Tekla EPM 2019

Estimating

April 2019

Contents

1 Set up the Estimating module

Before you start to create estimates and proposals in the **Estimating** module, we recommend that you take the time to set it up carefully. Once you have created and adjusted all necessary options, standard estimating items, and settings, working in the **Estimating** module is easier and more efficient.

To access the different **Estimating Maintenance** commands, do the following:

1. Click the **Maintenance** ribbon tab.
2. In the menu, go to **Estimating**.

For more information, see the following links:

Create, modify, and delete accessories (page 7)
Create and manage parametric assemblies (page 13)
Modify cleaning types and cleaning costs (page 26)
Create, modify, and delete paint types (page 27)
Modify freight pricing (page 30)
Manage estimating jobs (page 32)
Adjust labor information (page 36)
Manage estimate statuses (page 77)
Adjust standard shop information (page 78)
Create and modify shop setups (page 85)
Define company standard settings for Estimating (page 89)
Create a standard proposal setup (page 96)

1.1 Create, modify, and delete accessories

Accessories are frequently used items that can be added to any estimate. For example, stiffeners, gussets, base and cap plates, and embeds are good examples of accessories. We recommend that you create all necessary

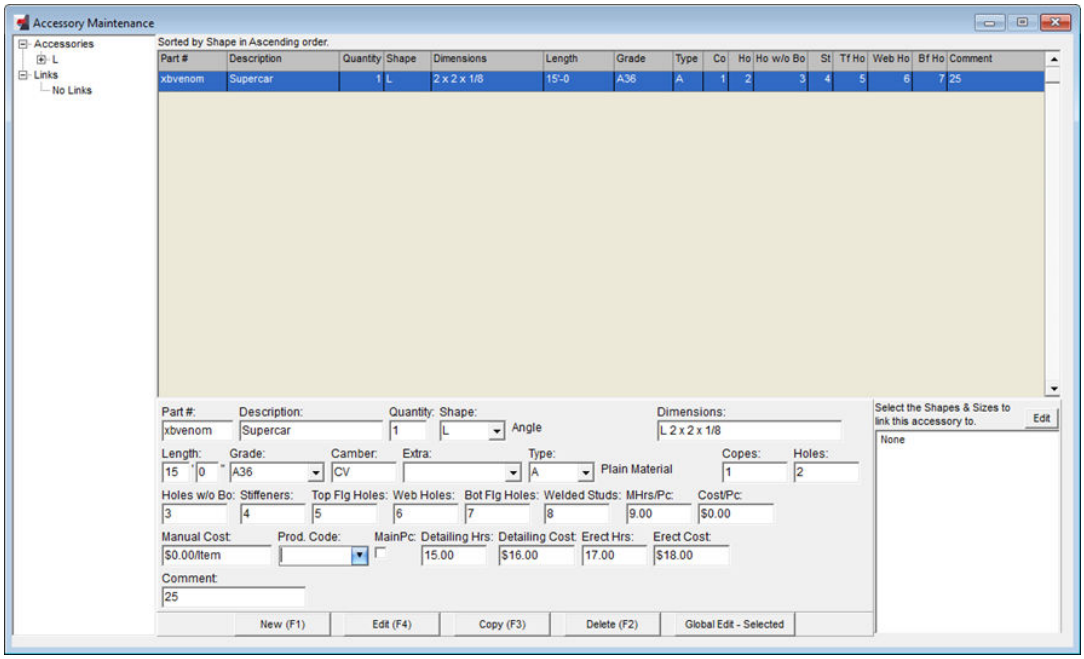
accessories at once before starting to create estimates, so that working in the **Estimating** module is as quick and efficient as possible.

We recommend that you create, modify, and delete accessories in **Accessory Maintenance**. You can also create accessories in an estimating job, but these job-specific accessories cannot be saved to the accessory library, so they cannot be reused in other estimating jobs.

To access the **Accessory Maintenance** dialog box, do the following:

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Accessory Maintenance** .

The **Accessory Maintenance** dialog box opens.



Create an accessory

The information that you enter for the accessory identifies the accessory together with the material cost and the required labor time.

1. Click **New**.
2. If necessary, type a part number for the accessory.

   Assigning part number allows you to add an accessory to an estimating item simply by selecting it in the item properties. Part numbers also make identifying accessories easier. However, note that if you add an item to the estimate by selecting the part number, you cannot modify the properties of the accessory in the estimating job.
3. Type a description for the accessory.

4. Determine the remaining properties of the accessory:

   The visible input fields and their order partially depend on the settings that you have defined in **Estimating Maintenance**. You can modify the input fields and their order via **Maintenance** --> **Estimating** --> **Edit Input Fields** .

Option	Description
Quantity	The number of accessories per item to which they are added.
Shape	The material shape of the accessory.
Dimensions	The material size of the accessory.
Length	The length of the accessory.
Grade	The material grade of the accessory.
Type	The labor code of the accessory. For more information, see Adjust labor codes (page 48).
Extra	The estimate extras applied to the accessory. To add estimate extras, double-click the **Extra** field. For more information, see Create estimate extras (page 43).
Holes	The number of holes in the accessory.
Web Holes	The number of web holes in the accessory.
Stiffeners	The number of stiffeners in the accessory.
Copes	The number of copes in the accessory.
MHrs/Pc	The number of man hours spent on the accessory.
Manual Cost	The cost for the accessory that you can enter manually. The manual cost is optional, and it overrides the pricing information in the pricing database.
MainPc	When selected, the item to which the accessory is added is considered a main piece.
Comment	An optional and additional comment on the accessory.
Erect Hrs	The number of man hours spent on erecting the accessory.
Erect Cost	The cost of erecting the accessory.
Prod. Code	The production code applied to the accessory.
Camber	The camber size used with the accessory.
Holes w/o Bo	The number of holes per piece in the accessory. No bolts will be added.

Option	Description
Top Flg Holes, **Bot Flg Holes**	The number of top flange holes or bottom flange holes per accessory.
Welded Studs	The number of welded studs per accessory.
Detailing Hrs	The number of hours spent on erecting the accessory.
Detailing Cost	The amount of money used for erecting the accessory.
Cost/Pc	A cost per piece that is added to the material cost of the accessory.

5. If necessary, select the linked material shapes and sizes to which the accessory can be added by clicking **Edit**.

   NOTE Selecting linked material shapes and sizes is optional. However, limiting the use of the accessory to the selected material shapes and sizes makes working easier, as you do not need to scroll through all existing accessory options whenever you want to add an accessory.

   If you do not select linked material shapes, the accessory can be added to all material items.

6. In the **Filter** dialog box, click the arrow buttons to move the desired material shapes and sizes to the **Included** list.

   Note that there are also lists at the bottom of the **Filter** dialog box that allow you to select the material shapes.

7. Click **OK**.
8. Click **Add** to save the accessory.

Example: Create a stiffener for W12 beams

Note that the following example uses imperial units.

1. Click **New**.
2. Set the properties as follows:
   a. **Part #**: `W12m`
   b. **Description**: `W12 Stiffener`
   c. **Quantity**: `1`
   d. **Shape**: `PL`
   e. **Dimensions**: `5/16 x 4`
   f. **Length**: `0'-11`
   g. **Grade**: `A36`

h. **Type**: `W` (Baffle)

3. Click **Edit** and link the accessory to the range `W 12 x 14 - W 12 x 152`.
4. Click **OK**.
5. Click **Add** to save the accessory.

Copy accessories

1. In the **Accessory Maintenance** dialog box, select the accessories that you want to copy.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
2. Click **Copy**.

   Copies of the selected accessories is added to the list in the **Accessory Maintenance** dialog box.
3. If necessary, define part numbers for the copied accessories.
4. Modify the properties of the copied accessories according to your needs.
5. Click **Edit** to save the changes.

Modify an accessory

1. In the **Accessory Maintenance** dialog box, select the accessory that you want to modify.
2. Modify the properties according to your needs.
3. Click **Edit** to save the changes.

Modify multiple accessories at once

1. In the **Accessory Maintenance** dialog box, select the accessories that you want to modify.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
2. Click **Global Edit - Selected**.
3. In the **Global Edit** dialog box, select check boxes next to the properties that you want to update.

   You can also use the **Un-check All** and **Check Changed Fields** buttons to quickly clear or select check boxes.

4. Modify any properties in the **Global Edit** dialog box according to your needs.
5. Click **Update**.

Delete an accessory

1. In the **Accessory Maintenance** dialog box, select the accessory that you want to delete.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
2. Click **Delete**.
3. To permanently delete the accessories, click **Yes** in the confirmation dialog box.

View, customize, print, and export accessory reports

Accessory reports show lists of existing accessories and accessory parts. You can view the reports, print them, or export them to another file format. You can also create a customizable copy of the accessory reports and modify it according to your needs.

1. In the **Accessory Maintenance** dialog box, click the **Accessory Maintenance** ribbon tab.
2. In the menu, select **Reports**, or press **Ctrl+R** on the keyboard.
3. In the **Report Selection** dialog box, select the report that you want to view, customize, print, or export.
4. Do one or more of the following:

To	Do this
View the report	• Click **View**. The report opens in **Tekla EPM Report Viewer**. You can use the **Email Excel** and **Email PDF** buttons at the top of the **Tekla EPM Report Viewer** window to email the report via Microsoft Outlook.
Customize the report	a. At the top right corner of the dialog box, click **Design**. A customizable copy of the report opens. b. Customize the report according to your needs.
Print the report	a. Change the number of the printed copies by clicking the **+** and **-** buttons.

To	Do this
	b. Click **Print**. c. To confirm printing the selected report, click **Yes** in the confirmation dialog box. d. In the **Select Printer** dialog box, click a printer to select it. e. Click **Print** or press **F2** on the keyboard.
Export the report	a. Click **Export**. b. In the **Export Format** list, select an export format. c. Click **Browse**. d. Modify the file name according to your needs. e. Browse to the location where you want to save the exported file, and click **Save**. f. If you want to attach the exported file to a Microsoft Outlook email and send it to a recipient, select the **Attach to Email** check box. g. If you want to open the file after exporting it, select the **Open Exported Document** check box. h. Click **Export**.

5. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Create, modify, and delete accessories (page 7)

1.2 Create and manage parametric assemblies

Parametric assemblies can be any fabricated items that may vary in height, width, or length, or according to any other variables that you define. For example, stairs, ladders, and handrails are common parametric assemblies can be created in Tekla EPM. Existing parametric assemblies can be added to an estimate while working in the **Estimating** dialog box.

See also

Create a parametric assembly (page 14)

Example parametric assembly: Roof ladder without cage (page 20)

Create a parametric assembly

You can use parametric assemblies in any estimating job, and modify the variable values according to your needs. Tekla EPM calculates the parametric assembly according to the values you have given. To create parametric assemblies, do the following:

Note that all information entered in the **Parametric Assembly** dialog box will be added to the estimate when the parametric assembly is selected.

TIP To see a concrete example of creating a parametric assembly, see Example parametric assembly: Roof ladder without cage (page 20).

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1. Create and name the assembly template

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating Maintenance** --> **Parametric Assembly Maintenance** .

3. In the **Select Parametric Assembly** dialog box, click **New**.
4. Name the parametric assembly.
5. To use an existing parametric assembly as the basis of the new one, select the parametric assembly in the **Template** list.

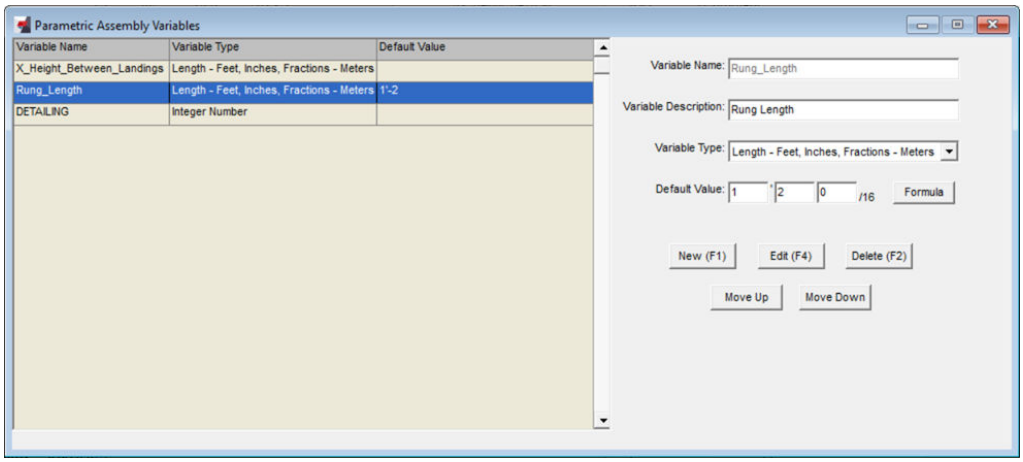
   Copying the information of an existing parametric assembly speeds up creating a parametric assembly. However, you can also create the parametric assembly from scratch.

6. Click **Add**.

2. Create variables, items, and formulas

Variables define the parametric calculations to be used.

1. In the **Parametric Assembly** dialog box, click the **Parametric Assembly** ribbon tab.
2. In the menu, select **Parametric Assembly Variables**.



3. In the **Parametric Assembly Variables** dialog box, click **New**.
4. Enter a name and description for the variable.
5. Select a suitable variable type:
   - **Integer Number**: a whole number. The **Integer Number** variable type is normally used for quantity type calculations where no fractions are required.
   - **Decimal Number**: a decimal number. The **Decimal Number** variable type has various uses.
   - **Length - Feet, Inches, Fractions - Meters**: length. The correct input format is determined in the name of the variable type.
   - **Length - Inches, Fractions - Millimeters**: length. The correct input format is determined in the name of the variable type.
   - **Length - Decimal Feet - Meters**: length. The correct input format is determined in the name of the variable type.
   - **Length - Inches, Fractions - Millimeters**: length. The correct input format is determined in the name of the variable type.
   - **Dimension**: allows you to change the dimension of the material by adding another variable. For example, you can have one material dimension for a short span and one for a long span in the assembly. The length applied to the span variable then determines which

dimension variable is used. The dimension variable can also be set when adding the parametric assembly to an estimating job.

- **Property from EST Line Item**: uses the selected property of the estimating item that was selected when the parametric assembly was added to the estimating job.
- **Property from Assembly Line Item**: uses the selected property of an item within the parametric assembly. Note that you need to select the desired property in the **Property** list, and type the item number in the **From Item #** field.

6. If necessary, define a default value for the variable.
7. Click **Add**.

   Repeat steps 3 to 5 to add all necessary variables.
8. To close the **Parametric Assembly Variables** dialog box, click the **Close** button (**X**) in the upper-right corner..
9. To add items to the parametric assembly, click **New** at the bottom of the **Parametric Assembly** dialog box.
10. Create a comment as the first item in the parametric assembly:
    a. Set **Quantity** to `1` and press **Enter**.
    b. Set **Shape** to `CO` and press **Enter**.
    c. In the **Description** field, type the parametric assembly name and press **Enter**.
    d. Click **Add**.

    Adding a comment as the first item of the parametric assembly makes it easier to recognize the parametric assembly in an estimating job.
11. To add another item, click **New**.
12. Enter properties for the item.
13. For properties that vary in the assembly, click the **Formula** button and define a formula using the previously created variables.

    For more information on creating formulas, see Create formulas (page 19).
14. If you need to add additional labor or clips to the item, click **Additional Labor & Clips** and determine their properties.

    Additional labor operations could be, for example, welding, burning, punching, or drilling. You can either determine the properties manually, or use formulas to use conditions for the additional labor and clips.

    Note that standard clips will be added according to the selected labor code when you add the parametric assembly to an estimate.

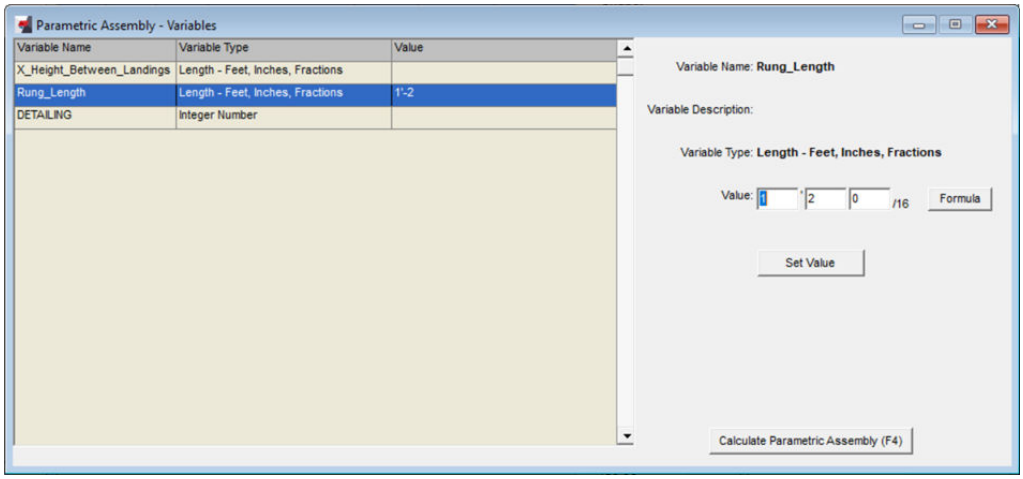
15. Once you have determined all necessary properties for the item, click **Add**.

    Repeat steps 9 to 12 to add the remaining items to the parametric assembly.

3. Test the parametric assembly

We recommend that you test all parametric assemblies that you have created to verify that the calculations work as expected.

1. While in the **Parametric Assembly** dialog box, click the **Parametric Assembly** ribbon tab.
2. In the menu, select **Test Parametric Assembly**.



3. In the **Parametric Assembly - Variables** dialog box, enter a value for a variable and click **Set Value**.

    For example, you could set the `Ladder Length` variable created in our example to `20'-0` and `Ladder Width` to `1'-6"`.

    Repeat step 3 for each variable in the parametric assembly.

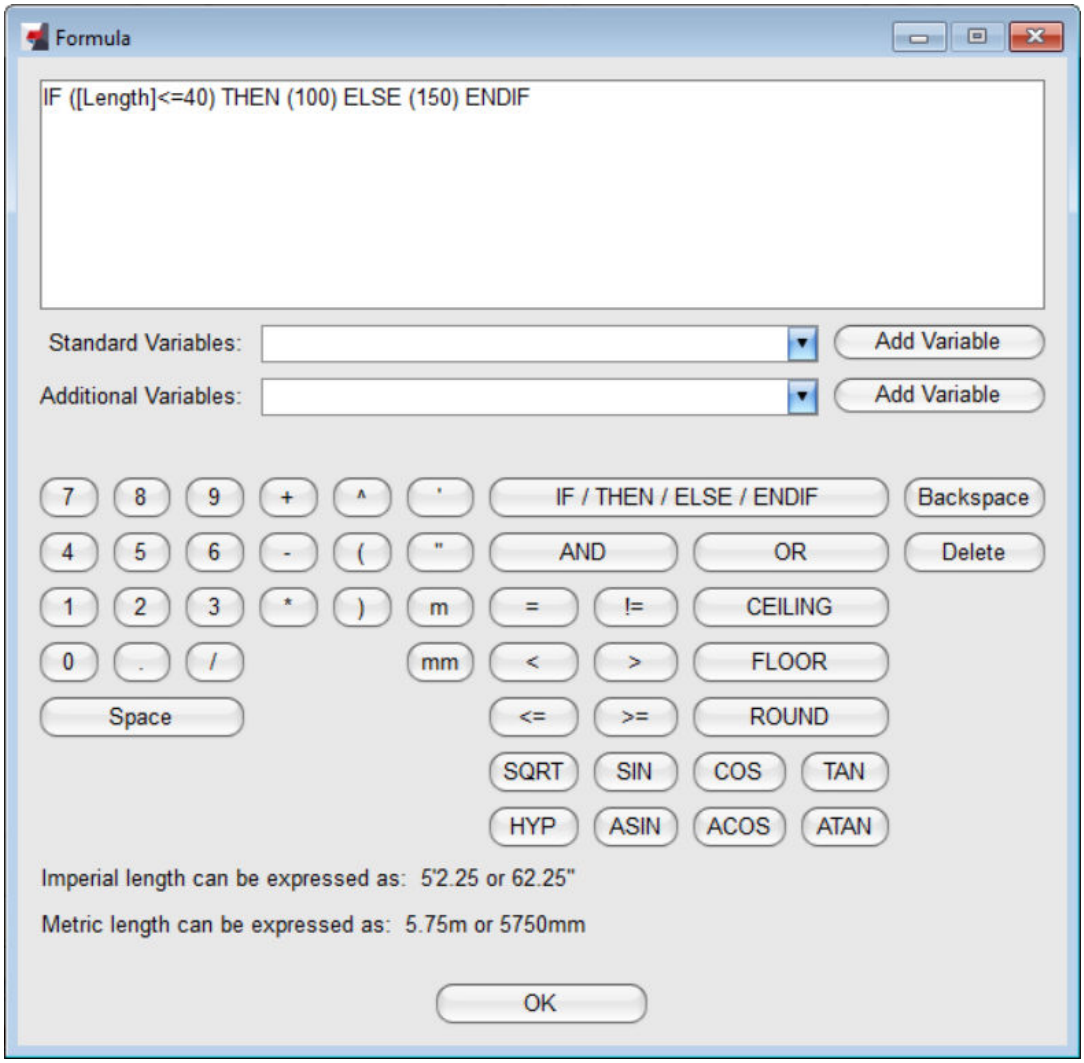
4. Click **Calculate Parametric Assembly**.

    You can now see the results of the calculations. Verify that the information is correct.

5. To view the additional labor and clips that were added for the selected item when creating the parametric assembly, click **Additional Labor & Clips**.
6. To close the results, click the **Close** button (**X**) in the upper-right corner..
7. Do one of the following:
    - To retest the calculations, set new values for the variables.
    - To close the **Parametric Assembly - Variables** dialog box, click the **Close** button (**X**) in the upper-right corner.

Create formulas

In the **Formula** dialog box, you can create formulas that Tekla EPM uses to calculate values. For example, you can create a formula to define the cost of an estimate extra, or to define the size of an angle used in a parametric assembly. You can access the **Formula** dialog box by clicking the **Formula** button on the right side of a field.



The formula functions allow you to add the following things to the formula:

- **Standard Variables**: the properties of a material item.
- **Additional Variables**: any previously added variables related to the parametric assembly or the estimate extra.
- `IF / THEN / ELSE / ENDIF` statements

- The `CEILING`, `FLOOR`, and `ROUND` rounding functions.

  The `CEILING` function always rounds up, the `FLOOR` function always rounds down, and the `ROUND` function rounds up at half and down at less than half.
- Several trigonometry functions, such as `SIN`, `COS`, and `HYP`.

Example formula: Calculate the cost of an estimate extra

In this example, we want the estimate extra to add a cost of $100 if the length of the item is less than or equal to 40'. If the length is greater than 40', the added cost should be $150.

In this case, we need the following formula:

```
IF ([Length] <= 40') THEN (100) ELSE (150) ENDIF
```

1. In the **Estimate Extra** dialog box, select the **Cost Expression** option, and click **Formula**.
2. In the **Formula** dialog box, click the **IF / THEN / ELSE / ENDIF** button.
3. Go to the parenthesis after `IF`.
4. In the **Additional Variables** list, select **Length**.
5. Click **Add Variable**.

   `[Length]` appears inside the parenthesis after `IF`.
6. Enter a space after `[Length]`.
7. After the space, type `<=40'`
8. Go to the parenthesis after `THEN`.
9. Type `100`
10. Go to the parenthesis after `ELSE`.
11. Type `150`

    The formula is now ready.
12. Click **OK** to close the **Formula** dialog box and use the formula in the estimate extra.

Example parametric assembly: Roof ladder without cage

The following example describes creating a roof ladder as a parametric assembly in Tekla EPM. The example can be helpful when you are learning to create parametric assemblies yourself.

1. Create a description for the parametric assembly

1. Click **New** and create an item with the following properties:

- **Shape**: `CO`
- **Description**: `Roof ladder (no cage)`

2. Click **Add**.

2. Create variables for calculating the ladder length and the number of rungs and collection clips

To create variables for calculating appropriate length, and the number of rungs and connection clips for the ladder, do the following:

1. Click the **Parametric Assembly** ribbon tab.
2. In the menu, select **Parametric Assembly Variables**.
3. Create the following variables without adding default values:
   - Overall length of the ladder
     - **Variable Name** and **Variable Description**: `Ladder Length`
     - **Variable Type**: `Length – Feet, Inches, Fractions – Meters`
   - Overall width of the ladder
     - **Variable Name** and **Variable Description**: `Ladder Width`
     - **Variable Type**: `Length – Feet, Inches, Fractions – Meters`
4. To close the **Parametric Assembly Variables** dialog box, click the **Close** button (**X**) in the upper-right corner.

3. Create side rails

1. Click **New** and create an item with the following properties:
   - **Quantity**: `2`
   - **Shape**: `FB`
   - **Dimensions**: `½ x 3`
2. To create a formula for calculating the length, click **Formula** next to **Length**.
3. In the **Formula** dialog box, do the following:
   a. Clear the existing text in the box at the top of the dialog box.
   b. In the **Additional Variables** list, select **Ladder Length**.
   c. Click **Add Variable**.

d. To have the ladder project beyond the landing elevation, type `+` and the length in feet and inches without a space between.

   The formula should now read approximately: `[Ladder Length] +3'6`.

e. Click **OK** to save the length formula and return to the **Parametric Assembly** dialog box.

   Note that whenever a property is calculated with a formula, it is marked with (F) in the **Parametric Assembly** dialog box.

4. Click **Add**.

4. Create the rungs

1. Click **New**.
2. To create a formula for calculating the number of rungs, click **Formula** next to **Quantity**.

   We want to calculate the number of rungs determined by the ladder length, starting 6 inches above the landing. The result should then be divided by 1'-0.

3. In the **Formula** dialog box, do the following:
   a. Clear the existing text in the box at the top of the dialog box.
   b. In the **Parametric Assembly Variables** list, select **Ladder Length**.
   c. Click **Add Variable**.
   d. Type `+6"`.
   e. Add parentheses () around `[Ladder Length]+6"`.
   f. Type `/12"` directly after the right parenthesis.
   g. Click **OK** to save the length formula and return to the **Parametric Assembly** dialog box.
4. Set the shape and dimension properties of the rungs as follows:
   - **Shape**: `RD` (round bar)
   - **Dimensions**: ¾"
5. To create a formula for calculating the length of the rungs, click **Formula** next to **Length**.
6. In the **Formula** dialog box, do the following:
   a. Clear the existing text in the box at the top of the dialog box.
   b. In the **Parametric Assembly Variables** list, select **Ladder Width**.
   c. Click **Add Variable**.

d. Click **OK** to save the length formula and return to the **Parametric Assembly** dialog box.

7. Click **Add**.

5. Create the connection clips

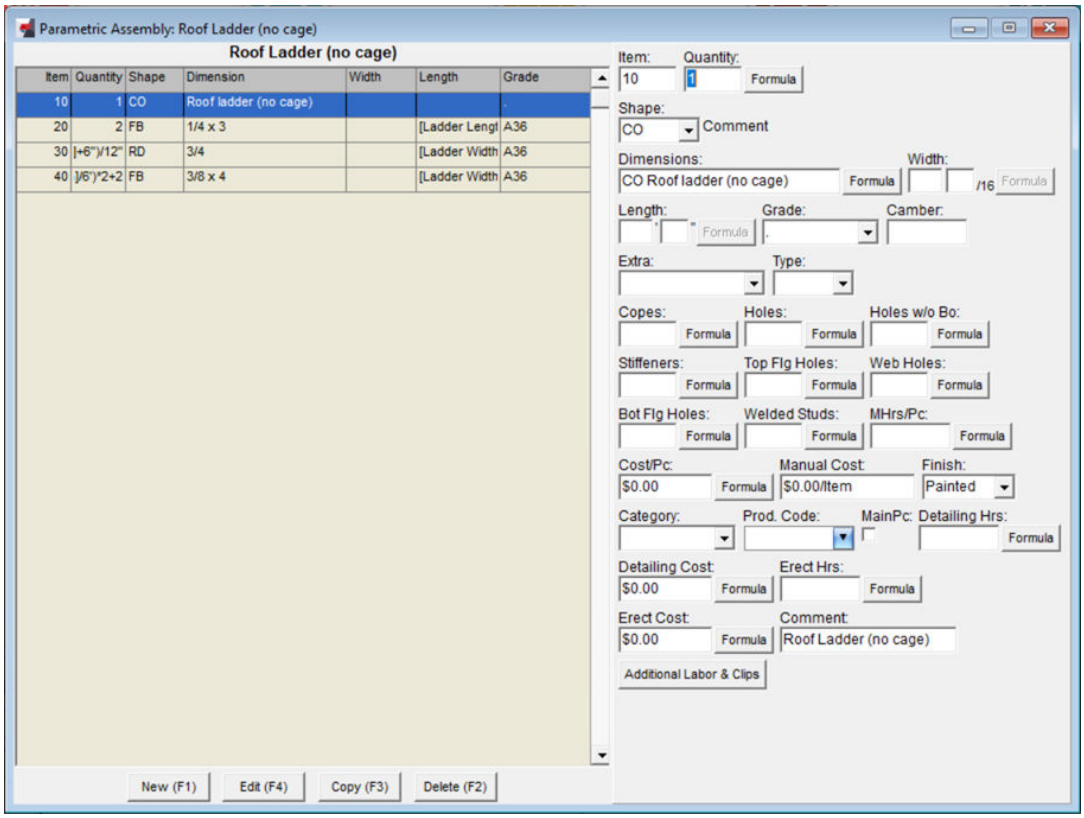
1. Click **New**.
2. To create a formula for calculating the number of clips , click **Formula** next to **Quantity**.

   We want to calculate the number of clips based on the length of the ladder.
3. In the **Formula** dialog box, do the following:
   a. Clear the existing text in the box at the top of the dialog box.
   b. Type `CEILING`.
   c. Type the left parenthesis (.
   d. In the **Parametric Assembly Variables** list, select **Ladder Length**.
   e. Click **Add Variable**.
   f. After the variable, type `/6')`.
   g. To calculate enough clips for both sides, type `*2`.
   h. To include the first and last clips for both rails, type `+2`.

      The calculation should read `CEILING([Ladder Length]/6')*2+2`. This means that Tekla EPM calculates the total ladder length divided by 6'-0, rounds it to the nearest foot, multiplies the result by 2, and then adds 2 more connection clips.
   i. Click **OK** to save the length formula and return to the **Parametric Assembly** dialog box.
4. Set the shape and dimension properties as follows:
   - **Shape**: `FB`
   - **Dimensions**: `3/8 x 4`
5. Click **Add**.

6. View the result

You can now view the result and test the parametric assembly.



For more information on testing a parametric assembly, see Create a parametric assembly (page 14).

Modify a parametric assembly

Existing parametric assemblies can be modified later on. You can rename the parametric assembly, or modify the items that form the parametric assembly or the variables used in calculations.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating Maintenance** --> **Parametric Assembly Maintenance** .
3. In the **Select Parametric Assembly** dialog box, select the desired parametric assembly that you want to modify.
4. Do any of the following:

To	Do this
Change the name of the parametric assembly	a. At the bottom of the **Select Parametric Assembly** dialog box, click **Set Name**.

To	Do this
	b. Type a new name for the assembly. c. Click **OK**.
Modify items	a. At the bottom of the **Select Parametric Assembly** dialog box, click **Open**. b. Select the item that you want to modify. c. Modify the properties of the item according to your needs. Among other things, you can change the quantity, shape, dimensions, or length of the item. d. Click **Edit** to save the changes.
Modify variables	a. At the bottom of the **Select Parametric Assembly** dialog box, click **Open**. b. Click the **Parametric Assembly** ribbon tab. c. In the menu, select **Parametric Assembly Variables**. d. Select the variable that you want to modify. e. Modify the variable name, description, variable type, and default value according to your needs. f. Click **Edit** to save the changes.

5. To close the **Select Parametric Assembly** dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Create a parametric assembly (page 14)

Example parametric assembly: Roof ladder without cage (page 20)

Delete a parametric assembly (page 26)

Export parametric assemblies

You can export a parametric assembly as a text file.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating Maintenance** --> **Parametric Assembly Maintenance** .
3. In the **Select Parametric Assembly** dialog box, select the parametric assembly that you want to export.

To select multiple items, hold down **Ctrl**.

To select a range of subsequent items, hold down **Shift**.

4. Click the **Parametric Assembly** ribbon tab.
5. In the menu, select **Export Selected Parametric Assemblies**.
6. In the **Save As** dialog box, browse to the location where you want to save the text file.
7. Name the text file.
8. Click **Save**.

   The parametric assembly is saved in the selected location as a text file.
9. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

Delete a parametric assembly

You can delete any parametric assemblies that you do not use. Note that deleting a parametric assembly cannot be reversed, so a deleted assembly can no longer be used in Tekla EPM.

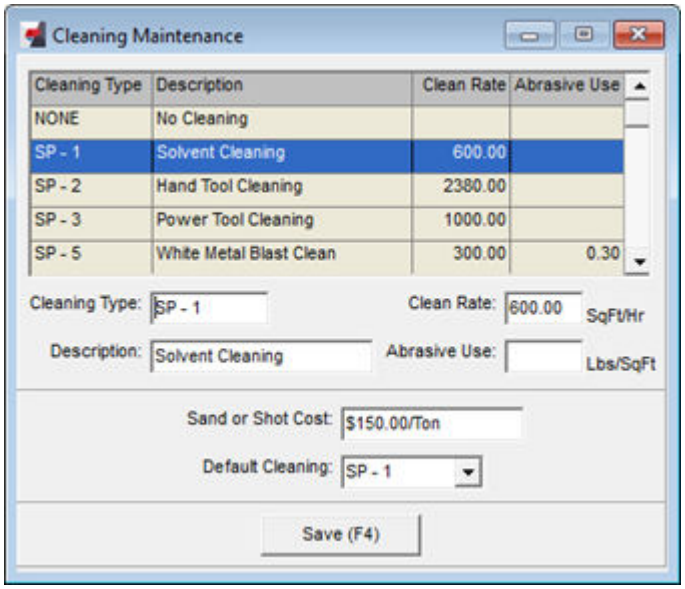
1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating Maintenance** --> **Parametric Assembly Maintenance** .
3. In the **Select Parametric Assembly** dialog box, select the parametric assembly that you want to delete.
4. Click **Delete**.
5. To permanently delete the selected parametric assembly, click **Yes** in the confirmation dialog box.

1.3 Modify cleaning types and cleaning costs

Tekla EPM contains multiple standard cleaning types that you can use in the **Estimating** module. In the **Cleaning Maintenance** dialog box, you can review the existing cleaning types, and modify the cleaning types and cleaning costs to meet your needs. You can also set the default cleaning type used in all future estimating jobs.

1. Click the **Maintenance** ribbon tab.
2. In the menu, go to **Estimating Maintenance** --> **Cleaning Maintenance** .

The **Cleaning Maintenance** dialog box opens, showing the existing clean types.



TIP If necessary, you can change the units in the dialog box from imperial to metric or the other way around. Click the **Cleaning Maintenance** ribbon tab, and in the menu, select a suitable **Switch To Metric/Imperial Mode** command.

3. To modify a cleaning type, select it in the list and modify the cleaning type name, description, clean rate, and abrasive use values.
4. If necessary, in the **Sand or Shot Cost** list, change the cost.
5. In the **Default Cleaning** list, select the default cleaning type applied to new estimating jobs.

   If necessary, you can also change the default cleaning type of each existing estimating job manually.
6. Click **Save**.

The changes you made are saved. The **Cleaning Maintenance** dialog box closes.

Note that you can create job-specific cleaning systems that contain various cleaning types in the **Estimating Job Edit** dialog box. For more information, see Create cleaning systems (page 106).

1.4 Create, modify, and delete paint types

In the **Paint Maintenance** dialog box, you can add, modify, and delete paint types that you want to use in estimating jobs. We recommend that you only

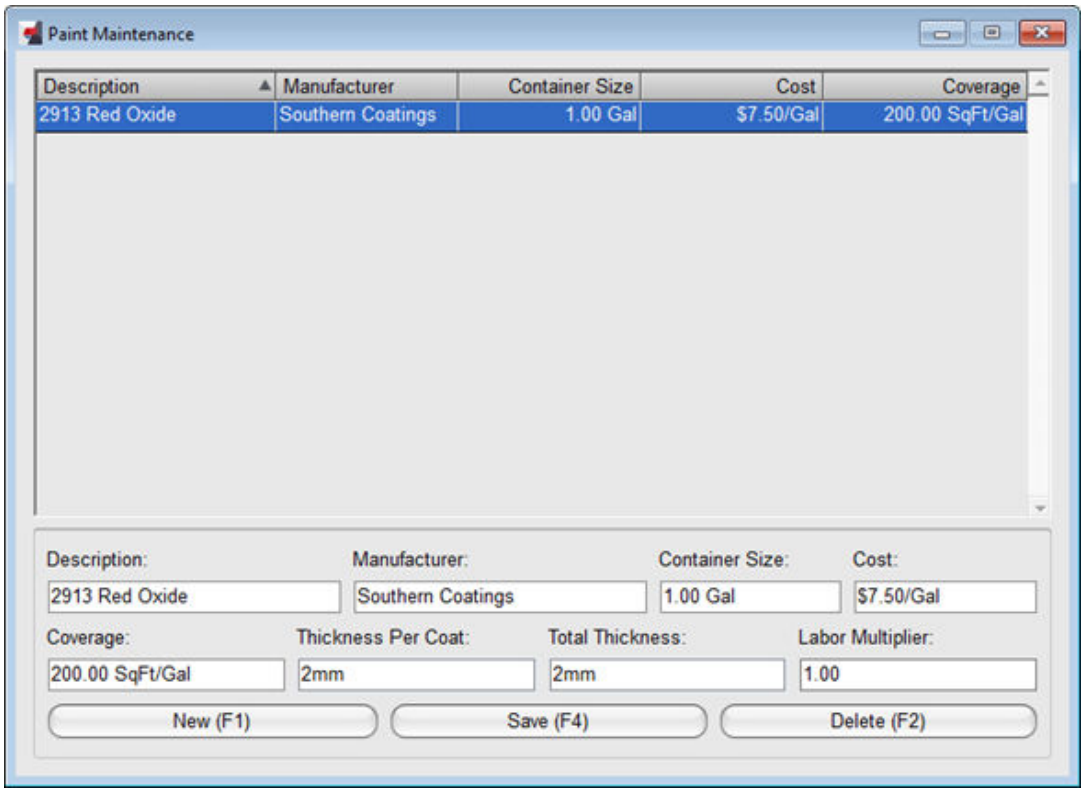
add paint types that are regularly used in your shop to **Paint Maintenance**. If a paint type is only used in a particular estimating job, you can create a job-specific paint type instead.

To create job-specific paint types, see Modify an estimating job (page 123).

To access the **Paint Maintenance** dialog box, do the following:

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating Maintenance** --> **Paint Maintenance** .

The **Paint Maintenance** dialog box opens.



Create a new paint type

1. In the **Paint Maintenance** dialog box, click **New** to add a new paint type.
2. Type a description, manufacturer, container size, cost, coverage, and thickness for the paint type.
3. If the painting process requires more time than usually, enter a labor multiplier value.

   The labor multiplier helps Tekla EPM to calculate the labor correctly.
4. Click **Add**.

The new painting type is added to the list.

Repeat steps 3 to 6 to add all regularly used paint types.

When you have created the necessary paint types, you can also create paint systems using the paint types. For more information, see Create paint systems (page 29).

Modify a paint type

1. In the **Paint Maintenance** dialog box, select the paint type that you want to modify.
2. Modify the properties of the paint type according to your needs.
3. Click **Save**.

Delete a paint type

1. In the **Paint Maintenance** dialog box, select the paint type that you want to delete.
2. At the bottom of the dialog box, click **Delete**.
3. To permanently delete the selected paint type, click **Yes** in the confirmation dialog box.

Create paint systems

By using paint systems, you can apply more than one coat of paint for an estimating job. When you select a paint system in an estimating job, Tekla EPM calculates the applicable costs and adds them to the estimate. Note that globally available paint systems need to be created before creating the estimating jobs where you want to use them. Otherwise, the paint systems will not be available.

1. While in the **Paint Maintenance** dialog box, click the **Paint Maintenance** ribbon tab.
2. In the menu, select **Paint Systems**.
3. In the **Paint System Maintenance** dialog box, click **New**.
4. Type a description for the paint system.
5. Click the arrow buttons to move the paint types that you want to include to the **Paints Included** list.
6. To change the number of coats, select an included paint type and type a new value in the **Quantity** field.
7. Click **Add**.

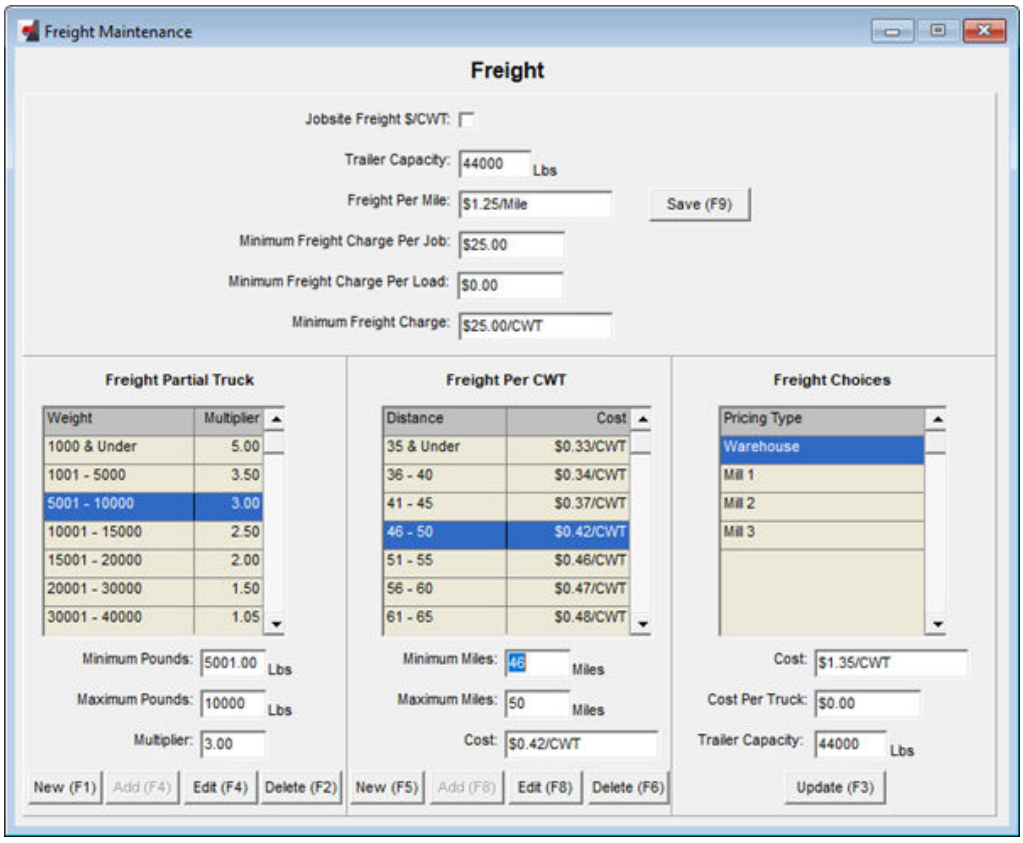
The new paint system is saved.

Note that you can also create job-specific paint systems. For more information, see Create job-specific paint systems (page 107).

1.5 Modify freight pricing

In the **Freight Maintenance** dialog box, you can modify freight pricing used in **Estimating**. The freight information that you set in the **Freight Maintenance** dialog box can be applied to all estimates.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating Maintenance** --> **Freight Maintenance** .



3. **Freight Maintenance** dialog box, select or clear the **Jobsite Freight $/CWT** or **Jobsite Freight $/KG** check box according to your needs:

When the Jobsite Freight $/CWT or Jobsite Freight $/KG check box is...	It means that...
selected	• Tekla EPM calculates freight as dollar per hundredweight or per kilogram.

When the Jobsite Freight $/CWT or Jobsite Freight $/KG check box is...	It means that...
	• When the total shipping weight is less than the trailer capacity, the **Freight Partial Truck** multipliers are added to the total calculation for **Freight Per CWT/KG**.
cleared	• Tekla EPM calculates freight as dollar per mile (the **Freight Per Mile** value is used). • When **Freight Per Mile** is less than **Minimum Freight Charge Per Job**, the **Minimum Freight Charge Per Job** is used instead.

Add or update the weight range and multiplier for different load sizes

The **Freight Partial Truck** options are used together with the **Jobsite Freight $/CWT**/**Freight Per CWT/KG** options when the **Jobsite Freight $/CWT**/**Jobsite Freight $/KG** check box is selected.

The **Freight Partial Truck** pricing also initiates a multiplier to the **Freight Per Mile** cost.

- Do any of the following:

To	Do this
Add a new weight range and multiplier	1. In the **Freight Partial Truck** section, click **New**. 2. Type the minimum and maximum weight. 3. In the **Multiplier** field, type the base load cost multiplier. The multiplier value is used to calculate the **Freight Per Mile** cost for loads that fall within the weight range. 4. Click **Add**.
Modify an existing weight range and multiplier	1. In the **Freight Partial Truck** section, click to select a distance in the list. 2. Modify the weight range or the multiplier value. 3. Click **Edit** to save the changes.

Add or update freight pricing per hundedweight or kilogram

- Do any of the following:

To	Do this
Add new pricing for a distance	1. In the **Freight Per CWT/KG** section, click **New**. 2. Define values for minimum miles, maximum miles, and cost. 3. Click **Add**.
Modify the pricing of an existing distance	1. In the **Freight Per CWT/KG** section, click to select a distance in the list. 2. Modify the cost. 3. Click **Edit** to save the changes.

Update costs for inbound freight and purchased items

1. In the **Freight Choices** section, click to select the desired supplier.
2. Enter new values in the **Cost**, **Cost Per Truck**, and **Trailer Capacity** fields.

   To remove all costs for inbound freight, set to `0`.
3. Click **Update**.

The pricing of inbound freight is updated.

1.6 Manage estimating jobs

In **Job Maintenance**, you can manage existing estimating jobs in different ways. You can copy, renumber, merge, export, and delete combining jobs, and set up job groups.

To manage estimating jobs, do the following:

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Job Maintenance** .
3. Select one of the available options to manage the existing jobs.

   The options are:

   - **Delete Jobs**
   - **Copy Job**
   - **Renumber Job**
   - **Merge Jobs**

- **Export Jobs**
- **Set Job Groups**

Note that you can also apply all changes made to the labor database to all existing estimating jobs by clicking **Calculate All**.

4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Delete estimating jobs (page 33)

Copy an estimating job (page 34)

Renumber an estimating job (page 34)

Merge estimating jobs (page 34)

Export estimating jobs (page 35)

Set job groups for estimating jobs (page 35)

Apply labor changes to all estimating jobs (page 33)

Apply labor changes to all estimating jobs

Use the **Calculate All** command in the **Job Maintenance** dialog box to apply any changes made to the labor database to jobs.

1. In the **Job Maintenance** dialog box, click **Calculate All**.

   Tekla EPM updates the labor properties for all estimates to match the changes that you have made to the labor database.

2. When the update process has been completed, click **Close** to close the **Calculate All** dialog box.

Delete estimating jobs

You can delete unnecessary estimating jobs at any time in **Job Maintenance**. Note that the jobs are deleted permanently. If you want to use estimating jobs for reference later, we recommend that you export the estimating jobs before deleting them.

1. In the **Job Maintenance** dialog box, select the **Delete Jobs** option.
2. In the list, select the job that you want to delete.
3. Click **Delete**.
4. To permanently delete the estimating job, click **Yes** in the confirmation dialog box.

See also

Export estimating jobs (page 35)

Copy an estimating job

If necessary, you can copy an existing job to use it as the base of a new similar job. Copying an existing job makes creating the new job quicker, as you do not have to set all properties manually, or create items one by one.

1. In the **Job Maintenance** dialog box, select the **Copy Job** option.
2. In the list, select the job that you want to copy.
3. In the **New Job Number** field, type the desired first item number.
4. Click **Copy**.

Tekla EPM creates a new job based on the selected job. You can modify the properties of the new job in the **Estimating** module.

See also

Manage estimating jobs (page 32)

Renumber an estimating job

You can renumber a job to re-establish the desired item number increments. To renumber items in an existing estimating job, do the following:

1. In the **Job Maintenance** dialog box, select the **Renumber Job** option.
2. In the list, select the job that you want to delete.
3. In the **Set Value** field, type a new starting number.
4. In the **Item Number Increment** field, type the desired numbering increment.

   For example, use 1 for single digit (1, 2, 3, ...), 5 for increments of five (5, 10, 15, ...), and 10 for increments on ten (10, 20, 30, ...).
5. To select specific pages to renumber, do the following:
   a. Click **Edit** on the right side of the **Pages** field.
   b. Click the arrow buttons to move the page numbers that you want to renumber to the **Included** list..
   c. Click **OK**
6. Click **Renumber**.

Merge estimating jobs

You can create a new job by merging two existing jobs. For example, merging jobs can be useful when you have separate estimating jobs in the same project.

1. In the **Job Maintenance** dialog box, select the **Merge Jobs** option.
2. In the list, select the jobs that you want to merge.
3. In the **New Job Number** field, type a number for the new job.
4. Click **Merge**.

   The new job appears in the list of jobs.

See also

Manage estimating jobs (page 32)

Export estimating jobs

Export jobs before deleting them to make the jobs available for future reference. Note that in Tekla EPM, only estimating jobs can be exported to KISS files.

1. In the **Job Maintenance** dialog box, select the **Export Jobs** option.
2. In the list, select the jobs that you want to export.
3. Click **Export**.
4. In the **Save As** dialog box, browse to the folder where you want to save the file.
5. Use the automatically generated name or type a new one.
6. Click **Save**.

The exported KISS file is saved to the selected folder.

Set job groups for estimating jobs

Job groups allow you to identify and sort projects that are similar. For example, you can create job groups for commercial or industrial work, or by year. Assigning job groups to jobs makes it easier to sort a long list of jobs.

1. In the **Job Maintenance** dialog box, select the **Set Job Groups** option.
2. In the list, select the jobs for which you want to create a job group.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
3. In the first empty field after **New Group**, type a name for the new group.

4. Click **Set Group**.

   The group name appears in the **Group** column for the selected job.

5. If necessary, add a secondary job group by typing a secondary group name in the second empty field after **New Group**.

6. Click **Set Secondary Group**.

   The secondary group name appears after the primary group name in the **Group** column. The two groups are separated with a hyphen.

See also

Manage estimating jobs (page 32)

1.7 Adjust labor information

Before you start working in the **Estimating** module, we recommend that you view the information in the Tekla EPM labor database, including labor groups, labor codes, and material-specific labor times. If necessary, you can then adjust this information to reflect the labor data of your shop.

NOTE Before making changes to the labor information, we recommend that you export the labor information and save it in a text file. This way, you can re-import the information later, if necessary. For more information, see .

1. Click the **Maintenance** ribbon tab.
2. In the menu, go to **Estimating** --> **Labor Maintenance** .
3. Select the desired menu command.

For more information, see the following links:

Calculating labor time (page 37)

Create an assembly (page 39)

View, rename, copy, and delete assemblies (page 40)

Adjust labor times for column splices (page 41)

Adjust labor times for copes, punches, and stiffeners (page 42)

Create estimate extras (page 43)

View extrapolation factors (page 47)

Modify the properties of filled columns (page 47)

Adjust labor codes (page 48)

Create, modify, and delete labor groups (page 52)

Create, modify, and delete labor operations (page 55)

Adjust labor standards (page 57)
Adjust quantity and weight labor factors (page 63)
Create, modify, and delete standard clips (page 65)
Adjust labor times for burning (page 67)
Adjust labor times for drilling (page 70)
Adjust labor times for punching (page 72)
Adjust labor times for welding (page 74)

Calculating labor time

The labor database consists of different elements that work together to calculate accurate labor times. See the purposes of each labor element:

Labor rates

Labor rates are hourly rates for specific fabrication functions, such as detailing, erecting, and shop labor.

Labor rates are assigned to different labor groups.

Labor standards

Labor Standards Maintenance contains the list of labor operations with applicable labor times.

Except for the times used for cutting and painting, the times within a material shape are very similar.

Labor groups

Labor groups bring together the assigned labor times and the hourly labor rates. A labor group can be described as a bucket where you put labor time and assign a labor rate.

The labor group is assigned to the labor operations. The labor from the labor operation is then summarized in the labor group, and a labor rate is applied.

Labor operations

Labor operations bring together the labor group and the extrapolation factor.

A labor operation is assigned an extrapolation factor and the time defined in the labor standard. Based on this information, Tekla EPM calculates the amount of labor based on the properties of the material.

Labor operations can be assigned through labor codes, estimate extras, or in some cases, additional labor.

To use a labor operation in an estimating job, you need to add it to a labor code in **Labor Codes**.

The labor time used for each labor operation is determined in **Labor Standards Maintenance**.

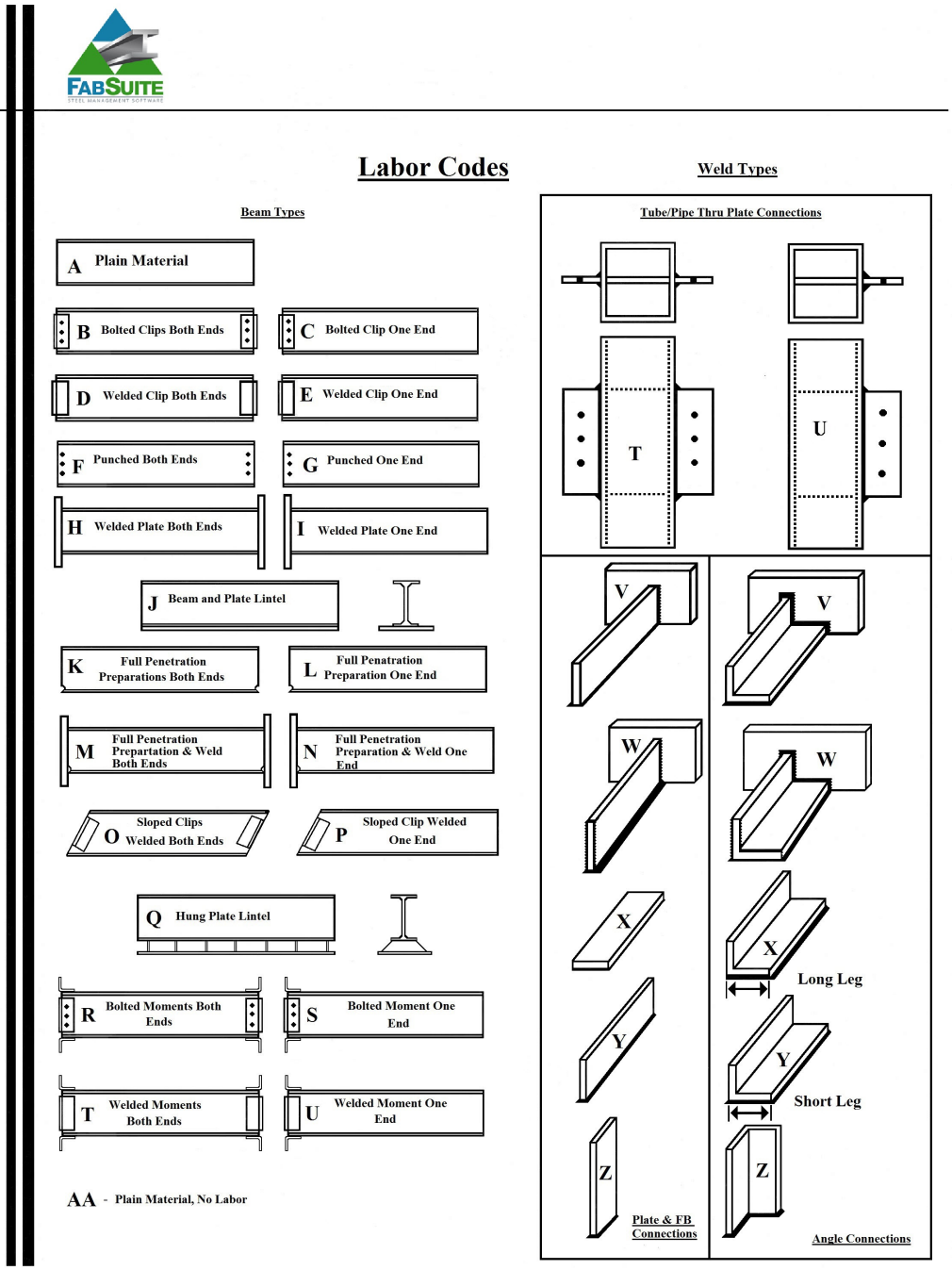
Labor codes

Labor codes group labor operations together with formulas that calculate burn, drill, punch, and weld time, the material and labor for standard clips.

The estimating items that do not belong to any material group, such as comments, hardware, and buy-out items, are not included in labor codes.

Labor codes also include the assignment of shop or field bolts, including the cleaning and splicing when those operations are required.

See the default labor codes in Tekla EPM in the following image:



Create an assembly

You can create a library of commonly used assemblies, or bid items, that you can use in all estimating jobs. Assemblies can contain multiple pieces with different shapes, labor codes, finishes, and other properties. By adding an assembly to your estimating job, you are actually adding all these pieces at once. While creating the assembly, you can apply additional labor and add

clips to the pieces, and add the necessary accessories and parametric assemblies.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Assemblies** .
3. In the **Select Assembly** dialog box, click **Add**.
4. Type a name for the assembly, and click **OK**.

   The **Assembly Maintenance** dialog box opens.

   The weight and labor hours of the assembly will be displayed at the top of the dialog box.
5. Click **New** to add the first item to the assembly.
6. Create a comment item as follows:

   a. Set **Shape** to CO and press **Enter**.

   b. Enter a description for the assembly and press **Enter**.

   c. Click **Add**

   The comment serves as the header line of the assembly, which makes it easier to identify the assembly in an estimating job.
7. Click **New** to add another item.
8. Define properties, labor codes, and labor functions for the item you are adding.
9. If necessary, add additional labor and clips to the item on the right side of the dialog box by clicking **New**, defining the properties, and clicking **Add**.
10. If necessary, click the buttons in the upper-right corner of the dialog box to add accessories or parametric assemblies for the item.
11. Click **Add**.

    Repeat steps 7 to 11 for all items that you want to include in the assembly.
12. When the assembly is ready, click the **Close** button (**X**) in the upper-right corner.

The assembly is now available for all estimating jobs. You can also see the assembly in the **Select Assembly** dialog box.

You can also create job-specific assemblies. For more information, see Add an assembly (page 138).

See also

View, rename, copy, and delete assemblies (page 40)

Add an assembly (page 138)

View, rename, copy, and delete assemblies

You can view, rename, and delete both globally available and job-specific assemblies in the **Assembly Maintenance** dialog box. Furthermore, you can copy job-specific assemblies to the assembly library, so that they will be available in all estimating jobs.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Assembly Maintenance** .

   The **Assembly Maintenance** dialog box opens.

   You can view the existing global assemblies in a list on the left side, and the job-specific assemblies on the right side.
3. According to your needs, do any of the following:

To	Do this
Rename an assembly	a. Select an assembly in either of the lists. b. Type a new name in the empty field under the list. c. Click **Rename**.
Delete an assembly	a. Select an assembly in either of the lists. b. Click **Delete** under the list. c. To permanently delete the assembly, click **Yes** in the confirmation dialog box.
Copy a job-specific assembly to the assembly library	a. In the **Job** list, click to select the estimating job from which you want to copy an assembly. b. Select the assembly that you want to copy. c. Click **<Copy**. The assembly is now available for all estimating jobs.

4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Create an assembly (page 39)

Add an assembly (page 138)

Adjust labor times for column splices

In **Column Splices Maintenance**, you can adjust the labor times for different times of column splices. These labor times will be used in all estimates by

default. If necessary, create new column splice types or modify the existing ones.

To use column splices, you need to add them to labor codes. For more information, see Adjust labor codes (page 48).

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Column Splices** .
3. In the **Column Splices Maintenance** dialog box, do any of the following:

To	Do this
Create a new column splice type	a. Click **New**. b. In the **Type** field, enter a letter indicator. c. Type a description and define the labor time in man hours. d. Click **Add**.
Modify an existing column splice type	a. Select a column splice type in the list. b. Modify the letter indicator, description, and labor time according to your needs. c. Click **Edit** to save the changes.
Delete a column splice type	a. Select a column splice type in the list. b. Click **Delete**. c. To permanently delete the column splice type, click **Yes** in the confirmation dialog box.

4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

Adjust labor times for copes, punches, and stiffeners

In **Cope Punch Stiffener**, adjust the default labor times for the layout of copes, punches, and stiffeners. For stiffeners, you can also adjust the fit-up time. The labor times that you define will be used in all estimating jobs.

- To define the labor time used for cutting the cope, see Adjust labor times for burning (page 67).
- To modify cope and stiffener weld settings, see Modify labor operation settings (page 80).

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Cope / Punch / Stiffeners** .

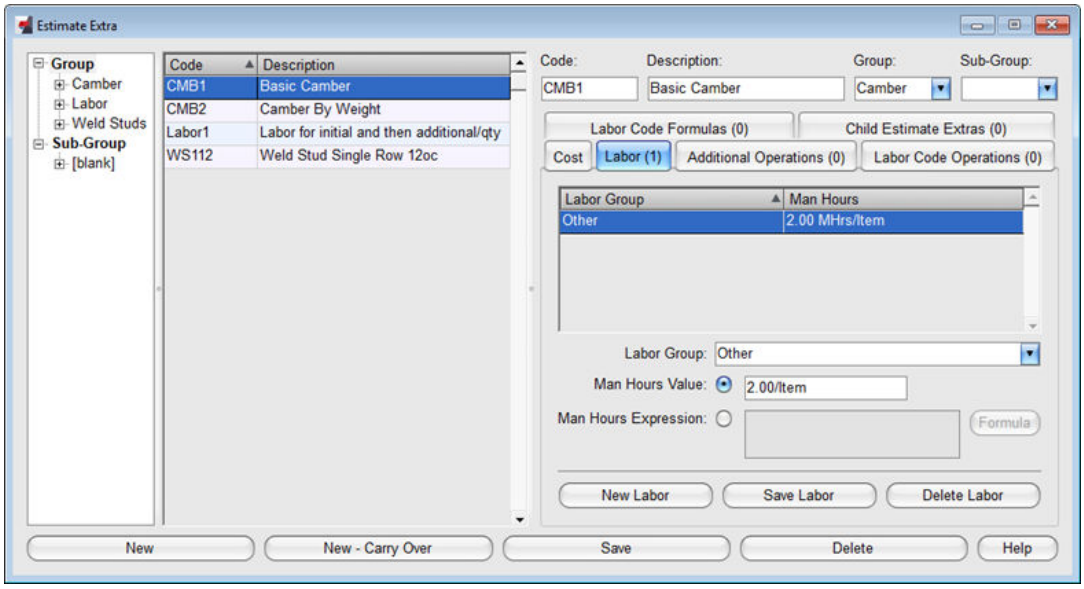
3. In the **Cope Punch Stiffener** dialog box, type labor times for the different copes, punches, and stiffeners.
4. Click **Save**.

Create estimate extras

Create estimate extras to add costs and labor for commonly used special items when there are no applicable labor codes in Tekla EPM. Estimate extras allow you to add as much labor and cost to a single item in an estimating job as needed. Estimate extras are often used for all labor done outside of your shop. For example, you can create estimate extras for items such as camber, rolling, and forming.

1. Click the **Maintenance** ribbon tab
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Estimate Extras** .

The **Estimate Extra** dialog box opens.



Create an estimate extra

1. In the **Estimate Extra** dialog box, click **New**.

> **NOTE** To create copy of an estimate extra and use it as the basis of a new one, select the existing estimate extra in the list and click **New - Carry Over**.

2. In the **Code** field, type an abbreviation that helps you identify the estimate extra.

   The abbreviation will be shown when you apply estimate extras to estimating items.

3. Type a description, group, and sub-group for the estimate extra.

   Groups and sub-groups are only used for filtering the estimate extras in the dialog box.

4. Click **Add**.

5. Click the other tabs to enter more information about the estimate extra.

   According to your needs, see any of the following instructions:

Add labor code formulas

You can add new labor code formulas in the **Labor Code Maintenance** dialog box. For more information, see Adjust labor codes (page 48).

For more information on creating formulas, see Create formulas (page 19).

1. Open the **Labor Code Formulas** tab.
2. Click **New Formula**.
3. In the **Formula** list, select an existing labor code formula.
4. Do one of the following:
   - In the **Quantity** field, enter the number of times the formula is used for the estimate extra.
   - Click **Formula** on the right side of the **Quantity** field and create a quantity formula.
5. Click **Add Formula**.

   Add as many formulas as necessary to define the extra labor.

6. Click **Save** at the bottom of the dialog box.

Add child estimate extras

Child estimate extras allow you to add more than one labor operation to the main estimate extra item. In practice, this means that you can group many labor functions together into one estimate extra.

1. Open the **Child Estimate Extras** tab.
2. Click **New Child Extra**.
3. In the **Child Estimate Extra** list, select an existing estimate extra that you want to add as a child item for the current estimate extra.
4. Do one of the following:

- In the **Quantity** field, enter the number of times the formula is used for the estimate extra.
- Click **Formula** on the right side of the **Quantity** field and create a quantity formula.

5. Click **Add Child Extra**.
6. Repeat steps 1 to 5 to add all necessary child estimate extras.
7. Click **Save** at the bottom of the dialog box.

Add costs

1. Open the **Cost** tab.
2. According to your needs, do any of the following:

To	Do this
Add a fixed cost	a. Select the **Cost Value** option. b. Type the cost in the **Cost Value** field. **TIP** If you want to change the units, right-click in the **Cost Value** field and select the new units.
Enter a formula for calculating the cost	a. Select the **Cost Expression** option. b. Click **Formula**. c. Build the formula by entering the necessary elements and adding variables. d. Click **OK**.

3. To assign the cost to a specific category, select an option in the **Cost Directed To** list.
4. Click **Save** at the bottom of the dialog box.

Add labor times for a labor group

1. Open the **Labor** tab.
2. Click **New Labor**.
3. In the **Labor Group** list, select the labor group for which you want to add labor times regarding the estimate extra.
4. Do any of the following:

To	Do this
Add a fixed amount of labor time	a. Select the **Man Hours Value** option.

To	Do this
	b. Type the labor time in the **Man Hours Value** field. **TIP** If you want to change the units, right-click in the **Man Hours Value** field and select the new units.
Add an expression to calculate the labor time	a. Click the **Man Hours Expression** option. b. Click **Formula**. c. Build the formula by entering the necessary elements and adding variables. d. Click **OK**.

5. Click **Add Labor**.
6. Click **Save** at the bottom of the dialog box.

Add welding, burning, punching, or drilling

1. Open the **Additional Operations** tab.
2. Click **New Operation**.
3. In the **Operation** list, select the labor operation.
4. In the **Type** list, select if the operation is manual, semi-automatic, or automatic.
5. Enter values or create formulas for **Quantity**, **Thickness**, and **Length**.
6. Click **Add Operation**.
7. Click **Save** at the bottom of the dialog box.

Add labor code operations

Labor code operations allow you to add the same operations for the selected estimate extra that are used for labor codes.

1. Open the **Labor Code Operations** tab.
2. Click **New Operation**.
3. Select the material group and the operation in the appropriate lists.
4. Type a quantity in the **Quantity** field, or click **Formula** to define a formula that calculates the quantity.
5. Click **Add Operation**.

6. Click **Save** at the bottom of the dialog box.

View extrapolation factors

Extrapolation factors are variables that Tekla EPM uses in calculating the labor times when labor applied to the materials. Extrapolation factors work together with labor operations and labor groups to properly apply labor times listed in labor standards. Extrapolation factors are also specific to certain labor operations.

You cannot create any additional extrapolation factors, but simply view the existing ones.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Extrapolation Factors** .
3. In the **Extrapolation Factor Maintenance** dialog box, view the extrapolation factors.
4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Create, modify, and delete labor groups (page 52)

Create, modify, and delete labor operations (page 55)

Adjust labor standards (page 57)

Modify the properties of filled columns

If you use filled columns in your estimating jobs, you can modify the properties of the concrete or vermiculite fill in **Filled Columns Maintenance**. Define the material cost, labor time, and weight according to your shop information. Note that the settings in the **Filled Columns Maintenance** dialog box are not applied to any functionality Tekla EPM.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Labor Maintenance** --> **Filled Columns** .

   The **Filled Columns Maintenance** dialog box opens.

TIP If you need to switch the dialog box information from imperial to metric units or vice versa, click the **Filled Columns Maintenance** ribbon tab and select the desired option in the drop-down menu.

If you need to define properties for a different shop, click the **Shop Setup** ribbon tab and select the desired shop.

---

3. Modify the cost, labor, and weight of the concrete and vermiculite fill.
4. Click **Save**.

Adjust labor codes

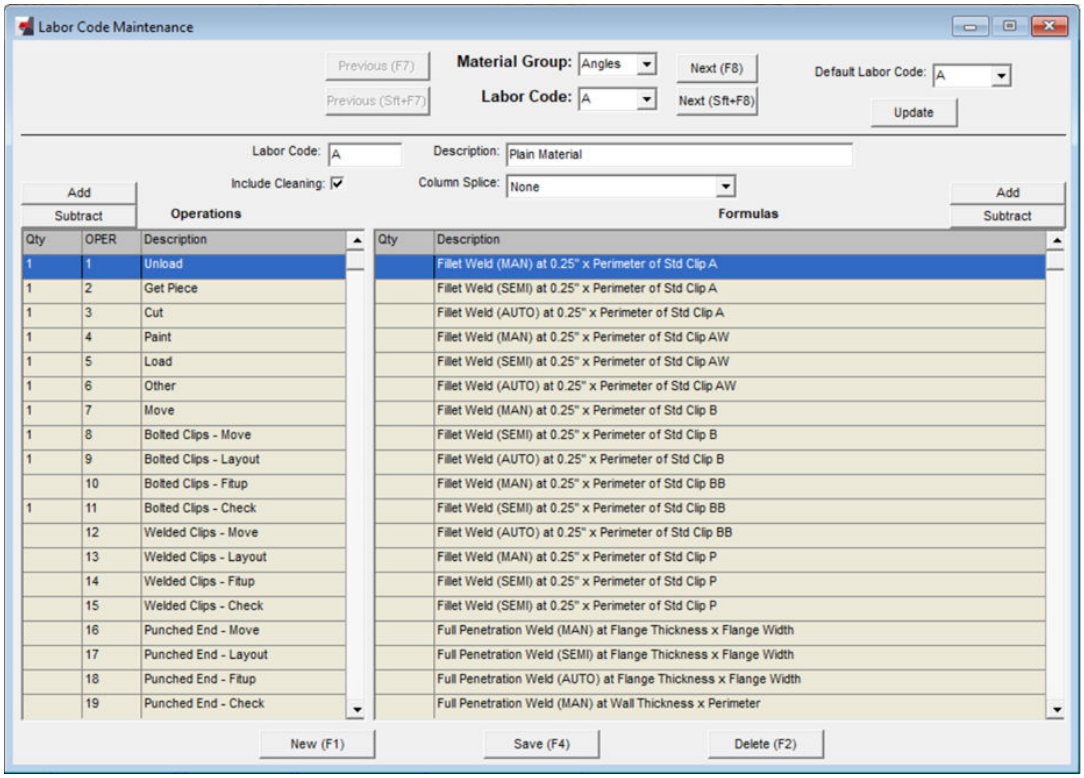
Labor codes group labor operations together with formulas. View the labor codes applied to different material groups in **Labor Code Maintenance**. You can also add more labor codes for common labor, such as adding sloped clips for bolted connections. In the **Estimating** module, you can use a labor code for the an item by selecting it the **Type** list.

To view the existing labor codes, see View the preloaded labor codes (page 52).

To access the **Labor Code Maintenance** dialog box, do the following:

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Labor Codes** .

The **Labor Code Maintenance** dialog box opens.



Labor codes are always used by certain material groups, or types of shapes. You can view the labor codes applicable to a material group by selecting the material group in the **Material Group** list, and scrolling the different options in the **Labor Code** list.

In the **Operations** section, you can set the number of times an operation is done within the labor code, or how many times the labor data from labor standards is entered for each item. When the **Quantity** column is blank, no labor is added.

In the **Formulas** section, you can see the formulas applied to calculating weld, burn, drill, and punch times, along with the labor times spent for standard clips. You can then set the number of times a formula is applied. When the **Quantity** column is blank, the formula is not applied.

Change the default labor code of a material group

1. In the **Material Group** list, select the material group.
2. In the **Default Labor Code** list, select the new default labor code.
3. Click **Update**.

The selected labor code is now used by default for the material group in the **Estimating** module.

Add a new labor code

1. In the **Material Group** list, select the material for which the new code is added.

   The labor code will only be available for the selected material group.
2. At the bottom of the dialog box, click **New**.
3. In the **Add Labor Code** dialog box, type an abbreviation and description for the labor code.
4. Click **Add**.
5. In the **Operations** list, ensure that the necessary operations are included to the labor code.

   If necessary, use the **Add** and **Subtract** buttons above the list to add or subtract the number of operations.
6. In the **Formula** list, ensure that the necessary formulas are applied.

   If necessary, use the **Add** and **Subtract** buttons above the list to add or subtract the number of formulas.
7. If necessary, include cleaning or column splices into the new labor code.
8. Click **Save**.

The new labor code is created and is available in the **Estimating** module.

Add or subtract operations and formulas

1. In the **Material Group** list, select the material group.

2. In the **Labor Code** list, select the labor code.
3. Select the operation or formula whose quantity you want to modify in the labor code.
4. Above the list, click **Add** or **Subtract** to change the quantity.
5. Click **Save**.

Add column splices to a labor code

You can apply column splices to any labor code. Tekla EPM calculates the labor time used in the column splice automatically.

1. In the **Material Group** list, select the material group.
2. In the **Labor Code** list, select the labor code.
3. In the **Column Splice** list, select the column splice type that you want to use for the labor code.
4. Click **Save**.

Column splices are added to the labor code.

Note that the required splice materials need to be added manually in the **Estimating** module.

Add cleaning to a labor code

1. In the **Material Group** list, select the material group.
2. In the **Labor Code** list, select the labor code.
3. Select the **Include Cleaning** check box.
4. Click **Save**.

Add, modify, and delete formulas

1. Click the **Labor Code Maintenance** ribbon tab.
2. In the menu, select **Formula Maintenance**.

   The **Formula Maintenance** dialog box opens. The existing formulas are displayed in the list on the left of the dialog box.

   Each formula type includes options for quantity, weld, thickness and length.
3. According to your needs, do any of the following:

To	Do this
Create a new formula	a. Click **New Formula**.

To	Do this
	b. In the **Formula Type** list, select an option. The formula type that you select determines the variables for which you need to enter values on the right side of the dialog box. For example, if you select **Burn**, you will need to determine the quantity, burn operation, thickness, and length. c. For each variable, click the **Edit Formula** button on the right side of the field, and type a value or build a formula. d. To save the formula, click **Edit Formula** at the bottom of the dialog box.
Modify an existing formula	a. Select the formula that you want to modify. b. If necessary, in the **Formula Type** list, select a different option. c. For each variable, click the **Edit Formula** on the right side of the field, and modify the value or formula according to your needs. d. To save the changes, click **Edit Formula** at the bottom of the dialog box.
Delete an existing formula	Note that the formula will be permanently deleted and cannot be used in any labor code. a. Select the formula that you want to delete. b. Click **Delete**. c. To permanently delete the formula, click **Yes** in the confirmation dialog box.

4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

View and print labor code reports

1. Click the **Labor Code Maintenance** ribbon tab.
2. In the menu, select **Reports**, or press **Ctrl+R** on the keyboard.
3. In the **Report Filter** dialog box, do one of the following to filter which shapes and dimensions are included in the reports:
   - To only include particular material groups, click **Edit** on the right side of **Material Group**.
   - To only include particular material groups and labor codes, click **Edit** on the right side of **Material Group & Labor Code**.

4. Click the arrow buttons to move the shapes and dimensions that you want to modify to the **Included** list.
5. Click **OK**.
6. Click **Make Report**.
7. In the **Report Progress** dialog box, do any of the following according to your needs:

To	Do this
View the labor code list	• Click **View**.
Print the labor code list	a. Change the number of the printed copies by clicking the **+** and **-** buttons. b. Click **Print**.

8. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

View the preloaded labor codes

Tekla EPM contains multiple preloaded labor codes. To view an image file that illustrates the various labor codes, do the following:

1. Click the **File** ribbon tab in the upper-left corner of the Tekla EPM window.
2. In the **File** menu, select **Run FabLicense**.
3. Click the **File** menu of the **FabLicense** dialog box.
4. In the menu, select **Downloads**.
5. In the **Contact Server** dialog box, type your company ID and password.
6. Click **Contact Server**.
7. In the **Select File** dialog box, scroll to and select the **Labor Codes.jpg** file.
8. Click **Download**.
9. Browse to the location where you want to save the file.
10. Click **Save**.

    Tekla EPM downloads the file to the selected location. Open the file to view the preloaded labor codes.
11. To close the **Select File** and **FabLicense** dialog boxes, click the **Close** button (**X**) in the upper-right corner.

Create, modify, and delete labor groups

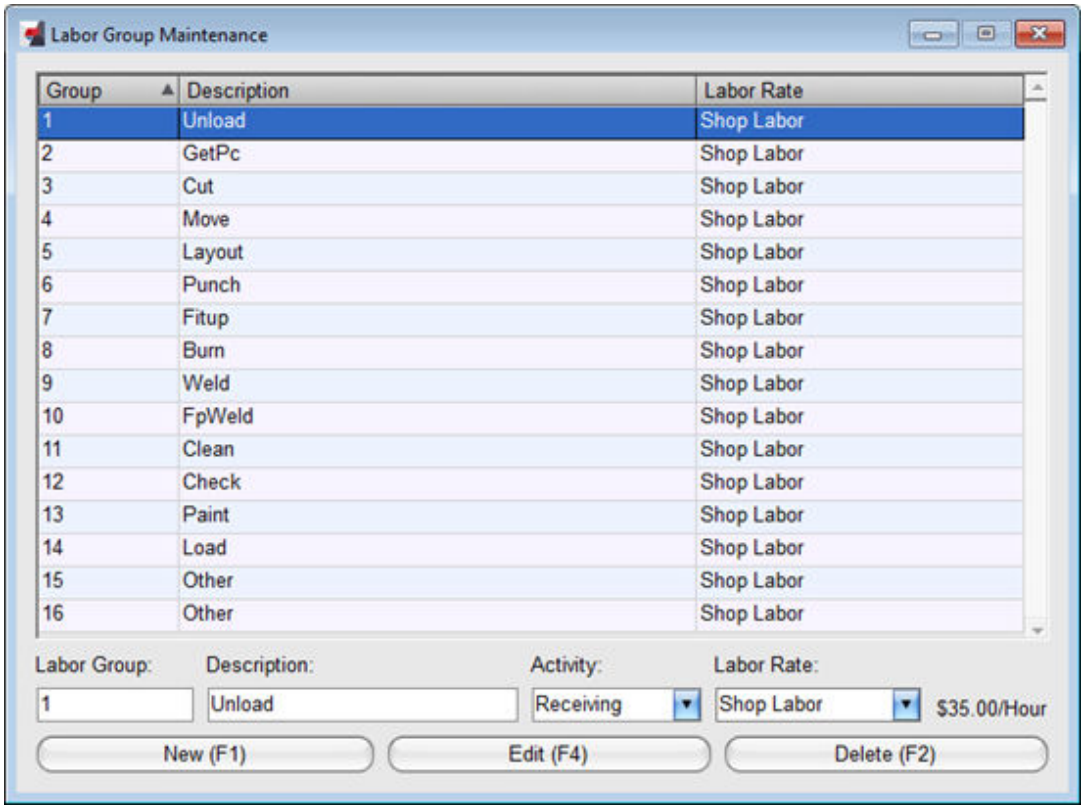
Labor groups define the different labor types being used in an estimating job. All labor times, except for the erection and detailing times, defined in Tekla

EPM are assigned to a particular labor group. Tekla EPM already contains labor groups for labor types such as cutting, cleaning, or loading. You can view and modify the existing labor groups in the **Labor Group Maintenance** dialog box, or add new ones according to the needs of your shop.

To access the **Labor Group Maintenance** dialog box, do the following:

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Labor Groups** .

The **Labor Group Maintenance** dialog box opens.



Create a labor group

1. Click **New**.
2. In the **Labor Group** field, type a number that is not used by any existing labor group.
3. Type a description for the labor group.
4. In the **Activity** list, select which activity the new labor group is associated to.

5. In the **Labor Rate** list, select which labor rate the new labor group is associated to.

   The labor rates are created in **Fabricator Information**. For more information, see Create and modify labor rates (page 82).

   The cost of the labor appears on the right side of the **Labor Rate** list.

6. Click **Add**.

The new labor group is created. You can now assign different labor times, such as burn time or manual labor time, to the labor group.

Modify a labor group

1. Select the labor group that you want to modify.
2. Modify the labor group number, description, activity, and labor rate according to your needs.
3. Click **Edit** to save the changes.

Delete a labor group

Deleting a labor group is permanent and cannot be undone.

1. Select the labor group that you want to delete.
2. Click **Delete**.
3. To permanently delete the labor group, click **Yes** in the confirmation dialog box.

Modify miscellaneous labor groups

In the **Miscellaneous Labor Group** dialog box, you can determine in which labor group specific operations, such as cleaning or manual labor, are included.

1. Click the **Labor Group Maintenance** ribbon tab.
2. In the menu, select **Miscellaneous Labor Groups**.
3. In the available lists in the **Miscellaneous Labor Group** dialog box, select to which labor groups the different labor times are assigned.
4. Click **Save**.

View and print the labor group list

1. Click the **Labor Group Maintenance** ribbon tab.
2. In the menu, select **Reports**, or press **Ctrl+R** on the keyboard.

3. In the **Report Progress** dialog box, do any of the following according to your needs:

To	Do this
View the labor group list	• Click **View**.
Print the labor group list	a. Change the number of the printed copies by clicking the **+** and **-** buttons. b. Click **Print**. c. In the **Select Printer** dialog box, click a printer to select it. d. Click **OK**.

Create, modify, and delete labor operations

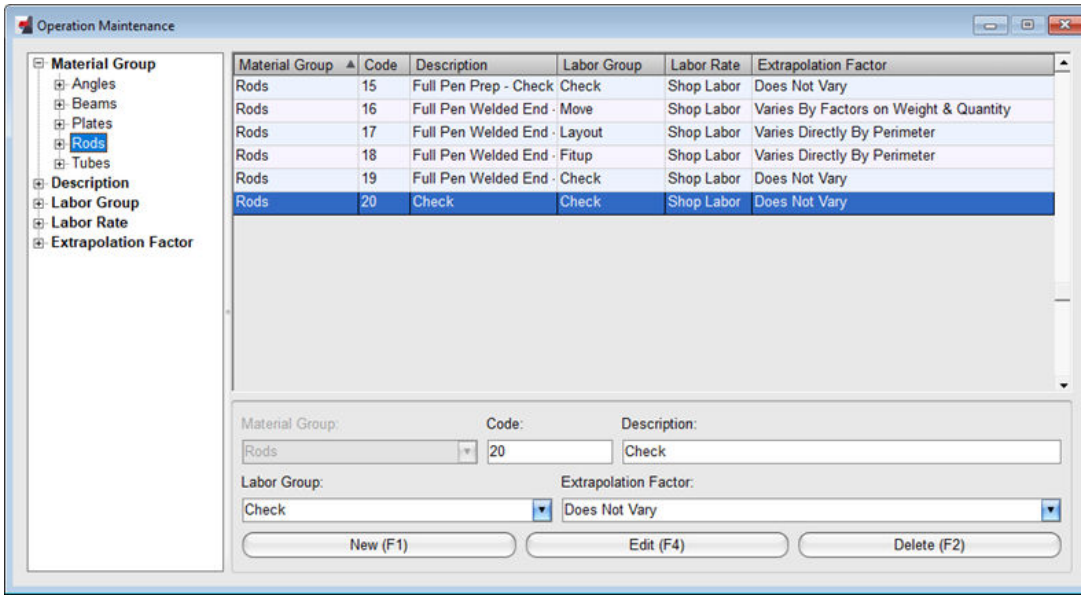
Labor operations are operations that take place in the fabrication process, such as unloading, painting, or moving material. A labor operation is assigned an extrapolation factor and the time in the labor standard, so that Tekla EPM can calculate the amount of labor based on the properties of the material. You can view and modify the existing labor operations in **Operation Maintenance**. You can also create new labor operations according to the needs of your shop.

To modify the burn, drill, punch, and weld settings for labor operations, see Modify labor operation settings (page 80).

To access the **Operation Maintenance** dialog box, do the following:

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Labor Operations** .

The **Operation Maintenance** dialog opens.



Create a labor operation

1. Click **New**.
2. In the **Code** field, type a number that is not in use by another labor operation.
3. Type a description for the labor operation.
4. In the **Labor Group** list, click to select the labor group to which the labor operation is assigned.
5. In the **Extrapolation Factor** list, click to select the variable used in calculating labor times.
6. Click **Add**.

The new labor operation is created.

Note that before you can use the labor operation in estimating jobs, you need to add it to a labor code in Labor Codes (page 48) and enter the labor time in Labor Standard Maintenance (page 57).

Modify an existing labor operation

1. Select a labor operation in the list.
2. Modify the code, description, labor group, and extrapolation factor according to your needs.
3. Click **Edit** to save the changes.

Delete a labor operation

Note that deleting labor operation is permanent and cannot be undone.

1. Select a labor operation in the list.
2. Click **Delete**.
3. To permanently delete the labor operation, click **Yes** in the confirmation dialog box.

View or print the labor operation list

The labor operation list shows how Tekla EPM applies labor for each material group.

1. Click the **Labor Operation Maintenance** ribbon tab.
2. In the menu, select **Reports**, or press **Ctrl+R** on the keyboard.
3. To only include particular material groups in the labor operation list, in the **Report Filter** dialog box, click **Edit** on the right side of **Material Group**.
4. Click the arrow buttons to move the material groups that you want to include to the **Included** list.
5. Click **OK**.
6. Click **Make Report**.
7. In the **Report Progress** dialog box, do any of the following according to your needs:

To	Do this
View the labor operation list	• Click **View**.
Print the labor operation list	a. Change the number of the printed copies by clicking the **+** and **-** buttons. b. Click **Print**. c. In the **Select Printer** dialog box, click a printer to select it. d. Click **OK**.

8. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

Adjust labor standards

In the **Labor Standards Maintenance** dialog box, you can view the labor time spent in each material operation by material dimension and shape. If necessary, you can modify the labor times, or add new labor times, shapes

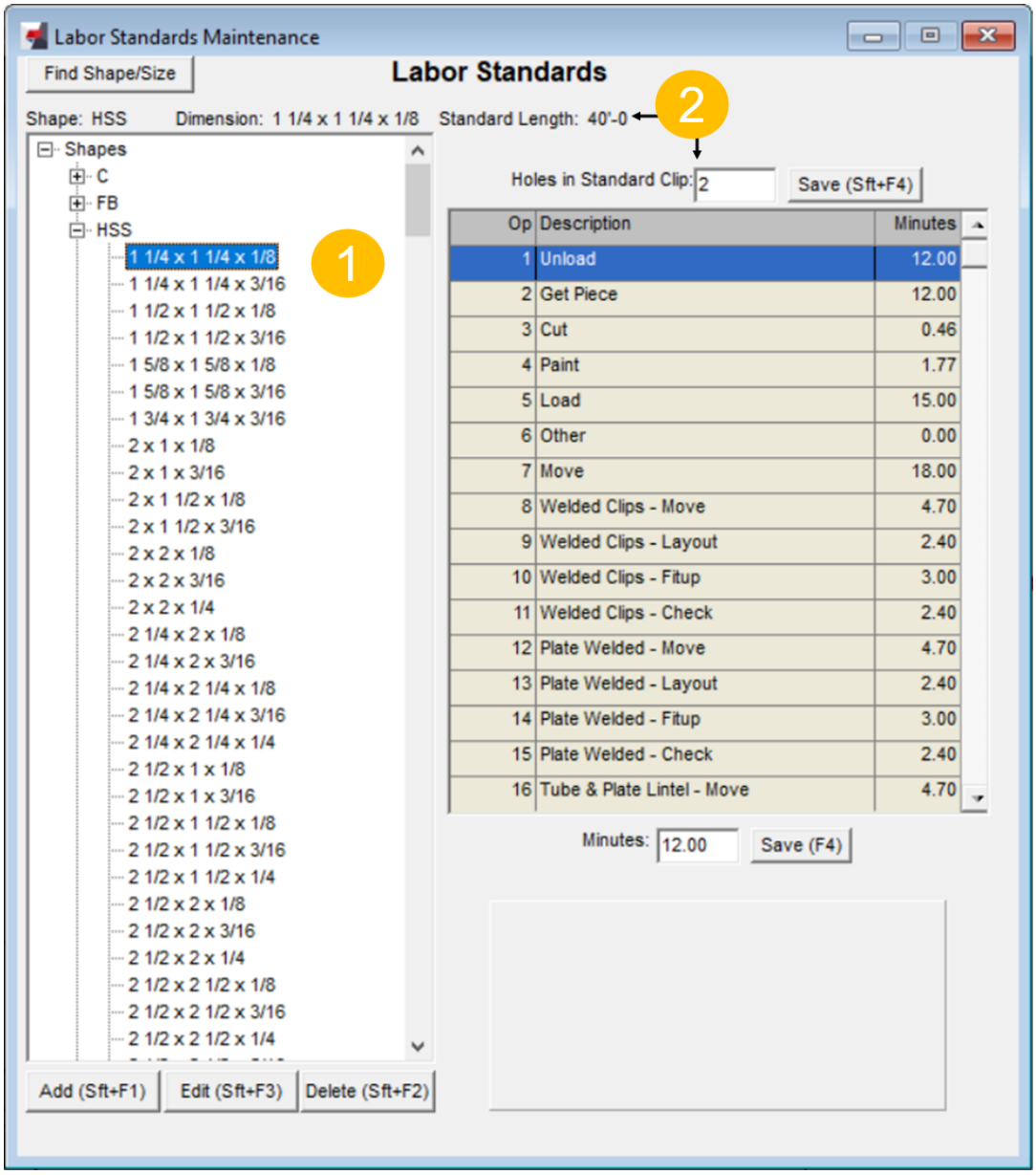
and material dimensions. You can also delete shapes and the applied labor time from **Labor Standards**.

NOTE Before making changes to labor standards, we recommend that you create a new shop based on the original labor database. Then, modify the copy, so that the original labor information remains untouched.

To access **Labor Standards Maintenance**, do the following:

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Standards** .

The **Labor Standards Maintenance** dialog box opens.



(1) You can browse the existing material shapes and dimensions on the navigation tree on the left.

When you click to select a dimension in the navigation tree, its labor times by labor operation appear on the right side of the dialog box.

(2) The standard length and the number of standard clip holes of the selected material dimension are displayed at the top of the dialog box.

According to your needs, see any of the following instructions:

View the compiled labor time of a material dimension

NOTE Remember to view the compiled labor time by labor code before and after making changes to labor time by labor group.

1. Select the material dimension whose properties you want to view.
2. Click the **Labor Standards Maintenance** ribbon tab.
3. In the menu, select **View Labor Code Labor Values**.

   The **Labor Code** dialog box opens.

   The total labor time is viewed at the top of the dialog box. The information on shop bolts, field bolts, weld cost, and weld weight is displayed at the bottom of the dialog box. All these properties are added to an estimate when the labor code is added.
4. In the navigation tree on the left, click a labor code to view the labor times of the material dimension when that labor code is selected.
5. To view the labor operation times and the total man hours without standard clips, clear the **Include Standard Clips** check box.
6. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.
7. If necessary, make changes to the labor times in the **Labor Standards Maintenance** dialog box.

Add an individual material dimension

1. At the bottom of the dialog box, click **Add**.
2. In the **Shape** list, select a shape.
3. Click the **Dimensions** field.
4. Double-click the dimension that you want to add, or create a new one by clicking **Add Size**.
5. Click **Save**.

   The dimension is added and automatically selected in the navigation tree.

6. To add labor time for the dimension, select a labor operation.
7. Type the labor time in the **Minutes** field and click **Save**.

   Repeat steps 6 to 7 for each applicable labor operation.

After the dimension has been added, you also need to add its pricing and combining length to the pricing database in **Pricing Maintenance**. For more information, see .

Add a material shape

Note that you can only add material shapes that are already stored in the **Shape / Grade / Size** database.

1. In the **Labor Standards Maintenance** dialog box, click the **Labor Standards Maintenance** ribbon tab.
2. In the menu, select **Add Sizes**.
3. In the **Shape** list, select the shape that you want to add.
4. Click **Add**.

   All dimensions of the selected shape are added to the **Labor Standards Maintenance** dialog box.
5. Use the **Global Edit - Operations** command to add labor times for the new dimensions.

   For more information, see **Copy labor times to multiple material dimensions**.

After the shape has been added, you also need to add its pricing and combining length to the pricing database in **Pricing Maintenance**. For more information, see .

Modify the number of standard clip holes for a single material dimension

1. In the navigation tree, select a material dimension.
2. In the **Holes in Standard Clip** field, type the desired number of holes.
3. Click **Save**.

Modify the number of standard clip holes for multiple material dimensions

1. While in the **Labor Standards Maintenance** dialog box, click the **Labor Standards Maintenance** ribbon tab.
2. In the menu, select **Global Edit - Holes in Standard Clip**.
3. On the **Shapes** section, use the arrows to move shapes whose standard clip holes you want to modify to the **Included** list..

4. On the **Dimensions** section, use the arrows to move the dimensions whose standard clip holes you want to modify to the **Included** list..
5. Click **OK**.
6. Type the desired number of holes in the **Holes in Standard Clip** field.
7. Click **Save**.

   The number of standard clip holes of the selected material shapes and dimensions is updated.

Copy labor times to multiple material dimensions

1. Change the labor times of labor operations for one dimension according to your needs.
2. In the navigation tree, select the material dimension whose labor times you want to copy to other dimensions.
3. Click the **Labor Standards Maintenance** ribbon tab.
4. In the menu, select **Global Edit - Operations**.
5. On the **Shapes** section of the **Global Edit - Operations** dialog box, use the arrows to move shapes whose labor times you want to modify to the **Included** list..
6. On the **Dimensions** section, use the arrows to move the dimensions whose labor times you want to modify to the **Included** list..
7. Click **OK**.
8. Click the arrow buttons to move the operations whose labor times you want to copy to the **Included** list.
9. Click **Save**.

The labor times of the selected operations are copied for the material dimensions that you selected.

Remove an individual material dimension

If necessary, you can remove all labor standards connected to a material dimension. The dimension will remain available in **Shape / Grade / Size Maintenance** and **Pricing Maintenance**, and you can add it back to **Labor Standards Maintenance** at any time.

NOTE If you remove a dimension from **Labor Standards Maintenance**, you will need to add labor times for all items of the dimension manually when you use that dimension in an estimating job.

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1. Select the dimension that you want to remove.
2. At the bottom of the dialog box, click **Delete**.

3. To permanently delete the selected dimension, click **Yes**in the confirmation dialog box.

Remove a shape

If necessary, you can remove all labor standards connected to a shape from labor standards. The shape and dimensions will remain available in **Shape / Grade / Size Maintenance** and **Pricing Maintenance**. You can add the shape and dimensions back to **Labor Standards Maintenance** at any time.

NOTE If you remove a shape from **Labor Standards Maintenance**, you will need to add labor times for all items of the shape manually when you use that shape in an estimating job.

---

1. While in the **Labor Standards Maintenance** dialog box, click the **Labor Standards Maintenance** ribbon tab.
2. In the menu, select **Remove Sizes**.
3. In the **Shape** list, select the shape that you want to remove.
4. Click **Remove**.
5. To permanently delete all labor standards of the shape, click **Yes** in the confirmation dialog box.

Create labor standard reports

1. In the **Labor Standards Maintenance** dialog box, click the **Labor Standards Maintenance** ribbon tab.
2. In the menu, select **Reports**, or press **Ctrl+R** on the keyboard.
3. To filter which shapes and dimensions are included in the reports, in the **Report Filter** dialog box, do one of the following:
   - To only include particular shapes, click **Edit** on the right side of **Shape**.
   - To only include particular dimensions of particular shapes, click **Edit** on the right side of **Shape & Size**.
4. Click the arrow buttons to move the shapes and dimensions that you want to modify to the **Included** list.
5. Click **OK**.
6. Click **Make Report**.

   The **Report Progress** dialog box opens.

7. In the **Report Progress** dialog box, do any of the following according to your needs:

To	Do this
View the labor standards list	• Click **View**.
Print the labor standards list	a. Change the number of the printed copies by clicking the **+** and **-** buttons. b. Click **Print**.

8. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

Adjust quantity and weight labor factors

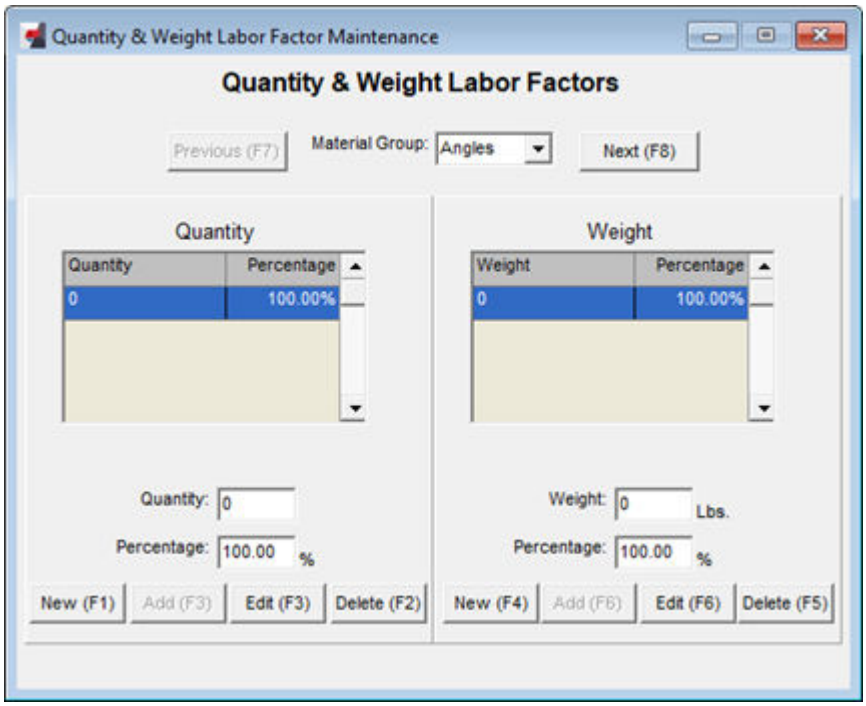
Quantity and weight labor factors are used in extrapolation factors for quantity and weight. These extrapolation factors are used for specific labor operations, and they affect the efficiency of labor. For example, for longer items, the efficiency may be greater than normal, and for heavy items, the efficiency may decrease. In **Quantity and Weight Labor Factor Maintenance**, you can add, modify, and delete these labor factors by material group.

To see which labor operations use the quantity and weight labor factors, refer to the **Operation Maintenance** dialog box.

To access the **Quantity and Weight Labor Factor Maintenance** dialog box, do the following:

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Quantity & Weight Labor Factors** .

   The **Quantity and Weight Labor Factor Maintenance** dialog box opens.



The quantity labor factors are adjusted on the left side of the dialog box, whereas the weight labor factors can be adjusted on the right side.

Quantity and weight labor factors are created separately for each shop in Tekla EPM. To switch to another shop, click the **Shop Setup** ribbon tab.

Add quantity or weight labor factors

1. In the **Material Group** list, select the material group whose labor factors you want to modify.
2. According to your needs, do one of the following:
   - To create a new quantity labor factor, click the **New** button under the **Quantity** list.
   - To create a new weight labor factor, click the **New** button under the **Weight** list.
3. In the **Quantity** or **Weight** field, type a value.

   This value defines the area for efficiency.
4. In the **Percentage** field, type the efficiency percentage.

   Increasing the efficiency percentage lowers the applied labor time for the operation that contains quantity and weight extrapolation factors.
5. Click **Add**.

The new labor factor is added to the applicable list.

Modify quantity or weight labor factors

1. In either the **Quantity** or **Weight** list, select the labor factor that you want to modify.
2. Modify the quantity or weight and percentage.
3. Click **Edit** to save the changes.

Delete quantity or weight labor factors

1. In either the **Quantity** or **Weight** list, select the labor factor that you want to delete.
2. Under the list, click **Delete**.
3. To permanently delete the labor factor, click **Yes** in the confirmation dialog box.

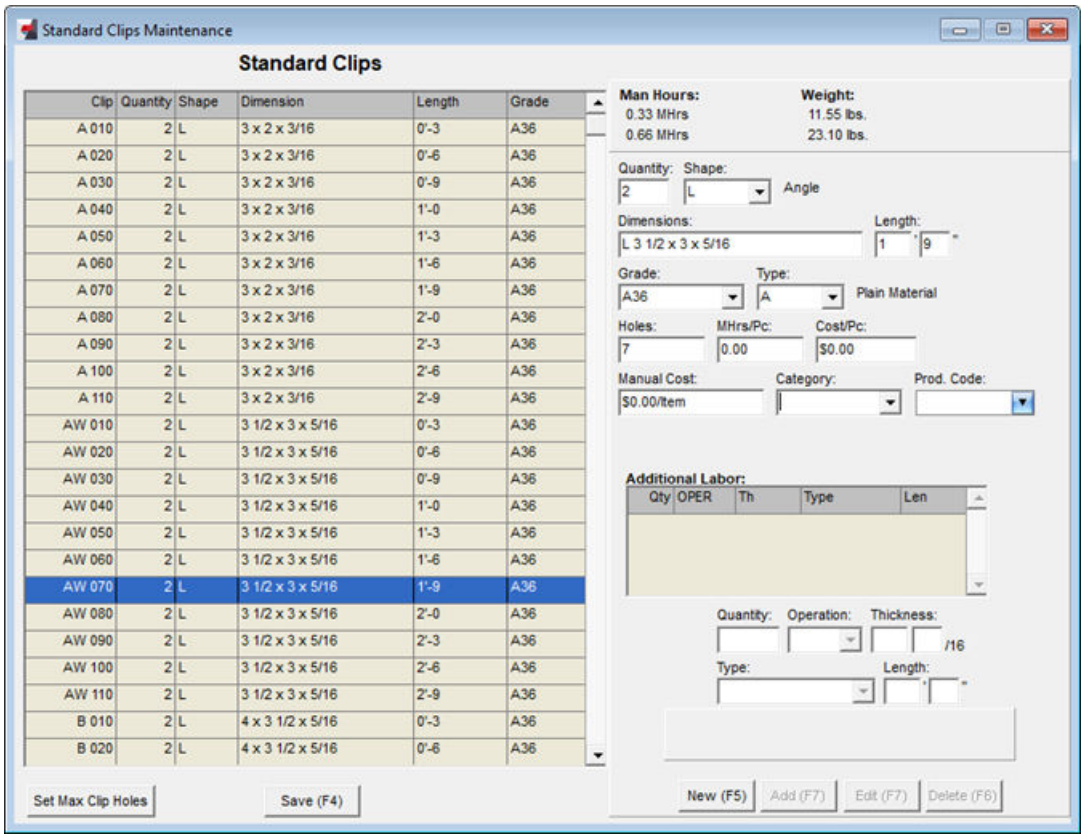
Create, modify, and delete standard clips

In **Standard Clips Maintenance**, you can modify existing stadndard clips, and add material items and additional labor for weld, burn, drill, and punch to standard clips. Note that standard clips are only used if you have selected the **Auto Clip-Angles** check box in **Fabricator Information**. If necessary, you can also modify the standard clips on a job by job basis.

To access the **Standard Clips Maintenance** dialog box, do the following:

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Standard Clips** .

The **Standard Clips Maintenance** dialog box opens.



You can see the labor time in man hours and the weight of the selected item in the top right corner of the dialog box.

Modify standard clip properties

1. Select the desired standard clip in the list.

   The properties of the standard clip appear on the right side of the dialog box.

2. Modify the standard clip properties according to your needs.

   For example, you can change the material shape or the quantity of clips.

   Even though shape of the clip can be changed, you can only change the shape within the original material group.

3. If you want to change the maximum number of holes in the clip, do the following:

   a. Click **Set Max Clip Holes**.

   b. Type the maximum hole number.

   c. Click **Set Max Holes**.

d. Click **Yes** to confirm changing the maximum number of holes.

Note that you cannot reduce the maximum number of holes if the selected clip is used in an estimating job.

4. Click **Save** to update the standard clip properties.

Add additional labor or material items to a standard clip

1. Select the desired standard clip in the list.
2. Under the **Additional Labor** table, click **New**.
3. Determine the quantity, operation, thickness, operation type, and length.
4. Click **Add**.
5. Click **Save** to update the standard clip properties.

The additional labor is added to the clip. You can see the labor time of the additional labor at the bottom right corner of the dialog box.

Modify an existing standard clip

1. Select the desired standard clip in the list.
2. In the list under the **Additional Labor** table, select the additional labor operation or material item.
3. Modify the quantity, operation, thickness, operation type, and length.
4. Click **Edit** to save the changes.
5. Click **Save** to update the standard clip properties.

Delete additional labor or material items

1. Select the desired standard clip in the list.
2. In the list under the **Additional Labor** table, select the desired item.
3. Click **Delete** to permanently delete the item.
4. Click **Save** to update the standard clip properties.

Adjust labor times for burning

In **Burn Maintenance**, you can view, add, and modify burn time information to match the time standards of your shop. If necessary, you can also add new burn types or create a list of burn rates.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Burn** .

3. In the **Burn Maintenance** dialog box, do any of the following:

To	Do this
Add new burn rate	a. Click **New**. b. In the **Shop Setup** list, select the shop to which you want to add the burn rate. c. In the **Burn Type** list, select how the burning process is executed: • Use **Automatic** for automated equipment. • Use **Semi-Automatic** for track burners. • Use **Manual**for burning by hand torch. d. Determine the thickness and rate per hour. e. Click **Add**.
Modify an existing burn rate	a. Select a burn rate in the list. b. Modify the thickness and rate per hour. c. Click **Edit** to save the changes.
Delete a burn rate	a. Select a burn rate in the list. b. Click **Delete**. c. To permanently delete the burn rate, click **Yes** in the confirmation dialog box.

See also

Add burn types (page 68)

View or print a burn rate list (page 69)

Add burn types

If your shop uses other burn types than the existing ones, you can add the missing burn types in **Burn Type Maintenance**. Then, you can use the new burn types in your estimating jobs.

1. In the **Burn Maintenance** dialog box, click the **Burn Maintenance** ribbon tab.
2. In the menu, select **Burn Type Maintenance**.
3. In the **Burn Type Maintenance** dialog box, click **New**.
4. Add a description and abbreviation for the burn type.

5. In the **Labor Group** list, select which labor group the burn type belongs to.

   The selection determines where Tekla EPM saves the labor time used in burning. Normally, burn times are saved to the **Burn** labor group.

6. Click **Add**.

   The new burn type is created and will be available in **Burn Maintenance**.

   Note that the new burn type will only be visible and available for filtering in the **Burn Maintenance** dialog box once you create a burn rate with the new burn type.

7. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Adjust labor times for burning (page 67)

View or print a burn rate list

When you are making changes to burn times in **Burn Maintenance**, having a list of the existing burn rates organized by burn type can be helpful. You can either view the burn rate list in the **Tekla EPM Report Viewer** or print it.

1. While in the **Burn Maintenance** dialog box, click the **Burn Maintenance** ribbon tab.
2. In the menu, select **Reports**, or press **Ctrl+R** on the keyboard.
3. According to your needs, do any of the following:

To	Do this
View the burn rate list	• Click **View**.
Print the burn rate list	a. Change the number of the printed copies by clicking the **+** and **-** buttons. b. Click **Print**. c. In the **Select Printer** dialog box, click a printer to select it. d. Click **OK**.

4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Adjust labor times for burning (page 67)

Adjust labor times for drilling

In **Drill Maintenance**, you can view, add and modify drill time information to match the time standards of your shop. You can also add new drill types or create a list of drill rates. The drill times set in **Drill Maintenance** are used when you directly apply them to an estimating job as additional labor.

The labor time entered in **Drill Maintenance** maintenance will be applied according to the drill settings determined in the **Fabrication Information - Operations** dialog box. For more information, see Modify labor operation settings (page 80). Note that when the thickness that you have defined for punching is greater than the punch capacity, Tekla EPM automatically switches to drill times.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Drill** .

   The **Drill Maintenance** dialog box opens.

   You can click an item in the navigation tree on the left to filter the drill information that is displayed.
3. According to your needs, do any of the following:

To	Do this
Add a new drill rate	a. Click **New**. b. In the **Shop Setup** list, select the shop for which you want to add the rate. c. In the **Drill Type** list, select if drilling is done automatically or manually. d. Determine the thickness and the number of holes per hour. e. Click **Add**. The new drill rate is added to the list.
Modify an existing drill rate	a. Select the drill rate that you want to modify. b. Modify the shop, drill type, thickness, and holes per hour information. c. Click **Edit** to save the changes.
Delete a drill rate	a. Select the drill rate that you want to delete. b. Click **Delete**. c. To permanently delete the drill rate, click **Yes** in the confirmation dialog box.

4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Add drill types (page 71)

View or print a drill rate list (page 71)

Add drill types

If your shop uses other drill types than automatic and manual, you can add the necessary drill types to Tekla EPM. Then, you can use the new drill types in any estimating job.

1. In the **Drill Maintenance** dialog box, click the **Drill Maintenance** ribbon tab.
2. In the menu, select **Drill Type Maintenance**.
3. In the **Drill Type Maintenance** dialog box, click **New**.
4. Add a description and abbreviation for the drill type.
5. In the **Labor Group** list, select which labor group the drill type belongs to.

   The selection determines where Tekla EPM saves the labor time used in drilling. Normally, drill times are saved to the **Punch** labor group.
6. Click **Add**.

   The new drill type is created and will be available in **Drill Maintenance**.

   Note that the new drill type will only be visible and available for filtering in the **Drill Maintenance** dialog box once you create a drill rate with the new drill type.
7. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Adjust labor times for drilling (page 70)

View or print a drill rate list

When you are making changes to drill times in **Drill Maintenance**, having a list of the existing drill rates organized by drill type can be helpful. You can either view the drill rate list in the **Tekla EPM Report Viewer** or print it.

1. While in the **Drill Maintenance** dialog box, click the **Drill Maintenance** ribbon tab.
2. In the menu, select **Reports**, or press **Ctrl+R** on the keyboard.
3. In the **Report Progress** dialog box, do any of the following according to your needs:

To	Do this
View the drill rate list	• Click **View**.

To	Do this
Print the drill rate list	a. Change the number of the printed copies by clicking the **+** and **-** buttons. b. Click **Print**. c. In the **Select Printer** dialog box, click a printer to select it. d. Click **OK**.

4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Adjust labor times for drilling (page 70)

Adjust labor times for punching

In **Punch Maintenance**, you can view, add, and modify punch time information to match the time standards of your shop. If necessary, you can also add new punch types or create a list of punch rates. The punch times set in **Punch Maintenance** are used when you directly apply them to an estimating job as additional labor.

Note that when the material thickness exceeds the punch capacity, Tekla EPM automatically switches to drill times. You can modify the punch capacity in the **Fabrication Information - Operations** dialog box. For more information, see Modify labor operation settings (page 80).

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Punch Maintenance** .
3. In the **Punch Maintenance** dialog box, do any of the following according to your needs.

To	Do this
Add a new punch rate	a. Click **New**. b. In the **Shop Setup** list, select the shop for which you want to add the rate. c. In the **Drill Type** list, select if punching is done automatically or manually. • Use **Automatic** for automated equipment. • Use **Manual** for punch by an iron worker.

To	Do this
	d. Determine the thickness and the number of holes per hour. e. Click **Add**. The new punch rate is added to the list.
Modify an existing punch rate	a. Select the punch rate that you want to modify. b. Modify the shop, punch type, thickness, and holes per hour information. c. Click **Edit** to save the changes.
Delete a punch rate	a. Select the punch rate that you want to delete. b. Click **Delete**. c. To permanently delete the punch rate, click **Yes** in the confirmation dialog box.

See also

Add punch types (page 73)

View or print a punch rate list (page 74)

Add punch types

If your shop uses other punch types than the existing ones, you can add the missing punch types in **Punch Type Maintenance**. Then, you can use the new punch types in any estimating job.

1. While in the **Punch Maintenance** dialog box, click the **Punch Maintenance** ribbon tab.
2. In the menu, select **Punch Type Maintenance**.
3. In the **Punch Type Maintenance** dialog box, click **New**.
4. Add a description and abbreviation for the punch type.
5. In the **Labor Group** list, select which labor group the punch type belongs to.

   The selection determines where Tekla EPM saves the labor time used in punching. Normally, punch times are saved to the **Punch** labor group.
6. Click **Add**.

   The new punch type is created and will be available in **Punch Maintenance**.

   Note that the new punch type will only be visible and available for filtering in the **Punch Maintenance** dialog box once you create a punch rate with the new punch type.

7. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Adjust labor times for punching (page 72)

View or print a punch rate list

When you are making changes to punch times in **Punch Maintenance**, having a list of the existing punch rates organized by punch type can be helpful. You can either view the punch rate list in the **Tekla EPM Report Viewer** or print it.

1. While in the **Punch Maintenance** dialog box, click the **Punch Maintenance** ribbon tab.
2. In the menu, select **Reports**, or press **Ctrl+R** on the keyboard.
3. In the **Report Progress** dialog box, do any of the following according to your needs:

To	Do this
View the punch rate list	• Click **View**.
Print the punch rate list	• Change the number of the printed copies by clicking the **+** and **-** buttons. • Click **Print**. • In the **Select Printer** dialog box, click a printer to select it. • Click **OK**.

See also

Adjust labor times for punching (page 72)

Adjust labor times for welding

In **Weld Maintenance**, you can view, add, and modify weld time information to match the time standards of your shop. If necessary, you can also add new weld types or create a list of weld rates. Weld times are used when included in an estimating job within a labor code, but they may also be directly applied to an estimating job as additional labor.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Labor Maintenance** --> **Weld** .

3. In the **Weld Maintenance** dialog box, do any of the following according to your needs:

To	Do this
Add a new weld rate	a. Click **New**. b. In the **Shop Setup** list, select the shop for which you want to add the rate. c. In the **Weld Type - Process** list, select the weld type and process. • Use **Automatic** options for automated equipment. • Use **Semi-Automatic** options for wire feed machines. • Use **Manual** options for stick welding. d. Determine the thickness, rate per hour, material weight per foot, and cost per pound. e. Click **Add**. The weld rate is added to the list.
Modify an existing weld rate	a. Select the weld rate that you want to modify. b. Modify the shop, weld type and process, thickness, rate per hour, weight, and cost information according to your needs. c. Click **Edit** to save the changes.
Delete a weld rate	a. Select the weld rate that you want to delete. b. Click **Delete**. c. To permanently delete the weld rate, click **Yes** in the confirmation dialog box.

See also

Add weld types (page 75)

View or print a weld rate list (page 76)

Add weld types

If your shop uses other weld types than the existing ones, you can add the missing weld types in **Weld Type Maintenance**. Then, you can use the new weld types in your estimating jobs.

1. While in the **Weld Maintenance** dialog box, click the **Weld Maintenance** ribbon tab.

2. In the menu, select **Weld Type Maintenance**.

   The **Weld Type Maintenance** dialog box opens.

3. Click **New**.

4. Type a type description and abbreviation, as wells as a process description and abbreviation for the weld type.

   The type description forms the first part of the weld type description, while the process description forms the second part. The two parts of the description are connected with a hyphen.

   Similarly, the type abbreviation and the process abbreviation together form the abbreviation of the weld type. The two parts of the abbreviation are connected with a hyphen.

5. In the **Labor Group** list, select in which labor group the weld type belongs to.

   The selection determines where Tekla EPM saves the labor time used in welding. Normally, labor time spent on full penetration welding is saved to the **FpWeld** labor group, while other weld times are saved to the **Weld** labor group.

6. Click **Add**.

   The new weld type is created and will be available in **Weld Maintenance**.

   Note that the new weld type will only be visible and available for filtering in the **Weld Maintenance** dialog box once you create a weld rate with the new weld type.

7. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Adjust labor times for welding (page 74)

View or print a weld rate list

When you are making changes to weld times in **Weld Maintenance**, having a list of the existing weld rates organized by weld type can be helpful. You can either view the weld rate list in the **Tekla EPM Report Viewer** or print it.

1. While in the **Weld Maintenance** dialog box, click the **Weld Maintenance** ribbon tab.

2. In the menu, select **Reports**, or press **Ctrl+R** on the keyboard.

3. In the **Report Progress** dialog box, do one of the following according to your needs:

To	Do this
View the weld rate list	• Click **View**.
Print the weld rate list	a. Change the number of the printed copies by clicking the **+** and **-** buttons. b. Click **Print**. c. In the **Select Printer** dialog box, click a printer to select it. d. Click **OK**.

4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Adjust labor times for welding (page 74)

1.8 Manage estimate statuses

Estimate statuses indicate the level of completion of estimate items. By using estimate statuses, you can quickly view the situation of each estimating job. You can also color-code the material items in an IFC model in Trimble Connect for Desktop according to their estimate statuses. Tekla EPM contains four preloaded status indicators, but you can modify the list of statuses according to your needs: you can add, modify, deactivate, and delete estimate statuses.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating Maintenance** --> **Estimate Status Maintenance** .
3. In the **Estimate Status Maintenance** dialog box, do any of the following:

To	Do this
Add a new estimate status	a. Click **New**. b. Type a description for the status. c. In the **Purpose** list, select a purpose for the status. d. Click **Add**.
Set the default estimate status	a. Select a status in the list. b. Select the **Default** check box.

To	Do this
	c. Click **Save**. The new default estimate status is marked with an asterisk (*).
Deactivate an estimate status	If you deactivate an estimate status, it will no longer be available for estimates. However, you can activate the status again at any time. a. Select a status in the list. b. Clear the **Active** check box. c. Click **Save**. To re-activate the estimate status, select the **Active** check box again.
Modify an existing estimate status	a. Select a status in the list. b. Modify the description, purpose, and other properties according to your needs. c. Click **Save**.
Delete an existing estimate status	a. Select a status in the list. b. At the bottom of the dialog box, click **Delete**. c. To permanently delete the estimate status, click **Yes** in the confirmation dialog box.

4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

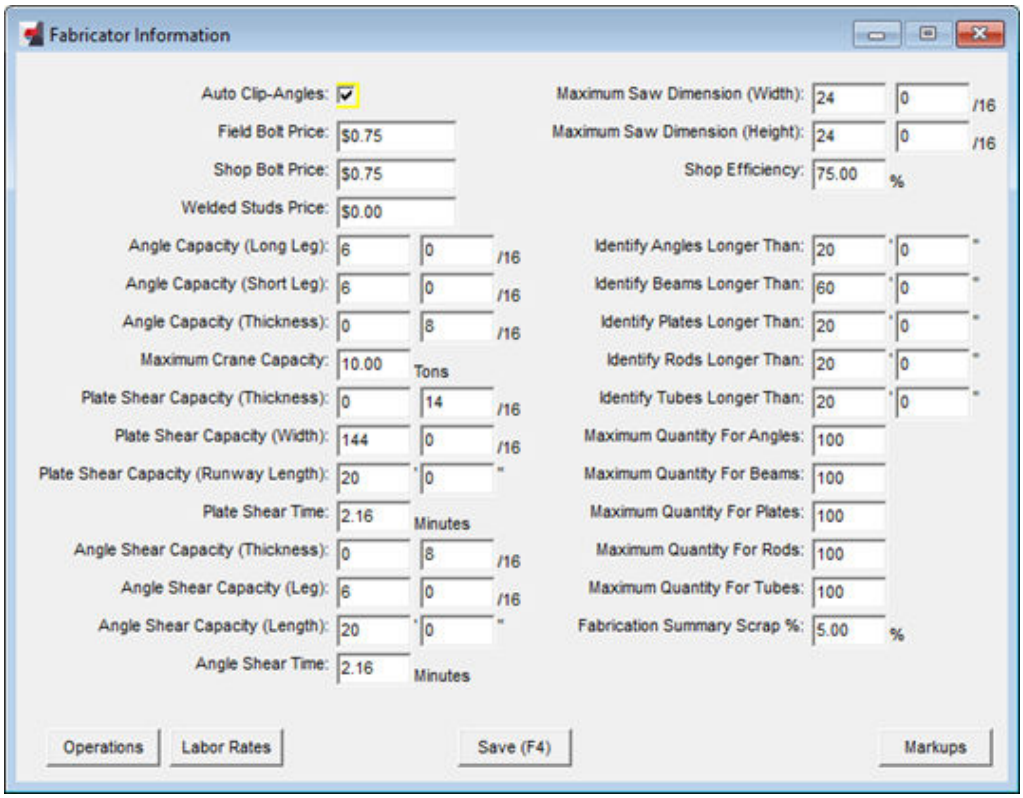
See also

Color-code estimating items in the IFC model (page 162)

1.9 Adjust standard shop information

In **Fabricator Information**, you can adjust all standard shop information according to your shop's actual hourly rates, pricing, equipment capacity, and efficiency. When you set the standard shop information correctly, Tekla EPM will be able to make more accurate calculations for your estimates. The sub dialog boxes of **Fabricator Information** also allow you to modify shop operations, labor rates, and markups percentages.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Fabricator Information** .



3. In the **Fabricator Information** dialog box, modify the settings to match your shop standards.

   In the following table, see details on some of the shop standard settings:

Option	Description	Further information
Auto Clip-Angles	When selected, Tekla EPM uses the standard clip settings, automatically adding the labor and materials for them according to the labor code.	To modify the standard clips, see Create, modify, and delete standard clips (page 65).
Identify [Items] Longer Than	The maximum length allowed for the named items.	When the item length exceeds this value, Tekla EPM will add it into the **Problem Summary Sheet** report.
Maximum Quantity For [Items]	The maximum number allowed for the named items.	When the item quantity exceeds this value, Tekla EPM will add it into the **Problem Summary Sheet** report.

Option	Description	Further information
Shop Efficiency	The shop efficiecy percentage used in all future estimating jobs.	The shop efficiency percentage affects the labor time and can be used in different ways. For example, it may be useful to set a lower percentage if your shop is fabricating miscellaneous items instead of structural ones. Note that the shop efficiency can be manually changed for each job. Existing estimating jobs are not affected by changing the efficiency percentage. If necessary, the percentage can exceed 100 percent. For example, changing the shop efficiency to 125% will reduce the standard labor time by 20%, whereas using the shop efficiency of 75% will add 33% to the standard labor time.

4. Modify labor operations and labor rates according to your needs, or define markup percentages.

NOTE Do not click **Save** until you have modified the labor operations, labor rates, and markup percentages. Saving the settings closes the **Fabricator Information** dialog box.

For more information, see the following links:

Modify labor operation settings (page 80)

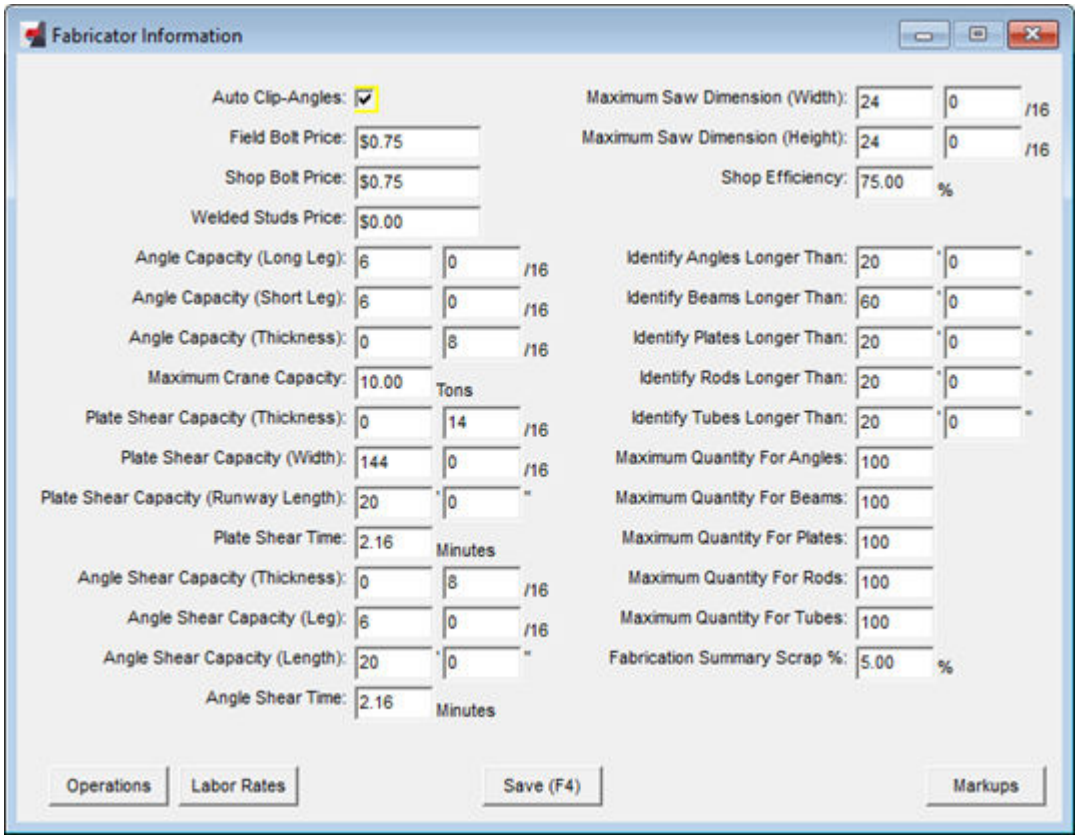
Create and modify labor rates (page 82)

Define markup percentages (page 83)

Modify labor operation settings

In the **Fabrication Information - Operations** dialog box, you can modify the punch and drill type and capacity for different items to match those of your shop. You can also determine how copes are burned and stiffeners are executed.

Setting an operation as automated or manual directly affects the labor time in Tekla EPM.



1. In the lower-left corner of the **Fabricator Information** dialog box, click **Operations**.
2. For each item type on the left side of the **Fabrication Information - Operations** dialog box, do the following:
   a. In the **Punch** list, select if punching is done automatically or manually.
   b. In the **Punch Capacity** field, type the thickness of the material.

      If an estimate requires a greater capacity, Tekla EPM uses the drill time information instead.

      If the material group does not have a punch process, type `0/16` to ensure that the drill operation is used.
   c. In the **Drill** list, select if drilling is done automatically or manually.

d. In the **Burn** list, select if the burn process of copes is manual, automated, or semi-automated.

e. In the **Weld** list, select how the weld process of stiffeners is handled.

3. Click **Save**.

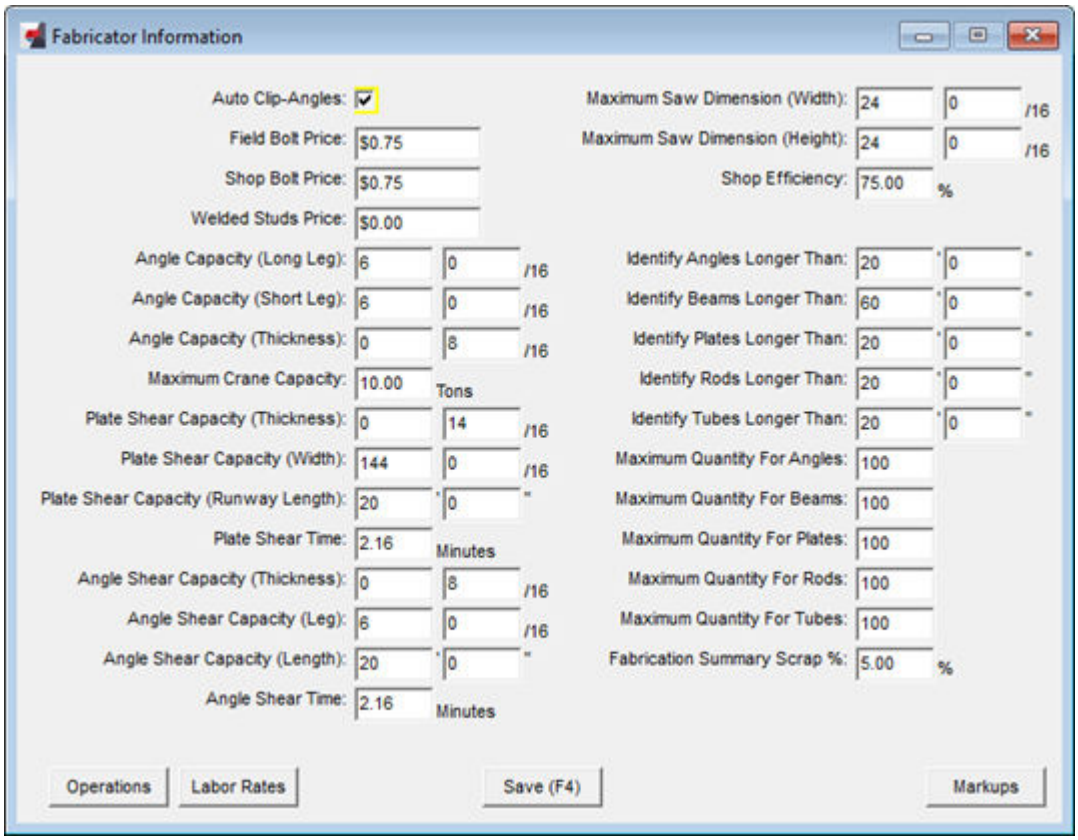
The changes are saved and the **Fabrication Information - Operations** dialog box closes.

See also

Adjust standard shop information (page 78)

Create and modify labor rates

We recommend that you create different labor rates that match the fabrication functions and rates of your shop. By modifying labor rates to match those of your shop, you can ensure that Tekla EPM calculates the prices in your estimates as accurately as possible.



1. At the bottom of the **Fabricator Information** dialog box, click **Labor Rates**.

2. In the **Labor Rates** dialog box, do any of the following:

To	Do this
Add a new labor rate	a. Click **New**. b. Type a description and a price per hour. c. Click **Add**.
Modify an existing labor rate	**NOTE** The **Detailing** and **Erecting** labor codes cannot be renamed or deleted. a. Select a labor rate in the list. b. Modify the description and price per hour. c. Click **Edit** to save the changes.
Delete a labor rate	a. Select a labor rate in the list. b. Click **Delete**. c. To permanently delete the labor rate, click **Yes** in the confirmation dialog box.

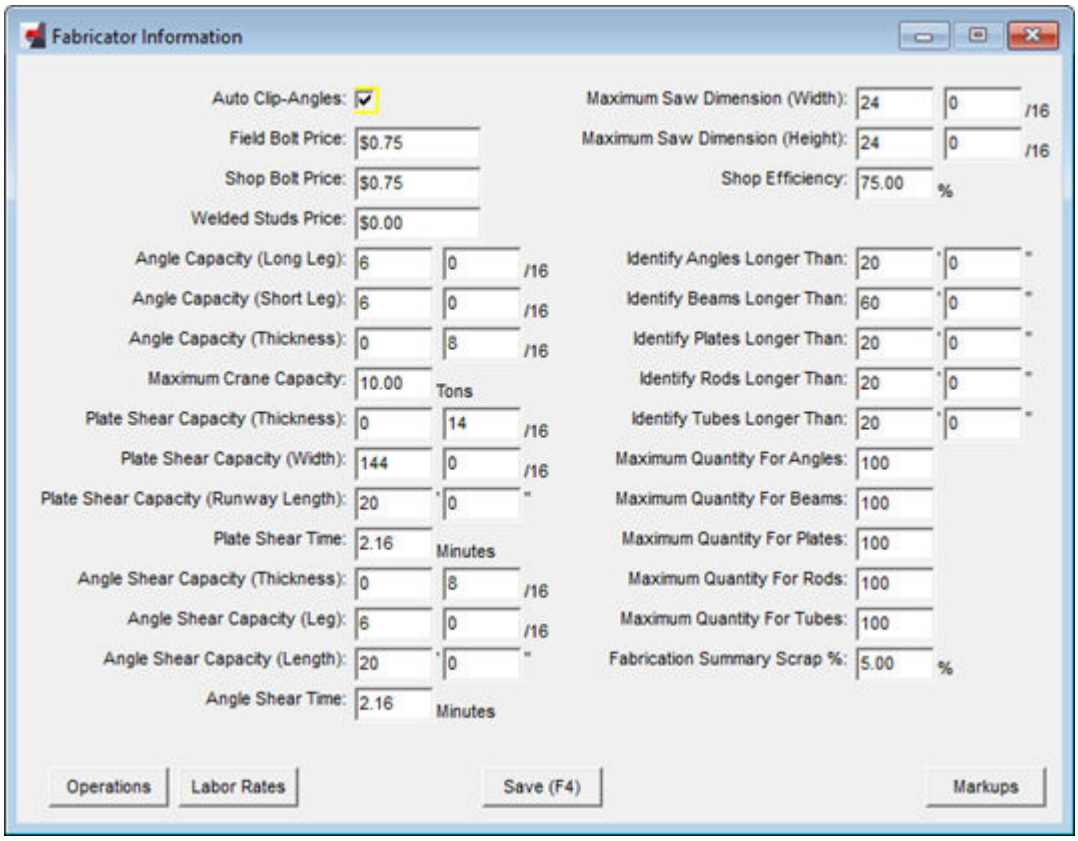
3. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.
4. Remember to click **Save** in the **Fabricator Information** dialog box to save the changes.

To modify where each labor rate is used, see Create, modify, and delete labor groups (page 52).

The labor rate assignments will be used on all summary reports that show the labor cost. For a breakdown of the labor rates, use the **Labor Rate Summary** or the **Summary Information - to Excel** report option. For more information on reports, see View, email, export, and print estimating reports (page 155).

Define markup percentages

While defining the standard shop information, you can also determine the markup percentages that you want to use in Tekla EPM. The markup percentages are divided into three different categories: overhead, profit, and sales, general, and administration.



1. At the bottom of the **Fabricator Information** dialog box, click **Markups**.

   The **Markup** dialog box opens.

   The **O.H.** column stands for overhead markup percentages, and the **S, G&A** column stands for sales, general, and administration markup percentages.

2. Modify the markup percentages in any of the following ways:

To	Do this
Modify percentages one by one	a. Click in the field that you want to modify. b. Erase the existing percentage and type a new one.
Apply the same markup percentage to multiple items at once	a. In the lower-right corner of the dialog box, click **Global Edit**. b. Click the arrow buttons to move the items that you want to modify to the **Included** list. c. Click **OK**. d. Type the markup percentage that you want to apply to all selected items.

To	Do this
	e. Click **OK**. The markup percentages of the selected items are updated.

3. Click **OK**.

   The **Markup** dialog box closes.

4. Once you have finished modifying the properties, in the **Fabricator Information** dialog box, click **Save**.

The changes are saved, and the **Fabricator Information** dialog box closes.

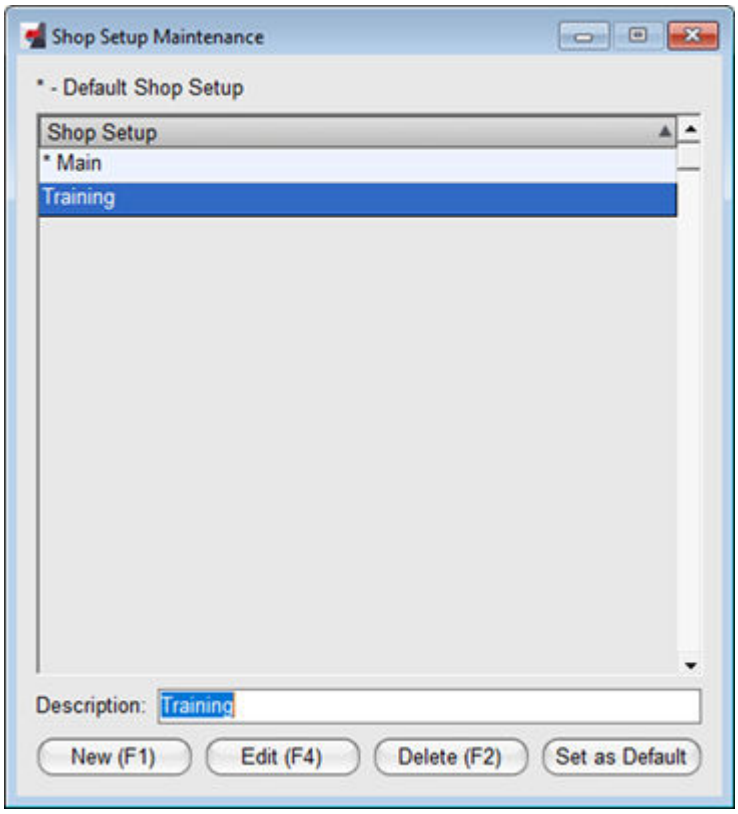
See also

Adjust standard shop information (page 78)

1.10 Create and modify shop setups

If your company has multiple shops, you can create additional labor databases, called shop setups, in Tekla EPM. We also recommend that you create an additional test shop if you are still learning to use Tekla EPM, so that you do not accidentally make changes to the original shop.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating Maintenance** --> **Labor Maintenance** --> **Shop Setup Maintenance** .



3. To create a new shop setup, in the **Shop Setup Maintenance** dialog box, click **New**.
4. In the **Description** field, type a name for the shop setup.
5. If you want to use an existing shop setup as the base of the new setup, select it in the **Copy From Shop Setup** list.
6. Click **Add**.

The new shop setup is added to the list. You can now customize all the shop settings according to your needs.

TIP To modify the name of an existing shop setup, select the shop setup, rename it, and click **Edit**.

See also

Change the active shop setup (page 86)

Change the default shop setup (page 87)

Change the active shop setup

If you have created multiple shop setups, also called labor databases, in Tekla EPM, you can modify the **Estimating Maintenance** properties of each shop separately. If you want to modify a shop setup, you need to activate it first.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating Maintenance** --> **Current Shop Setup** .

   You can see the active shop setup in the **Estimating Maintenance** menu after the **Current Shop Setup** text.

   The **Select Shop Setup** dialog box opens.
3. Select a shop setup in the list.
4. Click **OK**.

The shop setup, or the labor database, is changed.

If necessary, you can also change the shop setup of an individual estimating job while working in the **Estimating** module.

See also

Create and modify shop setups (page 85)

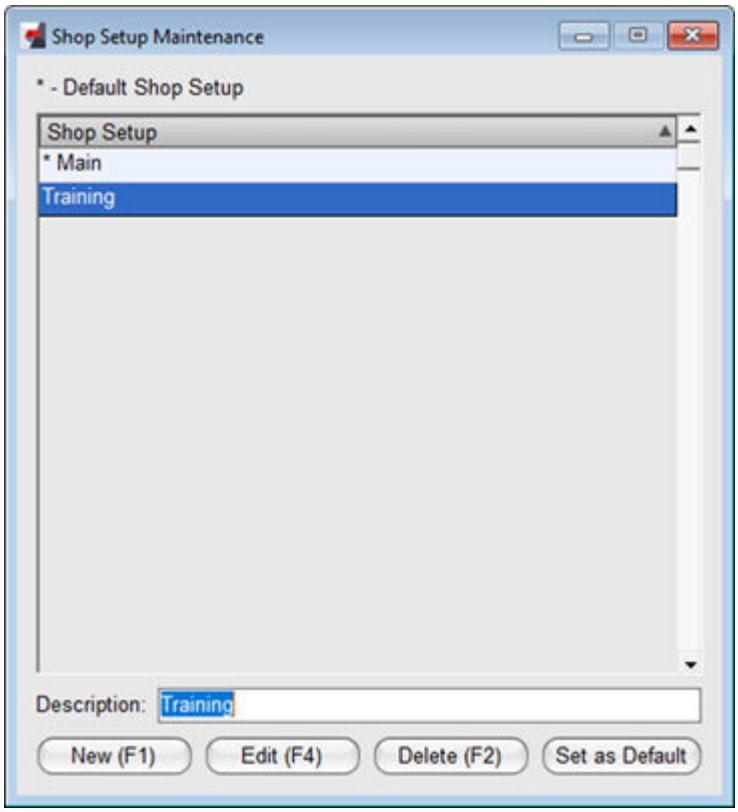
Change the default shop setup (page 87)

Change the default shop setup

The default shop setup is the default shop database used for all future estimating jobs created in Tekla EPM. You can change the default shop setup in **Shop Setup Maintenance**. Note that changing the default shop setup does not change the settings of existing estimating jobs.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating Maintenance** --> **Labor Maintenance** --> **Shop Setup Maintenance** .

The **Shop Setup Maintenance** dialog box opens.



The current default shop setup is marked with an asterisk (*).

3. Select a shop in the list.
4. Click **Set as Default**.
5. To change the default shop setup, click **Yes** in the confirmation dialog box.

The default shop setup is updated. The new default shop is marked with an asterisk (*).

See also

Change the active shop setup (page 86)

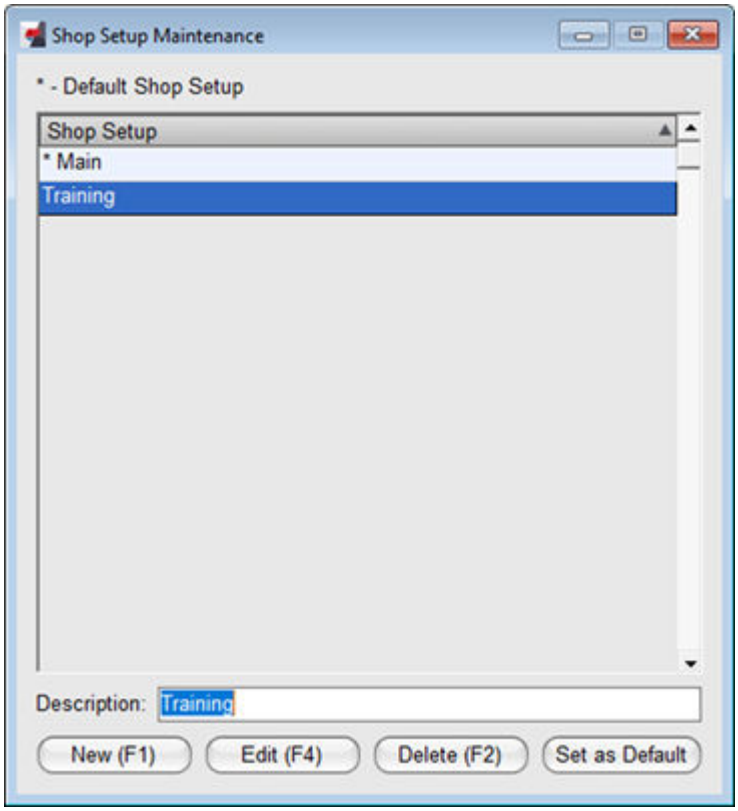
Create and modify shop setups (page 85)

Delete shop setups

You can delete any unnecessary shop setups in **Shop Setup Maintenance**. For example,you can delete a test shop database that you no longer use. Note that you cannot delete the current default shop, but you need to select a new shop setup first.

1. Click the **Maintenance** ribbon tab.

2. In the menu, select **Estimating Maintenance** --> **Labor Maintenance** --> **Shop Setup Maintenance** .



3. In the **Shop Setup Maintenance** dialog box, select the shop that you want to delete.
4. Click **Delete**.
5. To permanently delete the shop, click **Yes** in the confirmation dialog box.

See also

Create and modify shop setups (page 85)

1.11 Define company standard settings for Estimating

In the **Estimating Company Standards** dialog box, you can define the standard data entry settings for the **Estimating** module. Among other things, you can set the job numbering and the default material finish of items, create fabrication categories and sub-categories, select material suppliers, define galvanizing costs including freight, and select the size input and display units. Yyou can also modify these settings on a job by job basis in the **Estimating** module.

1. Click the **Maintenance** ribbon tab.

2. In the menu, select **Estimating** --> **Company Standards** .
3. In the **Estimating Company Standards** dialog box, adjust the following options according to your needs:

Option	Description
Job # Increment	Allows you to select the default option for automatic job numbering. The options are: • **Increment from Last Job #**: When you create a new job, Tekla EPM uses the next available job number after the latest job number created. • **Increment from Largest Job #**: Tekla EPM uses the next available job number after the largest job number created. • **Don't Increment**: Automatic job numbering is not used. You can modify the job number when you create a new job.
Default Finish	The most typical material finish for most estimating jobs and items.
Item Increment	Sets the auto-increment for item numbers. Using the default auto-increment of 10 allows items to be added in the list according to your needs, without having to renumber the other items in the job.
Keep Job Selection Screen Open	When selected, the **Select Estimating Job** dialog box stays open after a job has been selected.
Report Pricing - Automatically Select Last Combining Run	When selected, Tekla EPM automatically uses the pricing used in the last saved combining run.
Imports - Use Piece Mark as Part #	When selected, imported piece marks are automatically used as part number items in the estimating material list.
Imports - Use as Production Code	Select whether you want to use piece marks, drawing descriptions, or assembly descriptions as production codes. **TIP** If you use piece marks as production codes, you can ensure that each item in a production control job matches the same item in a linked estimating job. This guarantees that the corresponding items have the same labor times.

Option	Description
Job # Regular Expression	Allows the use of regular expressions to enforce a desired format for the job numbers.

4. Click the buttons at the bottom of the dialog box to modify galvanizing settings (page 91), fabrication categories and sub-categories (page 91), input and display units (page 93), combining optimizations (page 94), and suppliers (page 95).
5. When you have defined all necessary settings, click **Save**.

Define default galvanizing settings

You can define default galvanizing costs and freight settings used in all estimating jobs. Whenever an item in an estimating job is marked as galvanized, these default costs are applied to it.

1. At the bottom of the **Estimating Company Standards** dialog box, click **Galvanizing**.

   The **Galvanizing** dialog box opens.
2. Define the cost per pound, minimum cost, and freight cost.
3. In **Trailer Capacity**, type the trailer capacity.

   If you type `0` in the field, the freight cost value will be the total cost. If you enter a greater value, the freight cost value will be the cost per truck.
4. Define the labor prep cost as price per pound.
5. In the **Weight - Percent Added** field, define the percentage of galvanizing weight to be added for each galvanized item.

   The percentage is only used to calculate the galvanizing cost. It does not affect the weights of galvanized items in the **Estimating** module or reports.
6. Click **OK**.
7. In the **Estimating Company Standards** dialog box, click **Save**.

The default galvanizing settings are updated.

Note that you can also set job-specific galvanizing settings that override the default galvanizing settings. For more information, see Define and modify job-specific galvanizing settings (page 109).

Create categories and sub-categories for Estimating

Categories are user-defined keywords that you can use for sorting, tracking, and reporting. Creating categories also helps you to quickly identify the items in your estimating jobs. For example, you can categorize jobs by fabrication type. In addition to manually creating categories, you can choose to use existing categories used in Steel Erection Bid Wizard. To further filter items, you can also add sub-categories.

Note that you can also create new categories and sub-categories manually when creating or modifying an estimating job.

Add a category

1. At the bottom of the dialog box, click the **Categories** button.
2. In the **Company Categories** dialog box, do any of the following according to your needs:

To	Do this
Add a new category manually	a. Click **New**. b. In the **Category** field, type a name for the category. For example, `Skewed beam`. c. Click **Add**. The new category is added to the **Category** list. Repeat steps a to c for all new categories.
Add categories used in Steel Erection Bid Wizard	a. Click **Add SEBW Categories**. b. click the arrow buttons to move the categories that you want to add to the **Included** list. c. Click **OK**. The categories are added to the **Category** list.

NOTE If you need to modify or delete a category, click a category to select it in the **Category** list and either:

- Click **Edit**, change the category name, and click **Edit** again.
- Click **Delete** and then, click **Yes** to confirm deleting the category.

3. In the **Estimating Company Standards** dialog box, click **Save** to update the categories.

The **Estimating Company Standards** dialog box closes. The categories are saved for the **Estimating** module.

Add a sub-category

1. At the bottom of the **Estimating Company Standards** dialog box, click the **Sub-Categories** button.
2. In the **Company Sub-Categories** dialog box, click **New**.
3. In the **Sub-Category** field, type a name for the sub-category.
4. Click **Add**.

   The new sub-category is added to the **Sub-Category** list.

   Repeat steps 1 to 4 for all new sub-categories.

   NOTE If you need to modify or delete a sub-category, click a sub-category to select it in the **Sub-Category** list and either:

   - Click **Edit**, change the sub-category name, and click **Edit** again.
   - Click **Delete** and click **Yes** to confirm deleting the sub-category.

     You can also add multipliers for sub-categories in the **Estimating** module.

5. In the **Estimating Company Standards** dialog box, click **Save** to update the categories.

The **Estimating Company Standards** dialog box closes. The sub-categories are saved for the **Estimating** module.

Define default input and display units for Estimating

You can use either metric or imperial units for displaying and entering sizes, lengths, weights, and prices in the **Estimating** module. In addition, you can select how you want to enter the data for the length of a piece.

1. At the bottom of the **Estimating Company Standards** dialog box, click **Input/Display Units**.
2. In the **Input/Display Units** dialog box, click the arrows on the right side of the fields to select the units and the length input type.

   Note that there are multiple options depending on the required precision and the desired input method.
3. Click **OK**.

Define default combining optimizations for Estimating

Define company-level settings for multing and nesting in the **Estimating** module. If necessary, you can later change the settings job by job.

1. At the bottom of the**Estimating Company Standards** dialog box, click **Combining Optimizations**.
2. To use material grade substitutions with the optimization settings when performing a combining run, on the **General Settings** tab of the **Combining Setup** dialog box, select the **Use Grade Substitutions** check box.

   Grade substitutions must be set in the **Shape / Grade / Size Maintenance** dialog box. If the grade substitutions are not set, the material grades in the combining run and in the supplier pricing data set or the inventory need to match each other exactly.
3. Click the arrow buttons to move the optimization options that you want to use to the **Optimizations Included** list.

   The options are:

   - **Inventory Exact-Match (In Stock)**: Use this option for inventory items in stock that are an exact match without the use of kerf or clamp allowance.
   - **Inventory Exact-Match (On Order)**: Use this option for inventory items that are on purchase orders and have not yet been received and that are an exact match without the use of kerf or clamp allowance.
   - **Inventory Least-Scrap (On Order)**: Use this option for inventory items that are on purchase orders and have not yet been received and that will provide the least amount of scrap.
   - **Inventory Least-Scrap (In Stock)**: Use this option for inventory items in stock that will provide the least amount of scrap.
   - **Warehouse Least-Scrap**: Use this option to give preference to warehouse items that will provide the least amount of scrap. Warehouse items will only be used when they provide less scrap than the available inventory items.
   - **Warehouse Force Inventory**: Use this option to force the use of inventory regardless of the amount of scrap, no matter where it is located in the **Optimizations Included** list. This option is the opposite of **Warehouse Least-Scrap**.

     Note that you can only include **Warehouse Least-Scrap** or **Warehouse Force Inventory**, not both.
4. Use the **Move Up** and **Move Down** buttons to modify the order of the optimizations.

   The order is important while performing a combining run.

5. Click the **Mult Settings - Linear Material** tab to open it.
6. In **Multing Software**, select the multing software that you are using.
7. If you want to apply the material kerf settings defined in **Shape / Grade / Size Maintenance** to the combining as part of the cutting pattern, select the **Apply Kerf** check box.
8. Open the **Plate Nesting Settings** tab.
9. In the **Plate Nesting Software** list, click the plate nesting software that you are using to select it.
10. In the **Shear Cut Optimization** list, click a suitable shear cut option to select it.

    The selected option determines the plate allowance to be used with the combining:

    - Use **None** when cutting plate on a burn table.
    - Use **Shear Cut - First Cut Along Length** or **Shear Cut - First Cut Along Width** to alert Tekla EPM that the nesting needs to allow for that type of cut first. Then, the nesting will allow for all subsequent cuts to be made with that condition.
11. If the material grain direction is unimportant and you want Tekla EPM to create the best possible optimization of a plate, select the **Rotate Plates for Best Fit** check box.
12. If necessary, select the **Apply Kerf** check box.

    For more details, see step 7.
13. Click **Save**.

See also

Define company standard settings for Estimating (page 89)

Define default suppliers for Estimating

You can define different suppliers for angles, beams, plates, rods, tubes, and other material used in the **Estimating** module. This way, you can use material pricing from the selected supplier databases by material group.

You can manage the available suppliers in **Pricing Maintenance**. To make suppliers available in the **Suppliers** dialog box, the suppliers will first need to be added in **Pricing Maintenance**. For more information, see .

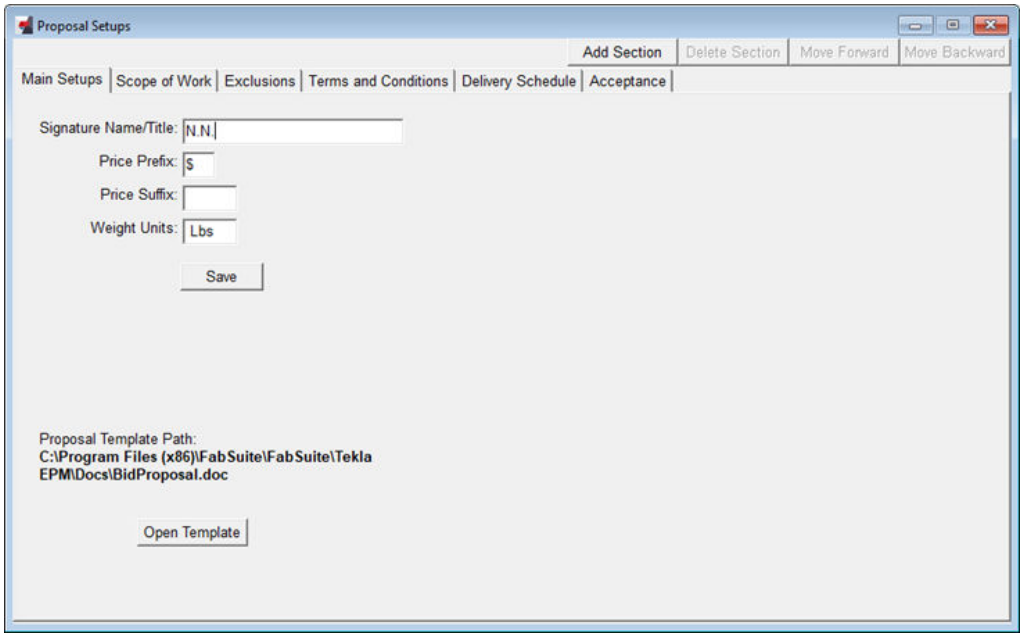
1. At the bottom of the **Estimating Company Standards** dialog box, click **Suppliers**.
2. In the **Suppliers** dialog box, click the arrows on the right side of the material group lists, and select the suppliers.

3. Click **OK**.

1.12 Create a standard proposal setup

In **Proposal Setups**, you can customize the content of bid proposals. Among other things, you can create different sections for the proposals and add entries for each section. We also recommend that you modify the existing entries and delete unnecessary entries according to your needs. You can also change the order of sections, and modify the titles and styles in the proposal according to your needs. The sections and entries that you have set up are used for creating an individual bid proposal based on each estimate.

1. Click the **Maintenance** ribbon tab.
2. In the menu, select **Estimating** --> **Proposal Setups** .



3. On the **Main Setups** tab of the **Proposal Setups** dialog box, determine the signature name or title, price prefix, price suffix, and weight units.

   The **Main Setups** tab controls details that affect the entire proposal, whereas the other tabs represent different sections of the proposal.
4. Click **Save**.
5. Do any of the following according to your needs:

Option	Description
Modify the appearance of the proposal	a. On the **Main Setups** tab, click **Open Template**. The proposal template opens in Microsoft Word. The items marked with << >> pull information from Tekla EPM and can be adjusted there, but the other information and font types can be changed in Microsoft Word. b. Make the necessary changes to the template. c. In the Microsoft Word window, click **File** --> **Save** . d. Save the modified proposal as a custom report in the default folder that your company uses for custom reports. You can verify the default folder by opening the **File** menu and selecting **Default Directories**. Note that any changes made to the proposal document outside of Tekla EPM are not available in Tekla EPM.
Add a new entry	a. Go to the section tab on which you want to add the new entry. b. At the bottom of the dialog box, click **New**. c. Type the desired text in the space the bottom of the dialog box. d. Click **Add**.
Modify an entry	a. Go to the section tab on which you want to modify an entry. b. Select the entry that you want to modify. c. Change the entry text according to your needs. d. Click **Edit** to save the changes.
Move an entry up or down in the proposal	a. Go to the section tab on which the desired entry is located. b. Select the entry that you want to move. c. To move the entry, click the **Move Up** and **Move Down** buttons at the bottom of the dialog box.
Change the indentation of an entry	a. Go to the section on which the desired entry is located. b. Select the entry that you want to move.

Option	Description
	c. Click the **Move Left** and **Move Right** buttons to shift the position of the item in the proposal.
Delete an entry	a. Go to the section tab from which you want to delete an entry. b. Select the entry that you want to delete. c. Click **Delete**. d. To permanently delete the entry, click **Yes** in the confirmation dialog box.
Change the titles or headings of the proposal	a. Go to the section tab whose titles or headings you want to change. b. Do any of the following: • To change the main title of the section, type a new title in the **Title** field and click **Set Title**. • To change the style of the headings, click **Attributes** and select appropriate styles in the lists. Then, click **Save**. • To add a subtitle, click **Attributes** and type a title in the **Subtitle** field. Then, click **Save**. The subtitle appears under the title in the proposal.
Add a section	a. At the top of the dialog box, click **Add Section**. b. Type a title for the section. c. Click **OK**. The new tab is added at the end of the proposal setup.
Delete a section	a. Go to the section tab that you want to delete. b. At the top of the dialog box, click **Delete Section**. c. To permanently delete the section, click **Yes** in the confirmation dialog box.
Move a section forward or backward in the proposal	a. Go to the desired section tab. b. In the upper-right corner of the dialog box, click **Move Forward** or **Move Backward**.

6. Click **Save**.
7. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

2 Create estimates

Use the **Estimating** module to create and modify estimates in Tekla EPM. You can add different items to your estimates, including accessories and assemblies. You can also mult and nest the material in an estimate, send material to purchasing, or export the estimate to KISS, among many other options.

NOTE Before you start working in the **Estimating** module, ensure that you have adjusted estimating settings to meet the standards of your shop. For more information, see Set up the Estimating module (page 7).

See also

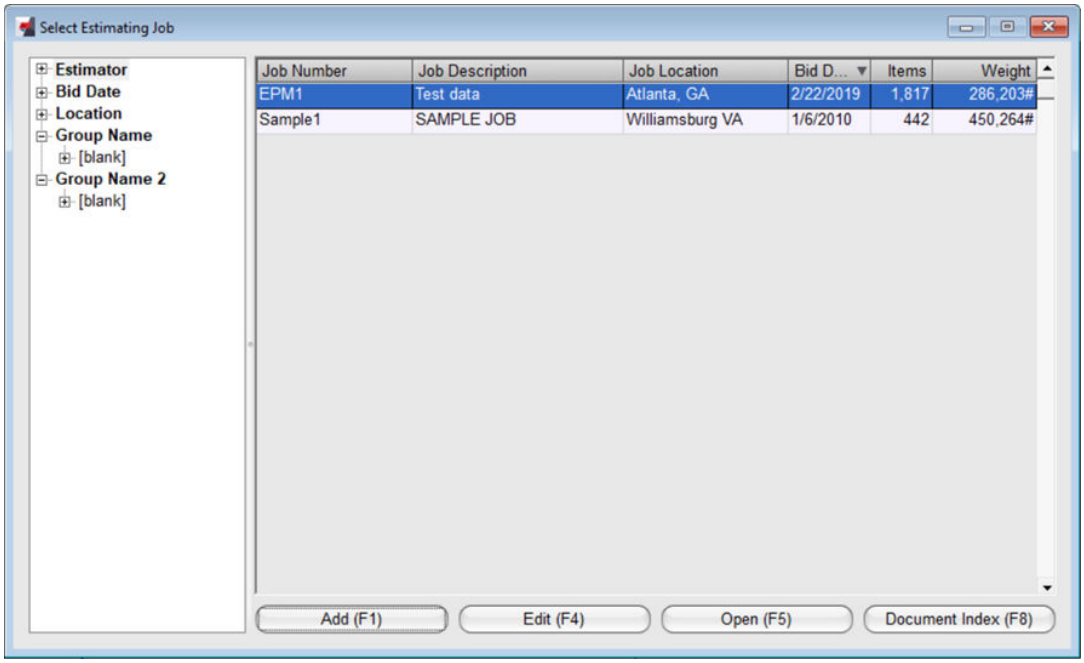
Open the Estimating module (page 100)
Create an estimating job (page 101)
Find an estimating job (page 101)
Open an estimating job (page 110)
Modify an estimating job (page 123)
Store document references for an estimating job (page 114)
Add an estimating item (page 127)
Copy and multiply estimating items (page 140)
Modify estimating items (page 142)
View the labor times of items (page 150)
Delete an estimating item (page 146)
Add an assembly (page 138)
Add a parametric assembly (page 139)
Create, modify, and delete production codes (page 146)
Calculate the total material cost (page 157)
Recalculate an estimate (page 157)

2.1 Open the Estimating module

To start creating estimates, you need to open the **Estimating** module:

- On the top of the Tekla EPM window, click the **Estimating** button.

The **Select Estimating Job** dialog box opens.



You can continue with adding a new estimating job, modifying the properties of an existing estimating job, opening an estimating job, or viewing the **Document Index**.

You can also customize the **Select Estimating Job** dialog box according to your needs.

See also

Find an estimating job (page 101)

Create an estimating job (page 101)

Open an estimating job (page 110)

Modify an estimating job (page 123)

Store document references for an estimating job (page 114)

Delete estimating jobs (page 33)

Find an estimating job

To open or modify a particular estimating job, use the **Find Job** command in the **Select Estimating Job** dialog box to find the job.

Note that sometimes sorting estimating jobs by estimator, bid date, or other properties in the navigation tree of the **Select Estimating Job** dialog box can be quicker than using the **Find Job** command.

1. While in the **Select Estimating Job** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Find Job**.

   You can also press **Ctrl+F** to find a job when you are in the **Select Estimating Job** dialog box.
3. Type the job name in the field, or click the arrow on the right side of the field to select an option in the list.
4. Click **OK**.

The estimating job that you searched for is selected in the **Select Estimating Job** dialog box. You can now open or modify it.

See also

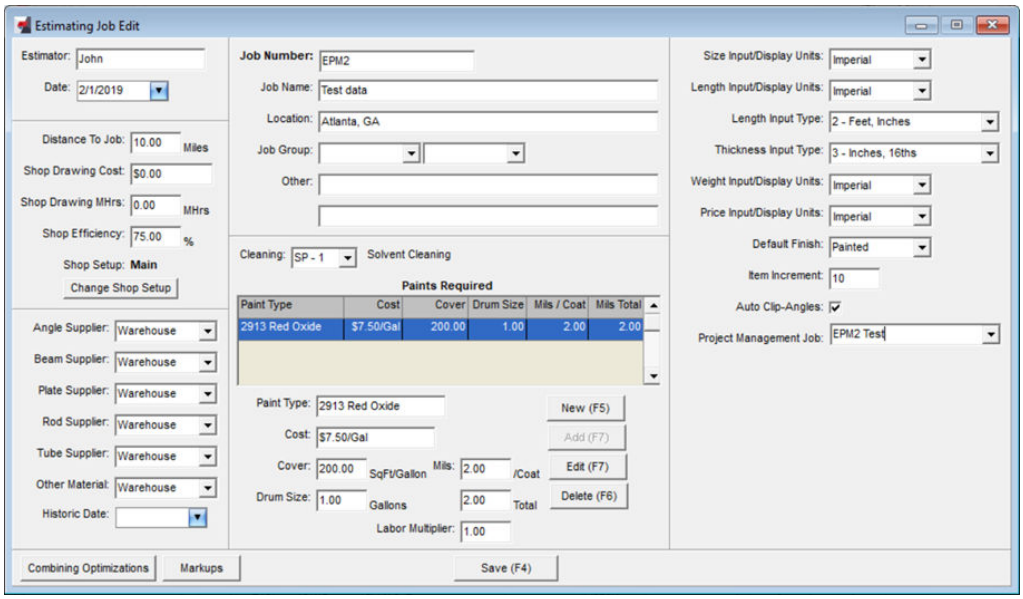
Open an estimating job (page 110)

Modify an estimating job (page 123)

2.2 Create an estimating job

To create a new estimating job, do the following:

1. At the bottom of the **Select Estimating Job** dialog box, click **Add**.



2. In the **Estimating Job Edit** dialog box, type the job number.

   The job number cannot be changed after creating the estimating job. All other details can be modified later.

3. Adjust the following properties according to your needs:

Option	Description
Estimator	The name of the estimator. You can sort estimating jobs based on the estimator.
Date	The date on which the bid is due. Tekla EPM automatically uses the date when you create the job, but you can select a different date in the associated calendar.
Distance To Job	The distance to the job site. Tekla EPM uses the distance to calculate freight costs if you have selected the **Freight Per Mile** option in **Freight Maintenance**. For more information, see Modify freight pricing (page 30).
Shop Drawing Cost	The total cost of the shop drawings. The value will be used in the fabrication summary report.
Shop Drawing MHrs	The total labor hours used in shop detail drawings. The value will be used in the fabrication summary. Costs will automatically include the **Detailing** labor rate set in **Labor Rates**.

Option	Description
Shop Efficiency	The efficiency percentage of the shop, used for calculating labor times. Shop efficiency is calculated by dividing the labor times accordingly. For example, typing `75%` would increase overall labor times by 33.3%, whereas entering `125%` would reduce the labor times by 20%. Note that shop efficiency cannot be set to `0`.
Shop Setup	The labor database used for the estimating job. Note that the **Shop Setup** is only available if more than one shop setup has been created. To use another labor database instead, click **Change Shop Setup** and double-click the shop that you want to use.
Angle Supplier, **Beam Supplier**, **Plate Supplier**, **Rod Supplier**, **Tube Supplier**, **Other Material**	The pricing data sets used for different material groups in the estimating job. Click the arrow on the right side of any supplier list to select and use another supplier's pricing data set.
Historic Date	The date whose pricing data you want to use for the estimating job. The historic date is normally set to the date when the bid is submitted. Setting a historic date is optional and can be done at any point. If you do not set a historic date, the material prices of the estimating job will automatically update when the material pricing database is updated.
Job Name	The description of the estimating job.
Location	The town or city where the job takes place.
Job Group	One or two job groups that help you identify and sort estimating jobs. For example, the year of the estimating job can be used as a job group. Either type a job group directly in the blank field, or click the arrow on the right side of the field to select an existing job group.
Other	Two fields that allow you to add any additional comments on the estimating job.
Cleaning	The default cleaning type used for new material items in the estimating job. Note that the cleaning type is only applied to items if cleaning is included in the labor codes selected for the items. You can override the cleaning type set here by assigning a cleaning system to the item. For more

Option	Description
	information on cleaning systems, see Create cleaning systems (page 106). To change the cleaning type, click the arrow on the right side of the **Cleaning** field and select a cleaning type in the list.
Paints Required	A section that allows you to create, modify, and delete job-specific paint types. • To add a new paint type, click **New**, define the properties, and click **Add**. • To modify a paint type, select the paint type, modify the properties, and click **Edit**. • To delete a paint type from the estimating job, select the paint type and click **Delete**. If you do not assign a paint system to the items, all paints listed in the **Paints Required** section will be applied to painted items. Assigning a paint system to an item overrides the paints listed here. For more information on the properties of paint types, see Create, modify, and delete paint types (page 27).
Size Input/Display Units, **Length Input/ Display Units**, **Weight Input/Display Units**, **Price Input/Display Units**	The input and display units used in the estimating job. To change the units, click the arrow on the right side of the desired field, and select another option in the list.
Length Input Type, **Thickness Input Type**	The data input format for material lengths and thicknesses. To change the input type, click the arrow on the right side of the desired field, and select another option in the list.
Default Finish	The default finish used for new items in the estimating job. You can change the finish item by item.
Item Increment	Sets the auto-increment for item numbers. Using the default auto-increment of 10 allows items to be added in the list according to your needs, without having to renumber the other items in the job.

Option	Description
Auto Clip-Angles	When selected, Tekla EPM adds standard clips in the estimating items according to their labor codes. When cleared, standard clips are not used.
Project Management Job	The project management job that is linked to the estimating job. By linking estimating and project management jobs to each other, you can share the labor and material information with the **Project Management** module. Among other details, all the bid documents of the estimating job can be automatically linked to the **Project Management** job, which saves data transfer time. Note that a related production control job needs to be linked to the estimate separately when in the **Production Control Job Edit**. For more information, see . To link a job, click the arrow on the right side of the **Project Management Job** field, and select an existing project management job in the list. The job numbers do not need to match.

4. If necessary, create job-specific clean systems and paint systems or define job-specific galvanizing settings.

   For more information, see Create cleaning systems (page 106), Create job-specific paint systems (page 107), and Define and modify job-specific galvanizing settings (page 109).

5. Modify the combining optimizations and markup percentages according to your needs.

   For more information on the available settings, see Define default combining optimizations for Estimating (page 94) and Define markup percentages (page 83).

6. Click **Save**.

The **Estimating Job Edit** dialog box closes. The estimating job is added to the list in the **Select Estimating Job** dialog box.

See also

Create cleaning systems (page 106)

Create job-specific paint systems (page 107)

Define and modify job-specific galvanizing settings (page 109)

Link an estimating job to a project management job (page 109)

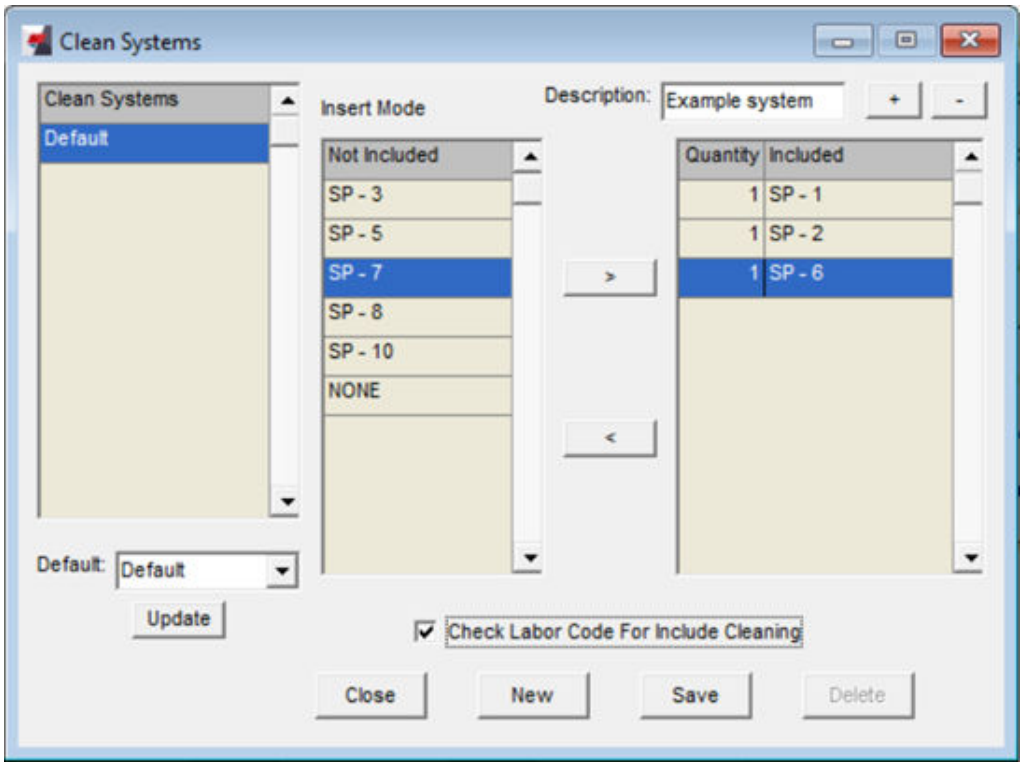
Modify an estimating job (page 123)

Create cleaning systems

Cleaning systems allow you to apply more than one cleaning type to estimating items. Use the **Clean Systems** command to create cleaning systems that you want to use in a specific estimating job.

Globally available cleaning systems currently cannot be created in Tekla EPM. To use the same cleaning systems in multiple estimating jobs, you can copy an existing job. Any cleaning systems created for the job are copied as well.

1. In the **Select Estimating Job** dialog box, do one of the following:
   - To add a cleaning system for a new estimating job, click **New**.
   - To add a cleaning system for an existing estimating job, select it in the list, and click **Edit**.
2. In the **Estimating Job Edit** dialog box, click the **Estimating** ribbon tab.
3. In the menu, select **Clean Systems**.



4. In the **Clean Systems** dialog box, click **New** to create a new cleaning system.
5. Type a description for the new cleaning system.
6. Use the arrow buttons to move the cleaning types that you want to include in the cleaning system to the **Included** list.

7. To add or reduce the times each cleaning type requires, click the **+** and **-** buttons above the **Included** list.
8. If you only want to apply the cleaning system if cleaning is included in the labor code of the item, select the **Check Labor Code For Include Cleaning** check box.
9. Click **Save**.

   The new cleaning system is added.
10. If you want to use the new cleaning system as the default cleaning system used for new items, do the following:
    a. Select the new cleaning system in the **Default** list.
    b. Click **Update**.
11. Click **Close** to close the dialog box.

The labor times and costs for cleaning need to be set in **Cleaning Maintenance**.

TIP To apply the cleaning system for an estimating item, do the following:

1. Open the estimating job.
2. In the **Estimating** dialog box, select an item.
3. Click the arrow on the right side of the **Clean System** input field, and select the new cleaning system in the list.
4. Click **Edit** to save the changes.

If you cannot see the **Clean System** field, modify the visible input fields via **Maintenance** --> **Estimating** --> **Edit Input Fields** .

Whether or not you select the **Carry Over** option for the **Clean System** field determines if new items initially use the default cleaning system or the cleaning system used for the previously created item.

See also

Create job-specific paint systems (page 107)

Modify cleaning types and cleaning costs (page 26)

Create job-specific paint systems

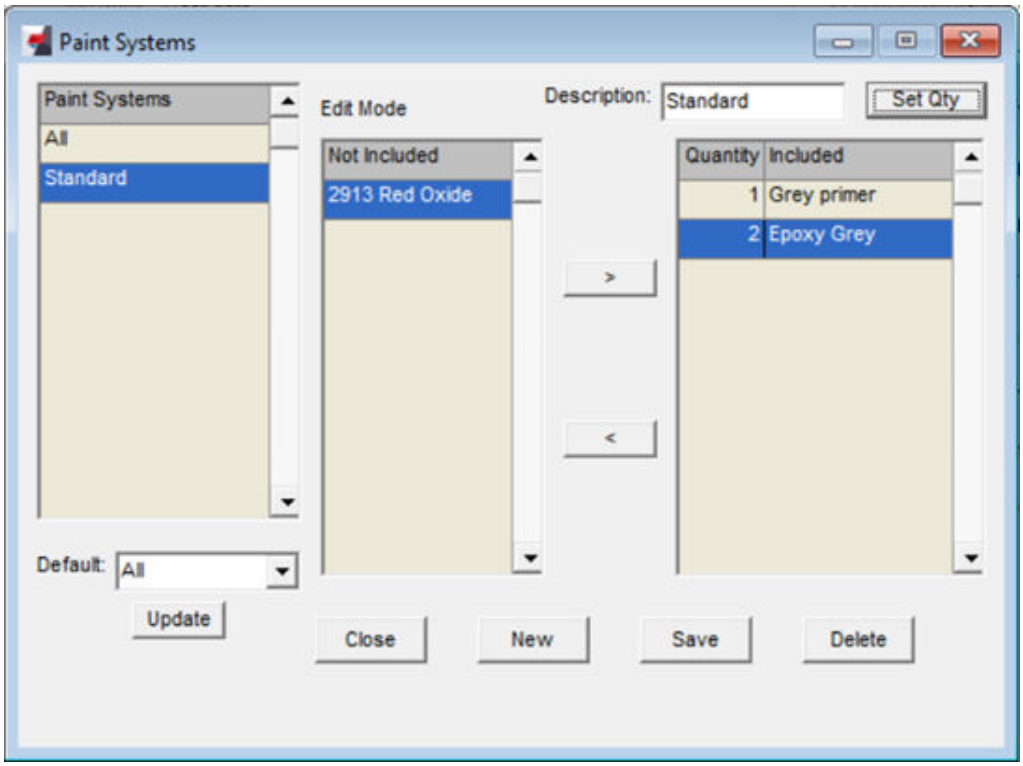
To create paint systems that are only used in the current estimating job, do the following:

NOTE To use job-specific paint types in paint systems, you first need to define them in the **Estimating Job Edit** dialog box.

---

1. While in the **Estimating Job Edit** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Paint Systems**.

   The **Paint Systems** dialog box opens.



3. In the **Paint Systems** dialog box, click **New**.
4. Type a description for the new paint system.
5. Use the arrows to move the paints that you want to include in the system to the **Included** list.
6. To add or remove the paint coats of the paint, do the following:
   a. Click the **Set Qty** button.
   b. Enter the number of the paint coats.
   c. Click **OK**.
7. Click **Save**.
8. If you want to use the new paint system as the default paint system for new items, do the following:
   a. Select the new paint system in the **Default** list.
   b. Click **Update**.

The new paint system is added for the estimating job. Click **Close** to close the dialog box.

If the paint system is set as the default option, it will automatically be used to all painted items.

If you cannot see the **Paint System** field in the estimating job, modify the visible input fields via **Maintenance** --> **Estimating** --> **Edit Input Fields** .

See also

Modify an estimating job (page 123)

Create paint systems (page 29)

Define and modify job-specific galvanizing settings

In the **Galvanizing** dialog box, you can modify the pricing, minimum costs and freight information that is applied to a galvanized item in a specific estimating job. If you do not want to modify these settings for a single estimating job, Tekla EPM will automatically use the galvanizing settings that you defined in **Estimating Company Standards**.

1. In the **Select Estimating Job** dialog box, do one of the following:
   - To define or modify galvanizing settings of a new estimating job, click **New**.
   - To define or modify galvanizing settings of an existing estimating job, select the job in the list, and click **Edit**.
2. In the **Estimating Job Edit** dialog box, click the **Estimating** ribbon tab.
3. In the menu, select **Galvanizing**.
4. In the **Galvanizing** dialog box, modify the galvanizing costs, the trailer capacity, the labor prep costs per pound, and the weight percent added.
5. Click **OK** to save the changes.
6. Click **Save** in the **Estimating Job Edit** dialog box.

The changes that you made to galvanizing settings are saved for the selected estimating job.

See also

Define default galvanizing settings (page 91)

Link an estimating job to a project management job

By linking an estimating job to a project management job, you can share the labor and material information with the **Project Management** and

Production Control modules. This allows you to compare the estimate information with the actual production information.

1. On the top of the Tekla EPM window, click the **Estimating** button.
2. In the **Select Estimating Job** dialog box, select the estimating job that you want to link to a project management job.
3. Click **Edit**.
4. In the **Estimating Job Edit** dialog box, click the arrow on the right side of the **Project Management Job** list, and select the desired project management in the list.

   The project names and job numbers do not need to match.
5. Click **Save**.

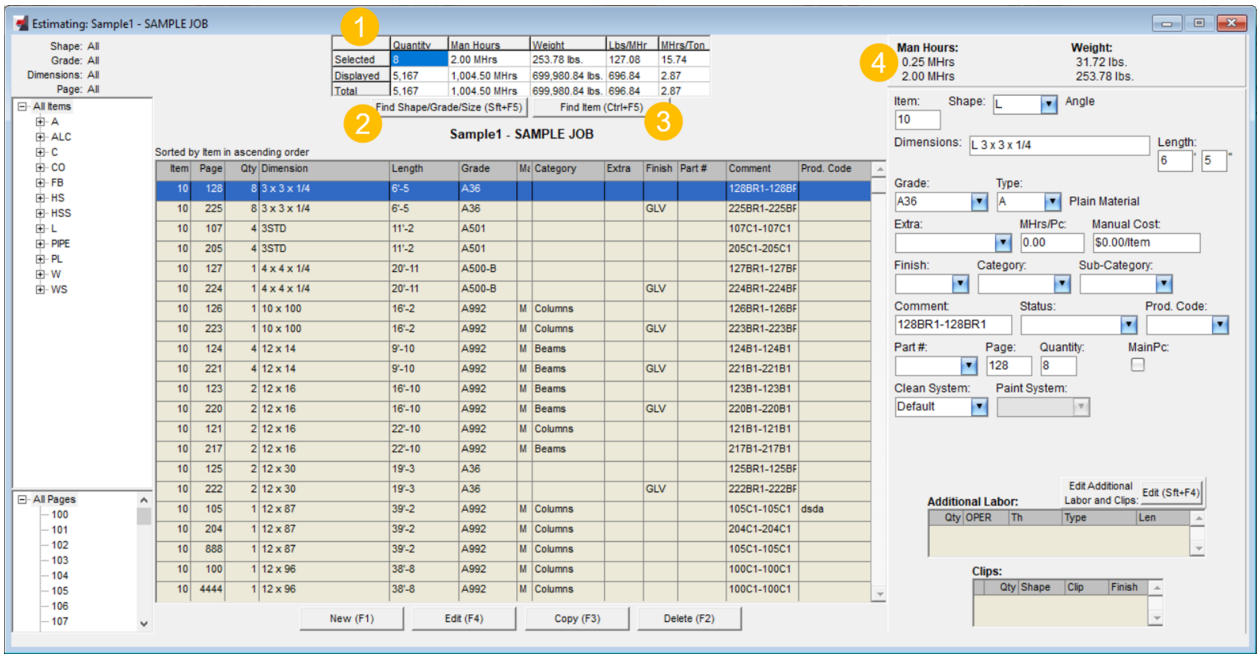
Note that you also need to link the production control job to the project management job.

2.3 Open an estimating job

To open an existing estimating job, do the following:

1. On the top of the Tekla EPM window, click the **Estimating** button.
2. In the **Select Estimating Job** dialog box, select the job that you want to open.
3. Double-click the job, or click **Open**.

The **Estimating** dialog box opens. View the components of the dialog box in the following image:



(1) The summary grid: shows the quantity, man hours, and the weight of the selected items, all items visible in the display area, and the entire job.

The summary grid also displays the pounds per man hour and man hours per ton calculations for the selected items, all items visible in the display area, and the entire job.

(2) The **Find Shape/Grade/Size** button: click to find items of a specific shape, material grade, or material dimension.

(3) The **Find Item** button: click to find an item by page and item number.

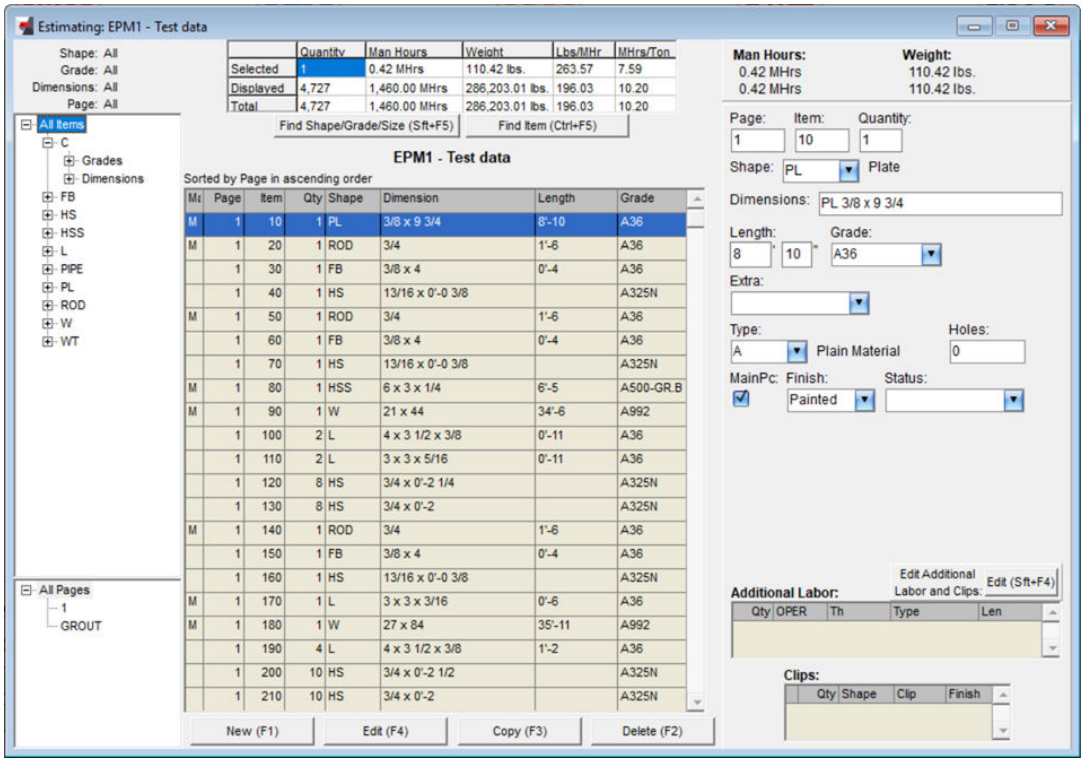
(4) Man Hours and **Weight**:

- The upper row shows the labor time and weight of one piece in the selected item.
- The lower row shows the labor time of all pieces in the selected item.

You can now continue to adding new items, or modifying and deleting existing items.

View only particular material items or pages in the Estimating dialog box

Use the navigation trees on the left side of the **Estimating** dialog box to only view particular material items of a specific shape, grade, or size, or particular pages of the estimating job.



- In the **Estimating** dialog box, do any of the following:

To	Do this
View items of the selected shape, grade, and material dimension	1. In the upper navigation tree, click **+** to show all shapes in the estimating job. 2. In the upper navigation tree, click a shape indicator to select it. 3. Optionally, select a material grade or dimension as well. Only items of the selected material shape, grade, and material dimension are shown in the display area.
View items of all shapes	• Click **All Items** at the top of the upper navigation tree.
View items on a particular page	1. In the lower navigation tree, click **+** to show all pages in the estimating job.

To	Do this
	2. Click a page to select it. Only items on the selected page are shown in the display area.
View items on all pages	• Click **All Pages** at the top of the lower navigation tree.

Note that the navigation trees also work together, so that you can also limit the displayed information also by selecting items in both navigation trees. For example, you can view items of a specific material dimension on a specific page.

See also

Filter information in the Estimating dialog box (page 113)

Filter information in the Estimating dialog box

Use the **Filter** command to create filter settings that are commonly used in the **Estimating** dialog box. For example, you can view labor totals by category to check averages, or view the totals for items with a specific finish. You can also save the filter settings for later use.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Filter**.
3. To filter the displayed items according to selected criteria, in the **Filters** dialog box, select a filter type in the **Type** list, and click **Select**.

   For some filter types, such as page, labor code, or comment, you can also click **Find** and type the desired value in the blank field to use it. This way, you do not have to scroll through all the available items.
4. In the **Filter** dialog box, click the arrow buttons to move the items that you want to display to the **Included** list.
5. Click **OK**.

   If you want to further filter the information displayed in the **Estimating** dialog box, repeat steps 3 to 5 for different items. Note that only items that match the items in the **Included** list will be available when setting more filters.

   If you want to clear all filter settings, click **Reset**.
6. To save commonly used filters, do the following:
   a. Click **Filter Types** in the lower-left corner.
   b. Click **New**.
   c. Type a description for the filter type.

d. Create the filter settings.

   For more information, see steps 3 to 5.

e. Click **Add**.

f. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

   The newly created filter type is selected in the **Filter Types** list.

g. To apply the filter type, click **Set**.

7. According to your needs, do one of the following:

   - To use the filter, click **Apply Filter**.
   - To use the filter in the job and save it until a new filter is set or the filter is cleared, click **Apply Filter & Save**.

     Note that the filter will remain in use even if you close and re-open the job. After you clear the filters, the filter settings cannot be used again.

The **Filters** dialog box closes, and the **Estimating** dialog box is filtered according to the filter settings you created.

TIP To display all information in the **Estimating** dialog box again, click **Clear Filters** in the upper-left corner.

2.4 Store document references for an estimating job

Document Index is where you can store documents for reference. When you store documents in **Document Index**, each user with access to the estimating job can view the documents, so it is easy to keep up-to-date on the estimating job. You can save all bid documents, contract drawings and specifications, as well as Microsoft Outlook emails, in **Document Index**.

To access **Document Index**, do the following:

1. In the **Select Estimating Job** dialog box, select the job whose document references you want to view or modify.
2. Click **Document Index**, or press **F8**. If the estimating job is linked to a project management job and a production control job, Tekla EPM asks you if you want to open the **Document Index** dialog box related to the linked project management job.
3. According to your needs, do any of the following:

   - To view and manage the document references of both the linked project management job and the current estimating job, click **Yes**.

- To only view and manage the documents of the current estimating job, click **No**.

If you clicked **Yes**, Tekla EPM asks if you want to view and manage the documents in the linked production control job as well.

4. According to your needs, do any of the following:
   - To view and manage the document references of the linked production control job as well, click **Yes**.
   - To only view and manage the documents of the current estimating job and the linked project management job, click **No**.

The **Document Index** dialog box opens.

Next, you can either modify the available folders for document references, or add, modify, delete, open, and email document reference files.

See also

Manage document reference categories (page 115)

Open a document reference (page 121)

Add document references for estimating jobs (page 116)

Modify a document reference (page 121)

Attach a document reference to an email (page 122)

Delete a document reference (page 122)

Manage document reference categories

Use the **Edit Categories** command in **Document Index** to manage the categories that you can use to organize document references. You can add new categories, rename categories, and delete unnecessary categories. You can also change the default folder where document references are saved.

1. At the bottom of the **Document Index - By Category** dialog box, click **Edit Categories**.
2. In the **Document Index - Edit Categories** dialog box, do any of the following:

To	Do this
Add a new category	a. In the navigation tree at the top of the dialog box, select the parent category for the new category. b. Click **Add**. c. Type a name for the new category. For example, `Miscellaneous documents`.

To	Do this
	d. Click **OK**. The new category is added to the list.
Rename a category	a. In the navigation tree at the top of the dialog box, select the category that you want to rename. b. Type a new name for the category. c. Click **OK**. The category name is updated.
Delete a category	a. In the navigation tree at the top of the dialog box, select the category that you want to delete. b. Click **Delete**. Note that you cannot delete a category that has sub-categories. c. To permanently delete the category, click **Yes** in the confirmation dialog box.
Change the default folder where documents are saved	When documents are added in **Document Index**, the selected document can be either moved or copied to the selected folder. This way, Tekla EPM retains all documents that have been saved to **Document Index**, even if the original documents are moved or deleted. The default folder for saving documents needs to be in the Tekla EPM default folders, so that all users can view the attached documents. Files saved elsewhere than the default location cannot be viewed by other Tekla EPM users. a. Click **Default Dir**. b. Do one of the following: • Select the folder that you want to use as the default folder. • Click **Make New Folder** to add a new folder under the currently selected one, and click it to use it as the default folder. c. Click **OK**.

3. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

Add document references for estimating jobs

You can either upload completely new document references, such as documents, Microsoft Outlook emails, and Microsoft Outlook email attachments to **Document Index**, or add documents already loaded to **Document Index** for the current job.

Add new documents

1. In the navigation tree of the **Document Index - By Category** dialog box, select the category where you want to save the document.
2. Click **Add Document Reference**.

   If you are viewing the document references of multiple modules and have not selected a module-specific category in the navigation tree, Tekla EPM asks you for which module you want to save the file.
3. Select the desired module.
4. In the **Document Index - Add Document Reference** dialog box, click **Add File**.

   You can also drag and drop files to the **Document Index - Add Document Reference** dialog box. If you do so, skip steps 5 and 6.
5. In the **Open** dialog box, browse to find the document that you want to add, and select the document.
6. Click **Open**.

   If you want to add more documents with the same settings, click **Add Additional File** and repeat steps 4 to 6 for each document.
7. In the **Add File** dialog box, select the company and contact that provided you with the document in the **File Source** lists.

   You can also drag and drop files to the **Add File** dialog box.
8. According to your needs, do one of the following:
   - To compress multiple documents into one archive, select the **Compress Files into a Single Archive** option.
   - To leave the documents that you added uncompressed, select the **Leave Files Uncompressed** option.
9. If you want to change the folder where the document is saved, click **Browse** and select a new folder.
10. According to your needs, do one of the following:
    - To move the original document to the selected folder, select the **Move File** option.
    - To copy the document to the selected folder but leave the original untouched, select the **Copy File (Leave Original)** option.

11. Type a description for the attached document.
12. Click **Add File**.
13. Type a description for the entire document reference.

    This description applies to all documents, emails, and email attachments that you add.
14. When you have added all necessary documents, emails and email attachments, click **Add Document Reference**.

The **Document Index - Add Document Reference** closes, and the documents are added to **Document Index**. You can see all added documents in the list in the **Document Index - By Category** dialog box.

Add a Microsoft Outlook email

1. In Microsoft Outlook, select the email that you want to add.
2. In the navigation tree of the **Document Index - By Category** dialog box, select the category where you want to save the email.
3. Click **Add Document Reference**.
4. In the **Document Index - Add Document Reference** dialog box, click **Add Outlook Email**.

   A copy of the email is added to **Document Index**.

   The text of the email is added to the **Description** field.
5. Click **Add File**.
6. Type a description for the entire document reference.

   This description applies to all documents, emails, and email attachments that you add.
7. When you have added all necessary documents, emails and email attachments, click **Add Document Reference**.

The **Document Index - Add Document Reference** closes, and the emails are added to **Document Index**.

Add an attachment from a Microsoft Outlook email

1. In Microsoft Outlook, select the email with the attachment that you want to add.
2. In the navigation tree of the **Document Index - By Category** dialog box, select the category where you want to save the attachment.
3. Click **Add Document Reference**.
4. In the **Document Index - Add Document Reference** dialog box, click **Add Outlook Attachments**.

5. Browse to the folder where you want to save the email attachment, and click the folder to select it.
6. Click **Open**.
7. In the **Add File** dialog box, select the company and contact that provided you with the email attachment in the **File Source** lists.
8. According to your needs, do one of the following:
   - To compress multiple email attachments into one archive, select the **Compress Files into a Single Archive** option.
   - To leave the email attachments you added uncompressed, select the **Leave Files Uncompressed** option.
9. Type a description for the email attachment.
10. Click **Add File**.
11. Type a description for the entire document reference.

    This description applies to all documents, emails, and email attachments that you add.
12. When you have added all necessary documents, emails and email attachments, click **Add Document Reference**.

The **Document Index - Add Document Reference** closes, and the email attachments are added to **Document Index**.

Search for and add a document already in Document Index

To find and add documents for the current job that are already saved in **Document Index**, use the **Search** command.

1. In the navigation tree of the **Document Index - By Category** dialog box, select the category where you want to save the document.
2. Click **Add Document Reference**.
3. In the **Document Index - Add Document Reference** dialog box, click **Search**.
4. In the **Search** dialog box, click **Browse** and select the folder where you want to look for documents.

   TIP To also search from the sub-folders of the selected folder, select the **Sub-Directories** check box.

5. To narrow the search, do one or more of the following:
   - Type the document name, document size, and file name extension.
   - In **File Date**, select the dates between which the document has been created or downloaded onto your computer.

- In **Date Loaded**, select the dates between which the document has been added to **Document Index**.
- In the **Source** lists, select the contact and company that have provided the document.

6. To include archived documents in the search, select the **Include All Archive Files** check box.
7. Click **Search**.

   The search results appear at the top of the **Search** dialog box.
8. In the search results, double-click the document that you want to add.

The document is added to **Document Index** for the current job.

Browse for and add a document already in Document Index

To browse to and add documents to the current job that are already saved in **Document Index**, use the **Find By Directory** command. You can also add new documents, delete existing documents, rename documents and categories, move documents to other folders, and open documents.

1. In the navigation tree of the **Document Index - By Category** dialog box, select the category where you want to save the document.
2. Click **Add Document Reference**.
3. In the **Document Index - Add Document Reference** dialog box, click **Find By Directory**.
4. In the navigation tree on the left of the **Document Index - By Directory** dialog box, select a category.

   If you want to rename the selected category, you can click **Rename Directory**, type a new name, and click **OK**.

   The documents within the category are listed in the display area of the dialog box.
5. Select a document.
6. In the lower-right corner, click **Select**.

   Note that besides adding an existing document to the current job, you can also use the buttons at the bottom of the dialog box to:

   - Add new documents (**Add File**).
   - Delete a document (**Delete File**).
   - Move a document to another folder within the document index folder (**Move File**).
   - Rename a document (**Rename File**).

- Open a document (**Open File**).

The document is added to **Document Index** for the current job.

Open a document reference

Use the **Open File** command to open and view a document reference.

1. In the **Document Index - By Category**, select the document that you want to open.
2. Click **Open File**.

The selected document opens.

See also

Add document references for estimating jobs (page 116)

Modify a document reference (page 121)

Attach a document reference to an email (page 122)

Delete a document reference (page 122)

Modify a document reference

Use the **Edit Document Reference** command to modify the source and description of a document in **Document Index**.

1. In the **Document Index - By Category** dialog box, select the document that you want to modify.
2. Click **Edit Document Reference**.
3. In the **Document Reference Details** dialog box, click **Filename**.
4. In the **File Details** dialog box, modify the file source and description according to your needs.
5. Click **Save**.
6. To close the **File Details** dialog box, click the **Close** button (**X**) in the upper-right corner.
7. Modify the description according to your needs.

   Entering a description in the **Document Reference Details** dialog box will override the description that you entered in the **File Details** dialog box. This description will then appear in the **Description** column in the **Document Index - By Category** dialog box.
8. Click **Save**.
9. To close the **Document Reference Details** dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Add document references for estimating jobs (page 116)

Open a document reference (page 121)

Delete a document reference (page 122)

Attach a document reference to an email

Use the **Email File** command to create a new Microsoft Outlook email and send a document to the desired recipients via email.

1. In the **Document Index - By Category** dialog box, select the document that you want to send via email.
2. Click **Email File**.

   Microsoft Outlook opens. A new email with the selected document is created, with the selected document attached to it.
3. Add recipients and modify the text of the email.
4. Send the email.

See also

Add document references for estimating jobs (page 116)

Open a document reference (page 121)

Delete a document reference

Deleting a document reference from **Document Index** is permanent and cannot be undone. If you delete a document reference, you or any other Tekla EPM users will not be able to access the document reference or any documents, emails, or attachments that it contains, from **Document Index**.

1. In the **Document Index - By Category** dialog box, select the document reference that you want to delete.
2. Click **Delete Document Reference**.
3. To permanently delete the document reference, click **Yes** in the confirmation dialog box.

See also

Add document references for estimating jobs (page 116)

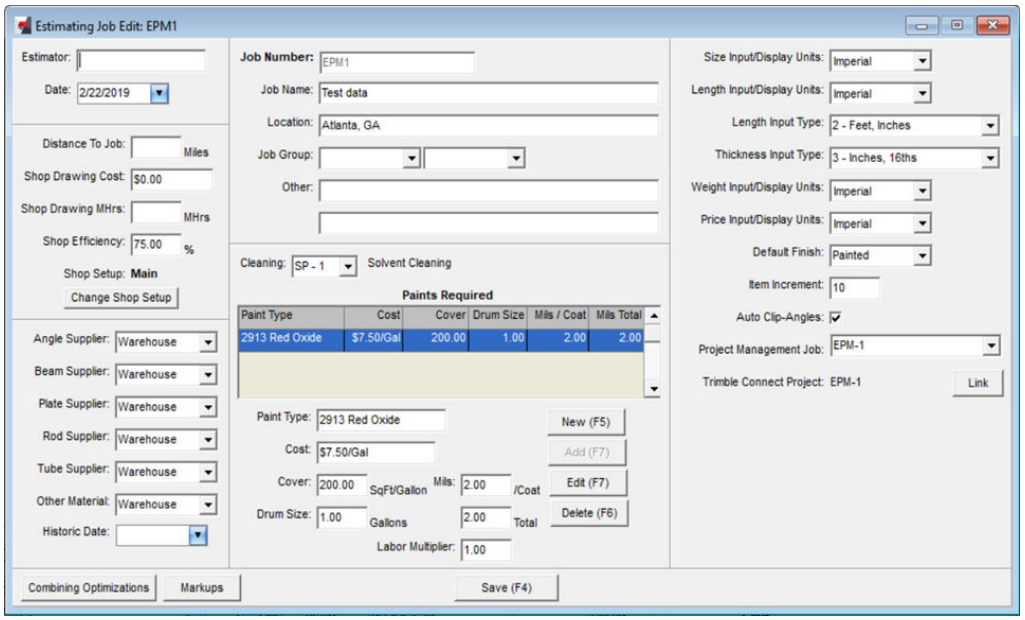
Modify a document reference (page 121)

Open a document reference (page 121)

2.5 Modify an estimating job

You can modify any properties of an estimating job later, except for the job number.

1. In the **Select Estimating Job** dialog box, select the job that you want to modify.
2. At the bottom of the dialog box, click **Edit**.



3. In the **Estimating Job Edit** dialog box, modify the estimating job properties according to your needs:

Option	Description
Estimator	The name of the estimator. You can sort estimating jobs based on the estimator.
Date	The date on which the bid is due. Tekla EPM automatically uses the date when you create the job, but you can select a different date in the associated calendar.
Distance To Job	The distance to the job site. Tekla EPM uses the distance to calculate freight costs if you have selected the **Freight Per Mile** option in **Freight Maintenance**. For more information, see Modify freight pricing (page 30).

Option	Description
Shop Drawing Cost	The total cost of the shop drawings. The value will be used in the fabrication summary report.
Shop Drawing MHrs	The total labor hours used in shop detail drawings. The value will be used in the fabrication summary. Costs will automatically include the **Detailing** labor rate set in **Labor Rates**.
Shop Efficiency	The efficiency percentage of the shop, used for calculating labor times. Shop efficiency is calculated by dividing the labor times accordingly. For example, typing `75%` would increase overall labor times by 33.3%, whereas entering `125%` would reduce the labor times by 20%. Note that shop efficiency cannot be set to `0`.
Shop Setup	The labor database used for the estimating job. Note that the **Shop Setup** is only available if more than one shop setup has been created. To use another labor database instead, click **Change Shop Setup** and double-click the shop that you want to use.
Angle Supplier, **Beam Supplier**, **Plate Supplier**, **Rod Supplier**, **Tube Supplier**, **Other Material**	The pricing data sets used for different material groups in the estimating job. Click the arrow on the right side of any supplier list to select and use another supplier's pricing data set.
Historic Date	The date whose pricing data you want to use for the estimating job. The historic date is normally set to the date when the bid is submitted. Setting a historic date is optional and can be done at any point. If you do not set a historic date, the material prices of the estimating job will automatically update when the material pricing database is updated.
Job Name	The description of the estimating job.
Location	The town or city where the job takes place.
Job Group	One or two job groups that help you identify and sort estimating jobs. For example, the year of the estimating job can be used as a job group. Either type a job group directly in the blank field, or click the arrow on the right side of the field to select an existing job group.

Option	Description
Other	Two fields that allow you to add any additional comments on the estimating job.
Cleaning	The default cleaning type used for new material items in the estimating job. Note that the cleaning type is only applied to items if cleaning is included in the labor codes selected for the items. You can override the cleaning type set here by assigning a cleaning system to the item. For more information on cleaning systems, see Create cleaning systems (page 106). To change the cleaning type, click the arrow on the right side of the **Cleaning** field and select a cleaning type in the list.
Paints Required	A section that allows you to create, modify, and delete job-specific paint types. • To add a new paint type, click **New**, define the properties, and click **Add**. • To modify a paint type, select the paint type, modify the properties, and click **Edit**. • To delete a paint type from the estimating job, select the paint type and click **Delete**. If you do not assign a paint system to the items, all paints listed in the **Paints Required** section will be applied to painted items. Assigning a paint system to an item overrides the paints listed here. For more information on the properties of paint types, see Create, modify, and delete paint types (page 27).
Size Input/Display Units, **Length Input/ Display Units**, **Weight Input/Display Units**, **Price Input/Display Units**	The input and display units used in the estimating job. To change the units, click the arrow on the right side of the desired field, and select another option in the list.
Length Input Type, **Thickness Input Type**	The data input format for material lengths and thicknesses. To change the input type, click the arrow on the right side of the desired field, and select another option in the list.
Default Finish	The default finish used for new items in the estimating job. You can change the finish item by item.

Option	Description
Item Increment	Sets the auto-increment for item numbers. Using the default auto-increment of 10 allows items to be added in the list according to your needs, without having to renumber the other items in the job.
Auto Clip-Angles	When selected, Tekla EPM adds standard clips in the estimating items according to their labor codes. When cleared, standard clips are not used.
Project Management Job	The project management job that is linked to the estimating job. By linking estimating and project management jobs to each other, you can share the labor and material information with the **Project Management** module. Among other details, all the bid documents of the estimating job can be automatically linked to the **Project Management** job, which saves data transfer time. Note that a related production control job needs to be linked to the estimate separately when in the **Production Control Job Edit**. For more information, see . To link a job, click the arrow on the right side of the **Project Management Job** field, and select an existing project management job in the list. The job numbers do not need to match.

4. Create or modify paint systems, clean systems, or job-specific galvanizing settings.
5. Modify the combining optimizations and markup percentages according to your needs.

   For more information on the available settings, see Define default combining optimizations for Estimating (page 94) and Define markup percentages (page 83).
6. Click **Save**.

The **Estimating Job Edit** dialog box closes. The estimating job is updated to match the changes that you made.

See also

Create job-specific paint systems (page 107)

Create cleaning systems (page 106)

Define and modify job-specific galvanizing settings (page 109)

2.6 Add materials to an estimating job

In addition to manually added estimating items, you can add accessories, assemblies, and parametric assemblies to estimating jobs.

See also

Add an estimating item (page 127)

Add an accessory (page 135)

Add an assembly (page 138)

Add a parametric assembly (page 139)

Add an estimating item

To add a new item to an estimating job, do the following:

1. At the bottom of the **Estimating** dialog box, click **New**.
2. Define the item properties.

   NOTE The visible input fields and their order depend on the settings that you have defined in the **Input Fields** dialog box that you can access via **Maintenance** --> **Estimating** --> **Edit Input Fields** .

   The properties marked with an asterisk (*) in the following table are mandatory information.

Option	Description
Page *	The number of the page on which the item is added. The page number can be used to color-code or filter items in Trimble Connect. For more information, see Use Trimble Connect with an estimating job (page 160). You can modify the page number manually or use the page number automatically determined by Tekla EPM.
Item *	The item number. You can modify the item number manually or use the item number automatically determined by Tekla EPM.

Option	Description
	Default item increments are set in **Company Standards**, but you can modify them for each job. We recommend leaving spaces between items, so that you can later add items between existing items. If necessary, you can reset the item number intervals in **Job Maintenance**. For more information, see Renumber an estimating job (page 34)-
Quantity *	The number of pieces to be added. Use the numeric keypad in the quantity field to add, multiply, divide, or subtract numbers to adjust the quantity.
Shape *	The material shape of each piece. Either click the arrow on the right side of the **Shape** field to select the shape, or type the shape indicator in the field (for example, HSS).
Grade *	The material grade of each piece. Depending on the shape, the grade can also be mandatory information. Either click the arrow on the right side of the **Grade** list to select the grade, or type the grade indicator in the field.
Dimensions *	The material dimension, or material size, of each piece. Depending on the shape, the dimension can also be mandatory information. Click the **Dimensions** field to select an available material dimension, and double-click the desired dimension in the list. **TIP** You can also use a custom material dimension. Note that the dimension is not automatically added to the material database. To use a custom dimension, do the following: a. Click in the **Dimensions** field. b. Click **Add Size**. c. Define the dimension properties.

Option	Description
	d. Click **Save**. You can now select the dimension and use it.
Length	The length of each piece. Default length input settings are set in **Company Standards**, but you can modify them for each job.
Type	The labor code applied to the item. Note that the available labor codes depend on the material group of the selected shape. The labor code can be used to color-code or filter items in Trimble Connect. For more information, see Use Trimble Connect with an estimating job (page 160). Click the arrow on the right side of the **Type** field to select a labor code, or type the labor code abbreviation in the field. For more information, see Adjust labor codes (page 48) and View the preloaded labor codes (page 52).
Extra	The estimate extra applied to the item. Estimate extras are additional costs and labor that you can add to an estimating item. Estimate extras can also contain formulas that calculate the additional costs and labor. To apply estimate extras to the item, do one of the following: • To apply one estimate extra to the item, click the arrow on the right side of the **Extra** field to select the extra that you want to apply. • To apply multiple extras to the item, double-click in the **Extra** field, and click the arrow buttons to move the desired extras to the **Included** list. For more information, see Create estimate extras (page 43).
Holes, **Web Holes**, **Top Flg Holes**, **Bot Flg Holes**	The number of the holes, web holes, top flange holes, or bottom flange holes per piece. Bolts are

Option	Description
	automatically added for beams and tubes with holes. When you define the number of holes, Tekla EPM automatically adds the labor time spent on holes to the item.
Holes w/o Bo	The number of holes per piece. No bolts will be added. When you define the number of holes, Tekla EPM automatically adds the labor time spent on holes to the item.
Stiffeners	The number of stiffeners per piece. When you define the number of stiffeners, Tekla EPM automatically calculates and adds the labor time spent on stiffeners to the item. For more information on the labor time for stiffeners, see Adjust labor times for copes, punches, and stiffeners (page 42). Note that you need to add the material for the stiffeners separately because such material is not added automatically.
Copes	The number of copes per piece. When you define the number of stiffeners, Tekla EPM automatically calculates and adds the labor time spent on copes to the item. For more information on the labor time for copes, see Adjust labor times for copes, punches, and stiffeners (page 42).
MHrs/Pc	The number of man hours per piece. This time will be added to the labor time already calculated by Tekla EPM.
Manual Cost	A cost that replaces the material cost of the item in reports. **TIP** If necessary, you can change and convert the units by right-clicking in the **Manual Cost** field. Select a suitable option in the context menu.
Finish	The finish type of the item. The default options are **Painted**, **Unpainted**, and **Galvanized**. The finish type can be used to color-code or filter items in Trimble Connect. For more information,

Option	Description
	see Use Trimble Connect with an estimating job (page 160). You can apply paint systems to an item whose finish type is **Painted** to use other finishes than the standard ones.
Category, **Sub-Category**	A class used for sorting items within a job. Categories and sub-categories can be used for filtering the information in the **Estimating** dialog box and color-coding or filtering items in Trimble Connect. The available categories and sub-categories are created in **Estimating Company Standards**. If necessary, you can also assign quantity multipliers to sub-categories. Click the arrow on the right side of the **Category** or **Sub-Category** field and select an existing category, or type a new category in the field.
MainPc	When selected, indicates that the item is a main piece in an assembly. When cleared, indicates that the item is not a main piece. Marking items as main pieces allows you to consider whole assemblies in fabrication. If you use main pieces, you can create reports that show the properties for each main piece, or assembly. Selecting the **MainPc** check box is optional, but be consistent: either select the check box for all main pieces in the estimating job, or do not select it for any of them.
Comment	An optional comment that you can type for the item.
Erect Hrs	The number of hours spent on erecting the item.
Erect Cost	The amount of money used for erecting the item.
Status	The estimate status of the item. The status indicates the level of completion of the item. The status can be used to color-code or filter items in Trimble Connect. For more information, see Use Trimble Connect with an estimating job (page 160). To modify the available estimate statuses, see Manage estimate statuses (page 77).

Option	Description
Detailing Cost	The amount of money used for erecting the item. The **Detailing Cost** field is identical with the **Erect Cost** field.
Detailing Hrs	The number of hours spent on erecting the item. The **Detailing Hrs** field is identical with the **Erect Hrs** field.
Prod. Code	The production code applied to the item. Production codes group items so that you can apply man hour per ton and per labor group percentages to items in the linked production control job. The production code can be used to color-code or filter items in Trimble Connect. For more information, see Use Trimble Connect with an estimating job (page 160). Production codes group similar items together within jobs.
Sequence	The sequence number assigned to the item. The sequence can be used to color-code or filter items in Trimble Connect. For more information, see Use Trimble Connect with an estimating job (page 160). Click the arrow on the right side of the **Sequence** field to select a sequence number, or type the number in the field.
Clean System	The clean system applied to the item. Click the arrow on the right side of the **Clean System** field to select an existing clean system. For more information, see Modify cleaning types and cleaning costs (page 26).
Paint System	The paint system applied to an item whose finish type is **Painted**. Click the arrow on the right side of the **Paint System** field to select an existing clean system. If no paint system is selected for a painted item, the default paints defined in the **Estimating Job Edit** dialog box are applied. For more information, see Modify an estimating job (page 123). To modify the available paint systems, see Create paint systems (page 29).

Option	Description
Cost/Pc	A cost per piece that is added to the material cost of the item.
Welded Studs	The number of welded studs per piece. The price per welded stud is defined in **Fabricator Information** for a typical stud price. You can also add welded studs as separate items. Tekla EPM will then price them accordingly.
Camber	The camber size used with the item. Type the labor time used in cambers in the **MHrs/Pc** field. Do not define the cost of cambers in the **Manual Cost** field. The cost entered in the **Manual Cost** overrides the material cost of cambers. Instead, you can type the cost in the **Cost/Pc** field.
Part #	The part number that identifies the accessory item. The selected part number populates the applicable fields with the information from **Accessory Maintenance**. The applicable fields need to be modified in the **Accessory Maintenance** dialog box. For more information, see Create, modify, and delete accessories (page 7).
PRC Unit Cost, **PRC Cost**, **PRC Date**	Fields that show the current pricing information of the selected item from the selected supplier. If no date is displayed in the **PRC Date** field, the material does not exist in the selected supplier's pricing data set. Double-click one of the fields to open the **Pricing Maintenance** dialog box and enter pricing information.

3. If necessary, apply additional labor and clips to the item.

   For more information, see Apply additional labor and clips (page 134).

4. Click **Add**.

The item is added to the display area.

See also

Apply additional labor and clips (page 134)

Modify a single estimating item (page 143)

Copy estimating items (page 140)

Delete an estimating item (page 146)

Apply additional labor and clips

If necessary, you can add labor operations, such as welding or burning, and standard clips to an estimating item.

To apply additional labor and clips, do the following:

1. In the **Estimating** dialog box, select the item to which you want to apply additional labor or clips.
2. At the lower-right corner of the dialog box, click **Edit**, or press **Shift+F4**.

The **Estimating Item** dialog box opens.

To apply additional labor and clips, see the following sets of instructions.

Apply additional labor

Note that the available options for thickness and length depend on the shape of the selected item.

1. In the **Additional Labor** section of the dialog box, click **New**.
2. In the **Quantity** field, enter the number of operations that you want to add.
3. In the **Operation** list, select which labor operation you want to add.
4. To define the material thickness, do either of the following:
   - Type the desired material thickness in the **Thickness** field.
   - In the list on the right side of the **Thickness** field, select **Thickness** to apply the thickness defined in the material dimensions.

     Note that if the selected item is a beam, the list on the right side of **Thickness** allows you to select if the applied thickness is the flange thickness or the web thickness.
5. Select the type of operation in the **Type** list.
6. If applicable, to define the length, do either of the following:
   - Type the desired length in the **Length** field.
   - In the list on the right side of the **Length** field, select an option to apply a value defined in the material dimensions.
7. Click **Add**.

   The additional labor operations are added to the list and applied to the selected item. You can view the labor time associated with the additional labor at the bottom of the **Additional Labor** section.
8. To close the **Estimating Item** dialog box, click **X** in the upper-right corner.

Apply clips

The available clips are standard clips defined in **Standard Clips Maintenance**. For more information on adjusting standard clips, see Create, modify, and delete standard clips (page 65).

1. In the **Clips** section of the dialog box, click **New**.
2. In the **Quantity** field, enter the number of clips that you want to add.
3. In the appropriate lists, select the shape, clip, and finish.
4. Click **Add**.

   The clips are added to the list and applied to the selected item. You can view the labor time associated with the clips and their weight at the bottom of the **Clips** section.
5. To close the **Estimating Item** dialog box, click **X** in the upper-right corner.

Add an accessory

Accessories are commonly used items that you can add to items in your estimating jobs. You can create accessories for items such as stiffeners, base plates, or embeds. Accessories can also be linked to specific material shapes and sizes, so that they can only be added to items of that shape and size. To add an accessory to an item, use the **Add Accessory** command.

Note that a you can also add an accessory by typing the part number of the accessory in the **Part #** field.

1. In the **Estimating** dialog box, select the item for which you want to add an accessory.
2. Click the **Estimating** ribbon tab.
3. In the menu, select **Add Accessory**.

   The **Select Accessory** dialog box opens.

   If the accessory list is empty, there are no accessories linked to the selected material shape and size. In these cases, you can either create a new accessory in (page 7), or create a job-specific accessory (page 136).
4. In the accessory list, select the accessory that you want to add.
5. Select or clear the check boxes at the bottom of the dialog box according to your needs.
6. Click **Add Selected**.

The **Select Accessory** dialog box closes.

The accessory is added as the last item of the selected page in the **Estimating** dialog box.

Note that accessories have the same input fields and properties as other estimating items. In addition, accessories have a description.

Create a job-specific accessory

You can create accessories that are only used within the current estimating job. Remember that all labor and material costs associated with the accessory will be added to the estimating job.

NOTE We recommend that you create, modify, and delete accessories in **Accessory Maintenance**. You can also create accessories in an estimating job, but these job-specific accessories cannot be saved to the accessory library, so they cannot be reused in other estimating jobs.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Job-Specific Accessory Maintenance**.
3. In the **Accessory Maintenance** dialog box, click **New**.
4. If you want to use the accessory multiple times in the current estimating job, enter a part number.
5. Type a description for the accessory.
6. Enter the remaining properties for the accessory:

Option	Description
Quantity	The number of accessories per item to which they are added.
Shape	The material shape of the accessory.
Dimensions	The material size of the accessory.
Length	The length of the accessory.
Grade	The material grade of the accessory.
Type	The labor code of the accessory. For more information, see Adjust labor codes (page 48).
Extra	The estimate extras applied to the accessory. To add estimate extras, double-click the **Extra** field. For more information, see Create estimate extras (page 43).
Holes	The number of holes in the accessory.
Web Holes	The number of web holes in the accessory.
Stiffeners	The number of stiffeners in the accessory.
Copes	The number of copes in the accessory.
MHrs/Pc	The number of man hours spent on the accessory.

Option	Description
Manual Cost	The cost for the accessory that you can enter manually. The manual cost is optional, and it overrides the pricing information in the pricing database.
MainPc	When selected, the item to which the accessory is added is considered a main piece.
Comment	An optional and additional comment on the accessory.
Erect Hrs	The number of man hours spent on erecting the accessory.
Erect Cost	The cost of erecting the accessory.
Prod. Code	The production code applied to the accessory.
Camber	The camber size used with the accessory.
Holes w/o Bo	The number of holes per piece in the accessory. No bolts will be added.
Top Flg Holes, **Bot Flg Holes**	The number of top flange holes or bottom flange holes per accessory.
Welded Studs	The number of welded studs per accessory.
Detailing Hrs	The number of hours spent on erecting the accessory.
Detailing Cost	The amount of money used for erecting the accessory.
Cost/Pc	A cost per piece that is added to the material cost of the accessory.

7. Click **Add**.

   The accessory is added to the list, and you can add it in the current estimating job.

   You can also use the other buttons at the bottom of the **Accessory Maintenance** to modify the job-specific accessories:

   - Click **Edit** to modify the selected accessory.
   - Click **Copy** to create a new accessory based on the selected accessory.
   - Click **Delete** to permanently delete the selected accessory.
   - Click **Global Edit Selected** to modify the properties of multiple selected accessories at once.

8. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.
9. Add the accessory to an item in the estimating job.

   For more information, see Add an accessory (page 135).

See also

Create, modify, and delete accessories (page 7)

Add an assembly

Assemblies are commonly used bid items that can contain multiple pieces with different shapes, labor codes, finishes, and other properties. By adding the assembly to your estimating job, you can add all these pieces at once. We recommend that you add assemblies at the end of the page in an estimating job.

Note that assemblies often begin with a comment line that describes and labels the assembly.

1. Scroll to the end of the page in the **Estimating** dialog box.
2. Click the **Estimating** ribbon tab.
3. In the menu, select **Add Assembly**.

   The **Add Assembly** dialog box opens.
4. In the **Add Assembly** dialog box, type the number of assemblies you want to add in the **Quantity** field.
5. Do one of the following:
   - In the **Assembly** list, select the assembly that you want to add.

     If you have selected the **Show Global Assemblies** check box, the **Assembly** list contains all assemblies that are available in **Assembly Maintenance**.
   - If you want to create a new assembly, click **New** and type a name for the assembly.

     Note that the new assembly will initially only be available in the current estimating job, but that you can later add it to the assembly library. For more information, see View, rename, copy, and delete assemblies (page 40).

     For more information on creating an assembly, see Create an assembly (page 39).
   - If you want to modify an existing assembly, select the assembly in the **Assembly** list, and click **Edit**.

     For more information, see Create an assembly (page 39).
6. If you want to assign a sub-category to the assembly, select the **Set Sub-Category** check box, and select an option in the **Sub-Category** list.

   Assigning a sub-category to the assembly allows you to easily identify and filter assemblies.
7. Click **Add Assembly**.

The **Add Assembly** dialog box closes.

The assembly is added to the end of the page in the **Estimating** dialog box.

Add a parametric assembly

Use the **Add Parametric Assembly** command to add assemblies with variables to an estimating job. These assemblies, called parametric assemblies, may vary in height, width or length, so you can use them in different situations. When you define the variable values, Tekla EPM calculates the parametric assembly according to the defined values.

We recommend that you add assemblies at the end of the page in an estimating job.

Note that parametric assemblies often begin with a comment line that describess and labels the assembly.

1. Scroll to the end of the page in the **Estimating** dialog box.
2. Click the **Estimating** ribbon tab.
3. In the menu, select **Add Parametric Assembly**.

   The **Select Parametric Assembly** dialog box opens, displaying all parametric assemblies.
4. Select the parametric assembly that you want to add.
5. Click **OK**.

   The **Parametric Assembly - Variables** dialog box opens, displaying all variables in the parametric assembly.
6. Select a variable in the list.
7. In the **Value** field, type a value for the variable.
8. Click **Set Value**.

   Repeat steps 6 to 8 for all variables.
9. Click **Calculate Parametric Assembly**.

   Tekla EPM calculates the parametric assembly. When the calculation process is finished, the **Parametric Assembly - Results** dialog box opens.
10. Verify that the calculations are correct.
11. If you want to assign a sub-category to the parametric assembly, click the arrow button on the right side of the **Sub-Category** list and select a sub-category.

    Assigning a sub-category to the assembly allows you to easily identify and filter assemblies.
12. Click **Add Parametric Assembly**.

The parametric assembly is added at the end of the estimating job.

For more information on parametric assemblies, see Create and manage parametric assemblies (page 13).

2.7 Copy and multiply estimating items

Creating an estimate becomes quicker when you use the available commands for copying and multiplying items. By doing so, you can avoid having to enter the same items one by one on different pages, and modifying the quantities of items one by one.

For more information, see the following links:

Copy estimating items (page 140)

Copy a page of estimating items (page 140)

Copy and multiply a group of estimating items (page 141)

Multiply the quantity of the selected estimating items (page 141)

Multiply the quantity of all estimating items in a sub-category (page 142)

Copy estimating items

You can copy estimating items in the **Estimating** dialog box and use them as the basis of a similar item. Then, modify the properties of the new items according to your needs. By copying items, you can save time and avoid entering the same information multiple times in an estimating job.

1. In the **Estimating** dialog box, select the items that you want to copy.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
2. Click **Copy**.

   Copies of the selected items appear at the bottom of the current page.
3. Adjust the properties of the new items according to your needs.
4. Click **Edit** to save the changes.

See also

Copy a page of estimating items (page 140)

Copy and multiply a group of estimating items (page 141)

Copy a page of estimating items

Use the **Copy Page** command to copy all items on a page of the estimating job onto a new page.

1. In the **Estimating** dialog box, select any item on the page that you want to copy.
2. Click the **Estimating** ribbon tab.
3. In the menu, select **Copy Page**.
4. In the **Copy Page** dialog box, type the new page number in the **New Page #** field.
5. Click **Copy**.

Copy and multiply a group of estimating items

Use the **Copy Special** to copy a group of items on a page and multiply their quantity while copying. You can either copy the items on the same page or on another page.

1. In the lower navigation tree of the **Estimating** dialog box, select a page.
2. In the display area, select the items that you want to copy.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
3. Click **Estimating**.
4. In the menu, select **Copy Special**.
5. In the **Qty Multiplier** field, type a number by which all selected items will be multiplied.
6. In the **New Page #** field, type a page name.
7. Click **Copy**.

The items are copied at the end of the selected page, and their quantity is multiplied. To view the items, click the page number in the lower navigation tree.

See also

Copy a page of estimating items (page 140)

Multiply the quantity of the selected estimating items

Use the **Selected Items Multiplier** command to multiply specific items in the estimating job. This is a quick way to you can increase the quantity of multiple estimating items at once.

1. In the **Estimating** dialog box, select the items that you want to multiply.
2. Click the **Estimating** ribbon tab.
3. In the menu, select **Selected Items Multiplier**.
4. In the **Multiplier** field, type the number by which you want to multiply the selected items.
5. Click **Save**.

The quantities of the selected items are multiplied.

See also

Multiply the quantity of all estimating items in a sub-category (page 142)

Multiply the quantity of all estimating items in a sub-category

Use the **Sub-Category Multipliers** command to multiply the quantity of all items that are associated with a specific sub-category in an estimating job.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Sub-Category Multipliers**.

   The **Sub-Category Multipliers** dialog box opens.
3. In the list, select a sub-category.
4. In the **Multiplier** field, type the number by which you want to multiply the quantity of items.
5. Click **Save**.

   The quantity of each item in the sub-category is multiplied.
6. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

Note that the quantity of the items in the **Quantity** field of the **Estimating** dialog box remains the same. The multiplication factor appears on the right side of the **Quantity** field.

See also

Multiply the quantity of the selected estimating items (page 141)

2.8 Modify estimating items

You can either modify the items in estimating jobs one by one, or use the different **Global Edit** commands to modify multiple items at one go.

For more information, see the following links:

Modify a single estimating item (page 143)

Modify multiple estimating items (page 143)

Modify the selected estimating items (page 144)

Modify the shape, grade, dimensions, length, or labor code of estimating items (page 145)

Modify the shape, grade, dimensions, length, or labor code of the selected estimating items (page 145)

Modify a single estimating item

You can modify a single estimating item directly in the **Estimating** dialog box.

1. In the **Estimating** dialog box, select the item that you want to modify.
2. On the right side of the dialog box, modify the item properties.

   For example, change the quantity, adjust the labor time, or add additional labor and clips.
3. Click **Edit** to save the changes.

See also

Modify multiple estimating items (page 143)

Modify the selected estimating items (page 144)

Modify the shape, grade, dimensions, length, or labor code of estimating items (page 145)

Modify the shape, grade, dimensions, length, or labor code of the selected estimating items (page 145)

Modify multiple estimating items

Use the **Global Edit** command to modify the properties of all or multiple estimating items at one go. This way, you can save time, as you do not need to change the properties of each item individually.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. To only modify specific types of items, in the **Estimating Global Edit Filters** dialog box, select a filter type in the **Type** list, and click **Select**.
3. In the **Filter** dialog box, do one of the following depending on the filter type:
   - Click the arrow buttons to move the items that you want to modify to the **Included** list.

- Type the maximum and minimum values for the items that you want to modify.

4. Click **OK**.

   To further limit the item types that you want to modify, repeat steps 2 to 5 for all necessary filter types.

5. Modify any properties in the **Global Edit** dialog box according to your needs.

   For example, you can change the category of the items by selecting an option in the **Category** list, or type a comment for the items.

6. In the **Global Edit** dialog box, select check boxes next to the properties that you want to update.

   You can also use the **Un-check All** and **Check Changed Fields** buttons to quickly clear or select check boxes.

7. Click **Update**.

The changes you made to estimating item properties are updated to the **Estimating** dialog box.

Modify the selected estimating items

Use the **Global Edit Selected** command to modify the properties of multiple selected items in the estimating job. This way, you can save time, as you do not need to change the properties of each item individually.

1. In the **Estimating** dialog box, select the items that you want to modify.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.

2. Click the **Estimating** ribbon tab.
3. In the menu, select **Global Edit** --> **Global Edit Selected** .
4. Modify any properties in the **Global Edit** dialog box according to your needs.

   For example, you can change the category of the items by selecting an option in the **Category** list, or type a comment for the items.

5. In the **Global Edit** dialog box, select check boxes next to the properties that you want to update.

   You can also use the **Un-check All** and **Check Changed Fields** buttons to quickly clear or select check boxes.

6. Click **Update**.

The properties of the selected estimating items are updated to the **Estimating** dialog box.

Modify the shape, grade, dimensions, length, or labor code of estimating items

Use the **Global Edit By Shape** command to modify the shape, grade, dimensions, length, or labor code of all or multiple items in the **Estimating** dialog box.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Global Edit** --> **Global Edit By Shape**
3. In the **Shape** list at the top of the **Estimating Global Edit Filters** dialog box, select the shape.
4. To only modify specific types of items, select a filter type in the **Type** list, and click **Select**.
5. In the **Filter** dialog box, do one of the following depending on the filter type:
   - Click the arrow buttons to move the items that you want to modify to the **Included** list.
   - Type the maximum and minimum values for the items that you want to modify.
6. Click **OK**.

   To further limit the items that you want to modify, repeat steps 4 to 6 for all necessary filter types.
7. Click **OK**.
8. Modify any properties in the **Global Edit** dialog box according to your needs.
9. In the **Global Edit** dialog box, select check boxes next to the properties that you want to update.

   You can also use the **Un-check All** and **Check Changed Fields** buttons to quickly clear or select check boxes.
10. Click **Update**.

Modify the shape, grade, dimensions, length, or labor code of the selected estimating items

Use the **Global Edit Selected By Shape** command to modify the material shape, grade, dimensions, length, or labor code of the selected items in an estimating job.

1. In the **Estimating** dialog box, select the items that you want to modify.

To select multiple items, hold down **Ctrl**.

To select a range of subsequent items, hold down **Shift**.

2. Click the **Estimating** ribbon tab.
3. In the menu, select **Global Edit** --> **Global Edit Selected By Shape** .
4. Modify any properties in the **Global Edit** dialog box according to your needs.
5. In the **Global Edit** dialog box, select check boxes next to the properties that you want to update.

   You can also use the **Un-check All** and **Check Changed Fields** buttons to quickly clear or select check boxes.
6. Click **Update**.

The properties of the selected items are updated to the **Estimating** dialog box.

2.9 Delete an estimating item

You can delete one or multiple unnecessary items from an estimating job. Note that deleting the items is permanent and cannot be undone.

1. In the **Estimating** dialog box, select the item that you want to delete.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
2. Click **Delete** or press **F2** on the keyboard.
3. To permanently delete the items, click **Yes** in the confirmation dialog box.

2.10 Create, modify, and delete production codes

Use production codes to group similar items together within estimating jobs. If necessary, you can then override the man hours of all items that production code. Production codes also allow you to link estimating items to production control job items. This way, the **Production Control** module can use estimate information, such as man hours, and you can view project details and parts easily.

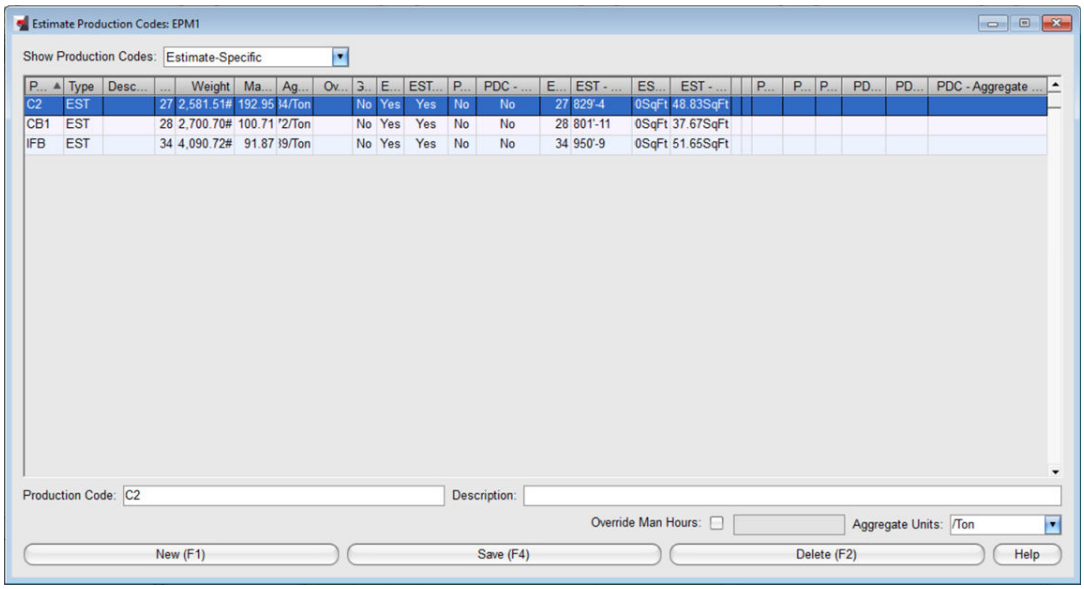
Production codes can be as broad or as specific as you like. For example, you can use one production code for the entire estimating job to add the labor estimates to the production control job. The man hours will then be calculated based on all work that must be done for the entire job. However, you can also

set every piece mark to have its own production code, so that man hours in the estimating job and in the production control job match for each item.

To access the **Production Codes** dialog box, do the following:

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Production Codes**.

The **Production Codes** dialog box opens.



You can filter the production codes that are displayed by selecting an option in the **Show Production Codes** list at the top of the dialog box. The options are:

- **Global**: production codes that can be used in all jobs in both **Production Control** and **Estimating**.
- **Estimate-Specific**: production codes that can only be used within a specific estimating job and the linked production control job. These are the production codes that you can create in the current dialog box.
- **In Use**: production codes that are used.

You can also create a report that lists all production codes used in an estimating job. The report is called **Production Code Summary**. For more information on creating reports, see View, email, export, and print estimating reports (page 155).

According to your needs, see any of the following instructions:

Create a production code

Note that you can only create production codes for the current estimating job in the **Production Codes** dialog box. Globally available production codes are created in **Global Production Code Maintenance**.

1. At the bottom of the dialog box, click **New**.
2. Name the production code and type a description.
3. Do any of the following:

To	Do this
Use the estimated labor times of items within the production code in **Production Control**	The man hours associated with the production codes are only used in **Production Control**. Production codes do not affect or apply labor to estimating items. The purpose of the man hours is to pull labor information from the estimate in the form of man hours per ton and labor percentages by labor group. • In the **Aggregate Units** list, select a calculation option.
Override the estimated labor time of items within the production code in **Production Control**	**NOTE** Manually overriding man hours applies an aggregate unit, man hours per ton, that can be applied to production control items. However, if the manual override is used, the labor information does not include labor group percentages. Therefore, the labor group percentages cannot be applied to any production control stations. Further, the information cannot be applied to tasks in the project schedule and to resources that feed information to the production schedule. Manually overriding man hours can also prevent you from comparing the linked production control job with the estimating job. a. Select the **Override Man Hours** check box. b. Type the labor time in the field on the right side of the check box. **TIP** To change the units, right-click in the field and select a suitable option in the context menu.

4. Click **Add**.

Modify a production code

1. Select the production code that you want to modify.
2. Modify the production code properties according to your needs.
3. Click **Save** to update the production code properties.

Delete a production code

1. Select the production code that you want to delete.
2. Click **Delete**.
3. In the confirmation dialog box, click **Yes** to permanently delete the production code.

Apply a production code

To apply an existing production code to the estimating job:

1. Ensure that you have the **Prod. Code** display and input fields visible in the **Estimating** dialog box.

   If not, do the following:

   a. Go to **Maintenance** --> **Estimating** --> **Edit Display Fields** .

   b. Move the **Production Code** field to the **Included Fields** list.

   c. Click **Save**.

   d. Go to **Maintenance** --> **Estimating** --> **Edit Input Fields** and repeat steps b and c.

   e. Re-open the estimating job.
2. Click the **Estimating** ribbon tab.
3. In the menu, select **Global Edit** --> **Global Edit** .
4. To only apply the production code to specific types of items, in the **Estimating Global Edit Filters** dialog box, select a filter type in the **Type** list, and click **Select**.
5. In the **Filter** dialog box, click the arrow buttons to move the items whose properties you want to modify to the **Included** list.
6. Click **OK** to apply the filter.
7. In the **Estimating Global Edit Filters** dialog box, click **OK**-
8. In the **Global Edit** dialog box, select the check box on the left side of **Prod. Code**.

9. In the **Prod. Code** list, select the production code that you want to use for the selected item types.
10. Click **Update**.
11. To update the production code for the selected items, click **Yes** in the confiramtion dialog box.
12. Repeat steps 2 to 10 to assign a production code for each item in the estimating job.

See also

Create, modify, and delete production codes (page 146)

2.11 View estimating job details

You can view various details regarding an estimating job, including the labor times of each material item and all changes made in the estimating job. You can also create estimating reports that show the details of the job, and view, email, or export the reports.

See also

View the labor times of items (page 150)

View all changes in an estimating job (page 154)

View, email, export, and print estimating reports (page 155)

View the labor times of items

Use the **View Labor Details** command to easily review the labor time of an item or a group of items, as well as the labor time of the entire estimating job. If necessary, you can override the labor time calculated by Tekla EPM and enter the labor time manually instead.

1. In the **Estimating** dialog box, select the items whose labor details you want to view.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
2. Click the **Estimating** ribbon tab.
3. In the menu, select **View Labor Details**.

   The **Labor Details** dialog box opens.

   The labor estimated time used on the selected items, the displayed items, and the total estimating job are viewed in a table, categorized by labor group.

4. If you want to enter labor time manually, do the following:
   a. In the table, select and right-click the labor time that you want to override.
   b. In the context menu, click **Set Manual Override**.
   c. Select if you want to enter the labor time in hours or minutes.
   d. Enter the desired labor time in the **Manual Override** field.
   e. Click **Set Manual Override**.

   The items whose values have changed are highlighted with yellow. Other items affected by the change are highlighted with blue.

   If you want to remove the manual override and revert to the labor time calculated by Tekla EPM, right-click the item and select **Remove Manual Override**.
5. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

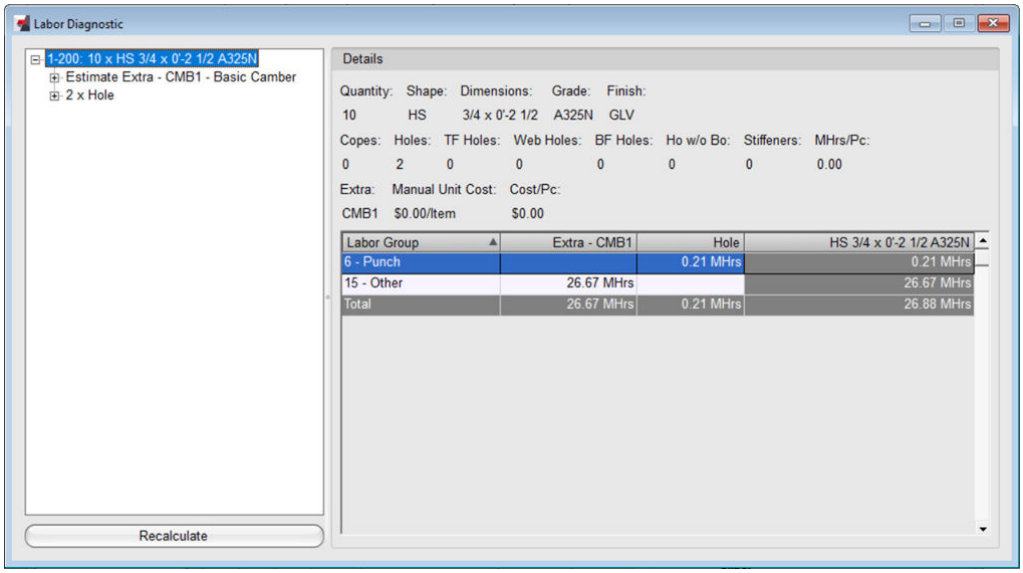
To print, email, or export the information in the **Labor Details** dialog box, create a **Labor Detail** report. For more information on creating reports, see View, email, export, and print estimating reports (page 155).

View and modify the labor time of an item

In the **Labor Diagnostic** dialog box, you can view and modify the labor time of an item. The labor time is divided into categories based on the different labor operations used for the item.

1. In the **Estimating** dialog box, double-click the item whose labor time you want to view.

The **Labor Diagnostic** dialog box opens, displaying all labor time used on the selected item.



In the navigation tree on the left, you can view all labor operations that the selected item goes through. These labor operations are defined by the labor code that is used. Each labor operation has buttons that allow you to access the settings that affect how the labor operation is calculated.

2. In the navigation tree, select a labor operation to view the labor operation details.
3. According to your needs, do any of the following:

To	Do this
Add a labor time manually	a. Right-click the labor time that you want to modify. b. In the context menu, click **Set Manual Override**. c. Select if you want to enter the labor time in hours or minutes. d. Enter the desired labor time in the **Manual Override** field. e. Click **Set Manual Override**. The manual override is created. Note that the override only applies to the selected item, not other items of the same shape, grade and size. If you want to remove the manual override and revert to the labor time calculated by Tekla EPM, right-click

To	Do this
	the item and select **Remove Manual Override**.

View and modify labor codes, labor operations, labor standards, or labor factors	**NOTE** Modifying the following settings will affect all new estimating jobs.
	• Click one of the buttons on the right side of the dialog box:
	  • Click **Labor Codes** to modify labor codes.
	  For more information, see Adjust labor codes (page 48).
	  • Click **Labor Operations** to modify the labor operations.
	  For more information, see Create, modify, and delete labor operations (page 55).
	  • Click **Labor Standards** to view and modify labor times for different material dimensions and shapes.
	  For more information, see Adjust labor standards (page 57).
	  • Click **Labor Factors** to modify the extrapolation factors used for specific labor operations.
	  For more information, see Adjust quantity and weight labor factors (page 63).

4. Click **Recalculate**.

   Tekla EPM applies the changed values.

5. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

6. In the **Estimating** dialog box, click the **Estimating** ribbon tab.

7. In the menu, select **Recalculate Estimate**.

   Tekla EPM recalculates the current estimating job to ensure accurate total values. The changes you made are applied to the estimating job.

View all changes in an estimating job

Tekla EPM records every change made in the system. This is useful because you can view all changes made in the current estimating job at once. You can filter the information to see changes made by a particular user, or on a particular date. You can also print the list of changes.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **List Of Changes**.
3. In the **Report Filter** dialog box, do any of the following according to your needs:

To	Do this
Filter changes by user	a. Click **Edit** on the right side of the **User** section. b. Click the arrow buttons to move the users whose changes you want to view to the **Included** list. c. Click **OK**.
Filter changes by date	a. Click **Edit** on the right side of the **Date** section. b. Enter the start (**Min**) and end (**Max**) dates. c. Click **OK**.

4. Click **Make Report**.
5. In the **Report Progress** dialog box, do one of the following according to your needs:

To	Do this
View the list of changes	• Click **View**. The report opens in **Tekla EPM Report Viewer**. You can use the **Email Excel** and **Email PDF** buttons at the top of the **Tekla EPM Report Viewer** window to email the report via Microsoft Outlook.
Print the list of changes	a. Change the number of the printed copies by clicking the **+** and **-** buttons. b. Click **Print**. c. In the **Select Printer** dialog box, click a printer to select it. d. Click **OK**.

6. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

View, email, export, and print estimating reports (page 155)

View, email, export, and print estimating reports

You can create multiple types of reports based on your estimating jobs. Some examples of available reports are different estimates, fabrication summaries, job summaries, and material pricing reports. Once you have selected which report you want to create, you can view, email, export, or print it, according to your needs.

To create estimating reports, do the following:

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Reports**, or press **Ctrl+R** on the keyboard.
3. To only display certain items in the report, in the **Report Filters** dialog box, select a filter type in the **Type** list, and click **Select**.
4. In the **Filter** dialog box, do one of the following depending on the filter type:
   - Click the arrow buttons to move the items that you want to include in the reports to the **Included** list.
   - Type the maximum and minimum values for the items that you want to include in the reports.
5. Click **OK**.

   Repeat steps 3 to 5 for every filter type that you want to use.
6. In the **Use Pricing Data From** list, select which pricing information you want to use.
7. Click **Make Report**.

   The **Report Selection** dialog box opens.

   Note the purpose of the following buttons:
   - If you want to include your company logo in the report, select the **Show Company Logo** check box.
   - If you want to modify the filters you set for the reports, click **Change Filters**.
   - If you want to modify the design of a report, select it and click **Design**.
   - If you want to create a customized report list, click **Edit Report Types**.

   According to your needs, see any of the following instructions:

View or email estimating reports

1. Select the report that you want to view.

   To select more than one report at a time, hold down the **Ctrl** key while clicking reports in the list.
2. Click **View**.
3. In the **Tekla EPM Report Viewer** window, view the report.
4. If you want to send the report attached to a Microsoft Outlook email, click either **Email Excel** or **Email PDF** at the top of the window.

   Microsoft Outlook automatically opens and creates a new email. You can then modify the message, add the recipient, and send the email.
5. Once you have viewed all necessary report details, click **Close** in the upper-right corner of the **Tekla EPM Report Viewer**.

Print estimating reports

1. Select the report that you want to print.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
2. Click the **+** and **-** buttons to increase or decrease the number of copies.
3. Click **Print**.
4. In the **Select Printer** dialog box, click a printer to select it.
5. Click **OK**.

Tekla EPM prints the report.

Export estimating reports

1. Select the report that you want to export.

   To select more than one report at a time, hold down the **Ctrl** key while clicking reports in the list.
2. Click **Export**.
3. In the **Export Format** list, select an export format.
4. Click **Browse**.
5. Modify the file name according to your needs.
6. Browse to the location where you want to save the exported file, and click **Save**.
7. If you want to attach the exported file to a Microsoft Outlook email and send it to a recipient, select the **Attach to Email** check box.

8. If you want to open the file after exporting it, select the **Open Exported Document** check box.
9. Click **Export**.

Tekla EPM saves the report to the selected location in the selected file format.

2.12 Calculate the estimating job

Use the **Calculate Material Cost** command to view the total material cost of the displayed or selected estimating items, or use the **Recalculate Estimate** command to update the estimating job value after making changes to the labor or material databases.

See also

Calculate the estimating job (page 157)

Recalculate an estimate (page 157)

Calculate the total material cost

To view the current total material cost of the displayed or selected items, use the **Calculate Material Cost** command. Note that the total material cost does not contain costs that have been applied to items by adding estimate extras.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Calculate Material Cost**.

   The **Material Cost** dialog box opens and displays the total material cost of selected, displayed, and all items in the estimating job.
3. View the material costs.
4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

Recalculate an estimate

By recalculating the entire estimating job, you can ensure accurate total value even after making multiple changes to the labor and material databases.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Recalculate Estimate**.
3. To recalculate the estimate, click **Yes** in the confirmation dialog box.

2.13 Import and export files to and from the Estimating module

Use the import commands to import useful files to the **Estimating** module. The compatible file types contain IFC files, CIS2 files, KISS files, Bluebeam files, and Microsoft Excel worksheets. You can also export an estimating job to the KISS format to save a copy of it before making any changes due to pricing changes or revisions.

See also

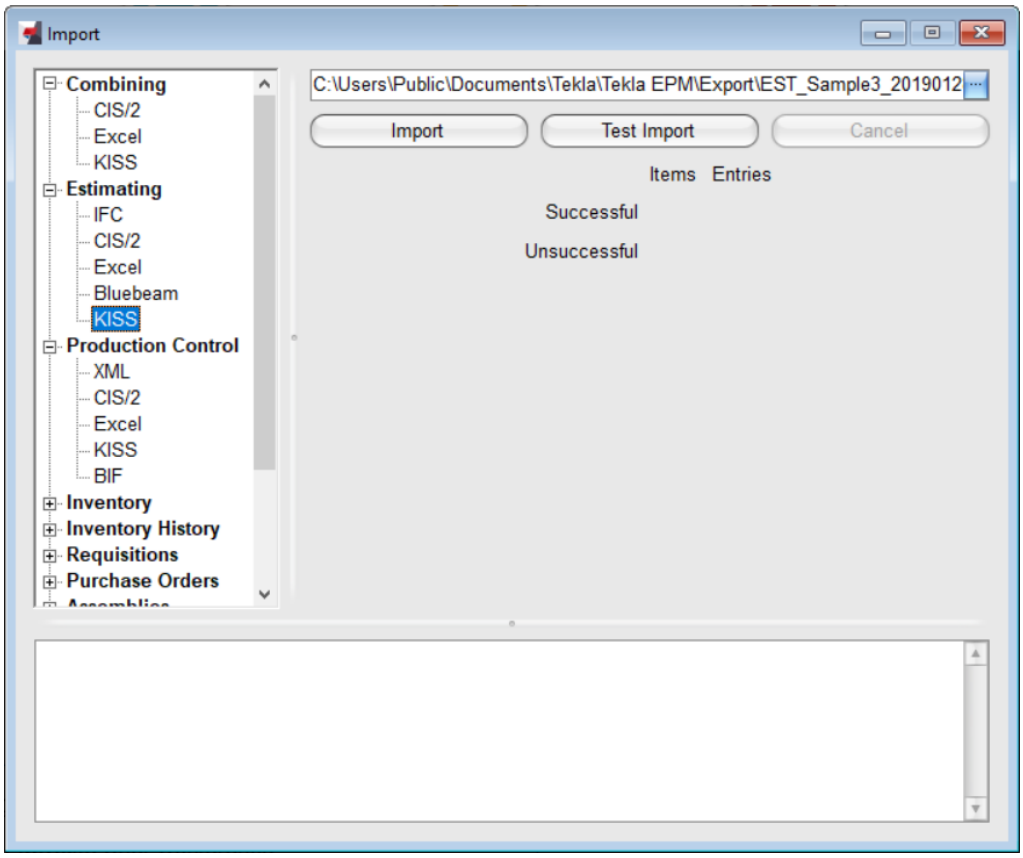
Import files to the Estimating module (page 158)

Export an estimating job to KISS (page 159)

Import files to the Estimating module

You can import several file types into the **Estimating** module. You can import IFC files, CIS2 files, KISS files, Bluebeam files, and Microsoft Excel worksheets.

1. Click the **File** ribbon tab in the upper-left corner of the Tekla EPM window.
2. In the **File** menu, select **Import**.
3. In the navigation tree of the **Import** dialog box, click the desired import option under **Estimating**.



4. To select the file that you want to import, click the **...** button in the upper-right corner of the dialog box.
5. Browse to find the file, and click **Open**.

   Note that you can click the **Test Import** button to test importing a KISS file before actually importing it. This way, you can ensure that all information will be imported successfully.
6. Click **Import**.

   What happens next depends on the type of file that you are importing. For example, when you are importing an Microsoft Excel worksheet, the **Import Field Map** dialog box asks you to connect the Microsoft Excel columns with the Tekla EPM standard fields.

   Note that you should only save your field mapping selections if you are absolutely sure that you will continue to use the same mapping. This is because the **Import Field Map** dialog box may not open in the future when you import new files that match the previously saved mapping.

   After you have done so, the import continues.

   Once the import is completed, a message appears at the bottom of the **Import** dialog box.
7. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

See also

Export an estimating job to KISS (page 159)

Export an estimating job to KISS

Exporting an estimating job to KISS allows you to archive a copy of the estimating job.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Export to KISS**.
3. In the **Save As** dialog box, browse to the folder where you want to save the file.

   By default, Tekla EPM saves the file to the **Export** folder.
4. If necessary, modify the file name.
5. Click **Save**.

A copy of the file is saved in the KISS format.

See also

Import files to the Estimating module (page 158)

2.14 Use Trimble Connect with an estimating job

You can view the estimating job information in an IFC model using Trimble Connect. You can interact with the model in several ways. For example, you can color-code items in the IFC model, or select the same items simultaneously in the IFC model and in the estimating job.

We recommend that you start the estimating job by importing an IFC file from Tekla Structures. The IFC file includes GUIDs, unique identifiers that match the identifiers in the IFC model. The necessary IFC settings for Tekla Structures can be downloaded from Tekla Warehouse.

Before you can view the job information in Trimble Connect, your Tekla EPM administrator needs to set up the Trimble Connect integration settings. For more information, see .

See also

Link an estimating job to Trimble Connect (page 160)

Color-code estimating items in the IFC model (page 162)

Select the same items in the estimating job and in the IFC model (page 163)

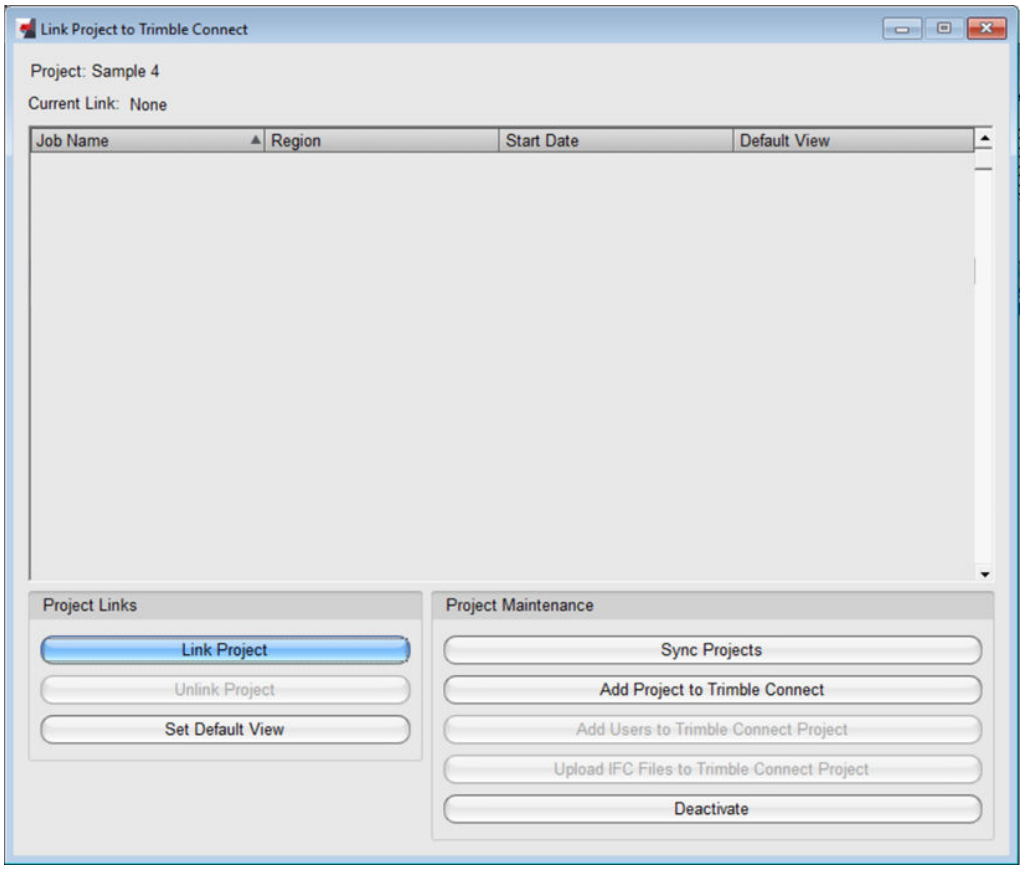
Link an estimating job to Trimble Connect

Before you can view the estimating job information in Trimble Connect for Desktop, you need to link the job to a Trimble Connect project. You can either link the job to an existing project or create a new project.

Note that if an estimating job is linked to a project management job, the Trimble Connect project is managed through the project management job. In this case, you need to link the project management job to Trimble Connect. The link is then applied to any linked estimating jobs. The Trimble Connect project cannot be modified when you access it through the estimating job.

1. In the **Estimating** dialog box, right-click anywhere in the display area.
2. In the context menu, click **Model Interface**.

   A message appears, telling you that the current job is not linked to a Trimble Connect project.
3. Click **OK** to close the message.



4. In the **Link Project to Trimble Connect** dialog box, do one of the following:

To	Do this
Link the job to an existing Trimble Connect project	a. To display the available Trimble Connect projects, click **Sync Projects**. b. Select the desired project, and click **Link Project**.
Create a new Trimble Connect project and link the job to it	a. Click **Add Project to Trimble Connect**. b. In the **Add Users to Project** dialog box, click the arrow buttons to move the users that participate in the project to the **Included** list. c. Click **OK**. Tekla EPM creates a Trimble Connect project with the same name and information as the current job. d. In the **Status** dialog box, review the creation process of the Trimble Connect project. A message appears, telling you that the project has been created successfully.

To	Do this
	e. Click **OK** to close the message. f. In Trimble Connect for Desktop, press the **Back** button to exit the empty 3D view. g. In the **Explorer** side pane on the left, click the **Add File** button. h. In the **Add Files** dialog box, browse to find the IFC model. i. Select the IFC model and click **Open**. The IFC model is imported to Trimble Connect for Desktop.

The estimating job and the Trimble Connect project are now linked.

Color-code estimating items in the IFC model

To color-code items in the IFC model according to their properties, use the **Colorize** command in the **Model Viewer Interface** dialog box. For example, you can color-code items according to their category or finish. You can also set filters to only color-code particular items in the model. By using a filter, for example, you could first filter the items by their category, and then color-code the items in that category by their finish.

1. In the **Estimating** dialog box, right-click anywhere in the display area.
2. In the context menu, click **Model Interface**.
3. If necessary, in the **Model Viewer Interface** dialog box, filter the items that you want to color-code:
   a. Click **Set Filters**.
   b. In the **Filters** dialog box, select a filter type in the **Type** list, and click **Select**.
   c. In the **Filter** dialog box, do one of the following depending on the filter type:
      - Click the arrow buttons to move the items that you want to display in the model to the **Included** list.
      - Type the maximum and minimum values for the items that you want to display in the model.
   d. Click **OK**.

      Repeat steps b to d for all filter types that you want to set.
   e. Click **Apply Filter**.

4. Click the arrow on the right side of the **Colorize By** list and select a property in the list.
5. Click **Colorize**.

The items in the IFC model are color-coded according to the selected property.

To revert to the original colors in the IFC model, click **Reset** in the **Model Viewer Interface** dialog box.

See also

Select the same items in the estimating job and in the IFC model (page 163)

Select the same items in the estimating job and in the IFC model

When you have linked an estimating control job to Trimble Connect, you can select an item that is selected in one of the software simultaneously in the other one. Do the following:

1. In the **Estimating** dialog box, right-click anywhere in the display area.
2. In the context menu, do one of the following:
   - To select the item that is selected in the estimating job also in the IFC model, select **Select in Model**.
   - To select the item that is selected in the IFC model also in the estimating job, select **Select from Model**.

See also

Color-code estimating items in the IFC model (page 162)

2.15 Combine materials in the Estimating module

Use the **Combine** command to mult and nest materials in the **Estimating** dialog box. You can then save and review the combining results.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Combine**.

   The **Select Combining Run** dialog box opens. When you are performing the first combining run for a combining job, the list in the dialog box is empty.
3. Click a desired combining option to select it.

   The options are:

   - **Mult**: combines linear items, like beams and angles.

- **Nest**: combines items that have area, like plates or gratings.
- **Mult & Nest**: combines all items.

The **Combining Run Filters** dialog box opens.

NOTE Filtering items is optional, so you can skip steps 4 to 7 if you do not want to filter out items from the combining run.

---

4. To only combine specific types of materials, select a filter type in the **Type** list, and click **Select**.
5. In the **Filter** dialog box, do one of the following depending on the filter type:
   - Click the arrow buttons to move the items that you want to combine to the **Included** list.
   - Type the maximum and minimum values for the items that you want to combine.
6. Click **OK**.
7. To ensure that you are using the correct settings, click the **Optimizations**, **INV Filter**, and **Suppliers** buttons.

   If necessary, you can modify the settings.
8. To combine the materials, click the button at the bottom of the **Combining Run Filters** dialog box, or press **F4**.

- Piece mark items included with the selected stock lengths are displayed at the lower-left section of the dialog box.
- Combining results are shown in both the display area and in the summary grid at the lower-right section of the dialog box.
- The material cost represents the pricing of the materials in the pricing database that was used in the combining run.

To save the combining run for comparing it with another one, you can click **Save Combining Run** at the bottom of the **Combining Run Results** dialog box.

See also

Rename a combining run (page 165)

Compare combining runs (page 172)

View combining run filter settings (page 165)

Modify run-specific pricing information (page 165)

Recombine all items (page 169)

Recombine items of a shape (page 170)

Recombine items of a material grade (page 171)

Recombine a material dimension (page 171)

Update combining information and recombine all items (page 172)

Rename a combining run

When you save a combining run, Tekla EPM automatically uses the date/time stamp as the combining run name. You can also rename the combining run. Renaming the combining run makes it easier to identify a specific combining run when you want to compare combining runs.

1. In the **Combining Run Results** dialog box, click the **Run Description** button.
2. In the **Enter Value** dialog box, type a new name for the combining run.
3. Click **OK**.

The name is updated. You can see the combining run name in the **Run Description** button at the bottom of the **Combining Run Results** dialog box.

View combining run filter settings

You can view which filter settings are used in the current combining run. Note that you cannot modify the filter settings of the combining run.

1. In the **Combining Run Results** dialog box, click the **Combining Run** ribbon tab.
2. In the menu, select **View Filters**.
3. In the **Combining Run Filters** dialog box, do one or more of the following:
   - To view the optimization settings used for the combining run, click **Optimizations**.
   - To view the combining run inventory filter setting used for the combining run, click **INV Filter**.
   - To view the supplier settings used for the combining run, click **Suppliers**.
4. When you have viewed the settings, click the **Close** button (**X**) in the upper-right corner of the dialog box.

   The **Combining Run Filters** dialog box closes.

Modify run-specific pricing information

After performing the first combining run, you can modify length options that are only used in that specific combining job. For example, L 3 x 3 x ¼ materials have 40'0 and 20'0 lengths. If you only want to combine the 20'0 lengths, you

need to delete the 40'0 lengths from **Run-Specific Pricing Maintenance**. Any changes that you make will override the values in the global pricing database, but only for the current combining run.

You can also modify a group of items in the combining run at one go. For more information, see Modify a group of items in run-specific pricing maintenance (page 168).

1. In the **Combining Run Results** dialog box, click the **Combining Run** ribbon tab.
2. In the menu, select **Run-Specific Pricing Maintenance**.
3. In the **Pricing Maintenance** dialog box, do any of the following according to your needs:

To	Do this
Add material shapes, grades and dimensions	a. At the bottom of the dialog box, click **Add**. b. In the **Shape** list, select the shape. c. Click the **Dimensions** field and select the dimensions that you want to add. d. In the **Grade** list, select the grades that you want to add. e. Click **Save**. The shape, its dimensions, and grades are added to the navigation tree.
Modify existing material shapes, grades, and dimensions	a. In the navigation tree, click the material dimension that you want to modify. b. At the lower-left corner of the dialog box, click **Edit**. c. In the **Shape** list, select the shape. d. Click the **Dimensions** field, and select the new dimensions in the dialog box that appears. e. In the **Grade** list, select the new grades. f. Click **Save**. The shape, its dimensions, and grades are updated to the navigation tree.
Add lengths or sizes	a. In the navigation tree, click the material dimension for which you want to add lengths. b. Click **New** under the **Normal Price** field. c. Type the length and price. d. Click **Add**. The length is added to the list of lengths.

To	Do this
Modify or delete lengths	a. In the navigation tree, click the material dimension that you want to modify or delete. b. In the list of lengths, select a length. c. Do one of the following: • To modify the length, type a new length and price, and click **Edit**. • To permanently delete the length, click **Delete**, and in the confirmation dialog box, click **Yes**.
Change the pricing of a length	a. In the navigation tree, select the material dimension whose pricing you want too change. b. In the list on the right side of the dialog box, select a length. c. Do any of the following: • To modify the special price, type a new value in the **Special Price** field, and click **Save**. • To modify the normal price, type a new value in the **Normal Price** field, and click **Edit**. You can also adjust the quantity and lengths of the material. To change the quantity to unlimited, type an asterisk (*) in the **Quantity** field. Click **Edit** to save the changes. The pricing of the length is updated.
Delete unnecessary material dimensions	a. In the navigation tree, select the material dimension that you want to delete. b. At the bottom of the dialog box, click **Delete**. c. In the confirmation dialog box, click **Yes** to confirm deleting the dimension.

4. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

The changes are saved for the current combining run. Now, you need to recombine the materials to update the combining results.

See also

Recombine all items (page 169)

Recombine items of a shape (page 170)

Recombine items of a material grade (page 171)

Recombine a material dimension (page 171)

Update combining information and recombine all items (page 172)

Modify a group of items in run-specific pricing maintenance

You can modify the properties of a group of items while you are in the **Pricing Maintenance** dialog box. For example, you can only make certain lengths available for combining by using the **Set Lengths** option. Any changes that you make will override the values in the global pricing database, but only for the current combining run.

For information on how to access the **Pricing Maintenance** dialog box, see Modify run-specific pricing information (page 165).

1. In the **Pricing Maintenance** dialog box, click the **Pricing** ribbon tab.
2. In the menu, select **Global Edit**.
3. In the **Shape** list at the top of the **Pricing Global Edit** dialog box, select the shape whose grades and dimensions you want to modify.

   The grades and dimensions of the shape appear in the dialog box.
4. In the **Grades** section, click the arrow buttons to move the grades that you want to modify to the **Included** list.
5. In the **Dimensions** section, click the arrow buttons to move the dimensions that you want to modify to the **Included** list.
6. In the lower-right corner, select an option.

   The options are:

   - **Increase By Percentage**: Increases the prices of the selected items by a specific percentage.
   - **Decrease By Percentage**: Decreases the prices of the selected items by a specific percentage.
   - **Increase By Amount**: Increases the prices of the selected items by a certain sum.
   - **Decrease By Amount**: Decreases the prices of the selected items by a certain sum.
   - **Set Amount**: Sets the prices of the selected items to a specific sum.
   - **Set Quantity**: Allows Tekla EPM to only use a specific number of the selected lengths.
   - **Set Lengths**: Allows you to add lengths for the selected items either one by one or as a range.

- **Set Lengths (No Price)**: Allows you to add lengths for the selected items either one by one or as a range. No pricing information is added.

New fields appear at the bottom of the dialog box.

7. Modify the values in the fields according to your needs.
8. Click **Save**.
9. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

The changes are saved for all selected material grades and dimensions. Now, you need to recombine the materials

Example: Change combining lengths of angles

In this example, we will modify all angles so that the only available length for combining is 20 inches.

1. In the **Shape** list at the top of the **Pricing Global Edit** dialog box, select **L**.
2. Click the double arrow buttons to move all grades and dimensions to the **Included** list.
3. Select the **Set Lengths** option button.
4. Click **New**.
5. Leave the **Quantity** field blank to allow Tekla EPM to use an unlimited quantity of the length.
6. **Length** field, enter `20'0"`.
7. In the **Normal Price** field, enter a price.

   For example, set the price to `$25,50/CWT`.
8. Click **Add**.
9. Click **Save**

Now, the only angle length available in recombining is 20'0".

See also

Recombine all items (page 169)

Recombine items of a shape (page 170)

Recombine items of a material grade (page 171)

Recombine a material dimension (page 171)

Update combining information and recombine all items (page 172)

Recombine all items

If the combining results need to be changed to fit specific material applications, such as different material lengths or plate sizes, you need to recombine items. The **Recombine All** command recombines all items in the previous combining run.

1. In the **Combining Run Results** dialog box, click the **Combining Run** ribbon tab.
2. In the menu, select **Recombine All**.
3. In the first confirmation dialog box, click **Yes** to recombine all items.
4. In the second confirmation dialog box, click **Yes** to save the previous combining run or **No** to recombine materials without saving the combining run.

   By saving the previous combining run, you can compare the differences between the previous combining run and the new one.

Tekla EPM performs the combining run and reloads the information that you selected. The materials recombine to the lengths changed in **Run-Specific Pricing Maintenance**.

Recombine items of a shape

To recombine materials after adding new items, use the **Recombine Shape** command in the **Combining Run Results** dialog box.

1. In the **Combined** navigation tree, click the **+** sign to show available material shapes.
2. Click the material shape to which you have added items.

   Only the items of the selected shape are shown.
3. Click the items that you want to recombine to select them.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
4. Click the **Combining Run** ribbon tab.
5. In the menu, select **Recombine Shape**.
6. In the first confirmation dialog box, click **Yes** to recombine the selected shape.
7. In the second confirmation dialog box, click **Yes** to save the previous combining run or **No** to recombine materials without saving the combining run.

   By saving the previous combining run, you can compare the differences between the previous combining run and the new one.

Tekla EPM recombines the selected items.

Recombine items of a material grade

To recombine materials after changes have been made to material grades, use the **Recombine Grade** command in the **Combining Run Results** dialog box.

1. In the **Combined** navigation tree, click the **+** sign under a material shape to show available material grades.
2. Click a material grade to select it.

   Only the selected material grade is shown.
3. Click the items that you want to recombine to select them.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
4. Click the **Combining Run** ribbon tab.
5. In the menu, select **Recombine Grade**.
6. In the first confirmation dialog box, click **Yes** to recombine the selected grade.
7. In the second confirmation dialog box, click **Yes** to save the previous combining run or **No** to recombine materials without saving the combining run.

   By saving the previous combining run, you can compare the differences between the previous combining run and the new one.

Tekla EPM recombines the selected items.

Recombine a material dimension

When changes have been made to a material dimension in the combining material list, use the **Recombine Size** command to recombine the dimension. Note that you need to have the **Combining Run Results** dialog box open.

1. In the **Combined** navigation tree, click the **+** sign, and select a material dimension.

   Only the selected material dimension is shown.
2. Click the **Combining Run** ribbon tab.
3. In the menu, select **Recombine Size**.

   A confirmation dialog box appears, asking if you want to recombine the selected dimension.
4. In the first confirmation dialog box, click **Yes** to recombine the selected dimension.

5. In the second confirmation dialog box, click **Yes** to save the previous combining run or **No** to recombine materials without saving the combining run.

   By saving the previous combining run, you can compare the differences between the previous combining run and the new one.

Tekla EPM recombines the selected material dimension.

Update combining information and recombine all items

When new materials have been added, or material pricing has changed, use the **Reload Information & Recombine All** command. Tekla EPM will then update the material and pricing information and perform a new combining run.

Note that all run-specific information will be lost if you use the **Reload Information & Recombine All** command.

1. In the **Combining Run Results** dialog box, click the **Combining Run** ribbon tab.
2. In the menu, select **Reload Information & Recombine All**.

   A confirmation dialog box appears, asking if you want to recombine all items.
3. In the first confirmation dialog box, click **Yes** to confirm recombining all items.
4. In the second confirmation dialog box, click **Yes** to save the previous combining run or **No** to recombine materials without saving the combining run.

   By saving the previous combining run, you can compare the differences between the previous combining run and the new one.
5. In the third confirmation dialog box, click **Yes** to reload and update the items to be recombined, or **No** to not reload and update the items.
6. In the fourth confirmation dialog box, click **Yes** to reload and update the pricing information, or **No** to keep the current pricing information.

Tekla EPM performs the combining run and reloads the information that you selected.

Compare combining runs

You can view and compare the changes that were made from one combining run to another. This is useful for comparing drops for the use of different stock lengths or pricing differences between two vendors.

Note that you must have saved a previous combining run to compare it with the current combining run.

1. In the **Combining Run Results** dialog box, click the **Combining Run** ribbon tab.
2. In the menu, select **Compare With a Previously Saved Run**.
3. In the **Select Combining Run** dialog box, click a previously saved combining run in the list to select it.
4. Click **Compare**.

   The **Combining Run Compare** dialog box opens, displaying the information of both combining runs. Any differences are marked with an asterisk (*).
5. In the navigation tree in the left-hand pane, click a material size to select it.
6. View the differences for the size in the different combining runs.
7. To close the comparison view, click the **Close** button (**X**) in the upper-right corner of the **Combining Run Compare** dialog box.

2.16 Load estimating materials to other modules

You can load the material items in an estimate to another estimate, a requisition or a purchase order, or a production control job.

See also

Load materials into another estimate (page 177)

Load estimating materials into purchasing (page 173)

Load materials into Production Control (page 179)

Load estimating materials into purchasing

You can load material items in an estimating job into a purchase order or a requisition. Either send material items into a purchase order in order to purchase the items, or send material items to a requisition in order to get

pricing information from suppliers and apply the received pricing to the estimating items.

You can either load all estimating items into a requisition or a purchase order, or select the items that you want to load to purchasing.

Load all estimating items into a requisition

Use the **Load Material Into Requisition** command to load all material in an estimating job into a requisition. This way, you can get pricing information from a supplier and apply it to the estimate-specific pricing. You can either add the items into an existing requisition or create a new one.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Purchasing** --> **Load Material Into Requisition** .
3. In the **Select Purchase Order** dialog box, select a purchase order and click **OK**.

   If necessary, you can also create a new purchase order and load the items into it.
4. In the **Purchasing Import Filters**, do one of the following:

To	Do this
Load all items	• Click **Import**.
Filter out items that you do not want to load	a. On the left side of the dialog box, select a filter type in the **Type** list, and click **Select**. b. Click **Select**. c. Click the arrow buttons to move the items that you want to load to the requisition to the **Included** list. The items on the **Not Included** side will not be sent to purchasing. d. Repeat the process for different filter types until you have filtered out all unnecessary items. e. Click **Import**.

5. Click **OK** to close the **Import Items** dialog box. the **Estimating** dialog box.

Items are sent to the selected requisition. To view and use the requisition, open the **Purchasing** module and go to the **Requisitions** tab.

See also

Load all estimating items into a purchase order (page 174)

Load the selected estimating items into a requisition (page 175)

Load all estimating items into a purchase order

Use the **Load Material Into Purchase Order** command to load all estimating material items into a purchase order. You can either add the items into an existing purchase order or create a new one.

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Purchasing** --> **Load Material Into Purchase Order** .
3. In the **Select Purchase Order** dialog box, select a purchase order and click **OK**.

   If necessary, you can also create a new purchase order and load the items into it.
4. In the **Purchasing Import Filters**, do one of the following:

To	Do this
Load all items	• Click **Import**.
Filter out items that you do not want to load	a. On the left side of the dialog box, select a filter type in the **Type** list, and click **Select**. b. Click **Select**. c. Click the arrow buttons to move the items that you want to load to the requisition to the **Included** list. The items on the **Not Included** side will not be sent to purchasing. d. Repeat the process for different filter types until you have filtered out all unnecessary items. e. Click **Import**.

5. Click **OK** to close the **Import Items** dialog box. the **Estimating** dialog box.

Items are loaded into the selected purchase order. To view and use the purchase order, go to the **Purchasing** module and open the **Purchase Orders** tab.

See also

Load all estimating items into a requisition (page 174)

Load the selected estimating items into a requisition

Use the **Load Selected Material Into Requisition** command to select the items in an estimating job that are loaded into a requisition. This way, you can get pricing information from a supplier and apply it to the estimate-specific pricing. You can either add the items into an existing purchase order or create a new requisition.

1. In the **Estimating** dialog box, select the items that you want to load.

To select multiple items, hold down **Ctrl**.

To select a range of subsequent items, hold down **Shift**.

2. Click the **Estimating** ribbon tab.
3. In the menu, select **Purchasing** --> **Load Selected Material Into Requisition** .
4. In the **Select Requisition** dialog box, select a requisition and click **OK**.

   If necessary, you can also create a new requisition and load the items into it.
5. Click **OK** to close the **Import Items** dialog box. the **Estimating** dialog box.

Items are sent to the selected requisition. To view and use the requisition, open the **Purchasing** module and go to the **Requisitions** tab.

See also

Load all estimating items into a requisition (page 174)

Load the selected estimating items into a purchase order (page 176)

Load the selected estimating items into a purchase order

Use the **Load Selected Material Into Purchase Order** command to select the items in an estimating job that are loaded into a purchase order. You can either add the items into an existing purchase order or create a new one.

1. In the **Estimating** dialog box, select the items that you want to load.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
2. Click the **Estimating** ribbon tab.
3. In the menu, select **Purchasing** --> **Load Selected Material Into Purchase Order** .
4. In the **Select Purchase Order** dialog box, select a purchase order and click **OK**.

   If necessary, you can also create a new purchase order and load the items into it.
5. Click **OK** to close the **Import Items** dialog box. the **Estimating** dialog box.

Items are loaded into the selected purchase order. To view and use the purchase order, go to the **Purchasing** module and open the **Purchase Orders** tab.

See also

Load all estimating items into a purchase order (page 174)

Load the selected estimating items into a requisition (page 175)

Load materials into another estimate

Use the **Load Material Into Estimate** and **Load Selected Material Into Estimate** commands to copy material from an estimating job to either another existing estimating job or to a new one. These commands are particularly useful when more than one person is working on a bid, or when you are making pricing breakouts on adds or deducts. You can load all items into another estimating job or select the items that you want to load manually.

NOTE To create pricing for the added material, you need to delete the copied items manually from the original location. Tekla EPM does not automatically remove items from any estimate.

Load all items into an estimate

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Load Material** --> **Load Material Into Estimate** .
3. In the **Select Estimating Job** dialog box, do either of the following:

To	Do this
Load the material into an existing estimating job	• Select the estimating job to which you want to load the material.
Load the material into a new estimating job	a. Click **Add**. b. In the **Estimating Job Edit** dialog box, type a job number. c. Define any other necessary properties for the new estimating job. Note that you can also change the estimating job properties later. d. Click **Save**. e. Select the new estimating job in the **Select Estimating Job** dialog box.

4. In the **New Page #** field, type the page where you want to copy the material.
5. Click **OK**.
6. To only load specific types of items, in the **Estimating Import Filters** dialog box, select a filter type in the **Type** list, and click **Select**.
7. In the **Filter** dialog box, do one of the following depending on the filter type:

- Click the arrow buttons to move the items that you want to load to the **Included** list..
- Type the maximum and minimum values for items that you want to load.

8. Click **OK**.

   To further limit the items to be loaded, repeat steps 6 to 9 for the necessary filter types.

9. Click **Import**.

Tekla EPM loads the material into the selected estimating job. After the process is finished, click **OK** to close the **Import Items** dialog box.

Load selected items into an estimate

1. In the **Estimating** dialog box, select the items that you want to load to another estimate.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.

2. Click the **Estimating** ribbon tab.
3. In the menu, select **Load Material** --> **Load Selected Material Into Estimate** .
4. In the **Select Estimating Job** dialog box, do either of the following:

To	Do this
Load the material into an existing estimating job	• Select the estimating job to which you want to load the material.
Load the material into a new estimating job	a. Click **Add**. The **Estimating Job Edit** dialog box opens. b. Type a job number. c. Enter any other necessary properties for the new estimating job. Note that you can also change the estimating job properties later. d. Click **Save**. e. Select the new estimating job in the **Select Estimating Job** dialog box.

5. In the **New Page #** field, enter the page where you want to copy the material.

6. Click **OK**.

Tekla EPM loads the material into the selected estimating job. After the process is finished, click **OK** to close the **Import Items** dialog box.

Load materials into Production Control

Use the **Load Material Into Production Control** and **Load Selected Material Into Production Control** commands to send items from the currently open estimating job to a new or existing production control job.

Load all items into a production control job

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Load Material Into Production Control**.
3. In the **Select Production Control Job** dialog box, do one of the following:

To	Do this
Load the items to an existing production control job	• Select the production control job in the list.
Load the items to a new production control job	a. Click **Add**. b. In the **Production Control Job Edit** dialog box, type a job number. c. Modify the other properties of the production control job according to your needs. Note that you can also modify the properties later. d. Click **Save**. e. To create the production control job, click **Yes** in the confirmation dialog box. The **Production Control Job Edit** dialog box closes. f. Select the new production control job in the list.

4. If you want to use the item number as the piece mark in the production control job, select the **Use Item # as Piece Mark** check box at the bottom of the dialog box.
5. Click **OK**.

   The **Estimating Import Filters** dialog box opens.

6. To only load specific types of items, in the **Estimating Import Filters** dialog box, select a filter type in the **Type** list, and click **Select**.
7. In the **Filter** dialog box, do one of the following depending on the filter type:
   - Click the arrow buttons to move the items that you want to load to the **Included** list..
   - Type the maximum and minimum values for items that you want to load.
8. Click **OK**.

   To further limit the items to be loaded, repeat steps 6 to 9 for the necessary filter types.
9. Click **Import**.

The material is loaded into the selected production control job. After the process is finished, click **OK** to close the **Import Items** dialog box.

Load selected items into a production control job

1. In the **Estimating** dialog box, elect the items that you want to load to a production control job.

   To select multiple items, hold down **Ctrl**.

   To select a range of subsequent items, hold down **Shift**.
2. Click the **Estimating** ribbon tab.
3. In the menu, select **Load Selected Material Into Production Control**.
4. In the **Select Production Control Job** dialog box, do one of the following:

To	Do this
Load the items to an existing production control job	• Select the production job in the list.
Load the items to a new production control job	a. Click **Add**. b. In the **Production Control Job Edit** dialog box, type a job number. c. Modify the other properties of the production control job according to your needs. Note that you can also modify the properties later. d. Click **Save**. e. To create the production control job, click **Yes** in the confirmation dialog box.

To	Do this
	f. Select the production job in the list.

5. If you want to use the item number as the piece mark in the production control job, select the **Use Item # as Piece Mark** check box at the bottom of the dialog box.
6. Click **OK**.

The material is loaded into the selected production control job. After the process is finished, click **OK** to close the **Import Items** dialog box.

2.17 Create a proposal

Once you are happy with the estimate, you can create a proposal out of it. Proposals are estimating bid letters whose setups you can modify according to your needs. You can then save the proposals on your computer as Microsoft Word documents, and print or send them to your client. After creating the first proposal, you can also create revisions according to your client's needs.

The standard proposal setup is set in the **Proposal Setups** dialog box that you can access via **Maintenance** --> **Estimating** --> **Proposal Setups** .

1. In the **Estimating** dialog box, click the **Estimating** ribbon tab.
2. In the menu, select **Proposal**.

   The **Estimating Proposals** dialog box opens. Here, you can create new proposals, modify existing proposals, or delete unnecessary proposals.
3. To create a new proposal, click **New**.
4. Type a revision number and title for the proposal.

   NOTE Steps 5 to 10 only apply when you are creating a first proposal based on the estimating. When you create revisions, you can skip these steps.

5. In the available lists, select the date of the proposal, and the company and recipient of the proposal.

   You can only select companies and recipients that have already been added to the **Address Book**.
6. Click **Add**.

   The **Select Sections** dialog box opens.
7. click the arrow buttons to move the sections that you want to include in the proposal to the **Included** list.

8. Click **OK**.

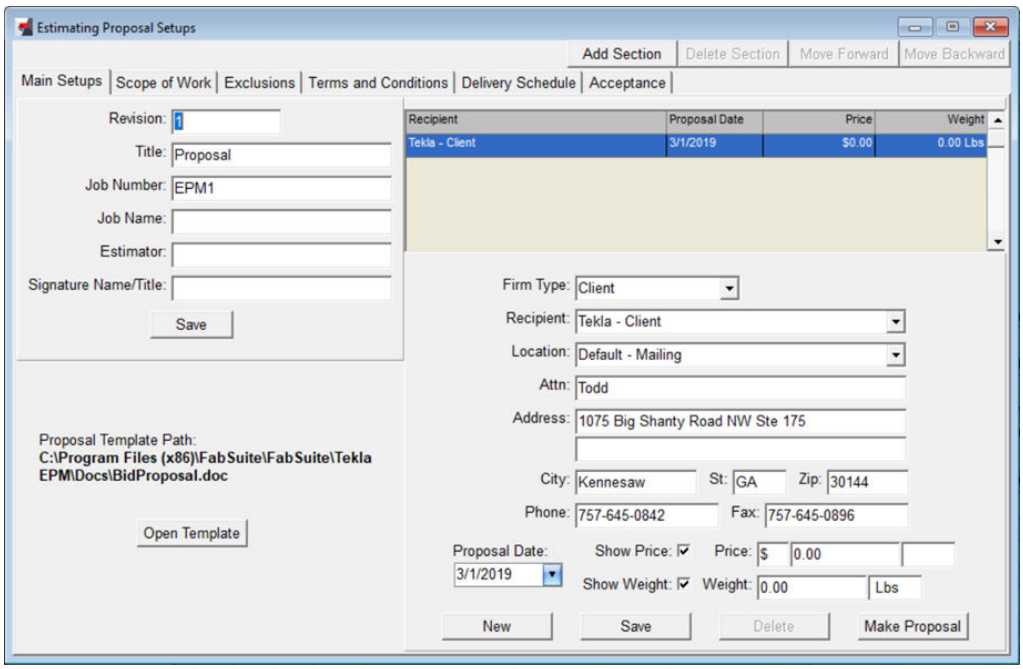
   A dialog box appears, asking you to select which text items you want to include in a section of the proposal.

9. Click the arrow buttons to move the items that you want to include in the proposal to the **Included** list..

10. Click **OK**.

    Repeat steps 9 to 10 for all sections that you want to include.

    The **Estimating Proposal Setups** dialog box opens.



11. In the **Estimating Proposal Setups**, do any of the following according to your needs:

To	Do this
Display the price and weight of the project in the proposal	a. Select the **Show Price** and **Show Weight** check boxes. b. Type the price and weight in the fields on the right side of the check boxes.
Modify the appearance of the proposal	a. On the **Main Setups** tab, click **Open Template**. The proposal template opens in Microsoft Word. The items marked with << >> pull information from Tekla EPM and can be adjusted there, but the other information and font types can be changed in Microsoft Word. b. Make the necessary changes to the template.

To	Do this
	c. In the Microsoft Word window, click **File** --> **Save** . d. Save the modified proposal as a custom report in the default folder that your company uses for custom reports. You can verify the default folder by opening the **File** menu and selecting **Default Directories**.
Add a new entry	a. Go to the section tab on which you want to add the new entry. b. At the bottom of the dialog box, click **New**. c. Type the desired text in the space the bottom of the dialog box. d. Click **Add**.
Modify an entry	a. Go to the section tab on which you want to modify an entry. b. Select the entry that you want to modify. c. Change the entry text according to your needs. d. Click **Edit** to save the changes.
Move an entry up or down in the proposal	a. Go to the section tab on which the desired entry is located. b. Select the entry that you want to move. c. To move the entry, click the **Move Up** and **Move Down** buttons at the bottom of the dialog box.
Change the indentation of an entry	a. Go to the section on which the desired entry is located. b. Select the entry that you want to move. c. Click the **Move Left** and **Move Right** buttons to shift the position of the item in the proposal.
Delete an entry	a. Go to the section tab from which you want to delete an entry. b. Select the entry that you want to delete. c. Click **Delete**. d. To permanently delete the entry, click **Yes** in the confirmation dialog box.
Change the titles or headings of the proposal	a. Go to the section tab whose titles or headings you want to change. b. Do any of the following:

To	Do this
	• To change the main title of the section, type a new title in the **Title** field and click **Set Title**. • To change the style of the headings, click **Attributes** and select appropriate styles in the lists. Then, click **Save**. • To add a subtitle, click **Attributes** and type a title in the **Subtitle** field. Then, click **Save**. The subtitle appears under the title in the proposal.
Add a section	a. At the top of the dialog box, click **Add Section**. b. Type a title for the section. c. Click **OK**. The new tab is added at the end of the proposal setup.
Delete a section	a. Go to the section tab that you want to delete. b. At the top of the dialog box, click **Delete Section**. c. To permanently delete the section, click **Yes** in the confirmation dialog box.
Move a section forward or backward in the proposal	a. Go to the desired section tab. b. In the upper-right corner of the dialog box, click **Move Forward** or **Move Backward**.

12. Click **Save**.
13. Click **Make Proposal**.

    The **Save As** dialog box opens.
14. Browse to find the location where you want to save the proposal.
15. If necessary, modify the file name.
16. Click **Save**.
17. To close the dialog box, click the **Close** button (**X**) in the upper-right corner.

Save the exported proposals in the estimating **Document Index** for future reference. For more information, see Store document references for an estimating job (page 114).

Index

E

F

G

I

J

L

M

N

P

Q

S

T

W