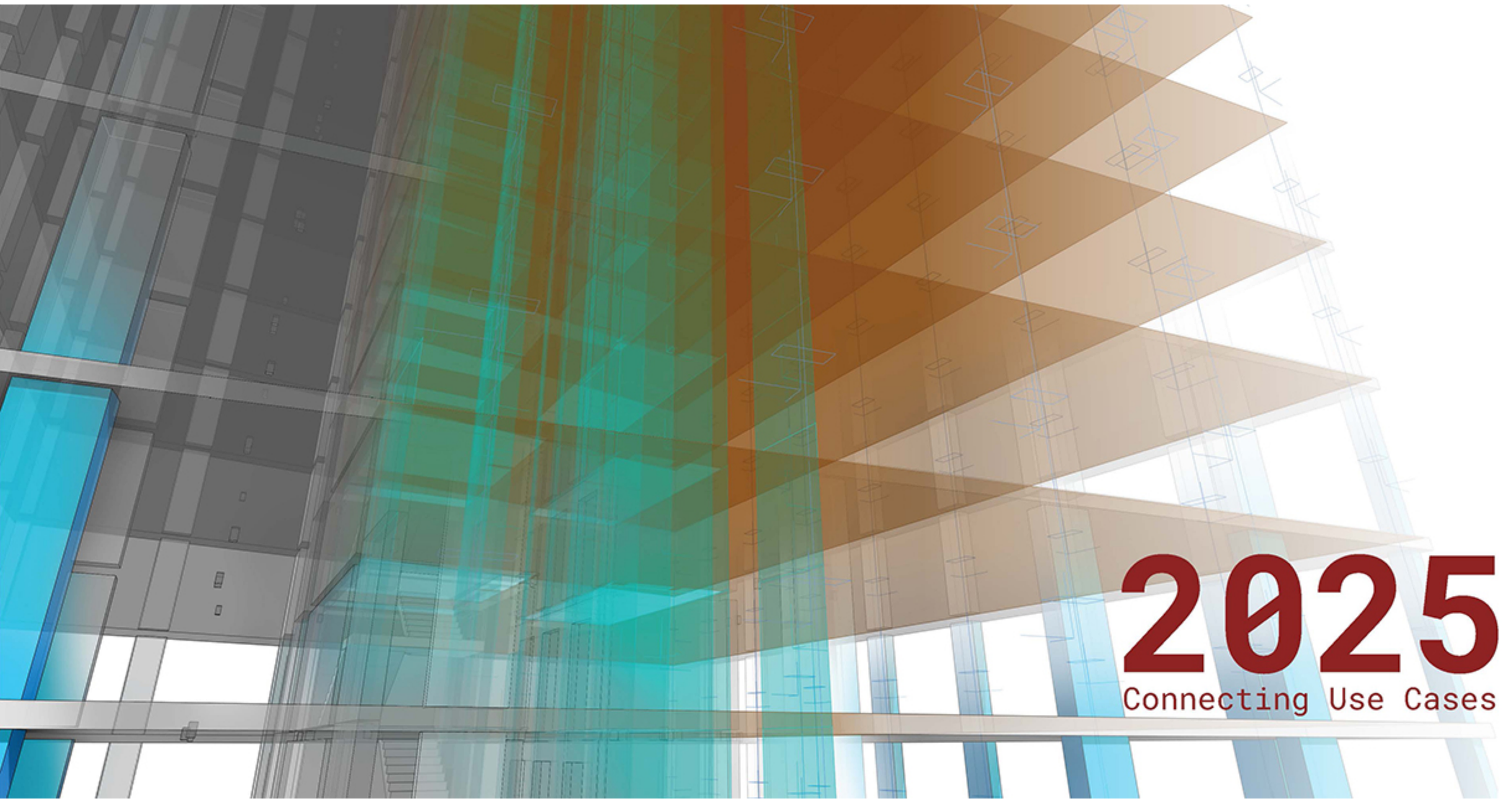
SOFiSTiK



SAF_EXPORT

Export Structural Model to SAF

SOFiSTiK | 2025

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SAF_EXPORT Manual, Service Pack 2025-4 Build 146

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1 Introduction

1.1 About SAF

SAF is an initiative from the Nemetschek Group to improve the collaboration between structural engineers by developing an open exchange format for exchanging data between structural analysis software based on the Excel format. It is focusing on a practical, easy to use, format that can be used in daily practice by structural engineers. It is meant as an open format and we look forward to you joining this initiative. The coordination is currently managed by SCIA.

For more details visit the official SAF documentation:

→ https://www.saf.guide/en/stable/index.html

Table 1.1: Supported SAF versions by SOFiSTiK

SOFiSTiK Version	SAF Version
2024-0	2.1.0

1.2 Export to SAF via SOFiSTiK Structural Desktop (SSD)

SOFiSTiK provides an option to export data to SAF via Graphical User Interface (GUI):

- Open SOFiSTiK Structural Desktop (SSD)
- Use "Insert Task"
- Select "SAF-Export"
- Open the task

2 Input Description

2.1 Input Language

The input is made in the CADINP language (see general manual SOFiSTiK: 'Basics').

Three categories of units are distinguished:

mm	**Fixed unit.** Input is always required in the specified unit.
[*mm*]	**Explicit unit.** Input defaults to the specified unit. Alternatively, an explicit assignment of a related unit is possible (eg. 2.5[*m*]).
[*mm*]$_{1011}$	**Implicit unit.** Implicit units are categorised semantically and denoted by a corresponding identity number (shown in green). Valid categories referring to the unit "length" are, for example, geodetic elevation, section length and thickness. The default unit for each category is defined by the currently active (design code specific) unit set. This input default can be overridden as described above. The specified unit in square brackets corresponds to the default for unit set 5 (Eurocodes, `NORM UNIT 5`).

2.2 Input Records

The following record names are defined:

Record	Items	
CTRL	OPT	VAL1
EXPO	TO	RESU
SEL	TYPE	ID

The records HEAD, END and PAGE are described in the general manual SOFiSTiK: 'Basics'.

A description of each record follows:

2.3 CTRL – Control of Calculation

CTRL

Item	Description	Unit	Default
OPT	Available options: LCS Local beam direction SUBL Export sublines instead of master SLN	–	
VAL1	The value of the option	–	

LCS

Following VAL1 values for option LCS are available:

ZYX_IDEA	Local x in beam direction - local z up (IDEA StatiCa)
ZYX	Local x in beam direction - local z up
MinusZMinusYX	Local x in beam direction - local z down

SUBL

Following VAL1 values for option SUBL are available:

YES	Export sublines
NO	Export masterline (DEFAULT)

2.4 EXPO – Export Options

EXPO

Item	Description	Unit	Default
TO	Path of the XLSX file (SAF)	–	
RESU	Export results		NO
	YES	–	
	NO	–	

The EXPO option controls which data will be exported to XLSX file (SAF).

TO The path definition of the XLSX file (SAF).
The command supports relative and absolute path definition.

```
+PROG SAF_EXPORT
CTRL ...
EXPO TO "file_1.xlsx" RESU YES ! Relative path
...
EXPO TO "C:\folder\file_2.xlsx" RESU YES ! Absolute path
...
END
```

RESU By using the RESU YES command, the results (e.g. internal forces) will be exported to the XLSX file (SAF).

2.5 SEL – Control of Selection

SEL

Item	Description	Unit	Default
TYPE	Available options: SLN Select structural lines SPT Select structural lines via node definition LC Select loadcase(s)	–	
ID	Identification number	–	

Use SEL to define the selection of the EXPO command.

```
+PROG SAF_EXPORT
HEAD SAF Export

CTRL OPT LCS VAL1 'ZYX_IDEA'

EXPO TO "demo.xlsx" RESU YES
  SEL TYPE SLN ID (1 5 1)    ! Select SLN number from 1 to 5 with increment 1
  SEL TYPE SLN ID 149        ! Select SLN number 149
  SEL TYPE LC ID 1           ! Select loadcase number 1

  SEL TYPE SPT ID 7          ! Select structural lines that are connected
                             ! to node 7
END
```