

IGX.Model.Extrusion 1.1

ig CAD Model: Extrusion — 2025-10-24

Version Requirement: IG.Model.Processor $\geq$ 1.4.0.100

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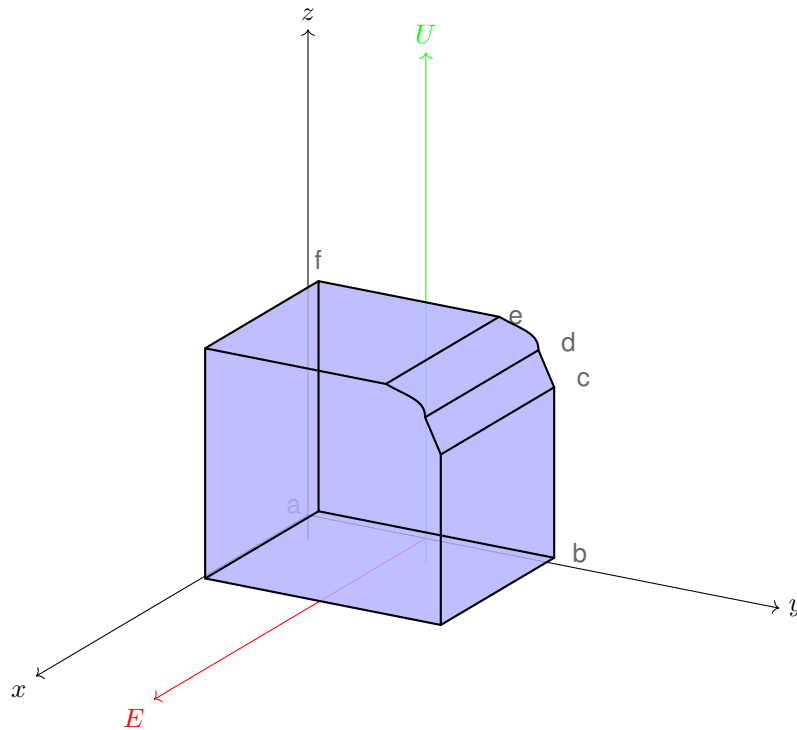


Figure 1: 3D illustration of the Extrusion 1.0 model. A 2D profile (a, b, c, d, e, f) defined in the `paths` array is extruded along the E vector with default 'up' as U Parallel of z axis for the coordinate system by a specified `length`. It is designed usually to generate flat laying surfaces, so with up vector Z the surface will be laying.

1 paths

Type: array of objects **Required:** Yes

An array specifying one or more 2D profiles. Each profile requires a unique `id` and a `path` array that defines its geometry using a sequence of commands similar to SVG.

```
"paths": [  
  {  
    "id": "myProfile",  
    "quality": 50,  
    "path": [  
      { "type": "M", "end": { "x": 10, "y": 0 } },  
      { "type": "L", "end": { "x": 50, "y": 0 } },  
      ...  
    ]  
  }  
]
```

2 extrusion

Type: object **Required:** Yes

Specifies the parameters for the extrusion operation.

- **profile**
Type: string **Required:** Yes
The id of the path from the `paths` array to be extruded.
 - **length**
Type: number **Unit:** mm **Required:** Yes
The distance to extrude the profile along the `upvector`.
-

3 upvector

Type: string **Enum:** ["x", "y", "z"] **Default:** "z" **Required:** No

Defines the axis along Model.Processor will generate the 3D model.

4 quality

Type: number **Range:** 0–100 **Default:** 25 **Required:** No

A global setting that controls the tessellation density of curved surfaces. Higher values produce a smoother mesh with more polygons. This can be overridden for individual profiles by setting the `quality` property within a path object.

5 uv

Type: object **Required:** No

Defines how a 2D texture is mapped onto the solid model. These parameters are available in version 1.1 and higher. All of these values can also be used as top-level parameters.

- **patchSize**
Type: number **Default:** 150
Size of each UV tile in mm.
 - **uvOrigin**
Type: string **Enum:** CENTER, ORIGIN **Default:** CENTER
Anchor point for the UV map.
 - **uOffset, vOffset**
Type: number **Default:** 0.0
Translates the UV grid along the U and V axes after the origin is applied.
 - **rotation**
Type: number **Default:** 0
Rotation of the UV grid in degrees.
 - **uvType**
Type: string **Enum:** CUBIC, AUTO **Default:** CUBIC
Specifies how the UV mapping is applied to the panel. Use `CUBIC` for cubic projection or `AUTO` for automatic mapping.
-

6 rotations

Type: array of objects **Required:** No

Specifies one or more rotations applied sequentially to the model. Each rotation object must define both an axis and an angle.

7 transformation

Type: object **Required:** No

Defines a global translation applied to the entire model. When used, all x, y, and z fields are required.

- **x, y, z**

Type: number

Translation values in millimeters applied along the X, Y, and Z axes.

- **axis**

Type: string **Enum:** X, Y, Z

Axis around which the rotation is performed.

- **angle**

Type: number

Angle in degrees used for the rotation around the specified axis.

8 shading

Type: object **Required:** No

Defines the shading style applied to the model. Available in version 1.4 and higher.

- **mode**

Type: string **Enum:** AUTO, FLAT, SOFT **Default:** FLAT

Determines the shading mode of the surfaces.

- AUTO – automatic shading based on angle of vector normals.
- FLAT – flat shading for each polygon.
- SOFT – smooth shading across polygons.

- **angle**

Type: number **Default:** 30

Angle in degrees used for calculating smoothing boundaries in soft shading.
