

PCs/Laptops: Component "Operating system" has been updated! (04/2020)

Components	Minimum requirements	Recommendation	Professional	Comments
Processor	Intel Pentium or AMD	Intel Core i5, i7 or AMD FX with at least 3.0 GHz	Intel Core i7 or i9 of the newest generation with 3.5 GHz or higher	To a large extend, the processor determines the operating speed of the programs. Particularly for major projects and for visualisation a high-performance processor is very useful.
Memory	4 GB	8 - 16 GB	16 - 32 GB	The capacity of the main memory also contributes to a large extend to the speed of the program. For larger projects we recommend a higher memory capacity in order to avoid the risk of data loss.
System hard disk	200 GB SATA	256 GB SSD or higher	512 GB NVME SSD or higher	The storage capacity largely depends on the number of installed SEMA versions (about 3 to 4 GB per version) and the number of projects. Typically, a project needs between 2 and 20 MB, depending on the number and size of components. Attention: A slow hard disk or PC connection is slowing down the computer.
Data hard disk	-	256 GB SSD or 1 TB SATA	1 TB NVME SSD	-
Drives	DVD-Multinorm	DVD-Multinorm	DVD-Multinorm	A DVD writer is not absolutely necessary, however, it makes your work easier, particularly with respect to data backup and exchange of data.
Interfaces	USB 2.0	USB 2.0 or USB 3.0	USB 2.0 or USB 3.0	The program is delivered with a copy protection (dongle) which is best used with a USB interface. The use of a quick USB 3.0 interface doesn't make much sense.
Operating system	Windows 8.1	Windows 10 64Bit	Windows 10 64Bit	SEMA has thoroughly tested Windows 10. This operating system turned out to be the best platform for the SEMA program. The operating system Windows 8.1 also works without any problem. However, please consider that Windows 7 and Windows 8.1 will no longer be supported by Microsoft soon. From 14 January 2020, Windows 7 is no longer supported by Microsoft, the use of this Windows version is no longer possible from the SEMA version V20-2 (publication in May 2020). ATTENTION: When buying a new hardware, please consider that the next versions of the SEMA timber construction programs (probably from version 21-1 in December 2020) require 64 bit operating systems.
Graphics card	3D graphics card compatible with Open-GL (no ATI) with 1 GB RAM ATTENTION! See side note	Nvidia GeForce from RTX 2xxx series from 4 GB RAM or equivalent Nvidia Quadro card	Nvidia GeForce RTX 2080Ti series with 8 GB RAM minimum	For visualisation, one of the latest accelerator cards is absolutely necessary. Due to recurrent problems with AMD Open GL drivers we strictly recommend the use of Nvidia graphics cards. With the Nvidia graphics cards series GeForce and Quadro there are no problems at all. ATTENTION! From SEMA version 20-1 the graphics card and the graphics card driver have to support the OPEN GL version 3.3 or higher.

Components	Minimum requirements	Recommendation	Professional	Comments
Resolution	1024*768	Full-HD 1920*1080 or higher	Ultra-HD 3840*2160 (4K)	The optimum resolution for the SEMA programs depends on the size of the monitor (see also "Recommendations for laptops"). For a professional setup, we recommend a system with two monitors.
Pixel depth	32 Bit	32 Bit	32 Bit	Particularly for snapping objects in Visualization a 32-bit pixel depth is necessary.
Monitor	17"	2 Screen solution with 1 Full-HD monitor and 1 Ultra-HD monitor (4K)	2 Screen solution with 2 equal Ultra-HD monitors (4K)	For everyone who works a lot on the computer, a high-quality/flat-panel monitor is a very sensible investment. We also recommend to make sure that the monitor/resolution ratio makes sense - we suggest for 14" - 17" monitor a resolution of 1024 x 768 and for a 17" - 19" monitor a resolution of 1280 x 1024. With higher resolutions it is absolutely necessary to use larger Monitors.
Mouse	2-button mouse with scroll wheel	High-resolution laser mouse	High-resolution laser mouse	For very accurate work, a mouse with corresponding sensitivity/speed is necessary. Laser mice offer the best DPI speed. Buttons that can be freely programmed (e.g. for macros) are very helpful.
Keyboard	Standard PC keyboard	Standard PC keyboard	Standard PC keyboard	Special gaming keyboards often offer the option to store macros - i.e. you can allocate special, often used tasks to specific keys and thus work a lot more efficient.
Printer	Laser printer and ink jet printer	Colour laser printer and large-format plotter	Colour laser printer and large-format plotter	It would be good to have at least one colour device. How well the printer works does not only depend on the printer itself but also on the driver and the paper. Please note the recommendations in the printer manual.
1:1 Output continuous printing	DIN A1 Colour inkjet plotter	DIN A0 Colour inkjet plotter	DIN A0 Colour inkjet plotter	Particularly for stairs construction we intended the 1 : 1 output in the SEMA programs. Please be aware that some continuous printers (continuous plotters) only allow output up to a certain length, i.e. you might buy a so-called continuous plotter which can only print up to 3.2 m.

Laptops/Tablets: Component "Operating system" has been updated! (04/2020)

Components	Minimum Requirement	Recommendation	Comments
Processor	Intel	Intel Core i5, i7 or i9 with at least 2.8 GHz	The processor largely determines the operating speed. We recommend Intel I5 or Intel I7 processors. These processors offer sufficient performance in combination with the SEMA Timber Construction programs and they come with the appropriate graphics card (Intel HD 4000) integrated. On tablets with Nvidia Tegra or ARM processors, the SEMA programs do not work!
System Memory	8 GB	16 GB	The size of the main memory also has a significant influence on the speed of the program. For large-scale projects, several main memories should be available. Insufficient memory can lead to data loss in the worst case.
Storage	200 GB SATA	256 GB SSD or more	The storage capacity largely depends on the number of installed SEMA versions (about 3 to 4 GB per version) and the number of projects. Typically, a project needs between 2 and 20 MB, depending on the number and size of components.
Interfaces	USB, LAN	USB, WLAN, HDMI	The program is delivered with a program protection key. This key requires a free port/interface. The following additional features may also be important: USB interface for data exchange with a USB device, WLAN adapter to access the Internet, HDMI port to connect the tablet to a larger screen, Port/slot for a SIM card for phone calls and mobile Internet, Possibility to expand storage with SD cards.
Operating Systems	Windows 10 64Bit	Windows 10 64Bit	IMPORTANT NOTE: The SEMA timber construction programs are not available in the form of an app! Thus, users must make sure that Windows 8 PRO, Windows 8.1 PRO or Windows 10 is used on the respective Tablet PC. None of the SEMA programs will run on Windows 8 RT or Windows 8.1 RT! ATTENTION: When buying a new hardware, please consider that the next versions of the SEMA timber construction programs (probably from version 21-1 in December 2020) require 64 bit operating systems.
Graphics card	3D graphics card compatible with Open-GL (no ATI) with 1 GB RAM ATTENTION! See side note	Nvidia GeForce from RTX 2xxx series from 4 GB RAM or equivalent Nvidia Quadro card	For visualisation, one of the latest accelerator cards is absolutely necessary. Due to recurrent problems with AMD Open GL drivers we strictly recommend the use of Nvidia graphics cards. With the Nvidia graphics cards series GeForce and Quadro there are no problems at all. ATTENTION! From SEMA version 20-1 the graphics card and the graphics card driver have to support the OPEN GL version 3.3 or higher.
Resolution	1280*1024	Full-HD 1920*1080 or higher	The screen should not have less than 10 inches, because with smaller screens the lines in the SEMA Timber Construction programs appear too thin. The ideal resolution for the SEMA programs depends on the screen size (see also info for laptops).
Color Depth	32 Bit	32 Bit	Particularly for the snap feature in Visualisation, a color depth of 32 Bit is necessary.