

# 3DINTERSECTION FOR AUTOCAD

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3DINTERSECTION is an application for AUTOCAD or BricsCAD, which determines the intersection curves between 2 sets consisting of 3DFACE, 3DSOLID or 3DMESH entities.

Starting with AutoCAD 2010, the 3DMESH entities must be created using 0 value for the MESHTYPE variable.

No matter the language of AutoCAD. 3DINT works, but his commands remain in English. But there are User Guides for different languages, in PDF format.

You can also try our RTOPO program (see [www.rcad.eu](http://www.rcad.eu)) running under Windows 98/XP/VISTA/7/8/10 ! This program, having its own CAD kernel, can divide, by the curves of the intersection, two sets of 3dmesh and 3dface entities and has an interface with other CAD systems via DXF files.

## INSTALLATION

Always download the latest shareware version from [www.rcad.eu](http://www.rcad.eu) (not from other websites)!

Follow these steps:

1) Unpack 3DINT.ZIP in the directory "C:\3DINT".

The folder "c:\3DINT" is mandatory!

If you used a different folder, 3DINT will not work and will appear the error "bad argument type: FILE nil"!

2) in AutoCAD

- starting with Autocad 2014, set SECURELOAD variable to 0 or TRUSTEDPATHS to c:\3DINT

- launch the menu function:

  - Tools

    - Load Application

      - Startup Suite

        - Add

          - C:/3DINT/3DINT.VLX

in BricsCAD

- launch the menu function:

  - Tools

    - Load Application

      - Add

        - C:/3DINT/3DINT.DES

          - Load

The shareware version (of trial) of the 3DINT program has the limitations:

- run only 4 times,

- the design of the intersections (excepting the first 2) is temporary (disappears if you introduce the AUTOCAD PAN, ZOOM, REDRAW or REGEN command).

## Available commands:

3DINT - determines the intersection curves between 2 sets consisting of 3DFACE, 3DSOLID or 3DMESH entities

3DINT\_CP - sets the "concatenation precision" (default 0.000001) of the segments of intersection

3DINTP - generates 3DFACE entities, perpendicular to a POLYLINE entity; is useful for obtaining of cross sections

3DINT\_S3 - if has a value other than 0, 3DINT will also draw the conversion to 3DFACE of the 3DSOLID entities

3DINTI - generates horizontal 3DFACE entities with a given step, having the size of the XOY gauge; is useful for isolines.

## LAUNCHING

Within an AutoCAD session the **3DINT** command will be introduced first. Then, it will appear the question:

"First set (3DFACE, 3DSOLID or 3DMESH)...",

the user will have to select entities of 3DFACE, 3DSOLID or 3DMESH types. The end of selection is indicated by pressing ENTER button.

The following question will be:

"Second set (3DFACE, 3DSOLID or 3DMESH)..."

The user will have to select a new 3DFACE, 3DSOLID or 3DMESH sets.

Then, the intersection curves are generated, in the form of 3DPOLY colored entities from 1 to 1, beginning with the color 1. Curves are generated in the 3DINT layer.

Smoothness of 3DSOLID entities may be adjusted by AutoCAD variable FACETRES (0.01-10).

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There is also the **3DINT\_CP** command that you can set "concatenation precision" (default 0.000001) of the segments of intersection. Two end points of segments are considered identical if the distance between them is less than "concatenation precision"! It is a good idea to enter higher values than the default value when you intersect 3DSOLID entities or 3DFACE entities that are not joined perfectly on their edges! The setting is valid only for the current session!

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**3DINTP** command generates 3DFACE entities perpendicular to a POLYLINE entity in its vertices. POLYLINE can be 2D or 3D, interpolated or not, closed or opened. The user will have to enter for 3DFACE entities: ZMIN, ZMAX, left distance and right distance of the vertical sides towards the POLYLINE vertices. 3DFACE entities are perpendicular to XOY plane and to POLYLINE (along the bisector of the vertex). 3DINTP and then 3DINT commands are useful for obtaining cross sections to a POLYLINE in a set of 3DFACE, 3DSOLID or 3DMESH entities.

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**3DINT\_S3** command sets whether to draw the conversion to 3DFACE of the 3DSOLID entities. If it has a value other than 0, 3DINT command will draw the conversion. The 3DFACE entities of an 3DSOLID will be in an layer "3DINT\_S3\_number", "number" having values between 1 and maximum number of 3DSOLID. The setting is valid only for the current session!

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**3DINTI** command generates horizontal 3DFACE entities with a given step, having the size of the XOY gauge. The user will have to enter ZMIN, ZMAX and the step. 3DINTI and then 3DINT commands are useful to obtain isolines.