

SOFiSTiK Extensions for Revit Structure 2009

Requirements

- Updated Installation of SOFiSTiK 23 software (in this document assumed to be installed at „C:\Program Files\SOFiSTiK\SOFiSTiK.23“)
- Revit Structure Version 2009

Installation

- Start *sofistik_for_rst2009.exe*
- Follow the on-screen installation instructions.
- You will be asked for the installation path for Revit Structure 2009 and SOFiSTiK.23
- Note: The setup needs write access to the file *revit.ini* in the Revit Structure 2009 Program folder (e.g. “C:\Program Files\Autodesk Revit Structure 2009\Program\revit.ini”).

Features

The SOFiSTiK extension is capable of exporting the following kinds of information to a SOFiSTiK database (.cdb):

- Structural Elements
 - Walls (except non-bearing ones)
 - Floors
 - All families containing an analytical model
 - Boundary conditions
 - Grids
- Loading
 - Single, line and area loads
 - Load cases

Additionally it generates one or more SOFiSTiK script files (.dat) with information regarding:

- Design Code
- Cross Sections

How to export a Revit analytical model to a SOFiSTiK database

- Click the “Export” icon on the SOFiSTiK toolbar or select “Analysis Export” in the SOFiSTiK menu.

A dialog will appear which lets you customize mesh generation settings.

Note: To export just a subset of elements select the elements to export right before starting the export command.

- The export generates a SOFiSTiK database with the name “<filename>.cdb”. It can be used for analysis or imported into SOFiPLUS for additional modifications.

Also, a “<filename>_rvt.dat” is generated which contains information like design code, cross sections and materials. You can modify this information by clicking on the “Text Editor” icon or menu entry. Please be aware that at present each run of “Export” will overwrite this file!

- Once the database has been updated the SOFiSTiK tool WPS will show you the progress of mesh generation, load appliance and analysis.
- If loadings are defined within Revit, all load cases will be analysed automatically, otherwise a load case 1 with dead load is generated.
- If the system has boundary conditions defined, the analysis will automatically generate linear results for all load cases. In case of rigid body movements the first 6 eigenforms can be found in load cases 1001-1006.
- You can view the meshed system and the results by choosing “Animator” from the SOFiSTiK toolbar or menu.
- You should find a meshed project.cdb, which can be imported into SOFIPLUS for modifications or used for analysis.

Limitations

- The design code is assumed to be DIN 1045-1. You can change this manually in the generated .dat file.
- Materials are not handled correctly. You can add this information manually in the AQUA section of the generated .dat file.
- Foundations are modelled as pinned supports.
- In the SOFiSTiK database (.cdb) eccentricity of cross sections on beams is only supported as an offset from the start and/or end of a beam. Eccentricity modelled in Revit as a curve cannot be exported in its full shape.

Hints for trouble shooting errors

- Use the tools Revit provides for checking your analytical model.
- If the mesh generation produces errors it may help to look for errors in the exported system by starting “Graphical Post-Processing” from the SOFiSTiK toolbar or menu.
- Try to solve modelling problems in Revit. For example, the 3D appearance of elements in Revit may not always reflect that the analytical model is not aligned the same way.
- To trouble shoot problems it helps to reduce your model. The commands “Hide” and “Isolate” can be very helpful.
- If you run into problems you cannot solve, send your model to support@sofistik.de

Disclaimer

SOFiSTiK provides this software “as is” without any liability. However users are kindly asked, to inform us about any bug you may find. Information about successful use is appreciated as well.