



Importing and Exporting SPACE GASS files

Rev 0, Created 3 June 2025

Introduction

As of version 5.8.1.0, Structural Toolkit now supports native import and export of SPACE GASS (SG) files directly within the program.

The previously provided TXT format transfer is still available for older file support; however, this format contains greater limitations. The SG transfer should be used in preference.

Users can now import SPACE GASS models directly into Structural Toolkit. These models are automatically converted to Structural Toolkit's native Analysis (ANA) file format and integrated into the current project

Additionally, users working within a Structural Toolkit Analysis file can export directly to the SPACE GASS (SG) format. This provides greater flexibility for users to choose the best tool for their analysis and design needs, while saving time by avoiding duplicate model entry.

Extensive testing has been carried out on standard analysis models, with exact result correlation achieved in those tested. However, we are aware of some limitations in model conversion. These are outlined below. In certain cases, manual adjustments may be required to ensure accurate transfer, particularly where program features differ—such as SPACE GASS's support for plates, or Structural Toolkit's rotated supports. Local member loads are another area of difference; SPACE GASS local member loads are resolved to the principal axis, while STK applies local loads through the principal axis. Improvements in this area are currently in development.

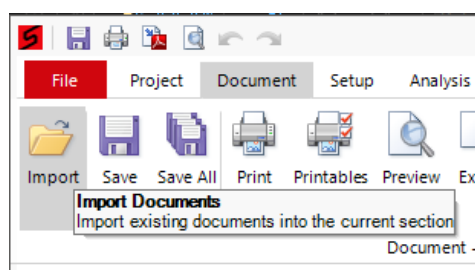
When transferring, the user should check the moments and deflections before proceeding. If transferring without access to the other software, then sufficient output should be provided alongside to ensure the model transfer replicates the original geometry and loading.

SPACE GASS and Structural Toolkit are designed to complement each other. SPACE GASS is ideal for modelling large and complex structures, while Structural Toolkit excels in smaller, everyday analysis scenarios. Choose the platform best suited to your project requirements.

Overview

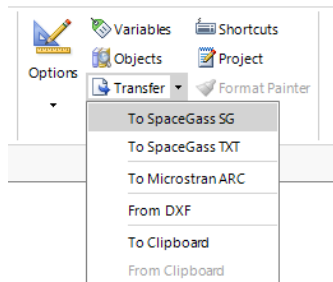
When transferring between software programs, ensure that you provide results to the recipient of the transferred file such that they can verify the transfer. For symmetric library sections the transfer should perform well.

To load a SG file in STK Document > Import and select a SPACE GASS (SG) file.





To save a SG file from STK in the analysis viewer go to Transfer drop-down on Analysis > Settings tab



Limitations

While some known limitations exist in the conversion process, the transfer is generally robust for most structures using standard Australian steel libraries.

Several limitations apply to the conversion at this stage converting to SPACE GASS:

- Custom sections acting in NP or XY are transferred as XYR.
- Flipping of sections with a section alpha (principal axis rotation) unless standard Library sections excluding angles
- Haunches are transferred as values
- Local member loads with sections that have a section alpha (principal axis rotation) will differ (SPACE GASS local loads are geometrically local and resolved to principal; STK applies local loads in principal axis)
- Angles acting in the NP axis or XY axis are transferred as values
- Groups, Restraints and Annotations are not transferred

SPACE GASS does not support:

- Global distributed moments (only local)
- Rotated supports
- Greek symbols in the load case combinations

Structural Toolkit does not support:

- Plates, cables or advanced analysis
- Large model sizes (500 nodes) and large load case sets
- STK does not support international section libraries

Feedback

If you regularly use specific features that are not currently supported and would like to see improved conversion support, please let us know.

