Import Excel material files with Simu-Therm 8.0

Hilger & Daniel Software GmbH
www.simu-therm.de

Contents

Steps for material data import

The material import from Excel includes three steps:

- Add a header row in the Excel file to import
- Export the data to a Unicode text file
- Import the text file in Simu-Therm

Header Row Pt 1: Main material properties

Microsoft Excel - ST80_material_import.xlsx

	A	B	C	D	E	F	G	H	I
1	MKEY	MNAME	MGROUP	DENSE	CLTEMP	MAXTEMP	OPENPOR	TOTALPOR	H2O _PERC
2	Mat-Key	Mat.- Name	Material group	Density	Classification Temp	Max.Continous use	Open Porosity	Total Porosity	H2O Consumption
3					Celsius	Celsius	%	%	%
4	MATERIAL LINES START								
5	CAST24	Fire concrete 1500	dense castable	2420	1500	1500	22	22	8
6	Cast9	Insulation concrete 900	insulating castable	900	1100	1100	50	60	30
7	Brick Cl26	Fireclay Class 26	insulating brick	800	1400	1400	55	65	
8	Blnk128	Fiber blanket 128	fiber blanket	128	1300	1300	95	95	
9	Modul160	Fiber modul 160	fiber modul	160	1400	1400	93	93	
10	Micpor300	Microporous 300	microporous	300	1000	1000			

MKEY: Unique key to identify the material
MNAME: Material name
MGROUP: Material group (optional)
DENSE: Density in [kg/m3]
CLTEMP: Classification temperature [°C]

MAXTEMP: Max continous use temp. [°C]
OPENPOR: Open porosity %
TOTALPOR: Total porosity %
H2O_PERC: Water consumption %

MATERIAL LINES START: Indicates the first data row

Header Row Pt 2: Chemical composition

Microsoft Excel - ST80_material_import.xlsx

	A	J	K	L	M	N	O	P	Q
1	MKEY	CHEMX_3	CHEMX_3	CHEMX_3	CHEMX_3	CHEMX_3	CHEMX_3	CHEMX_3	
2	Mat-Key	Chemical components %							
3		AL2O3	SiO2	CaO	MgO	Fe2O3	TiO2	SiC	
4	MATERIAL LINES START								
5	CAST24	77	11	3		3			
6	Cast9	33	35	15		6			
7	Brick Cl26	55	40	2		1			
8	Blnk128	35	55						
9	Modul160	55	40						
10	Micpor300								
11									

CHEMX_3: Reads a component of the chemical composition.
'_3' means that the chemical formula of the component (e.g. AL2O3) is read from row 3.

Header Row Pt 3: Thermal conductivity, remarks

Microsoft Excel - ST80_material_import.xlsx

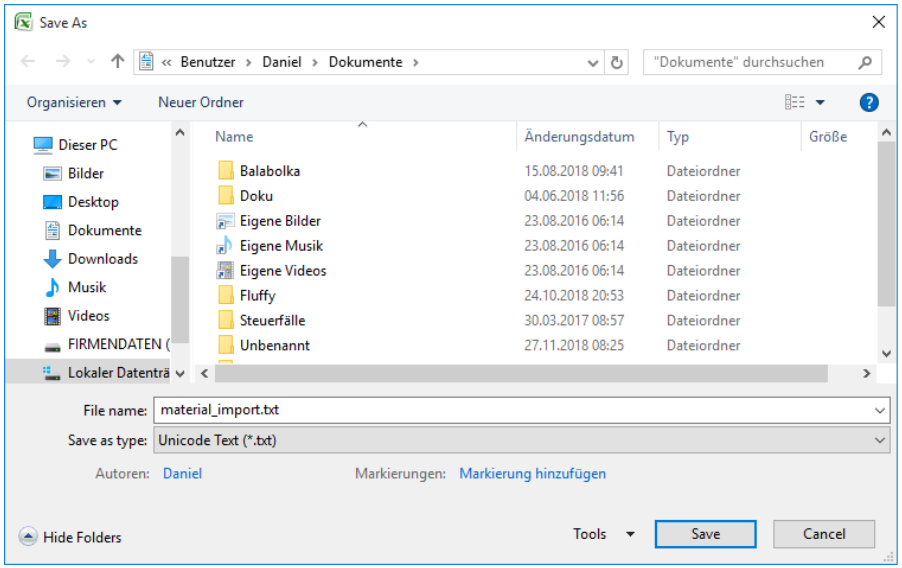
	A	R	S	T	U		AC	AD	AE	AF	AG	AH	AI
1	MKEY	CONDX_3	CONDX_3	CONDX_3	CONDX_3	CONDX_3	CONDX_3	CONDX_3	CONDX_3	CONDX_3		REM_	REM_
2	Mat-Key		Thermal Conductivity [W/mK]									Remark 1	Remark 2
3		100	200	350	400	[...]	1200	1300	1500	1700			
4	MATERIAL LIN												
5	CAST24		0,9					1,22				Material loss gunning: 8 percent	Ceramic bond type
6	Cast9		0,2										
7	Brick Cl26		0,3		0,31			0,45					
8	Blnk128	0,055			0,1								
9	Modul160			0,1								Conductivity with anchors	
10	Micpor300	0,02			0,03							Quilted blanket	
11													

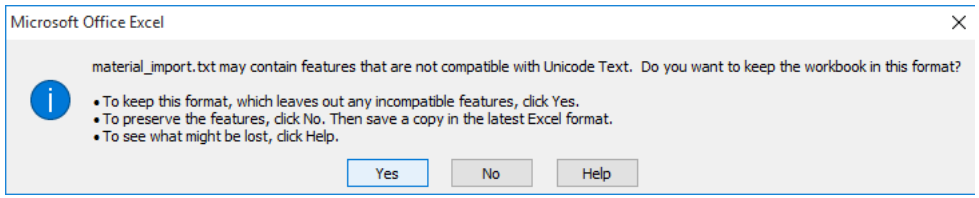
CONDX_3: Reads a data point of the thermal conductivity curve.
'_3' means that the temperature of the data point (e.g. 100°C) is read from row 3.

For calculations a material needs at least 1 data point (constant curve)

Exporting the material data

After adding the headers to your Excel sheet you have to export it as a Unicode CSV file.
Click on the Office button and select **Save as**, keyboard shortcut F12.
Enter *material_import.csv* as the file name and select **Unicode Text** from the dropdown list.
Save and choose *Yes* when prompted **'Do you want to keep the workbook in this format?'**.





Import the materials in Simu-Therm

To import the material data in Simu-Therm, please copy the file 'material_import.csv' into the folder 'material_tools' in the installation folder of Simu-Therm.
Then doubleclick the batch file **CSV_MatimportST8.bat**.
A new SIMU-THEM material file will be created, named *ST80mat_Excel_import_CURRENTDATE.txt*. You can now use your materials by opening this file in SIMU-THERM. You can also rename the material file to your liking.