



12d Import/Export

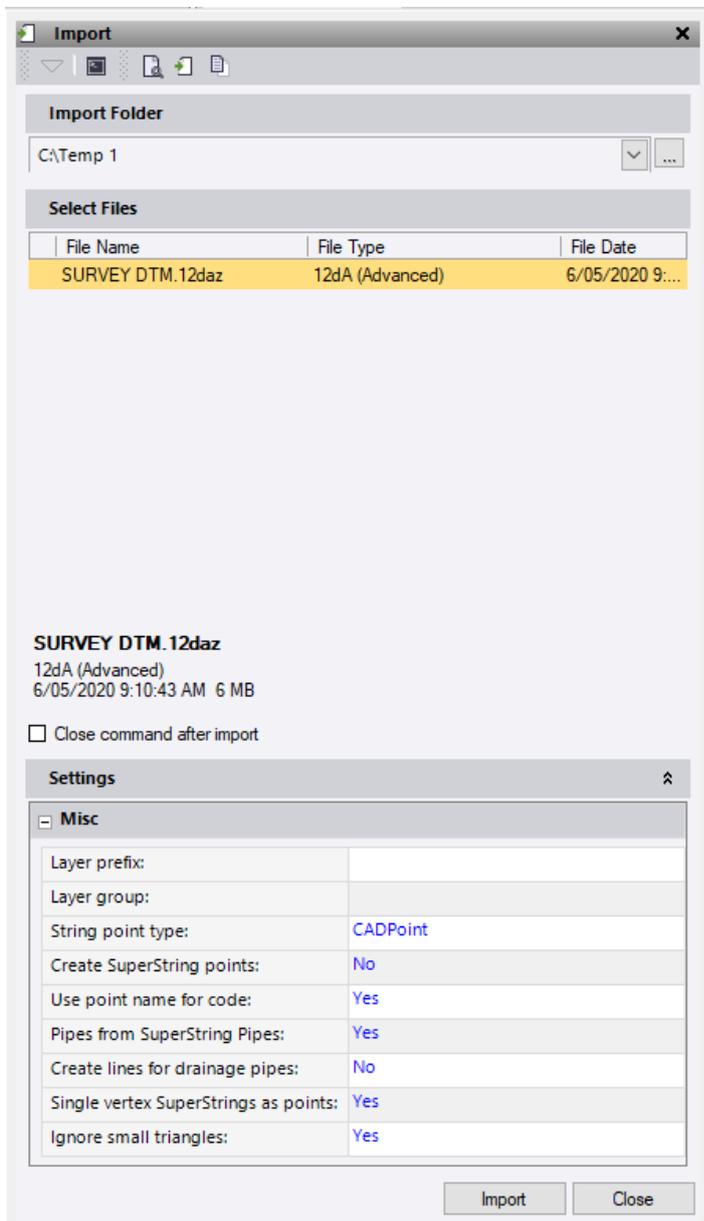
Description

12da is the native file format created by 12d Model software.

The **12da Import/Export (Basic)** can handle strings/points/surfaces and alignments for 12d.

The **12da Import/Export (Advanced)** can import advanced 12d data including, Pipe super strings, Drainage type strings, 12d Trimesh objects, hatch fills and attributes. It can now also import a colour.4d file from 12d and apply those colours to files subsequently imported to the TBC project.

Import 12da Files



Importable Data		
Data common to each section	How the data is handled when imported	
String	This identifies the type of object that is defined in the section. See descriptions below of how each data for each type of string is handled when imported.	
Model	This imports as the object's Layer property. Data on an undefined model imports onto the 0 layer.	
Name	This is imported as the object's name property.	
Chainage	For alignment strings, this imports as the station value at the alignment's starting point (point of beginning).	
Breakline	This defines whether the string's data will be imported as one or more-point objects or as a linear object. See how the distinction affects the imported object in the section below.	
Colour	This original display colour is converted into the closest system colour when imported. User-defined colours are assigned the By layer colour and reported as warnings in the Import Report . Use of a colour.4d file prior to import will map the exact colours used in the 12d project.	
Attributes	Attribute data found in the "String" Attribute section and the "Vertex" Attribute section of a line or point is imported into a "12d Attributes" section on the line or point and shown in properties. <i>Note: "Segment Attributes" are not supported.</i>	
String type	Break line status	How the data is handled when imported
2D (<i>Superseded by Super string</i>)	point	This data is imported as one or more CAD points with coordinates (X,Y values), but not elevations (Z values).
	line	This data is imported as a line string with coordinates, but not elevations. If this data contains only one point, it is imported as a 2D point (described above).
3D (<i>Superseded by Super string</i>)	point	This data is imported as one or more CAD points with coordinates and elevations.
	line	This data is imported as a line string with coordinates and elevations. If the line data contains only one point, it is imported as a 3D point (described above).
4D (<i>Superseded by Super string</i>)	point	This data is imported as one or more CAD points with coordinates and elevations. A text string naming each point is ignored.

	line	<p>This data is imported as a line string with coordinates and elevations, and a text string for each named point on which the line string's segments are based.</p> <p>The text string name is used as the ID for its respective named point. The line string's segments are dependent on the location of the named points on which they are based: if a point is moved, the segments that use it changes accordingly.</p>
Alignment <i>(Superseded by Super alignment)</i>	na	This data is imported as a PI-based (Point of Intersection-based) alignment with horizontal and vertical components.
Arc	na	This data is imported as a 2D or 3D line string (based on your data).
Circle	na	This data is imported as a 2D or 3D line string (based on your data).
Drainage	point	This data is imported as manholes which are created in the MSI manager based on the shape and size defined in the 12d file. Type Pit_v2 pits are imported at the first level of the pit but not the riser section.
	line	<p>This data is brought in as Utility pipes. Note: Pipes are set to calculated "End type" by default but can be edited in TBC after import.</p> <p>The setting Create lines for drainage pipes is an option to create a 3d line string from centre to centre of the manholes applying the pipe invert level at the centre of manholes and placing them on a new layer of the same name with <i>_lines</i> as a suffix.</p> <p>Note: Pipes that are designed as doubles using a single centreline are not supported and will import as a single.</p>
Interface	point	This data is ignored; no points are imported.
	line	This data is imported as a line string.
Pipe <i>(Superseded by Super string)</i>	point	This data is imported as a point
	line	This data is imported as a line string.
Pipeline <i>(Superseded by Super alignment)</i>	na	This data is imported as a PI-based (Point of Intersection-based) alignment with horizontal and vertical components.
Polyline <i>(Superseded by Super string)</i>	point	This data is ignored; no points are imported.
	line	This data is imported as a 2D or 3D line string (based on your data).
Text	na	<p>This data is imported as 2D CAD Multiline text.</p> <p>The 'world size' value is used as the 'ground' text height. No paper text height is imported.</p>
Super	point	This data is imported as one or more 2D or 3D CAD points (based on your data). There is an option String point type

		in the settings that allows you to import as a point instead if required.
	line	<p>All Super strings are brought in as line strings. This is now the main format for all 2D,3D, 4D, Pipe and Polyline strings out of 12d.</p> <ul style="list-style-type: none"> ▪ If the data does contain arcs, it is imported as a 2D or 3D line string (based on your data). If a point data block is defined, there is the option in the settings to create points on nodes. The line string's segments are associative with the location of the named points on which each segment is based. ▪ If the line data contains only one point, it is imported as a CAD point. <p>All spiral segments are imported as straight segments.</p> <p>Vertex and segment text are ignored but attribute data is imported except "segment Attributes". String Attributes come in with the line string and Vertex Attributes come in on points if the Create SuperString points setting is on.</p> <p>The setting Pipes from SuperString Pipes is an option to create the 3d pipe object as well as the line string if the data exists and is placed on a new layer of the same name with <u>_pipes</u> as a suffix..</p>
Super_alignment	na	<p>This data is imported as a segment-based horizontal alignment and a PI based vertical alignment.</p> <p>The pipe diameter value is used if the setting, Pipes from SuperString Pipes is checked to create the 3d pipe object and is placed on a new layer of the same name with <u>_pipes</u> as a suffix.</p> <p>The alignment string attributes are imported if available.</p> <p>Note: <i>Chainage equations are not supported. Also, nonstandard transitions are imported as straights and are shown in the warning message.</i></p>
TINs	na	<p>This data is imported as a 3D surface with 'internal data'. All triangle edges are imported as internal break lines. All vertices that are not used by surface triangles are ignored.</p> <p>It is recommended that when exporting a surface from 12d you do not use the "Output full tin" option.</p> <p>Note: <i>Internal data is data that is embedded in a surface on Import. It cannot be edited in this program. External data includes objects that have been added to a surface as members. They influence the surface's shape and can be edited or removed.</i></p>
Trimesh	na	This data is imported as a 3d BIM object.
Non-importable Data		
<ul style="list-style-type: none"> ▪ Styles ▪ Faces 		

- Features
- Super_TINs

Extra Options for the **Advanced** import are the ability to set import parameters as follows below.

Import setting – This is default layout, which is also what you get when using the drag and drop method unless you change a setting while importing through this pane and then any subsequent drag and drop import will use the last settings applied.

Settings	
[-] Misc	
Layer prefix:	
Layer group:	
String point type:	CADPoint
Create SuperString points:	No
Use point name for code:	Yes
Pipes from SuperString Pipes:	No
Create lines for drainage pipes:	No
Single vertex SuperStrings as points:	Yes
Ignore small triangles:	Yes

Layer Prefix: Ability to add a prefix to all the layers upon import.

Layer Group: Ability to combine all new layers into a new group.

String point type: Import 12d point type data as CAD Points or Points.

Create SuperString points: Ability to turn off importing the point data block on every 12d super string node. Only needed if the super string has vertex attributes.

Use point name for code: Ability to use the 12d point name as the feature code name in TBC.

Pipes from SuperString Pipes: Ability to create a utility pipe string in TBC from a 12d super string with diameter and justification. Data placed on a new layer of the same name with *_pipes* as a suffix.

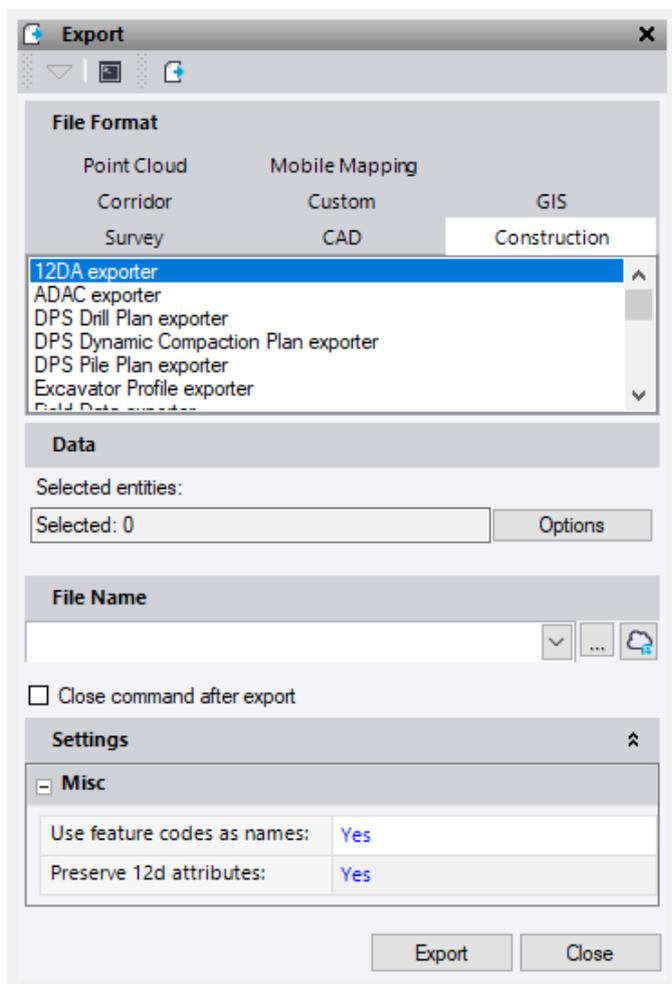
Create lines for drainage pipes: Ability to create a 3d line string when importing a 12d drainage string from centre to centre of the manholes applying the pipe invert level at the centre of manholes. Data placed on a new layer of the same name with *_lines* as a suffix

Single vertex SuperStrings as points: Turns single vertex 12d string types into points.

Ignore small triangles: Stops the import of tiny triangles from 12d that can cause problems to the surface and not import properly.

Note: At the completion of an import if there are any errors or warnings to report a box will pop up on screen. Please review these to determine if they affect the data that was imported.

Export 12da Files



Process:

1. Select **Export** in **Home > Data Exchange**.
2. Click the **Construction** tab.
3. Select **12D Exporter** in the **File Format** list.
4. Click in the **Selected objects** box and pick the objects that you want to include in the export from a graphic view, or click **Options** and choose a selection option in the list.
5. Type a path and file name for the exported file in the **File Name** box or click the **Browse** button to browse for a location and specify a file name. *Note: By default, the exported file is given the name of your project.*
6. If you want to export another file after this one, uncheck the **Close command after export** box.

Click **Export**. The selected data is exported to the file you specified

Note: IP Based Horizontal alignments and Linestrings with Vertical Tab data are not currently supported.

Extra Options for the **Advanced** Export are the ability to set export parameters as follows below.

- **Use feature codes as names** allows points in 12d to have the name of the feature code instead of the Point ID.
- **Preserve 12d attributes** allows any attributes that may have been imported from 12da files previously to be exported out again. This is defaulted to No unless you specifically need the function.
- Other Advanced exports that do not require an option to be checked.
 - Blocks will now be exported as strings for import to 12d. **Note:** *If there are many blocks in the data this will slow the export process due to the conversion required. Also, the name of the block will be lost in the exported data.*
 - Feature Attributes processed in TBC will be exported to 12d and populate the “String” attribute section in 12d.
 - Utility lines created in TBC will export as pipe super strings to 12d.