

Overview

BendPro G2 V2 can import and export tube geometry and/or complete part files to and from the Supravisation standardized file format. This import and export capability is utilized as a standardized data transfer mechanism between BendPro G2 V2 and various measuring machines and other devices. These standard interactions are defined and documented in the BendPro G2 V2 operating manuals and other application notes related to measuring machines.

The Supravisation part import mechanism can also import tube geometry and apply a set of material setup defaults. This utilization of Supravisation part import can be used to generate bendable parts with minimal user interaction required, using material setup defaults to define the appropriate bend and tooling settings for the part geometry.

This document details the Supravisation data file contents required to import tube geometry and apply material setup defaults to the resulting part program. Refer to the BendPro G2 V2 Operating and Setup manuals for a complete overview on how to use material setup defaults.

BendPro G2 V2 System Requirements

Option 1208 Supravisation Interface is required to import and export parts as Supravisation data files.

Option 1222 CAD Interface is required to visually review Supravisation data file geometry before part creation.

BendPro G2 V2 Version 2.2.6750 or newer (June 2018 Update) is required to automatically apply material setup defaults during a Supravisation import.

Note: If option 1222 CAD Interface is not present, the Supravisation import creates a part file after import without any geometry preview displayed. The imported part geometry may be reviewed in the Part Editor.

Supravisation Data File Import

Refer to the official “Supravisation File Format” documentation or equivalent for a complete specification of Supravisation data sections and required formatting.

This section lists the minimum Supravisation fields required to import tube geometry and apply Material Setup Defaults to the resulting part.

Supravisation Part Import With Material Setup Defaults

CURRENT TECH

BendPro G2 V2 Application Note

- Each Supravisation field requires an empty line separator before the next field definition.
- Additional fields (not listed in this document) are allowed in the import file, including custom BendPro data fields.
- Additional custom BendPro part and data fields other than the material setup defaults specification will applied to the resulting part only if the BendPro G2 V2 option "SVYBCOnly" is set to FALSE (the default setting).
- Field and value identifiers are case-sensitive.
- Tube geometry may be specified in XYZ format as an alternative to CLRA. Refer to the Supravisation file format documentation for guidelines when using the \$mxyz field as an alternative to \$clra for tube geometry specification.

Part Number Field

Field Identifier: \$pnum

This field specifies the resulting part number for the imported part in BendPro G2 V2.

Allowed Values

- This field is required as the first line of the Supravisation file to import.
- The allowable part number characters are all characters that are allowed on the Windows filesystem.
- Illegal characters are ignored.

Example:

```
$pnum Sample Part
```

Units Declaration Field

Field Identifier: \$unit

This field specifies the part units.

Allowed Values

- "E" to represent "inches"
- "M" to represent "millimeters"

Example:

```
$unit E
```

Supravisision Part Import With Material Setup Defaults

CURRENT TECH

BendPro G2 V2 Application Note

YBC / LRA Tube Geometry Data Field

Field Identifier: \$clra

This field contains the tube geometry in YBC / LRA format. The tube geometry is the desired part shape, and the resulting BendPro moves will be adjusted to compensate for other settings such as elongation or springback as defined in the Material Setup Defaults or other sections of the file import (such as \$pvar).

Speeds, Accelerations, and Tooling values per the official Supravisision specification are ignored and will be specified via the Material Defaults Settings. These ignored values must contain a placeholder "0".

Allowed Values

- The \$clra field specification requires a numeric value indicating the number of bends represented.
- The data columns for each YBC bend line are space-delimited and can specify up to 3 digits of precision.
- A "0" placeholder is required for the ignored fields (Speed, Acceleration, Tooling)
- Additional spaces between fields may be included to enhance readability.
- The last data row represents the last Y value

YBC Bend Line Format:

<Y> 0 0 0 0 0 0 <C> 0 0 0 <CLR>

Last Y Format:

<LastY> 0 0 0

Example:

```
$clra 3
10.000 0 0 0      0.000 0 0 0      90.000 0 0 0      2.000
 6.000 0 0 0      90.000 0 0 0      90.000 0 0 0      2.000
12.000 0 0 0      45.000 0 0 0      90.000 0 0 0      2.000
10.000 0 0 0
```

Part Variables Field

Field Identifier: \$pvar

The \$pvar field contains values defining basic part geometry and springback behavior. The \$pvar field specification requires a numeric value argument indicating the number of values specified.

Supravisision Part Import With Material Setup Defaults

CURRENT TECH

BendPro G2 V2 Application Note

Required Field Values (Geometry):

PRBR	Default CLR specification for the part (may be overridden in the \$clra section)
TUBL	Overall tube length
TBWT	Tube wall thickness
TBDI	Tube diameter

Optional Field Values (Springback and Load Position):

TLDP	The Y load position for this part
FSBK	The Constant Springback specification (0-100%)
PSBK	The Proportional Springback specification (0-100%)
TELO	The Elongation specification (0-100%)

Example:

```
$pvar 4  
PRBR 2.000  
TUBL 59.274  
TBDI 1.000  
TBWT 0.125
```

Interference Zone Variables Field (Optional)

Field Identifier: \$mvar

The interference zone field is optional and can be used to override the tooling interference zones in the material setup defaults. The \$mvar field specification requires a numeric value argument indicating the number of values specified.

Optional Field Values:

CIN1	Front Interference Zone
CLL1	Clamp Die Length
F1L1	Pressure Die Interference Zone
WDL1	Wiper Die Interference Zone
COLG	Collet Depth

Example:

```
$mvar 1  
COLG 1.000
```

Supravision Part Import With Material Setup Defaults

CURRENT TECH

BendPro G2 V2 Application Note

Material Setup Defaults Field (Custom)

Field Identifier: \$mtdf

This is a custom Supravision field that BendPro G2 V2 interprets to select the material setup default values during tube geometry import and apply them to the resulting part. Material setup defaults are not applied if this field is missing or if an inappropriate material index string is specified.

Note: Inclusion of any optional BendPro data in the Supravision file (via the \$bend or \$part custom fields) may overwrite any material setup defaults that were applied using the \$mtdf field.

Required Field Values:

Material	Material Setup Defaults Index String
----------	--------------------------------------

Example:

```
$mtdf 1  
Material Aluminum
```

Supravisation Part Import With Material Setup Defaults

CURRENT TECH

BendPro G2 V2 Application Note

Example Supravisation Part Import File With Material Setup Defaults



Part Number: ZX33448A
Description:
Units: Inches
OD: 1.000
Wall: 0.065
CLR: 3.000
Material: Aluminum

Bend - YBC

Bend	Y Move	B Move	C Move	CLR
1	9.000	0.00	180.00	3.000
2	3.000	180.00	90.00	3.000
3	3.000	180.00	90.00	3.000
4	3.000	180.00	90.00	3.000
5	3.000	180.00	90.00	3.000

L.Y.: 10.000
Tube Length: 59.274

\$pnum ZX33448A

\$unit E

\$clra 5

9 0 0 0 0 0 0 0 180 0 0 0 3
3 0 0 0 180 0 0 0 90 0 0 0 3
3 0 0 0 180 0 0 0 90 0 0 0 3
3 0 0 0 180 0 0 0 90 0 0 0 3
3 0 0 0 180 0 0 0 90 0 0 0 3
10 0 0 0

\$pvar 4

TUBL 32.059

TBDI 1

TBWT 0.065

PRBR 3

\$mtdf 1

Material Aluminum