



BIM CAPABILITY DATA SHEET

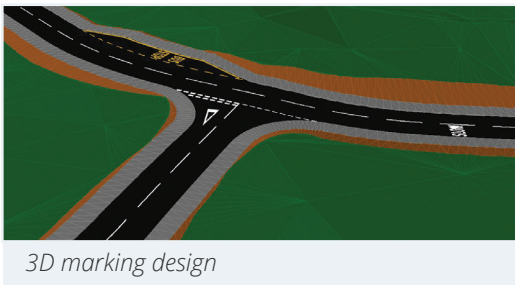
PDS LINE

PDS Line can produce **data-rich road marking designs in 3D**, by overlaying 2D marking objects and digital surfaces, automatically attaching BIM data. The BIM design can then be viewed in collaboration with software such as Autodesk Navisworks.

What do I need?

2D marking design – either fully intelligent PDS Line marking objects, or native AutoCAD polylines.

PDS Line can extract BIM data from these objects and apply them to the BIM model as they are projected onto the digital surface. The marking objects do not have to be present in the drawing – they can be extracted from a different drawing file if necessary.



3D marking design

Digital surface – including:

- Drawing objects such as polylines, faces or PDS Strings representing triangular data
- Civil 3D surfaces, if running in Autodesk Civil 3D
- A PDS ground model file (.pgm)

What does it produce?

3D representation of road markings

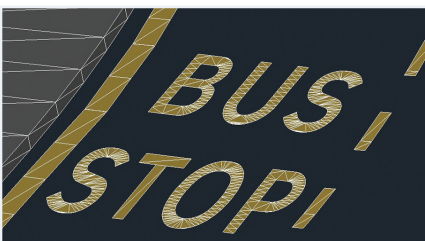
Road markings are always projected as AutoCAD objects, meaning any DWG software can understand and use them. The markings are automatically triangulated and projected as 3D polylines, faces or polyface meshes.

The layer set used for triangulation is fully configurable, providing comprehensive layer and colour control complying with Uniclass or corporate layer standards.

BIM data

If BIM data is required, the triangles for each marking are stored inside a block, with attributes representing the BIM data.

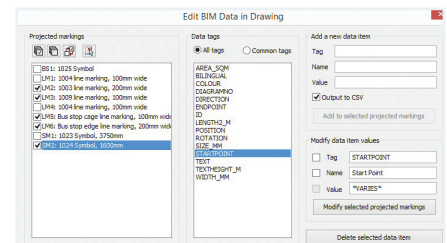
If required, each projected marking is assigned a unique ID (re-using IDs if the marking has been projected before) which can be stored as part of the marking's BIM data.



3D representations

BIM data	Tag	CSV ...
<ul style="list-style-type: none"> All Markings <ul style="list-style-type: none"> Contractor ID Line Markings <ul style="list-style-type: none"> TSRGD Diagram No Line Width (mm) Alignment Length (m) Start Point End Point Offset From Alignm... 	<ul style="list-style-type: none"> CONTRACTOR ID DIAGRAMNO WIDTH_MM LENGTH_M STARTPOINT ENDPOINT OFFSET_M 	

BIM data



BIM data editing

The required BIM data is set up in a schema describing the data required, how it should be represented, whether each item is mandatory and if it should be exported to CSV or not. BIM data items can represent marking information, such as:

- Traffic Sign Regulations and General Directions (TSRGD) diagram number, length, width, area, colour or geospatial information
- Custom data such as construction/maintenance information and chainages

As far as possible, PDS Line will populate BIM data values automatically, based on the marking design. Values can then easily be modified later on.

If required, the schema can be shared across projects for consistency and more precise BIM management.

All 3D triangulation and BIM data is captured in a single drawing file.

Can I manipulate BIM data once created?

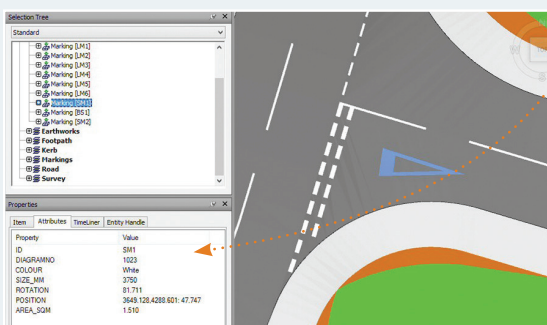
It's easy to modify, add and remove BIM data after the BIM model has been created. You can manipulate data items on a drawing-wide or individual basis as the design evolves over time. It is easy to make changes to the data on one single marking, or on a selection of markings in one operation.

Can I export my BIM data?

Your BIM data can be easily extracted and exported to a .csv file and imported into a database or spreadsheet using bespoke PDS Line commands. As the data is created using native AutoCAD objects, it can also be extracted using AutoCAD methods.

Can I view my BIM model and data in other software?

As PDS Line creates BIM information as native AutoCAD data, any software capable of reading a .dwg file can display the model. Autodesk Navisworks and Autodesk Design Review will show the BIM data as a **property list** (as with any other block attributes).

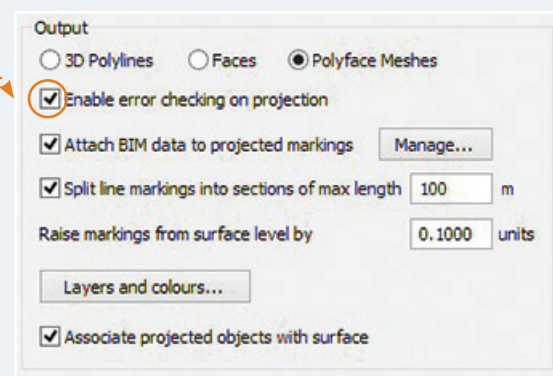


What if my digital surface changes?

If your Civil 3D surface or PDS ground model changes, PDS Line can detect this and re-project any road markings affected, subsequently updating any relevant BIM data.

What if I have anomalies in my digital surface?

Surfaces can often contain triangulation errors, depending on the accuracy and quality of the survey. PDS Line can attempt to detect and **correct irregularities** in projected marking triangulations, saving time and efforts fixing the triangulation manually.



Can I break long line markings down into shorter sections?

Yes. For some maintenance systems, this is a requirement – specifically for Highways England projects. Therefore, PDS Line can break line markings down to any length. The break points will not occur on a dash, and each section is created separately and numbered sequentially.