

Engineered Efficiency's ProPack Base 2010 Tools


To find out more, email eepropack@eng-eff.com or call Marc Meyers at 630.773.8724 x 26

The Interface

The user interface of ProPack was designed to provide an integrated look and feel of your native AutoCAD interface. Thus, all the tools for ProPack are built into an easy to use Palette. In addition, most of the tools also have an integrated AutoCAD command associated with the tool. This additional feature provides CAD Managers and others to create scripts and/or lisp routines that can easily use ProPack tools within the automation.

Working with the Palette

ProPack's palette is automatically displayed upon installation. However, if you close the palette you can open it again using the command `EEProPack`. The command `EEProPackClose` closes the palette.

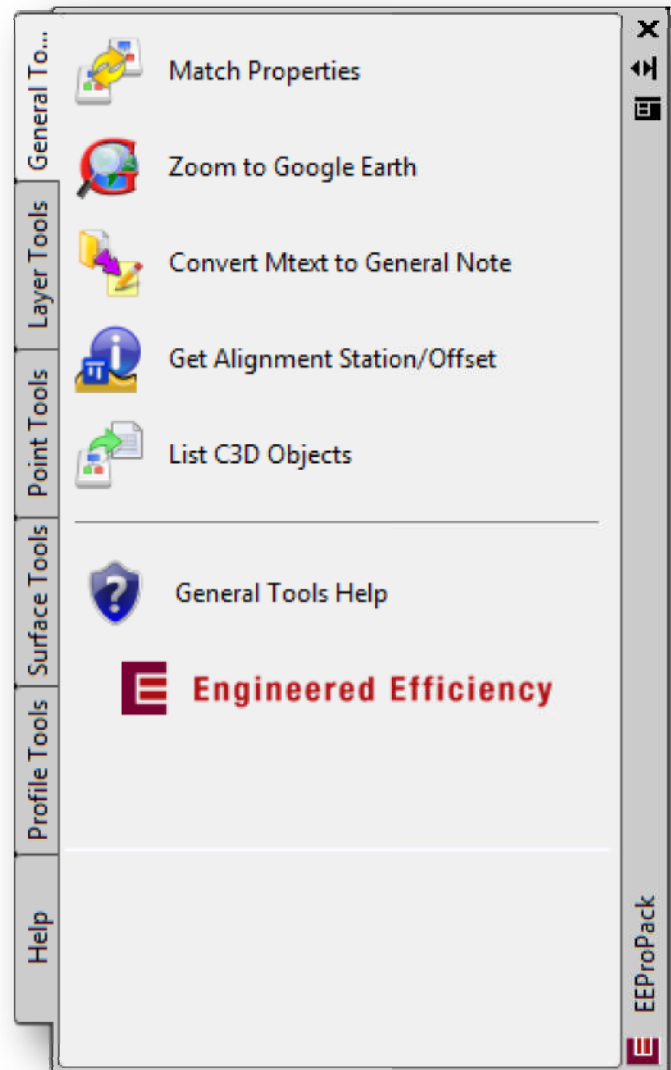
Just in case you are not good at memorizing long command names or if you prefer a more visual interface, you can click on the small EE icon  along the status bar to close/open the ProPack palette.

Tool Organization

The tools provided in ProPack Base are organized in a similar pattern as are the tools found in Civil3D. Therefore, you have the following palette tabs:

- General Tools
- Layer Tools
- Point Tools
- Surface Tools
- Profile Tools
- Help

Let's look at each palette tab to understand its purpose and tools found within.



The Palette Tabs

Each palette tab contains a link to the help for that specific category of tools along with a link to Engineered Efficiency's webpage. As updates to EE ProPack are added, each tab will notify you and with a click you can update your version of EE ProPack.

General Tools

The general tools tab provides miscellaneous tools that work with multiple object types, general C3D objects or do not really apply to Civil 3D.

Match Properties

`MatchC3DProperties`

The match properties tool works similar to native AutoCAD's match properties but with C3D objects. You first select the object whose properties you want to match. The properties which the tool will match are layer, style, tooltip settings, and labels (if applicable). Which properties that are matched can be adjusted in the settings option.

Once you select the parent object whose properties you want to match, select the objects you want to apply the parent object's properties to. It is that easy.

Objects that are currently supported are:

- Alignments
- Points
- Profiles
- Profile Views
- Surfaces

Zoom to Google Earth

`ZoomToGoogleEarth`

Many times we get a survey but have not even been out to the site yet. Now, you can simply click on the zoom to Google earth tool and the function will take you to your project's location in Google Earth. The drawing has to be associated with a coordinate system.

Convert Mtext to General Note

`MtextToNote`

There are many advantages to having text built into a general note. However, having to convert all your existing Mtext objects can be too time consuming. Now, you can quickly convert any Mtext object to a General Note object. The General Note style used is the style associated with the "AddNoteLabel" command setting.

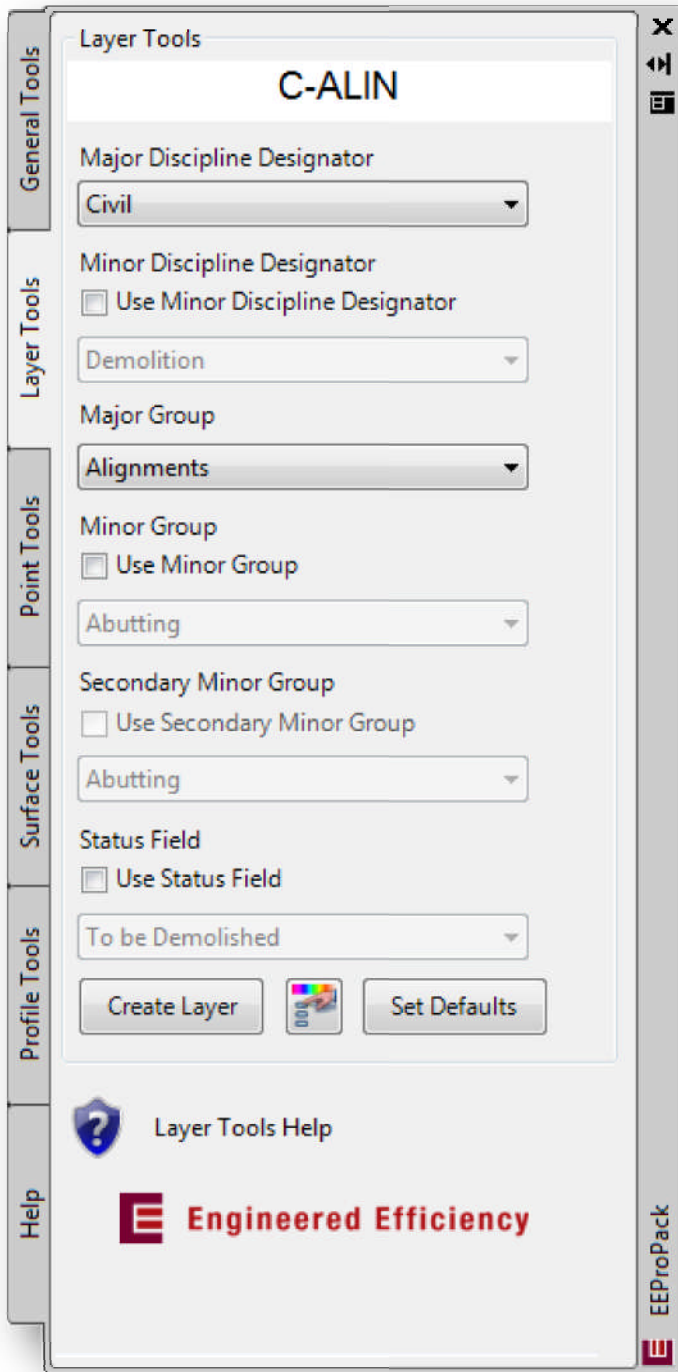
Get Alignment Station/Offset

`InquireStationOffset`

It is important that you are able to identify locations with reference to alignments. Autodesk answered the call with the inquiry palette. However, the inquiry palette takes so many clicks to just get a little information. This tool reduces the steps to get an alignment's station and offset and reads the information back to the command line.

List C3D Objects


Provides additional information about the C3D object selected than a normal list.



Layer Tools

The layer tools tab provides an easy to use interface to allow any user to painlessly create a NCS format layer name.

As you change the layer's discipline, major group, minor group, etc., the layer name at the top of the palette dynamically adjusts. If the layer exists in the drawing, the layer name changes to red.

To adjust the layer properties before the layer is created, click the properties button. 

So that you don't have to go through and always set certain parameters for every layer, you can click the "Set Defaults" button which will take the current combo box selection and checkboxes and will always display these settings.

For CAD Managers, the layer data is being read from a database which can be copied to your network. You can also edit (at your own risk) this file to set your company's interpretation of the NCS layer naming format. There is an undocumented command named `NCSDbPath` which will change EE ProPack's path to the NCS layer naming database.

Point Tools

Point tools are built to provide ease of access and creation to C3D points.

Add Point by Interpolation

PointByInterpolation

This is another tool which speeds up an already existing Civil3D process. You pick a point to grade from and then pick a point to grade to. Enter a slope or grade used to set elevation of new point. This tool will then read the selected Civil3D point's elevation, distance of the picked point from the C3D point, and the grade to create a new point. This quickly speeds up spot grading for those who may not be using feature lines yet.

Inverse Points

InversePoints

Quickly select two points and find out the inverse data of the points.

List Available Points

ListAvailablePoints

Quickly find out what point numbers have not been used in the drawing. What drawing numbers are available will be written to the command line.

Zoom to Point

ZoomToPoint

Quickly find a point by entering a point number and this tool will zoom right to it.

Point Group Commander

PointGroupCommander

Quickly adjust the point groups that a selected point belongs to. Simply check and uncheck which point groups to assign the point to. The point groups that the selected point belongs to are already checked.

Quick Points

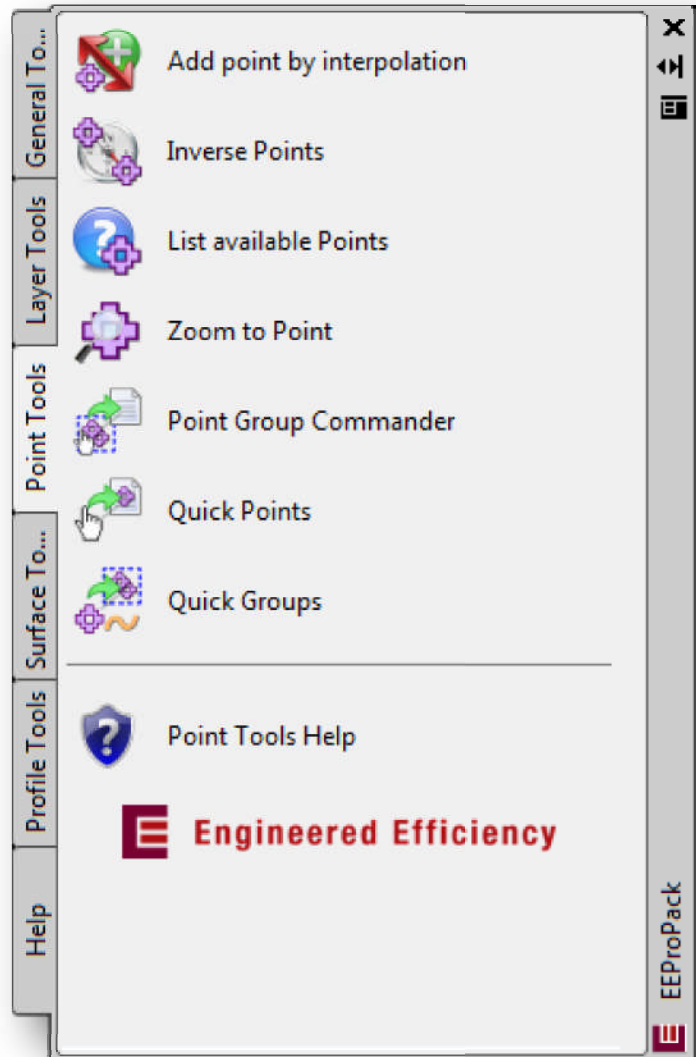
QuickPoints

For those who are still point based graders, this tool will allow you to drop points based upon their offset from a selected alignment's profile and a grade.

Quick Groups

QuickGroups

Dynamically add multiple point groups simply based upon a point's description character count.



Surface Tools

The surface tools are built to not only assist in working with C3D surfaces but also to assist in grading for surfaces.

Export Surface to STL

`ExportSurfaceToSTL`

This tool allows you to pick any surface and export the surface to a STL file format.

Set Points along Feature Line

`FeatureLinePoints`

This tool creates C3D points along a selected feature line. You can add the points using three different options:

- Add points at Points of Intersection
- Add points at Elevation Points
- Add Points at specified intervals

The point descriptions will read "Feature Line Name-Point Type" whereas the point elevation will be read from the feature line.

Create 3DPolyline Daylight

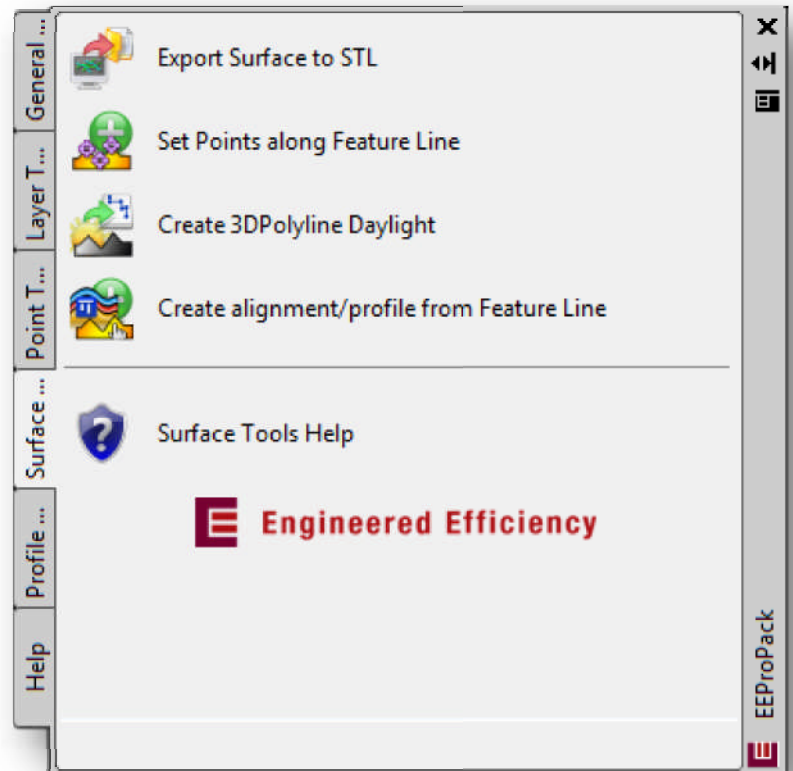
`FeatureLineDaylight`

This tool will create a 3DPolyline(s) representing the daylight of a specified slope from a selected feature line to a selected surface. Create 3DPolyLine Daylight allows you to enter supplementing factors along line segments and curve segments of the feature line.

Create alignment/profile from feature line

`AlinProfFromFl`

Select an existing feature line within a drawing to create an alignment and profile from the data of the selected feature line. This tool allows you specify styles, names, descriptions, etc for the created alignment and profile.



Profile Tools

We are happy to provide many tools that assist in the creation, editing, deletion, and even linking C3D profiles.

Create Multiple Surface Profiles

CreateSurfaceProfiles

This tool provides you a dialog box where you can create surface profiles for all checked alignments. For the surface profile names, the dialog box provides you with a naming format template area where the current drawing's surface profile creation name template. You can create your own just for these profiles.

The alignment names are on the left of the list and each surface found in the drawing is shown as a sub-list to each alignment. Simply check which alignments and/or surfaces you want to create profiles of.

Reverse Profiles

ReverseProfile

Native C3D provides a great function where you can reverse an alignment layout. So where is the function to reverse your matching layout profile? It is right here in ProPack! Pick your layout profile to reverse and it is that simple. If the curves are too close, then it will simply remove these for you.

Delete Profiles

DeleteProfiles

All of a sudden you have so many profiles in your drawing that you don't know what to do. Use this tool to delete multiple profiles (surface and layout) from your drawing.

This tool provides you a dialog box listing each alignment in the drawing and their associated profiles. Simply check/uncheck which profiles you want to delete.

Get Profile Elevation

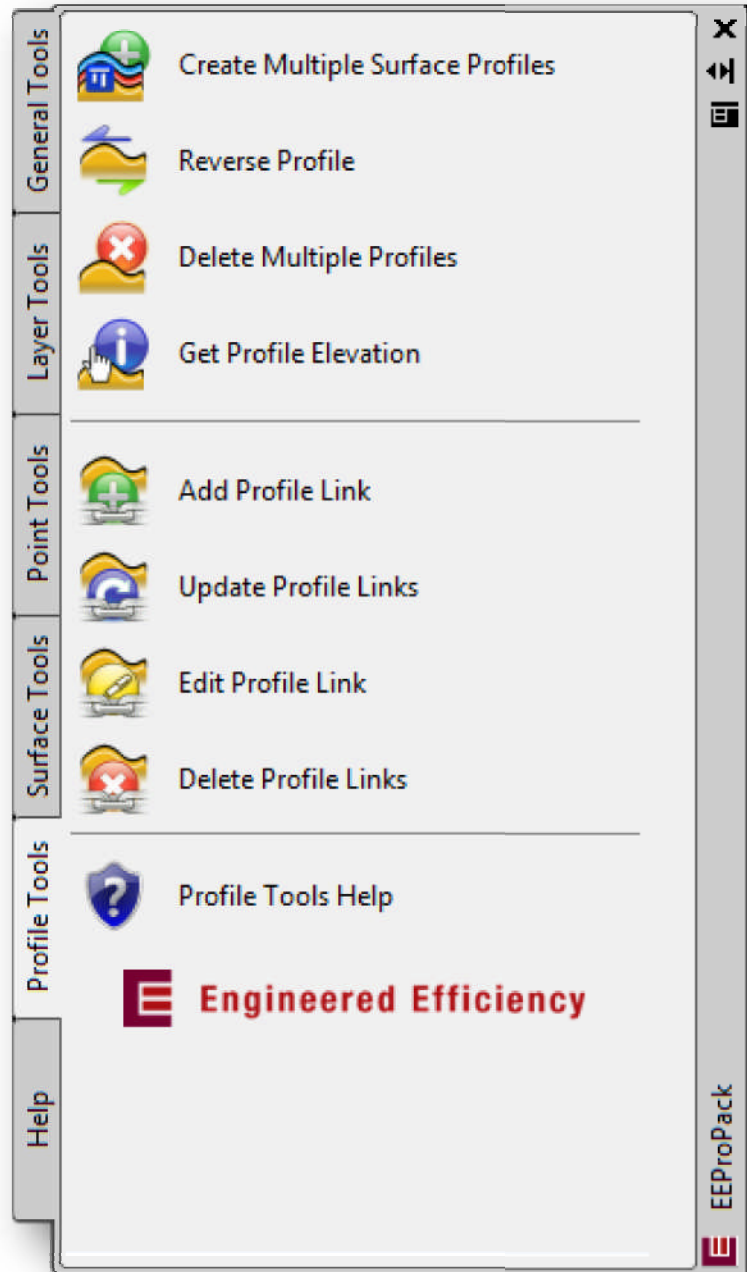
GetProfileElevation

It is important that you are able to identify profile elevations and grades at specific points in your plan. Autodesk answered the call with the inquiry palette. However, the inquiry palette takes so many clicks to just get a little information. This tool reduces the steps to get a profile's elevation and grade at a specified point along a selected alignment.

Add Profile Link

AddLinkProfiles

As you begin to build your corridor, you come across an intersection. The side street's starting elevation needs to match the main street's elevation at the PI point. Not only that but each curve tying the intersection will need profiles that automatically adjust to both the main road's profile and the side street's profile. Here enters a tool that gives you the ability to do just that.



There are two different ways to link a profile:

- Segment Link
 - This link type links only the closest PVI to the link control station. This would affect the grade at the point of the control station but the rest of the profile remains unchanged.
 - Great for profiles whose alignments run parallel such as alignments for curves along the alignment.
- Full Link
 - This link type adjusts the entire profile up or down to keep the control station's elevation. This keeps the PVI stations the same but affects the elevations of ALL PVI's.
 - Great for profiles whose alignments run perpendicular such as side roads to main roads.

The link occurs at the control station. If the profiles whose alignments intersect, you can check the option "Use Intersection as control point". This will update dynamically each time the link is updated. Otherwise, you can pick or enter the actual station to use as the control.

Once the control stations are selected the current elevation difference is shown in the "Elevation difference" textbox. You can enter a different elevation or enter 0.00 to match elevations.

Update Profile links

[UpdateLinkProfiles](#)

Once profile links are established simply click this button to update all the profiles that are linked to match their elevation differences at their control stations.

Edit Profile Links

[EditLinkProfiles](#)

Once profile links are established you can use this tool to edit any information previously discussed that establishes the links.

Delete Profile Links

[DeleteLinkProfiles](#)

Once profile links are established you can delete/remove these links with this tool.

ProPack Help

The ProPack help tab is pretty self explanatory providing an in-depth help file, information about the current version of ProPack that you are running, and an easy link to Engineered Efficiency's website so as to give you online support as well.

Conclusion

Now is the time to get your copy of EE ProPack Base 2010!

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ask for Marc Meyers

The screenshot shows the 'Link Profiles' dialog box. It is divided into several sections. At the top, under 'Link Type', the 'Segment' radio button is selected, and the 'Use Intersection as Control Point' checkbox is checked. The 'Control Profile' section contains a dropdown menu for 'Select an alignment:' set to 'Through Road', another dropdown for 'Select a profile:' set to 'Through Road FGCL', and a text input field for 'Enter control station:' containing '1+140.00'. The 'Linked Profile' section contains a dropdown for 'Select an alignment:' set to 'Side Road', another dropdown for 'Select a profile:' set to 'Side Road FGCL', a text input for 'Enter elevation difference' containing '-0.001', and a text input for 'Enter control station:' containing '0+208.61'. At the bottom of the dialog are 'OK' and 'Cancel' buttons.