



Detailed Description

Sumo is a general-purpose frame and finite element analysis software aimed at structural engineers. With a powerful graphical modelling interface, you get the benefit of **PROKON**'s tried and tested analysis engine in a modern program. A properties palette is always visible, allowing you to navigating model parameters similar to most popular CAE software.

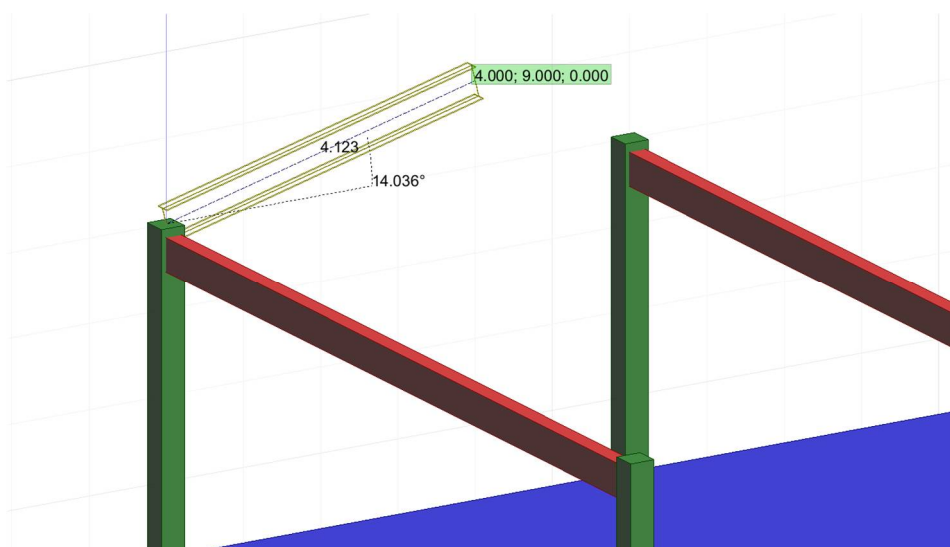
While you model, **Sumo** takes care of node assignment in the background. This is a major improvement on older software where nodes had to be modified manually when changes were made to the model. The analyst has full control over the location and number of nodes through the various mesh controls.

Drawing a beam, column, or wall is as easy as selecting the beam, column or wall tool and drawing the element. Input wizards are available to speed up the modelling of common structures.

Sumo allows for collaboration with **Autodesk® Revit®** and **Advance Steel®** through the **Prodesk** add-ins. This avoids the need to remodel every time, saving much time. Sumo also supports industry standard file formats like IFC and DWG, making it suitable to communicate with third party software.

Modelling

Modelling in **Sumo** is easy with the sophisticated graphical interface. Alternatively, models can be imported from Autodesk products using the **Prodesk** add-in or one of the supported exchange formats.





Analysis

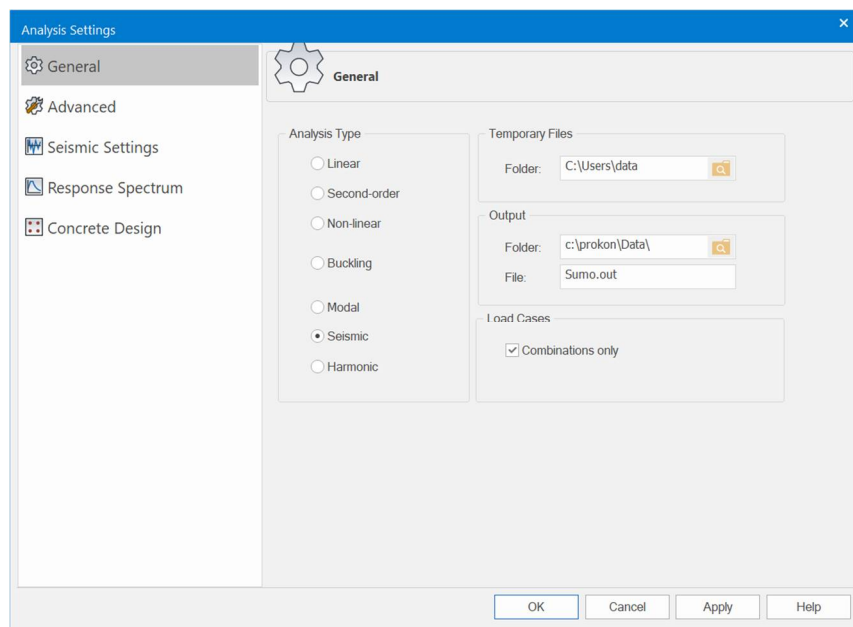
Various analysis modes are available to aid the engineer in accurately predicting structural behaviour in every situation.

Static

- Linear
- Second order
- Non-linear
- Buckling
- Stage

Dynamic

- Modal
- Seismic
- Harmonic



Design

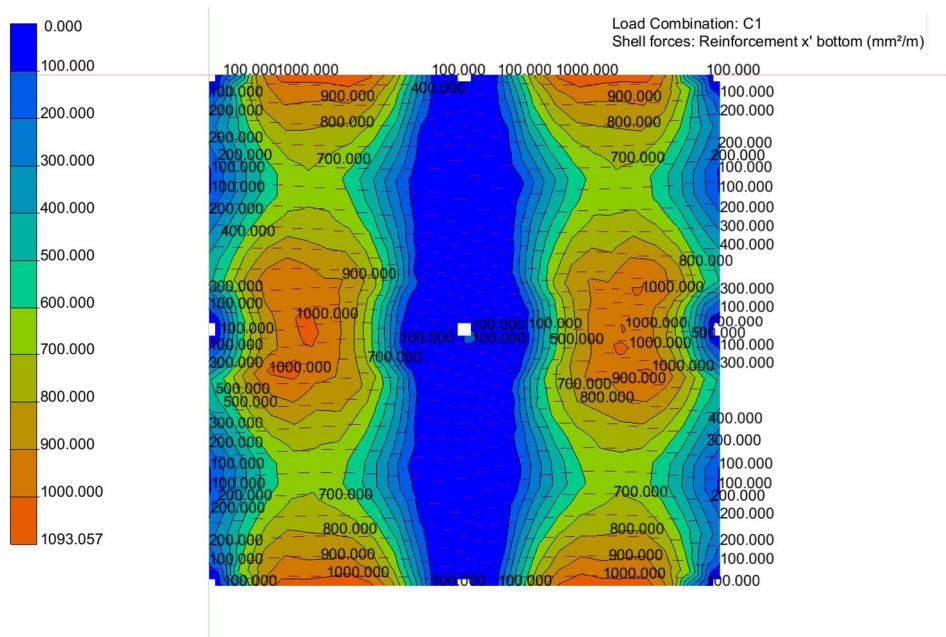
Design planar reinforced concrete elements modelled with shells. Out-of-plane moments are combined with in-plane effects through the Wood-Armer theory to specify reinforcement. The contours can be exported to **Padds** or **Probar 2D** for detailing.



SUMO

3D STRUCTURAL ANALYSIS & BIM SOFTWARE

ANALYSIS | BIM MODELLING | A01



Sumo integrates with **PROKON's** various steel, concrete, and timber design modules through the design links. The design modules are sold separately, allowing you to tailor your order based on your requirements.

The screenshot shows the SUMO software interface. The main workspace displays a 3D model of a structure with columns. A red arrow points from the model to a detailed view of a rectangular column design.

Rectangular column design - Developer License

Load case: DEAD
Load case: LIVE

Properties

Column

General

- Name: Column 1
- Notes: []
- Class: []
- Design p.: []
- Connect.: []

Display

- Colour: []
- Section start: []
- Line style: []
- Line wid.: []
- Visible: []
- Opacity: []

Section display

- Hatch p.: []
- Hatch s.: []
- Columns: []
- Section: []

Title: Rectangular column design

Steel column with uni axial bending

Steel column with axial load

Breast slender column with bi axial bending

Unbreast slender column with bi axial bending

Cellulose column with bi axial bending

See as default-end conditions

Examples

Load Case	Description	p (kN)	Ma Top (kNm)	My Top (kNm)	Ma Bottom (kNm)	My Bottom (kNm)
1	C1 (Column 1 12)	181.429	481.495	481.553	0.000	0.000

181 Design loads

There are no errors

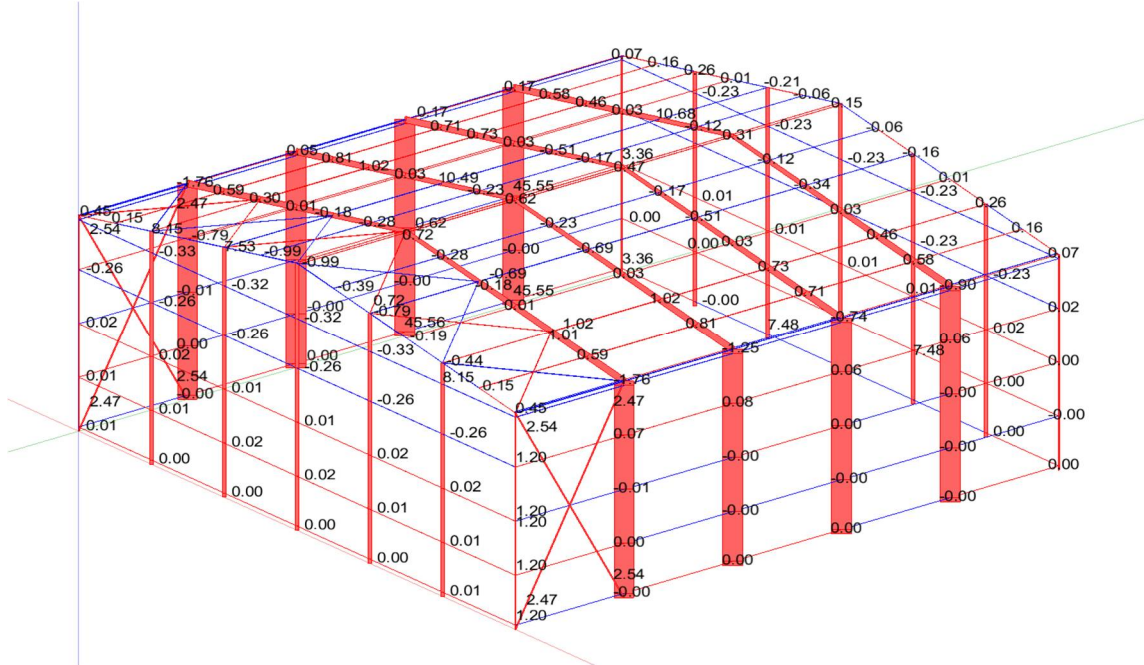
Input errors

Unmodified SABS 0100 : 2000 Not Analysed Language: English

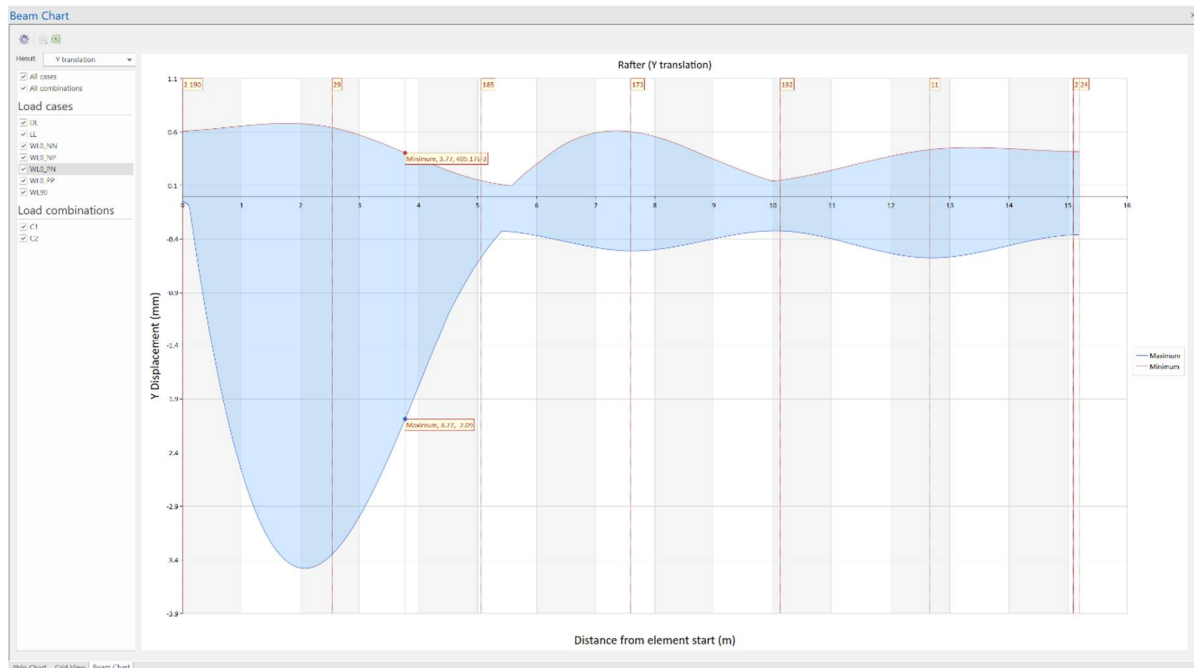


Results

Displacements, reactions, and forces are plotted on the elements.



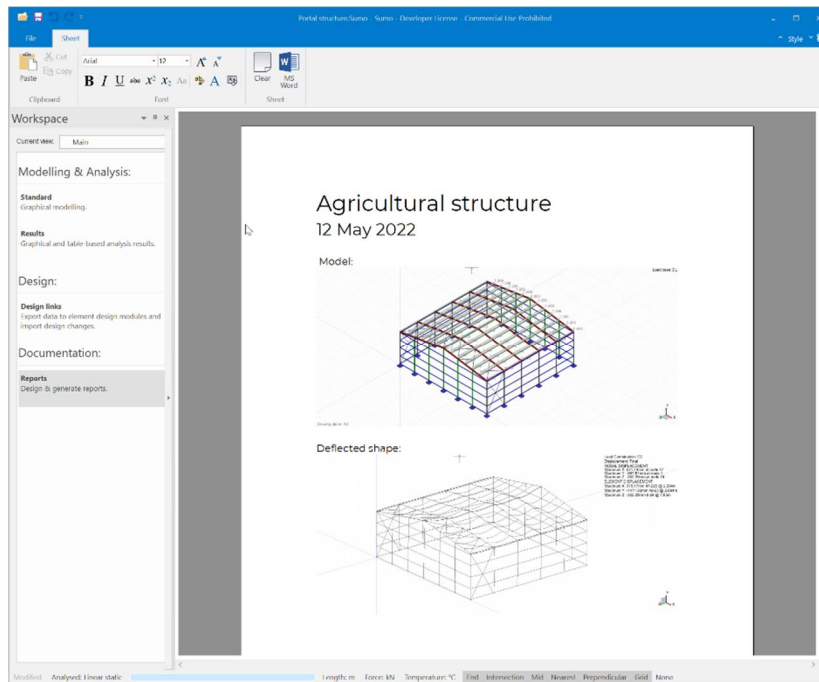
Raw results are available in the Grid View and can be accessed for more detailed plots using the Beam Chart feature.





Reporting

With the built-in word processor, rich text format (.rtf) reports can be compiled while you work. Export the document to your favourite dedicated word processor to add the final touches.



Design Codes

Concrete Design Codes

- ACI 318 – 1999
- ACI 318 – 2005
- ACI 318 - 2011
- ACI 318 – 2014
- AS3600 – 2001
- AS3600 – 2009
- AS3600 - 2018
- BS8110 – 1985
- BS8110 - 1997
- CP65 – 1999
- CSA-A23.3 – 1994
- CSA-A23.3-04 – 2010
- CSA-A23.3:2019
- Eurocode 2 -2004
- HK Concrete – 2004
- HK Concrete - 2013
- IS:456 – 2000
- NZ 3101 – 2006
- SABS 0100 – 2000
- SP63.13330.2018

Seismic Response Spectra

- IS 1893-1 – 2002
- NZS 1170.5 – 2004
- SABS 0160 – 1989
- TMH7 – 1981
- UBC – 1994
- SANS 10160 – 2011
- EN 1998-1 – 2004