

Section cuts drawn within the graphical user interface

Test Problem

Name:	Section cuts drawn within the graphical user interface
Description:	Draw section cuts within the graphical user interface using either 2D or 3D views.
Program:	SAP2000
Version:	14.1.0
Model ID:	na

On this page:

The process for drawing [section cuts](#) within the graphical user interface is demonstrated using a cantilevered frame system (Figure 1) which has 1m segments extending along the positive global Z axis, then X, then Y. A point load of $F_x = 1\text{kN}$, $F_y = 10\text{kN}$, and $F_z = 100\text{kN}$ is applied to the free end. After analysis is run, section cuts are drawn to obtain section-cut forces.

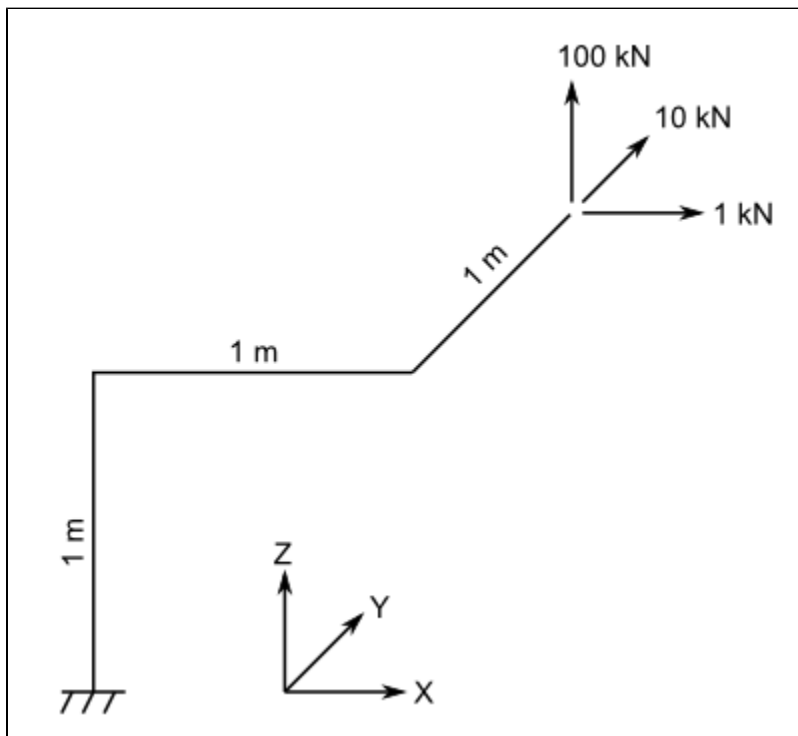


Figure 1 - Geometry and Loading of the Test Model

Section cut in 2D View

For section cuts drawn in a 2D View, the software automatically projects a quadrilateral cutting plane into the depth of the display. This depth is specified through Options > Dimensions and Tolerances > 2D View Cutting Planes +/- . Relevant parameters are shown in Figures 2 and 3:

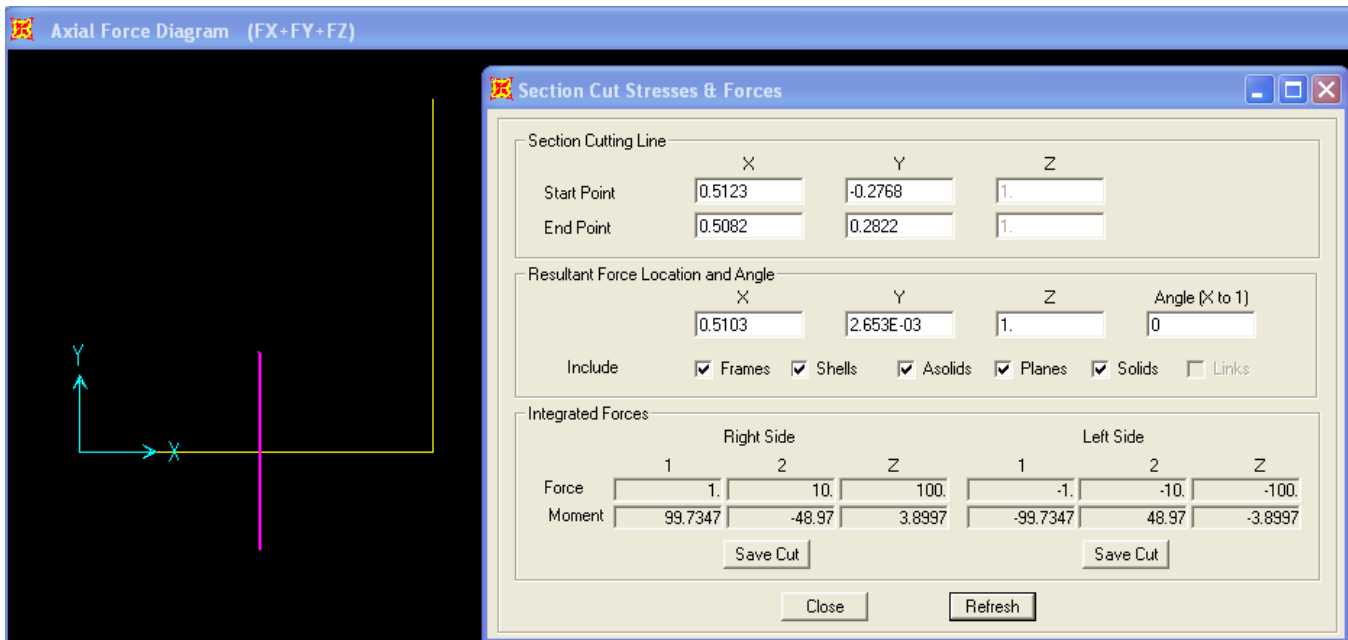


Figure 2 - Section cut in 2D View

Section Cut Data

Edit

Section Cut Name SCUT3

Coordinate System GLOBAL Units KN, m, C

Section Cut Defined By
 Group
 Quadrilateral Cutting Planes

Results Reported Are On This Side of Elements
 Positive 3 Axis Side of Quadrilateral
 Negative 3 Axis Side of Quadrilateral

Section Cut Group
 Group SCUT3

Quadrilateral Cutting Planes
 Number of Quadrilaterals 1
 Currently Displayed Quadrilateral: 1

Point	X	Y	Z
1	0.5123	-0.2768	0.9
2	0.5082	0.2822	0.9
3	0.5082	0.2822	1.1
4	0.5123	-0.2768	1.1

Section cut results are reported for all elements that are fully cut by quadrilaterals and have their associated objects included in the section cut group.

Section Cut Result Type
 Analysis (F1, F2, F3, M1, M2, M3)
 Design (P, V2, V3, T, M2, M3)

Results Reported at this Location
 Default
 User Defined
 X Coordinate 0.5103
 Y Coordinate 2.653E-03
 Z Coordinate 1.

Section Cut Local Axes Orientation - Analysis
 Rotation about Z 0.
 Rotation about Y' 0.
 Rotation about X'' 0.
 Advanced Axes Advanced

OK
 Cancel

Figure 3 - Section-cut data

Attachments

- [SAP2000 V14.1.0 model](#) (zipped .SDB file)
- [Section cuts defined by groups and cutting planes](#) (.PDF)