ROMAC

LENGTH NESTING V2.5 USER MANUAL

Last Updated: April 1, 2025

Contents

1. Program Overview

Length Nesting v2.5 is a desktop application designed to help users determine the most efficient way to cut a list of finished lengths from available stock materials. It is commonly used by steel service centers, manufacturers, and other professionals working with linear materials such as beams, bars, and rods. The goal of the program is to reduce waste by identifying cutting patterns that result in minimal drop lengths while maintaining a fast and user-friendly workflow.

1.1 Purpose and Function

Length Nesting assists in generating an optimum—or near optimum—cutting sequence for a group of finish lengths based on the stock lengths available. After entering the required materials to cut and the stock lengths available to cut from, the program calculates:

- **Gross Length Used** – Total stock length required, including allowances and drops
- **Net Length to Cut** – Total of all required finished lengths
- **Drop Length** – Total remnant material left over after cutting

A detailed listing of cutting instructions and drop amounts is available for on-screen review or can be printed using a standard line printer.

1.2 Cut Optimization Logic

The nesting routine built into the program is designed to deliver results quickly while reducing waste. In most real-world scenarios, the software produces cutting sequences that yield minimal drops. However, due to the complex nature of nesting algorithms, the program does not guarantee that every result is the absolute best possible outcome in every situation. For advanced or edge cases, manual review or further optimization may still be possible.

1.3 Material Management by Unit

The program is structured to process one material description—also referred to as a **unit**—at a time. A unit may represent a specific type of material such as:

- W 8 x 18 beam
- L 3 x 3 x 1/4 angle
- 3/4" round rod

Each unit can be entered, edited, processed, saved, and printed independently. This allows users to work through jobs section by section or manage more complex projects that involve multiple types of materials.

1.4 Project Workflow Tabs

Each material unit is managed using four main tabs in the software interface:

1. **General** – Used for assigning a description and setting key parameters
2. **To Cut** – Where users enter the list of finished lengths needed
3. **Cut From** – Where users specify the stock lengths available for cutting
4. **Results** – Displays the calculated cutting instructions and summary statistics

Projects can consist of a single unit or multiple units, depending on the complexity of the job. Units can be stored as individual files, allowing for easy retrieval, editing, and processing at any time.

1.5 Enhanced Functionality

Length Nesting v2.5 also includes the ability to:

- Import material lists using **CSV** or **KISS** file formats
- Pre-define and reuse standard “To Cut” quantities and sizes
- Export nested results into a **CSV** format for use in spreadsheets or other systems

These features allow users to integrate Length Nesting more efficiently into their broader workflow, reduce repetitive data entry, and better manage recurring material lists.

2. Terminology Used

This section defines key terms used throughout the **Length Nesting** program. Understanding these terms will help users navigate the interface and interpret nesting results more effectively.

2.1 Length Entry Methods

Length Nesting supports four different units of measurement for entering and displaying material lengths. Each material list must use a single, consistent method. You can switch between methods using the **General** tab.

- **Feet/Inches/Fractions**
  Supports lengths from 0-0 1/16 to 999-11 15/16. Entry uses redefined fraction keys.
  (See Section 5: Dimension Entry for input instructions.)
- **Inches/Fractions**
  Supports lengths from 1/16\" to 9999 15/16\". Also requires fraction shortcut keys.
- **Decimal Inches**
  Supports lengths from .001\" to 9999.999\". Allows precision entry without fractions.
- **Millimeters (mm)**
  Supports whole millimeter entries from 1 mm to 9999 mm. Decimal millimeters cannot be entered but may display up to two decimal places when converting from other formats.

2.2 To Cut List

The **To Cut List** contains the finish pieces you want to produce. It supports up to **160 entries**, with each entry including:

- **Quantity:** Up to 9999 pieces
- **Length:** Entered using one of the supported length methods
- **Piece ID (optional):** Up to 9 characters; can be enabled or disabled using the General tab

🔄 To remove an entry, set its quantity to 0.

2.3 Cut From List

The **Cut From List** defines the stock lengths you have available for nesting. It supports up to **40 entries**, with each entry including:

- **Quantity:** Up to 9999 pieces
- **Length:** The full stock length available for cutting

🔄 To remove an entry, set its quantity to 0.

2.4 Squaring Allowance

This value defines the material removed from each end of a stock piece before any cutting occurs. A squaring cut is typically used to ensure clean, square ends.

- If the squaring allowance is **greater than 0"**, the program assumes each *Cut From* piece will have a squaring cut on **both ends**.
- If the squaring allowance is **0"**, no end trimming is assumed.

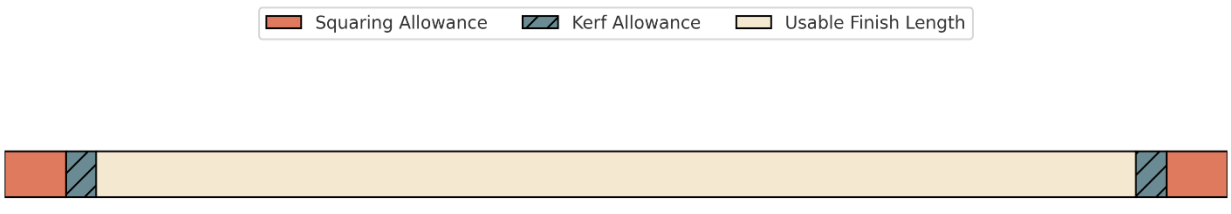
2.5 Kerf Allowance

The **kerf** is the width of material removed by the saw blade (or shear) during each cut. This allowance is subtracted for **every parting cut**.

- Kerf loss is calculated separately from the squaring allowance.
- Not included in the final drop length reported.

Example:
With a 1" squaring allowance and a 1/2" kerf allowance:

- A 20'-0" stock length yields a maximum finish piece of 19'-9"
  → 20'-0" − 2" squaring − 1" total kerf = 19'-9"



Cut From Stock: Squaring and Kerf Allowance Example (20’-0 Stock)

2.6 Cut From Groups

A **Cut From Group** is a saved list of commonly used stock lengths and quantities that can be quickly loaded into the **Cut From** list during the nesting process. This feature is designed to **save time** when entering standard materials, particularly for users who frequently work with the same stock sizes—such as steel service centers.

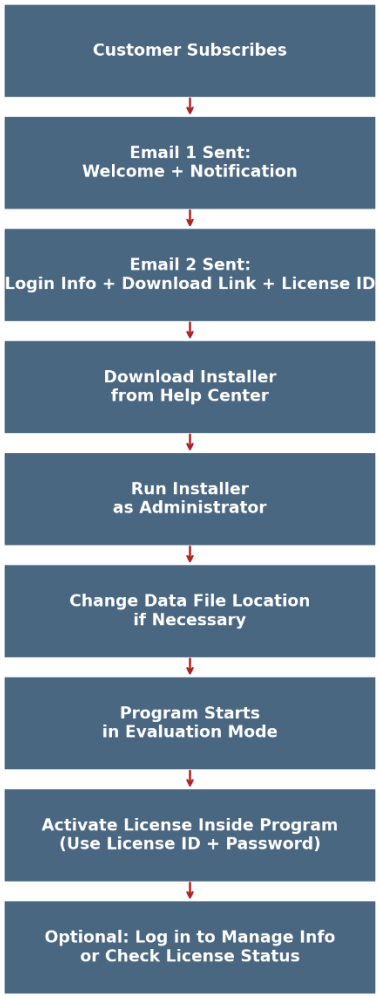
Cut From Groups are **not an inventory control system**. They simply serve as a convenient way to pre-load known stock sizes.

- Create, edit, or delete groups via **Maintenance > Update 'Cut From' Groups**
- You can create **unlimited groups**
- For **Length Nesting**, do not exceed **40 Cut From sizes** in a group
- For **Plate Nesting**, the limit is **10 Cut From sizes**
- To delete a size from a group, set its quantity to 0

💡 *Tip: If working from steel service center stock, use a high quantity (e.g., 1000) to reflect abundant material. If stock is limited, enter the actual quantity available.*

3. Program Installation and Activation

3.1 Length Nesting Installation Workflow



This section provides instructions for installing and activating **Length Nesting v2.5** on supported Windows operating systems. Please read through this section before beginning your installation.

3.2 System Compatibility

Length Nesting is officially supported on:

- **Windows 11**
- **Windows 10**

While the program may also install on earlier versions of Windows (XP, Vista, 7, 8.1), we cannot guarantee compatibility or provide support for those platforms.

⚠️ **Not Compatible:** Windows 98 and Windows 2000

3.3 After Subscribing – What to Expect

Once your subscription has been processed, you will receive **two emails**:

1. **Welcome Email:** Confirms your subscription and lets you know the activation process is underway.
2. **Setup Email:** Includes everything you need to get started:
    - Login credentials for license management
    - Product download links
    - Installation instructions
    - Activation details including License ID and Password

🔒 License activation is handled within the software — you do not need to log in to your account to activate.

3.4 Installation Requirements

- **Administrator Privileges:**
  You must have administrative rights to install the software. After installation, the program may be run under a standard user account.
- **Internet Access:**
  Required for downloading the installer and activating the license online.
- **Evaluation Period:**
  If this is your first time installing Length Nesting, the software will automatically begin a **30-day evaluation period** from the installation date. You can activate your license at any time during or after the trial.

3.5 Installation Instructions

1. **Download the Installer**
   Use the link provided in your setup email or visit:
   https://romacsystems.com/help-center/
   Select the **Nesting Downloads** option and download **Version 2.5.n** of the Length Nesting program.
2. **Locate the Installer File**
   The file will be saved in your computer's **Downloads** folder unless your browser is configured to save elsewhere.
   If you're unsure, check your browser's Downloads section to locate the file:

   LengthNestingSetup_v2.5.exe

3. **Run the Installer**
   Right-click on the installer and choose **Run as Administrator** to begin the setup process.
4. **Complete the Installation Wizard**
   Follow the on-screen instructions to accept the license agreement and install the software.

3.6 Default Data File Location

Upon installation, the program creates a default data file in the following location:

C:\Romac\NEST25\Nest25data.mdb

This file stores program data and should not be moved unless you are changing the data storage location.

To change the data location:

1. Manually create the new destination folder
2. Move the Nest25data.mdb file into that folder
3. Open the program and go to:
   Maintenance > Configuration
4. Update the data path to reflect the new folder location

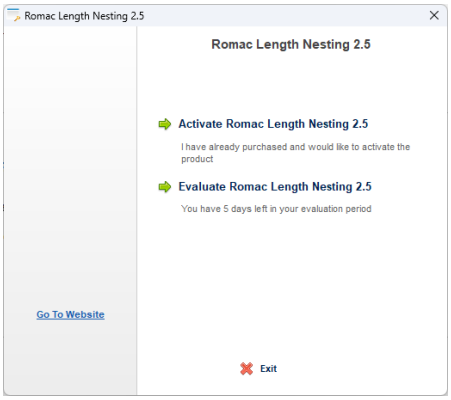
⚠️ The software will not move or create the folder for you — this must be done manually.

3.7 Activation Overview

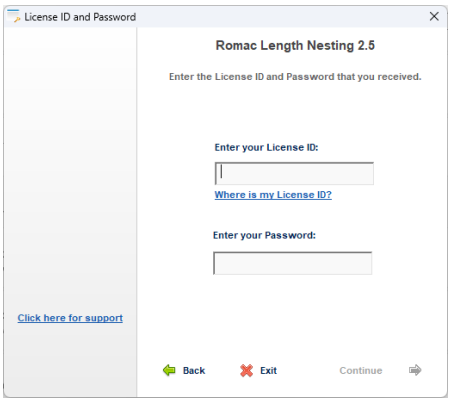
Once installed, you can activate the software using the information provided in your setup email. There are two ways to activate your Length Nesting license, depending on whether you're activating immediately upon first launch or converting from an evaluation version.

3.7.1 Method 1: Activate at First Launch

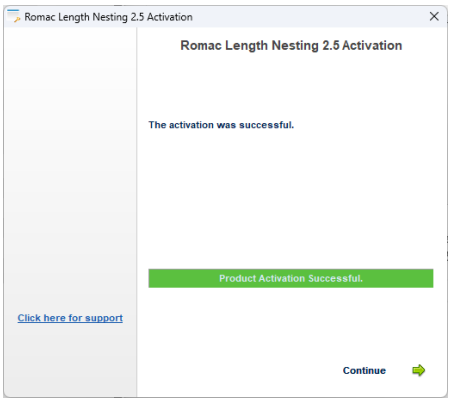
If you're opening **Length Nesting v2.5** for the first time after installation, you will see an activation screen like shown below.



← On the welcome screen, choose **Activate Romac Length Nesting**



← Enter your **License ID** and **Password** provided in your setup email



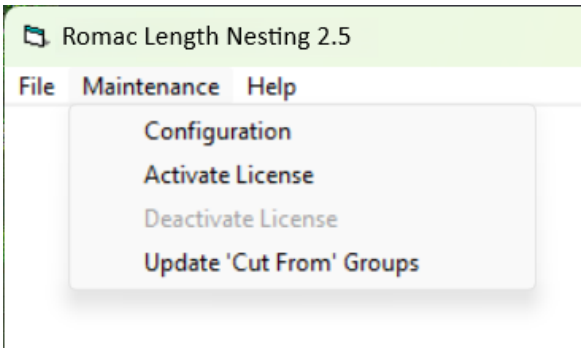
← After successful validation, a confirmation screen will appear

Click **Continue** to complete the activation process and begin using the software

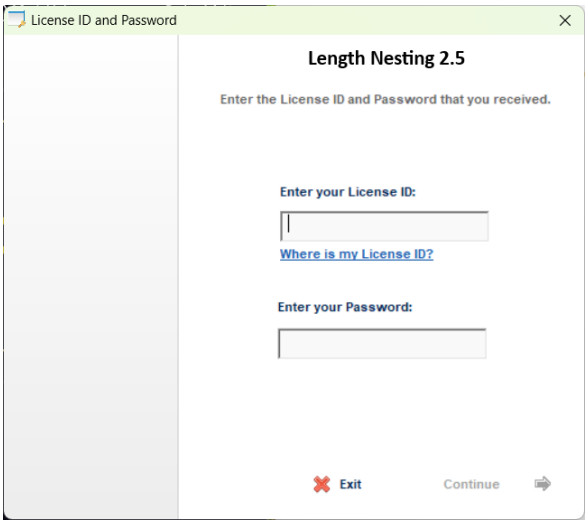
3.7.2 Method 2: Activate from Within the Program (Post-Evaluation)

If you previously chose to evaluate the software or your trial has expired, you can activate the license from within the program interface.

1. Launch **Length Nesting v2.5**
2. Go to the top menu and click the **Maintenance** tab
3. Select **Activate License** from the dropdown menu



4. Read the popup notice and select **Yes** if you agree.
5. Enter your **License ID** and **Password** in the activation dialog box



6. Follow the prompts to complete the activation online

Once activated, the evaluation mode is disabled, and your license is registered to the computer. You may log in to your ROMAC customer account separately to:

- View license status and expiration
- Update your company information
- Change your activation password (if needed)

3.8 License Management and Transfers

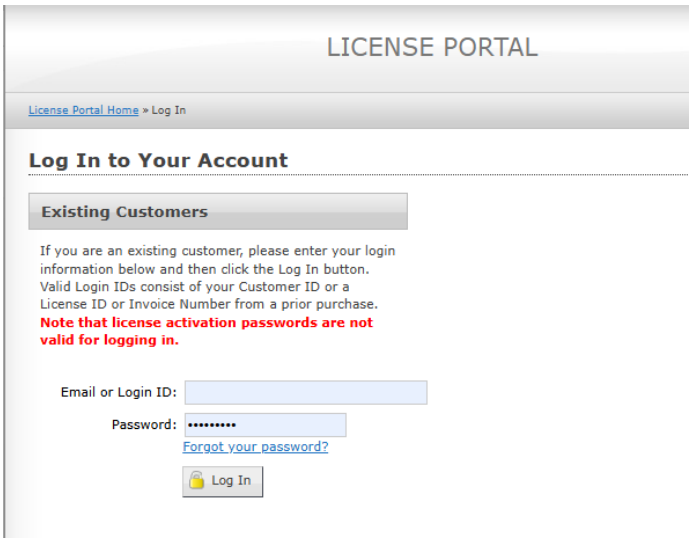
3.8.1 Accessing the License Portal

The **License Portal** is a dedicated online platform where you can manage your ROMAC product licenses. Through the portal, you can:

- **Update Company Information:**
  Ensure your contact details are current.
- **Change Passwords:**
  Modify your license activation password for security.
- **View License Status:**
  Check the validity and expiration dates of your licenses.

To access the License Portal:

1. **Visit the License Management Page in the Help Center located at:**
   https://romacsystems.com/help-center/
2. **Click on the Go to License Portal button.**
3. **Log In:**
   Use your **Customer ID** and **Password** provided in your setup email to log in.



3.8.2 Requesting a License Transfer

If you need to transfer your Length Nesting license to a different computer or user:

1. **Submit a Transfer Request:**
   Contact ROMAC Systems through the **License Transfer Request Form** on the **License Management Page** in the **Help Center** to initiate the transfer process.
2. **Provide Necessary Details:**
   Include your current **License ID(s)**, **Contact Info**, and the reason for the transfer.
3. **Await Confirmation:**
   ROMAC Systems will process your request and provide instructions for completing the transfer.

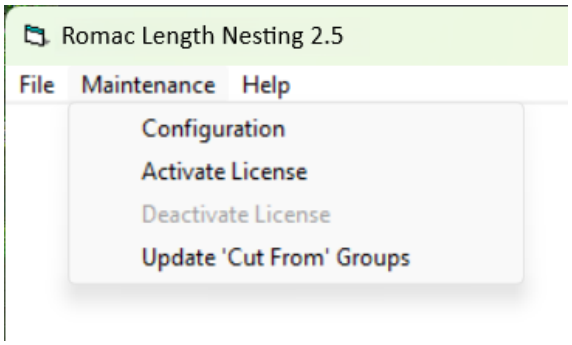
By following these guidelines, you can effectively manage your Length Nesting licenses, ensuring uninterrupted access and compliance with ROMAC Systems' licensing policies.

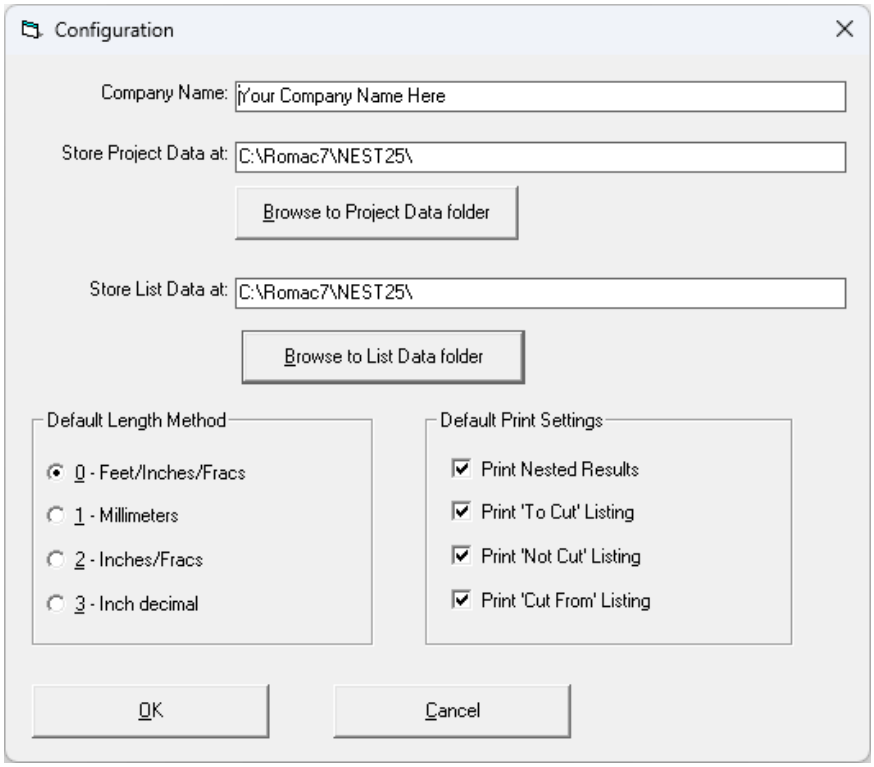
4. Initial Program Configuration

Before operating **Length Nesting v2.5**, it's important to configure several key settings. These ensure that your company information, data storage preferences, measurement units, and report formatting are aligned with your workflow.

All configuration options are found on a single screen:

🔧 Navigate to: **Maintenance > Configuration**





Configuration Screen

4.1 Enter Your Company Name

The company name entered here will appear at the top of all printed reports generated by the program.

- Locate the **Company Name** field
- Enter your company name exactly as you'd like it to appear
- This setting can be updated at any time

4.2 Review Data File Locations

Length Nesting uses two types of data organization: **Lists** and **Projects**. Both file paths can be customized on the Configuration screen by entering a full path or browsing to a folder.

4.2.1 Data File Structure and Storage

Length Nesting v2.5 supports two distinct data models: **List-Based Data** and **Project-Based Data**.

4.2.1.1 List-Based Data (Manually Entered Material Sections)

- Lists are created manually within the program
- Each list is saved as a **separate file** with a .CL2 extension
- There is **no tracking database** used for list-based files

📄 **Example List File:** BeamList01.CL2

4.2.1.2 Project-Based Data (Imported or Grouped Lists)

- Projects are used when importing lists from CSV or KISS files, or when grouping multiple lists
- Each project is stored in its **own folder**
- Items are saved as .CL2 files and are tracked via a shared database file:
    - Nest25data.mdb — required for program-level and project-level tracking

📁 **Example Project Folder Contents:**

- Nest25data.mdb
- Part01.CL2, Part02.CL2, etc.

4.2.2 Default Installation Path

By default, Length Nesting installs and stores its data in:

C:\Romac\NEST25

This directory includes the default Nest25data.mdb used to manage project-based data.

4.2.3 Changing the Data File Location

To relocate your data:

1. **Create the New Folder**
   Use File Explorer to manually create the new storage folder
2. **Move Required Files**
   - For projects: move the Nest25data.mdb and associated .CL2 files
   - For lists: move any standalone .CL2 files
3. **Update File Paths in Configuration**
   In Length Nesting, go to:
   Maintenance > Configuration
   Update the **Project Data** and **List Data** fields accordingly

⚠️ **Important:** Length Nesting does not automatically move or create folders. You must complete this process manually before updating the settings.

4.3 Select Default Length Method

Length Nesting supports four different units for entering and displaying material lengths. Only one default method can be selected at a time. You may change the method later on a per-list basis if needed.

Available options:

- **Feet/Inches/Fractions**
- **Millimeters**
- **Inches/Fractions**
- **Inch Decimals**

Choose the format that best matches your workflow or industry standards.

4.5 Set Default Print Options

You can configure which sections of the report will be printed by default. These options can still be modified manually each time you print.

Available default print settings:

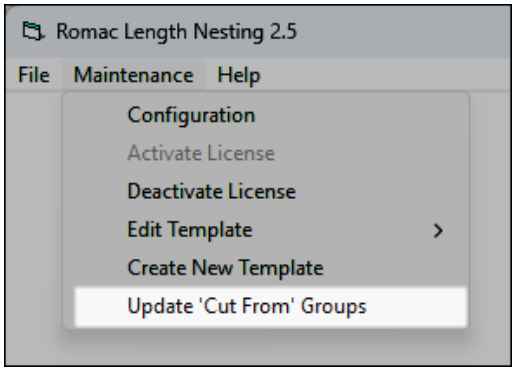
- ✅ **Print Nested Results**
- ✅ **Print "To Cut" Listing**
- ✅ **Print "Not Cut" Listing**
- ✅ **Print "Cut From" Listing**

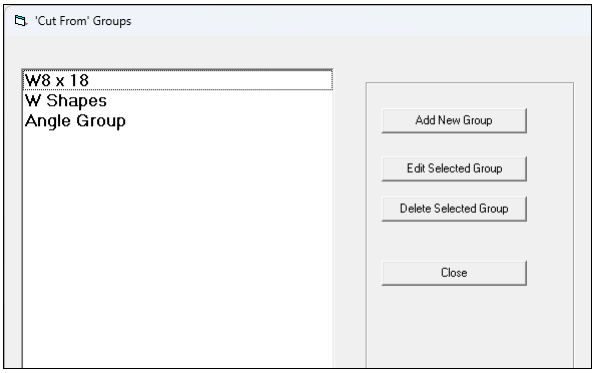
Select or deselect any combination based on your reporting preferences.

4.6 Cut From Groups

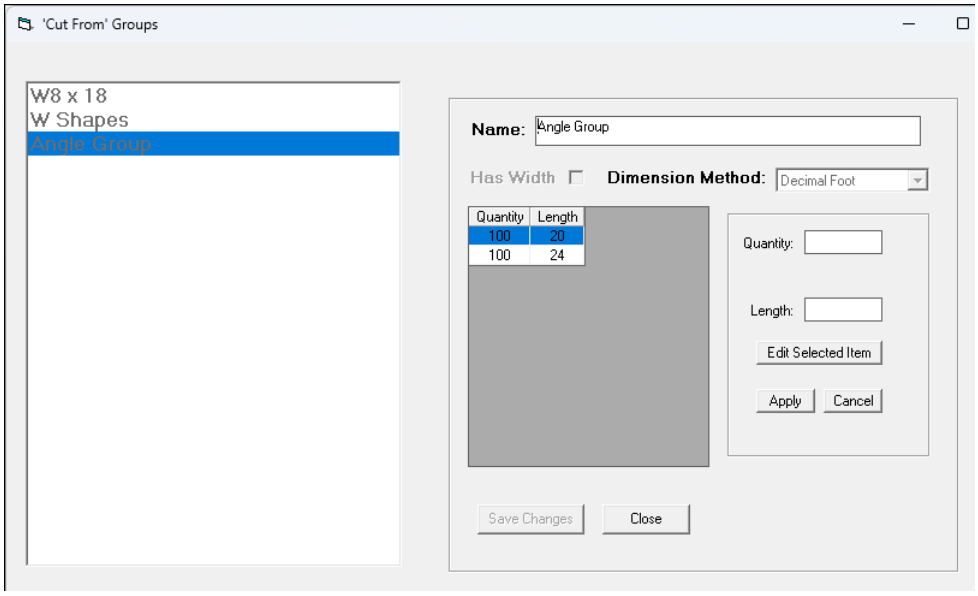
A **Cut From Group** is a saved list of commonly used stock lengths and quantities that can be quickly loaded into the **Cut From** list during the nesting process. This feature is designed to **save time** when entering standard materials, particularly for users who frequently work with the same stock sizes—such as steel service centers.

1. Go to **Maintenance > Update 'Cut From' Groups**





2. Add, edit, or delete groups



Cut From Groups are **not an inventory control system**. They simply serve as a convenient way to pre-load known stock sizes.

- You can create **unlimited groups**
- For **Length Nesting**, do not exceed **40 Cut From sizes** in a group
- For **Plate Nesting**, the limit is **10 Cut From sizes**
- To delete a size from a group, set its quantity to 0

💡 *Tip: If working from steel service center stock, use a high quantity (e.g., 1000) to reflect abundant material. If stock is limited, enter the actual quantity available.*

5. Dimension Entry

Length Nesting v2.5 supports four different **length entry methods**, each with its own format and limitations. Only **one method** may be used per list, but you can convert between methods using the **General** tab at any time.

5.1 Supported Length Entry Methods

Method	Format Example	Value Meaning	Notes
Feet/Inches/Fractions	12-6K	12'–6 15/16"	Uses hyphen (-), single quote ('), or period (.) between feet and inches
Inches/Fractions	150K	150 15/16"	Up to 9999 inches; uses shortcut keys for fractional input
Decimal Inches	12.375	12 3/8"	Up to 2 digits left and 3 digits right of decimal
Millimeters	3150	3150 mm	Whole numbers only; no decimal input allowed

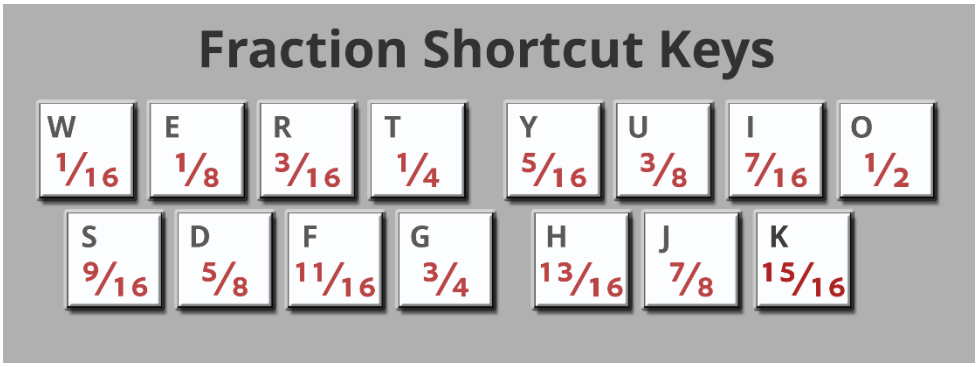
📌 *Note: Decimal millimeters are displayed when converting from other methods, but cannot be entered directly.*

5.2 Length Input Rules

- All length values must match the currently selected **length method**
- You cannot **mix formats** (e.g., combining decimal inches and fractions in the same list)
- The cursor is always positioned at the **end** of the field when editing
- **Character insertion** is not allowed within the field (you must backspace to correct)
- **Cut and paste** is not supported for dimension fields

5.3 Fraction Shortcut Keys

When working in **Feet/Inches/Fractions** or **Inches/Fractions** modes, you can use **fraction shortcut keys** to quickly enter common fractional values. Each key on your keyboard corresponds to a predefined fraction.



🧠 *Tip: You do not need to enter a space before typing the shortcut key.*

5.4 Format Notes by Method

Feet/Inches/Fractions

- Separate feet and inches using -, ', or .
- Example: 12-6K = 12 feet, 6 and 15/16 inches
- Max Foot Entry: 999
- Max Inch Entry: 11

Inches/Fractions

- Example: 150K = 150 and 15/16 inches
- Max Entry: 9999 inches

Decimal Inches

- Example: 12.375
- Up to 2 digits before the decimal and 3 digits after

Millimeters

- Whole number input only
- Example: 3150
- Max Entry: 99999
- Decimal entry not allowed

6. Program Operation

Length Nesting v2.5 is built around a user-friendly, tab-based interface that guides users through the process of entering material data, optimizing nesting results, and generating reports. The program supports both manual entry and imported data and is structured to help operators achieve accurate, low-waste cutting plans.

6.1 User Interface Overview

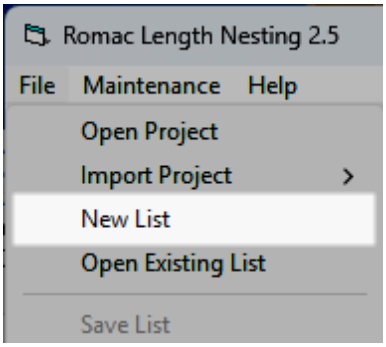
The software interface is divided into four main tabs:

- **General** – Configure list properties, select dimension method, and convert formats
- **To Cut** – Enter or review the list of finish lengths required
- **Cut From** – Enter or select available stock lengths to nest from
- **Results** – View optimized nesting results, generate reports, or export data

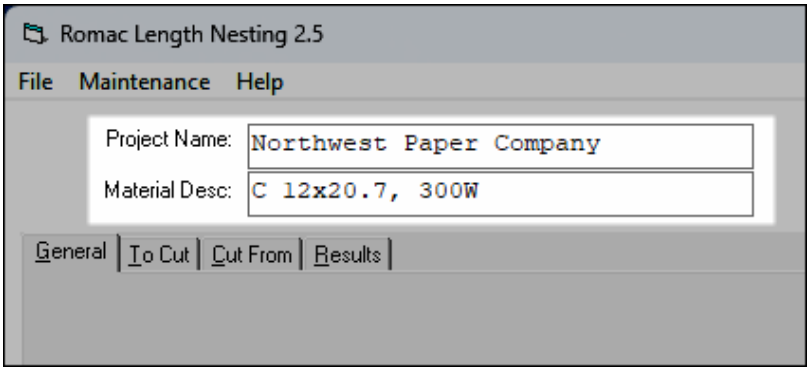
Data for both **To Cut** and **Cut From** lists is entered in a spreadsheet-style grid.
Use the **arrow keys** or **Enter** to move between fields. Use the **Tab** key to switch focus between tabs and lists.

7. Create Your 1st Nesting List Manually

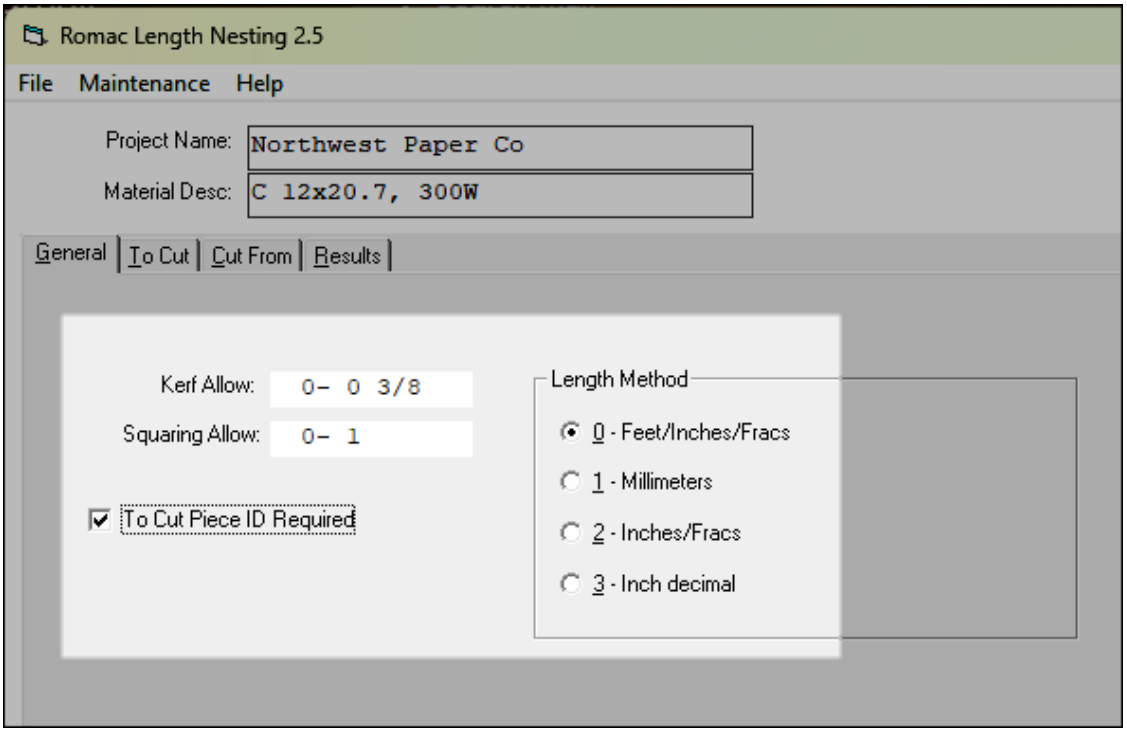
7.1 Navigate to File → New List



7.2 Enter Project Name and Material Description (ie: W8x18, L3x3x3/8, etc.)



7.3 General Tab

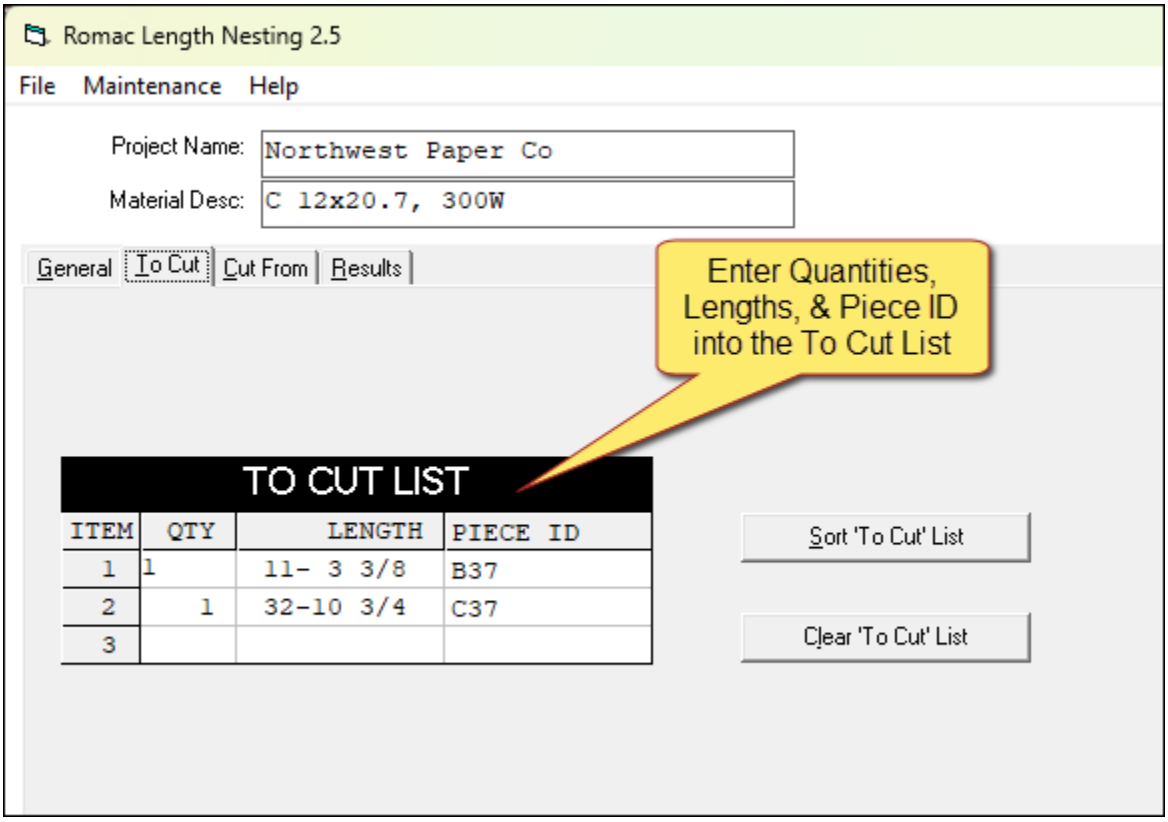


7.3.1 Enter Kerf and Squaring Allowance (optional)

7.3.2 Select whether you want to require To Cut Piece ID or not

7.3.3 Select desired Length Method

7.4 To Cut Tab

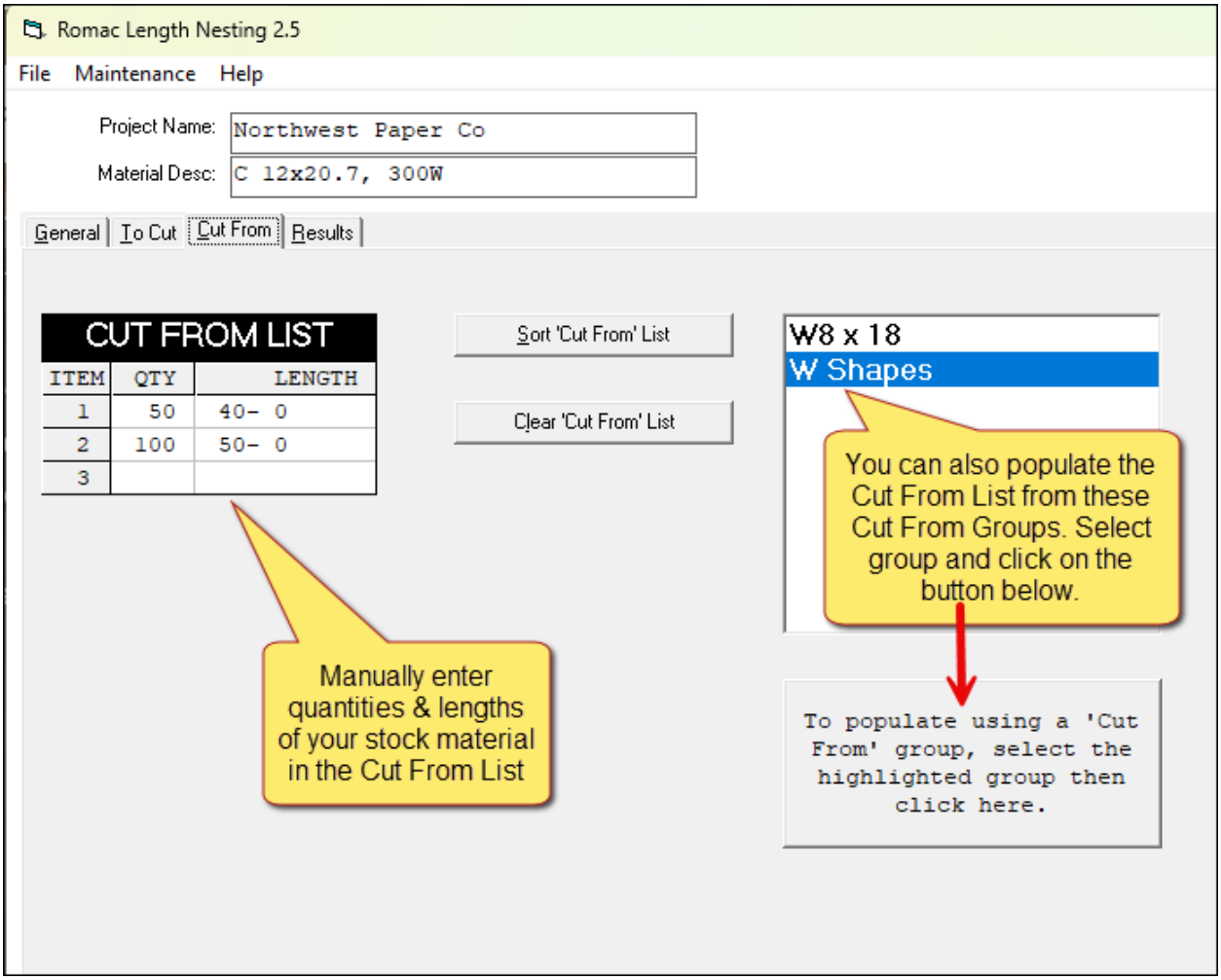


7.4.1 Enter the quantity and lengths of the items you wish to nest.

7.4.2 Enter the piece ID if you required it in the General Tab screen.

7.4.3 You can sort the list or clear the list to start over.

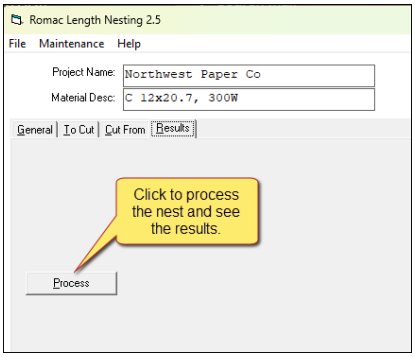
7.5 Cut From Tab



7.5.1 Manually enter the quantities and lengths of your stock material in the **Cut From List** table

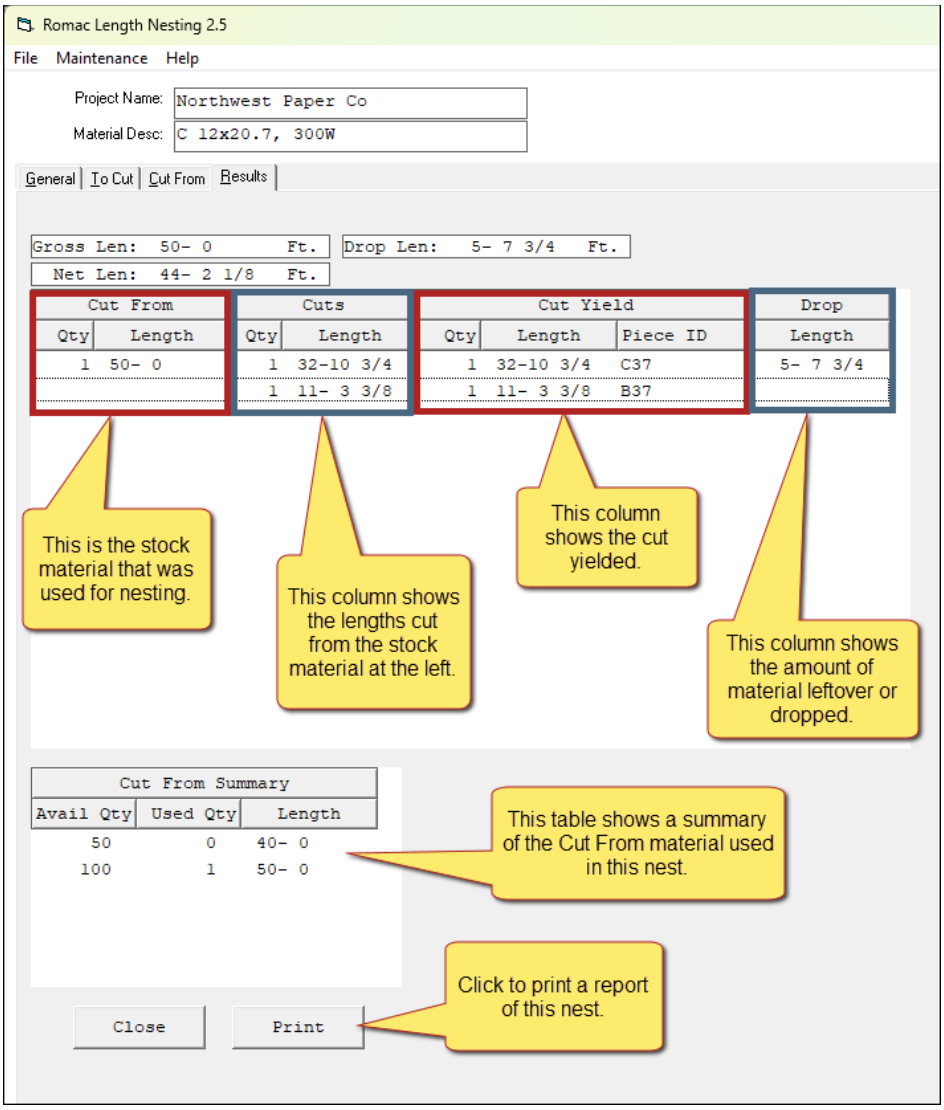
7.5.2 Optionally, you may populate the **Cut From List** from one of the **Cut From Groups** in the list in the box to the right of the Cut From List. Simply select the appropriate Cut From Group and click the button below the box to automatically enter it into the Cut From List.

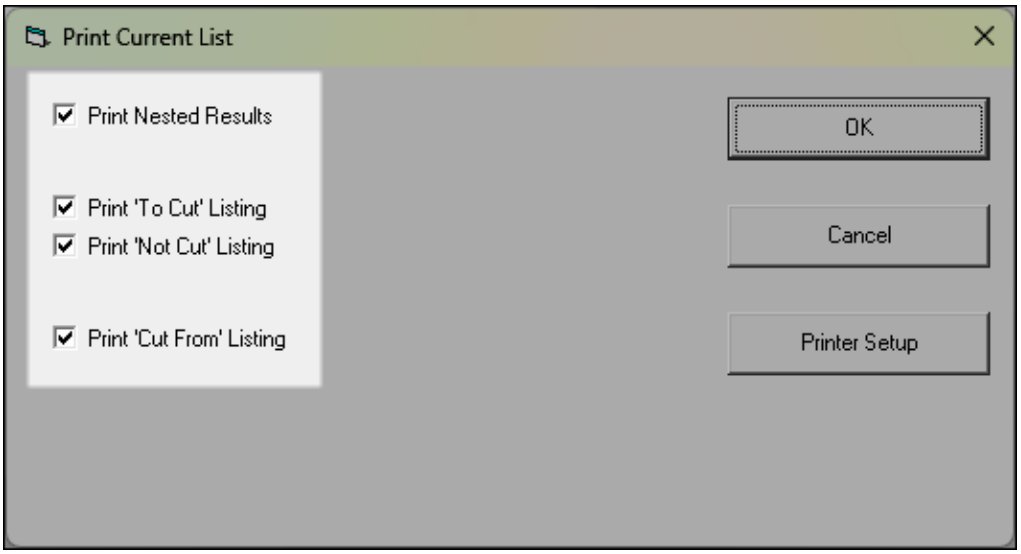
7.6 Results Tab



7.6.1 Click on the Process button

7.6.2 View the Results output





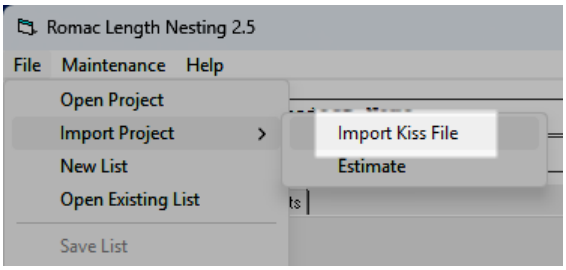
7.6.3 You can select to print the nested results, “To Cut” list, “Not Cut” List, and or “Cut From” list depending on your needs.

8. Importing Project Data

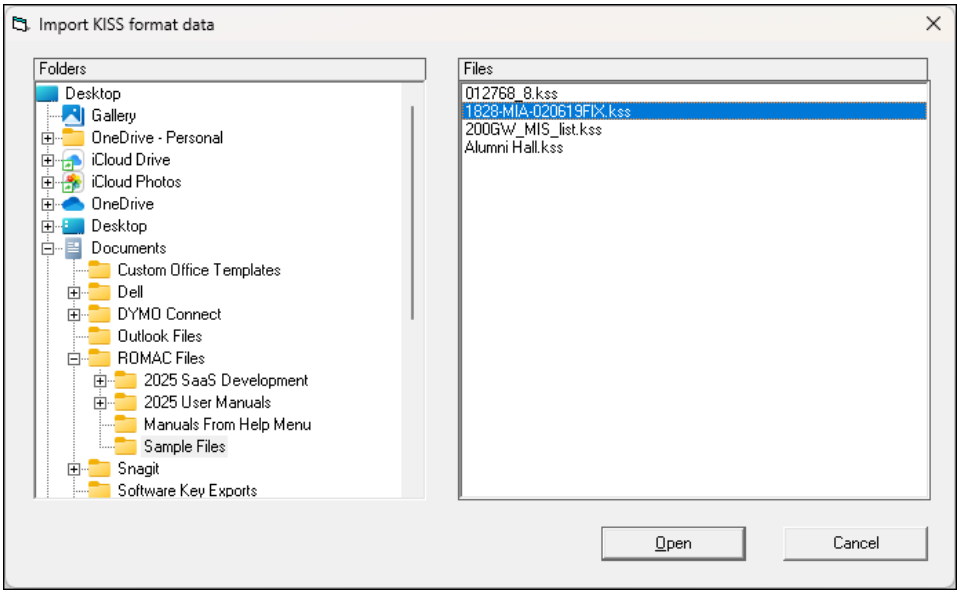
If you have material lists in KISS or CSV file formats, then importing the material is a more efficient way of creating nests.

8.1 Importing Project Data from a KISS File

8.1.1 Navigate to File → Import Project → Import Kiss File

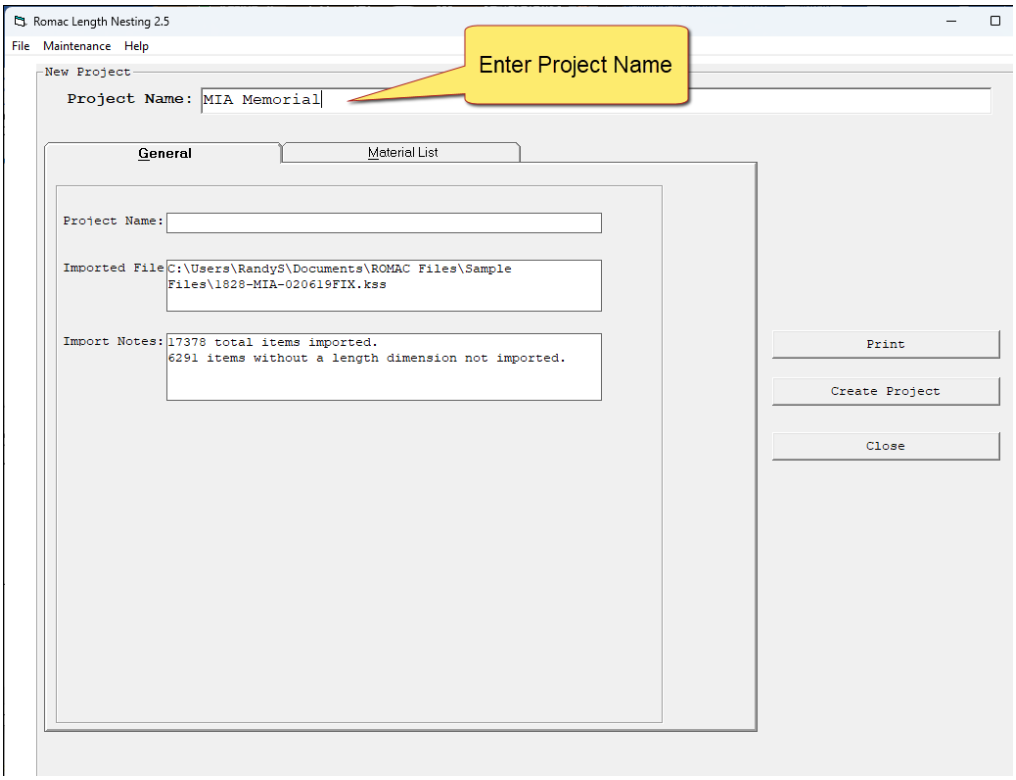


8.1.2 Browse to the folder on your computer that contains the KISS file you wish to import

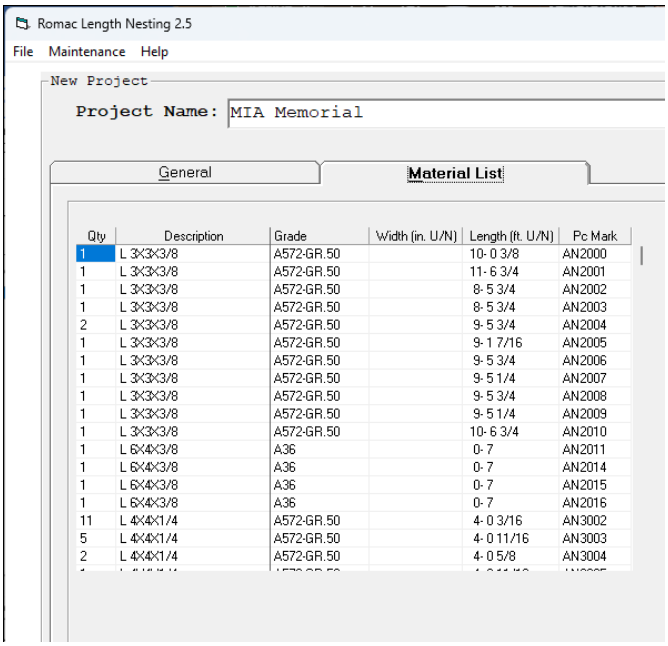


8.1.3 Select the KISS file for the project you are working on and click **Open**

8.1.4 Enter the **Project Name**

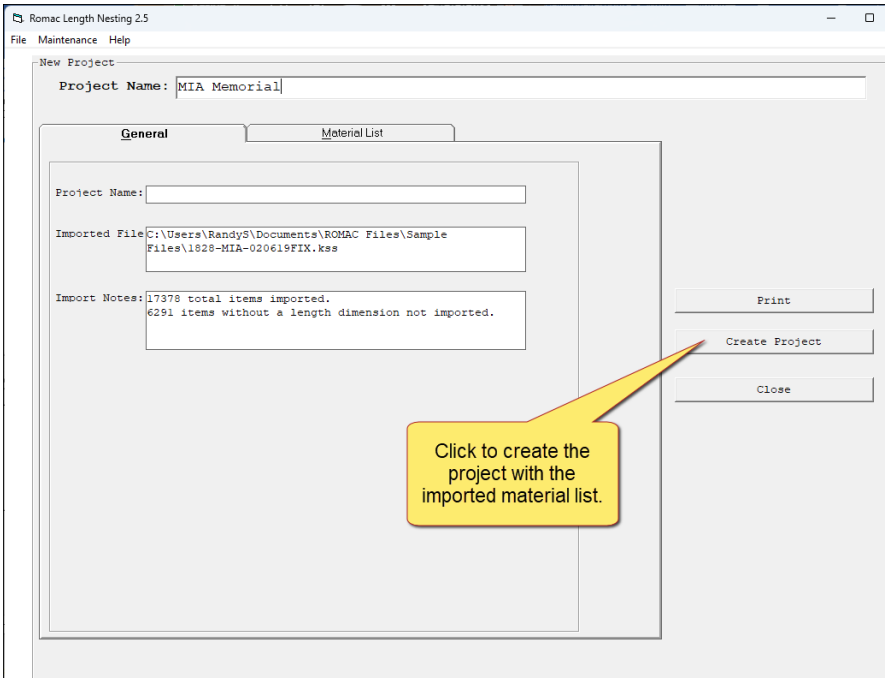


8.1.5 You can click on the **Material List** tab to see the entire list to be imported

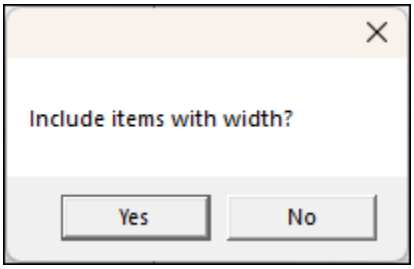


Qty	Description	Grade	Width (in. U/N)	Length (ft. U/N)	Pc Mark
1	L 3X3X3/8	A572-GR.50		10- 0 3/8	AN2000
1	L 3X3X3/8	A572-GR.50		11- 6 3/4	AN2001
1	L 3X3X3/8	A572-GR.50		8- 5 3/4	AN2002
1	L 3X3X3/8	A572-GR.50		8- 5 3/4	AN2003
2	L 3X3X3/8	A572-GR.50		9- 5 3/4	AN2004
1	L 3X3X3/8	A572-GR.50		9- 1 7/16	AN2005
1	L 3X3X3/8	A572-GR.50		9- 5 3/4	AN2006
1	L 3X3X3/8	A572-GR.50		9- 5 1/4	AN2007
1	L 3X3X3/8	A572-GR.50		9- 5 3/4	AN2008
1	L 3X3X3/8	A572-GR.50		9- 5 1/4	AN2009
1	L 3X3X3/8	A572-GR.50		10- 6 3/4	AN2010
1	L 6X4X3/8	A36		0- 7	AN2011
1	L 6X4X3/8	A36		0- 7	AN2014
1	L 6X4X3/8	A36		0- 7	AN2015
1	L 6X4X3/8	A36		0- 7	AN2016
11	L 4X4X1/4	A572-GR.50		4- 0 3/16	AN3002
5	L 4X4X1/4	A572-GR.50		4- 0 11/16	AN3003
2	L 4X4X1/4	A572-GR.50		4- 0 5/8	AN3004

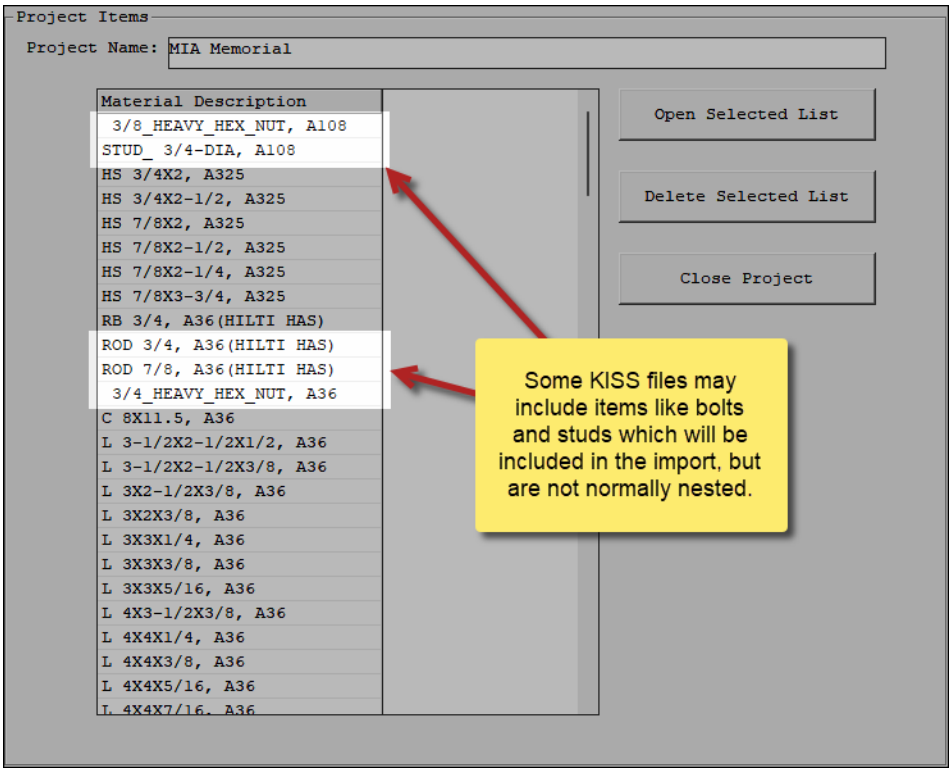
8.1.6 Click on **Create Project**



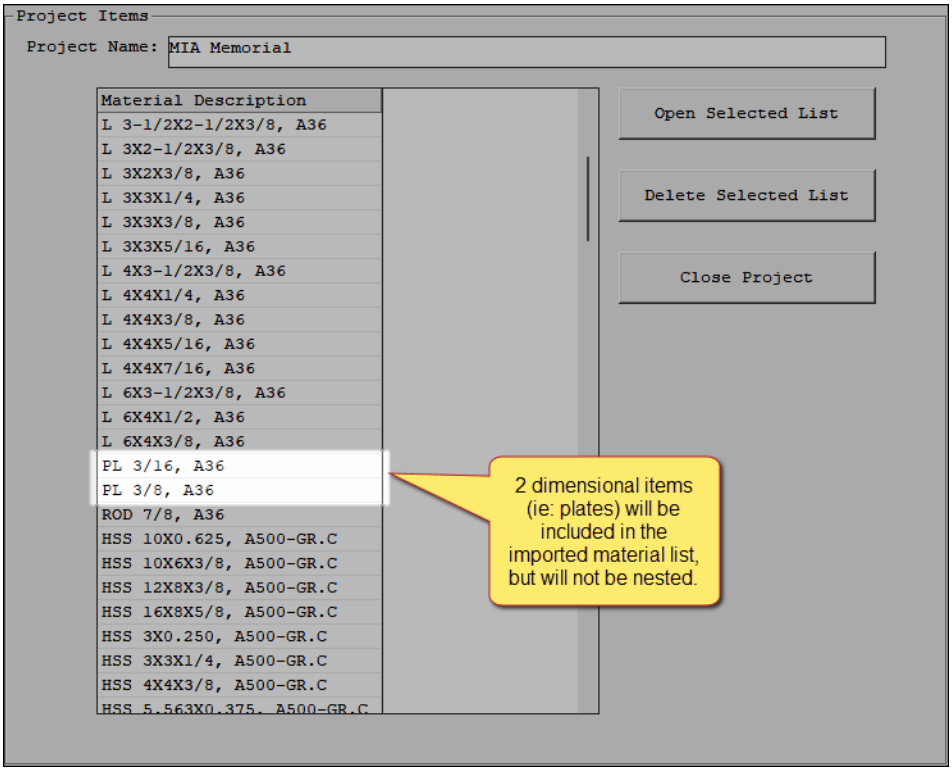
8.1.7 You will see a pop-up asking if you want to include items with widths. If the material list you imported includes items with widths and lengths (ie: plates), then you can create a **PL2 file** by clicking **Yes**. PL2 files can be opened by our optional Plate Nesting program. Click No to ignore this step and continue on to the Length Nesting.



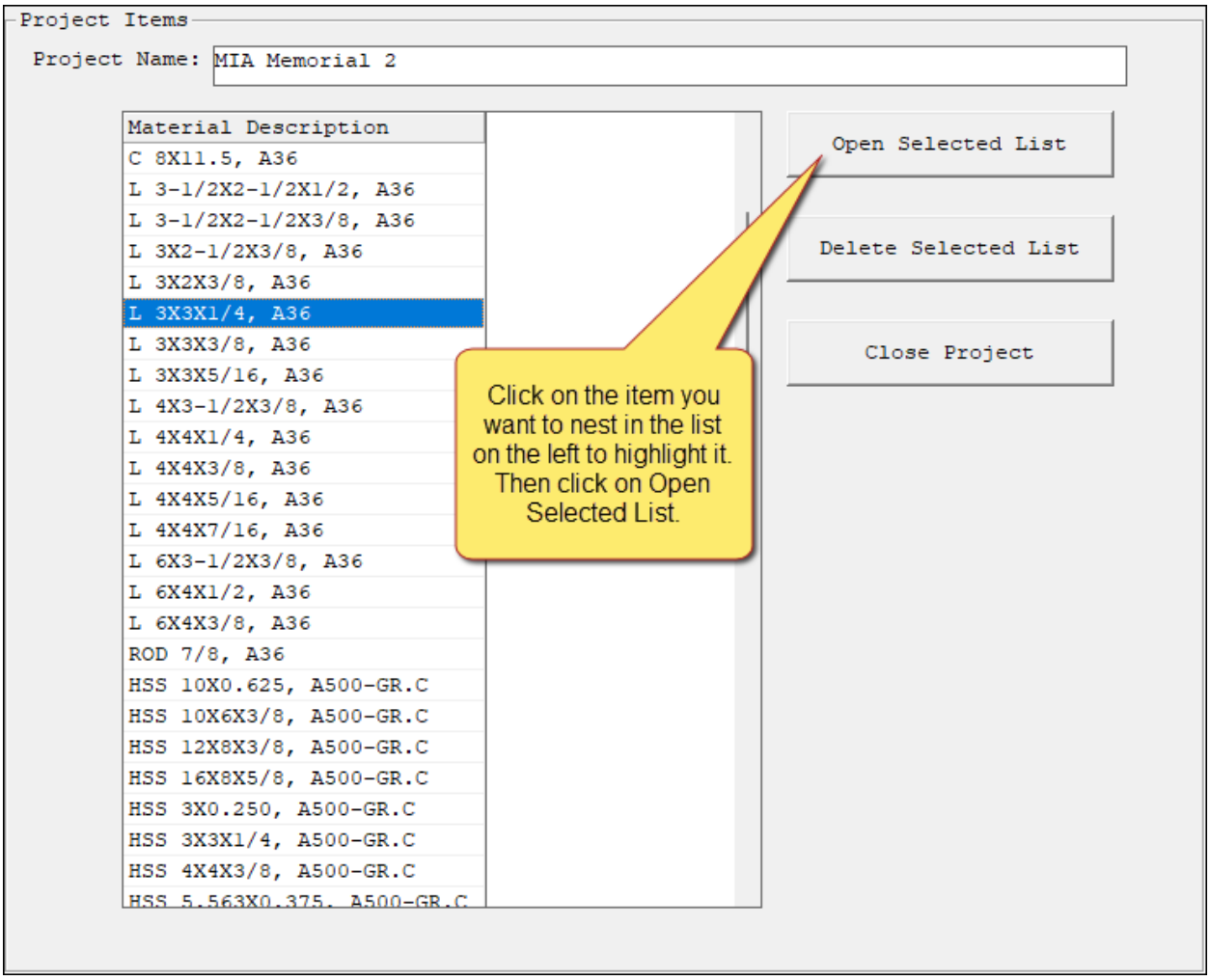
8.1.8 Project Items Screen



The Project Items screen will show all of the imported material. Some KISS files may contain items like bolts and studs which are not normally nested.



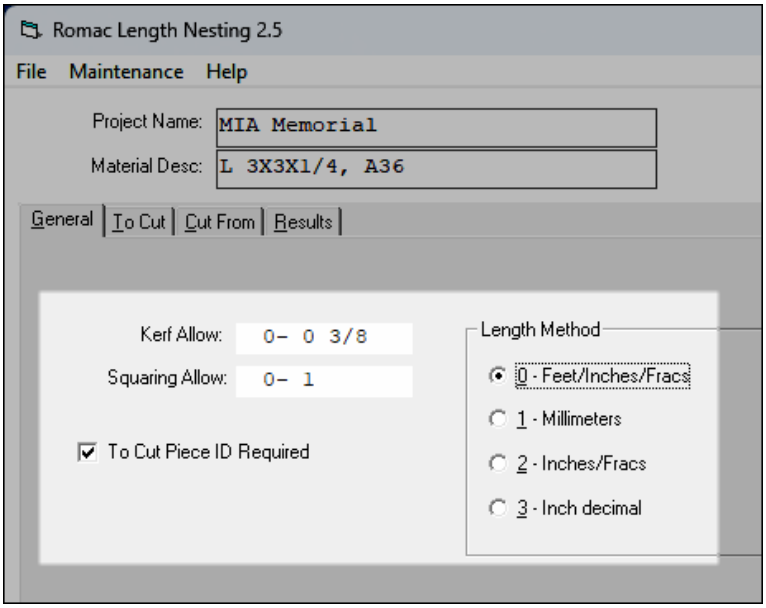
2 dimensional items (ie: plates) may also be included in this list, but will not be nested. If you elected to include items with widths in the previous step, the program will automatically create a PL2 file which will contain the 2 dimensional items. These PL2 files can be opened within our optional Plate Nesting program.



Select the item you wish to nest from the imported list on the right side of the screen. Then click on the Open Selected List to begin the nesting process.

The rest of the steps will be identical to the steps we took when manually creating a nest.

8.2 General Tab

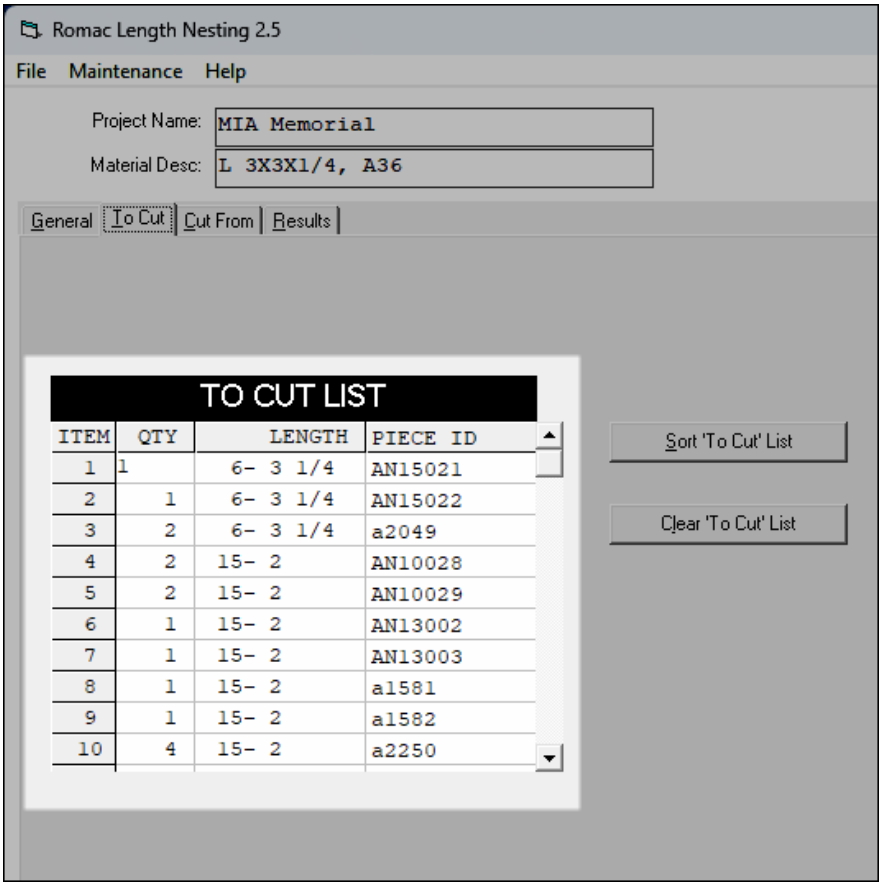


8.2.1 Enter Kerf and Squaring Allowance (optional)

8.2.2 Select whether you want to require To Cut Piece ID or not

8.2.3 Select desired Length Method

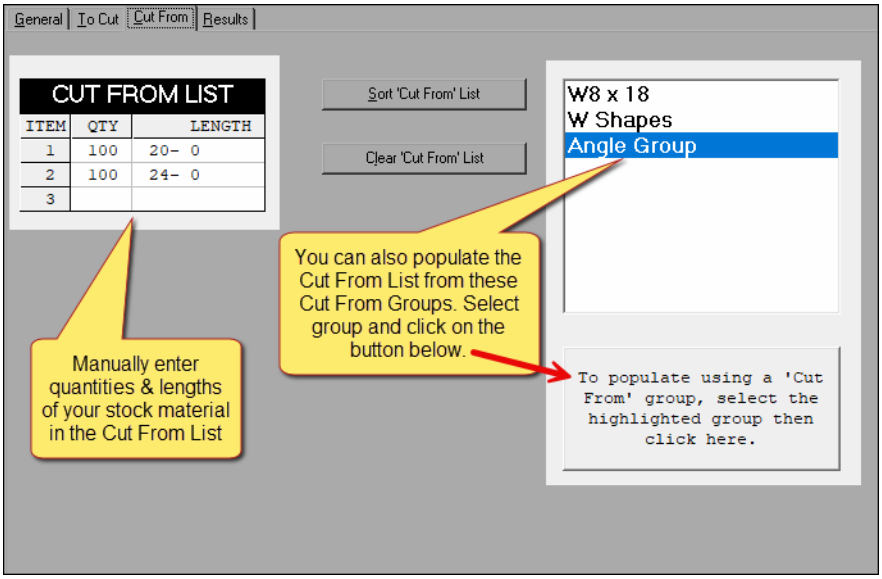
8.3 To Cut Tab



8.3.1 Imported data will automatically populate the To Cut List .

8.3.2 You can sort the list or clear the list to start over.

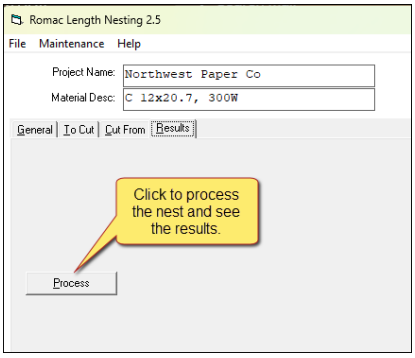
8.4 Cut From Tab



8.4.1 Manually enter the quantities and lengths of your stock material in the **Cut From List** table

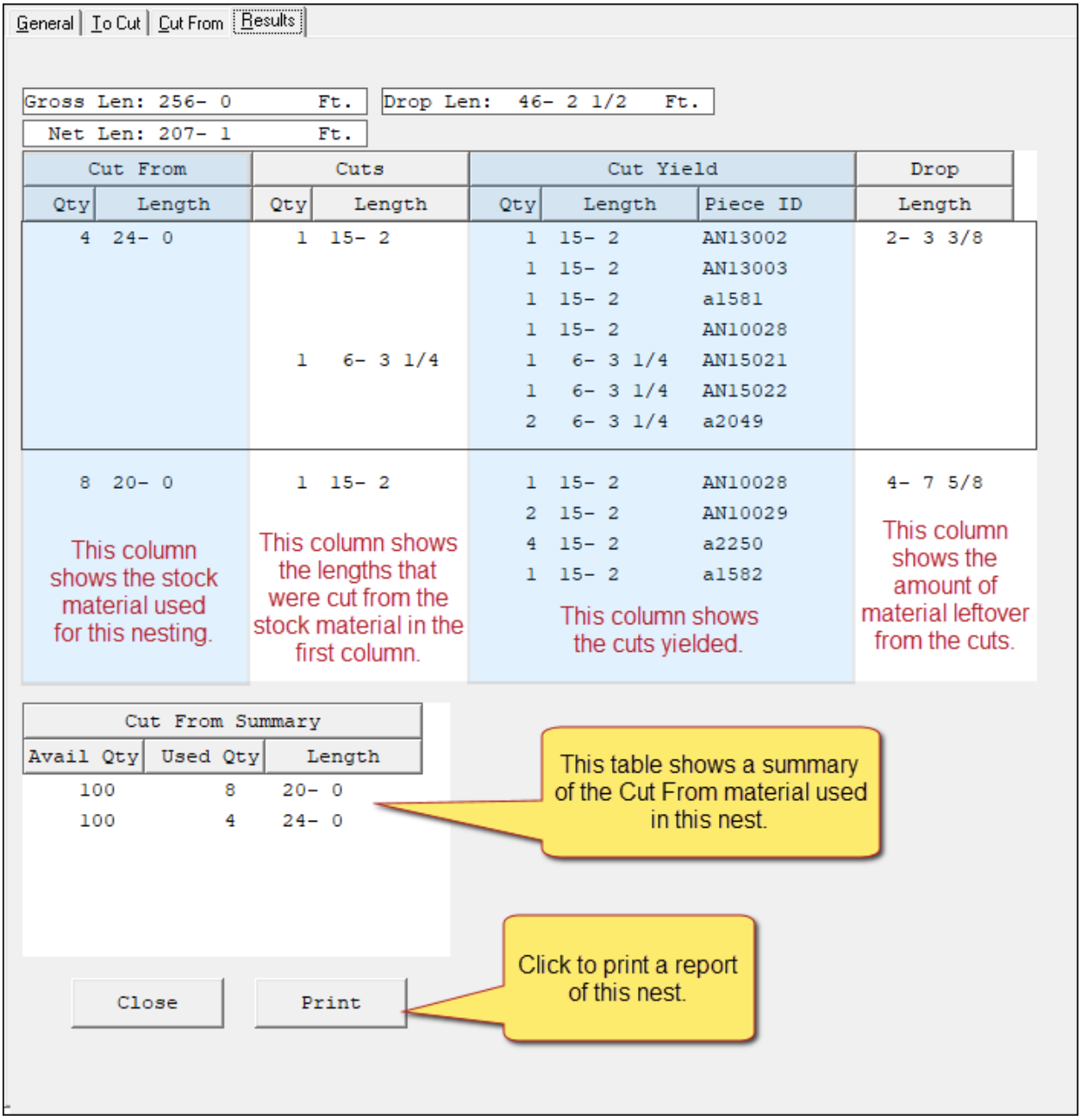
8.4.2 Optionally, you may populate the **Cut From List** from one of the **Cut From Groups** in the list in the box to the right of the Cut From List. Simply select the appropriate Cut From Group and click the button below the box to automatically enter it into the Cut From List.

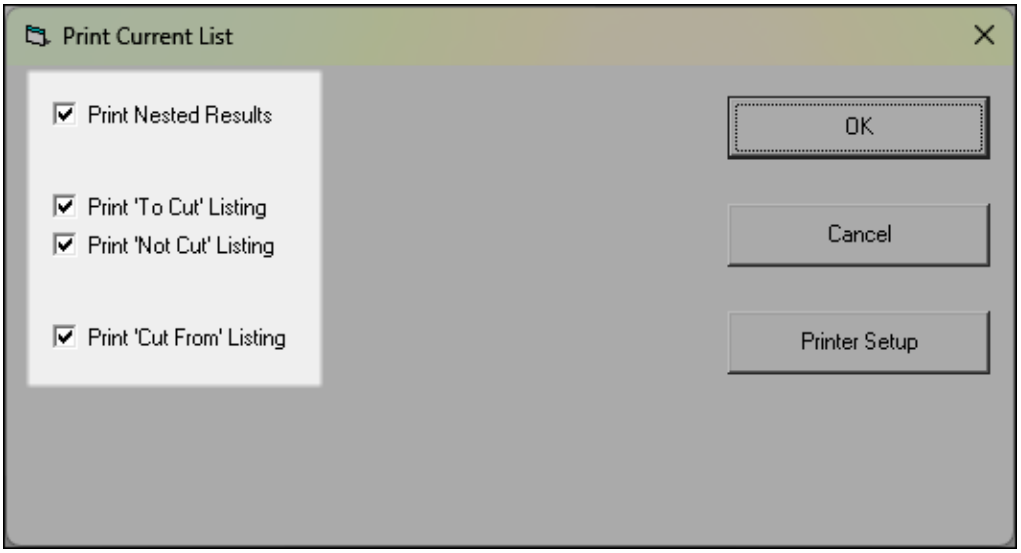
8.5 Results Tab



8.5.1 Click on the Process button

8.5.2 View the Results output





8.5.3 You can select to print the nested results, “To Cut” list, “Not Cut” List, and or “Cut From” list depending on your needs.

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