FRANKONIA

Comparison of Frankonia Shielding System to Sandwich System:

	Frankonia-Shielding-System	Sandwich-System
1.	The Frankonia panels can be bolted from either inside or outside. When installation is done from inside: The chamber can be installed close to the walls of the building. The double-edges inside the chamber can be used to fix lamps, subconstruction for absorbers, others … When installation is done from outside: Inside the chamber are flat walls, which are necessary in case the shielded chamber shall be used for high-voltage testing.	For installation always access from outside and inside is necessary.
2.	Sheet metal of Frankonia shielding system has a thickness of 2mm. The individual shielding panels are bolt every 75mm with a wire mesh gasket inserted into the gap. Frankonia system has very high shielding efficiency over a wide frequency range and under different enviromental conditions. The panels are bolt to neighbour panels directly. At the corners, too. This guarantees same (high) shielding efficiency at corners and walls.	Typical construction is 0.5mm sheet metal + wooden chip board + 0.5mm sheet metal (total metal thickness 1mm). Sandwich panels are fixed together by special clamping components. Shielding efficiency is lower, because of the lower metal thickness. Additionally seams and especially corners are problematical zones. Often here low shielding efficiency or untightness against RF can be found.
3.	Frankonia shielding panel connection system is maintenance-free after installation and keeps the shielding efficiency for many years.	Sandwich panels are fixed together by metalic clamping components. The clamp connection is tightened by bolts (These bolts narrow the outside chamber part to the inside chamber part of the clamping component). The force of this clamping determines the shielding efficiency. After some time the clamping force decreases, because of vibrations, influences of the humidity to the wood chip board, ….. This causes degradation of the shielding efficiency. Therefore in order to keep shielding efficiency sandwich systems have to be maintained periodically. Clamp construction has to be checked, bolts retightened, or renewed. The joints can be accessed in case of shielded room. In case of absorber chamber internal side of the shielding is covered by ferrite absorbers or pyramide absorbers. In these cases an access of the clamping zones in order to maintain the chamber is difficult or even impossible. This caused loss of shielding efficieny.

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	Frankonia-Shielding-System	Competitor's Sandwich System
4.	Disassembling of Frankonia modular system is easy. The ferrite absorbers (which are mounted on a 0.6m x 0.6m subtrate) can be removed very easy from the subconstruction on the shielding. Bolts between modules are unscrewed. In case of reinstallation just bolts and gasket have to be replaced. Even enlargement and modifying of existing chambers is possible	In absorber chamber ferrite absorbers are glued or screwed onto the sandwich wall directly. In case chamber must be moved to other location, it is impossible to disassemble it.
5.	Higher mechanical resistance against mechanical damages (sheet metal thickness 2mm).	Lower mechanical resistance. The smaller thickness of sheet metal (2 x 0.5mm) makes it more susceptible to mechanical damages.
6.	Higher strength against vibration, acoustic waves, pressure. Mesh gasket between the modules damps a. m. effects.	Lower mechanical strength.
7.	Frankonia is using a raised floor. Inner floor level is equal to door. Power cables, RF-cables, others: tubes, cables, …can be installed below the raised floor. It is possible to install ground access panels near to EUT and antenna support. This gives easy connection possibilities to the operator.	If no raised floor is in the chamber: Very often sandwich system chamber has not got a raised floor. In these cases you have a step from inside the chamber to the door. Installation areas and connection points of cables are limited to proximity of walls (near floor). Ground access panels not possible.
8.	Ground plane is absolutely flat.	Ground plane is not flat, because of clamping components used to fix the floor sandwich panels.
9.	Frankonia system allows installation of cables and tubes behind the wall (or ceiling) absorbers. For example power cables to switches, lamps at the ceiling,… Cables are installed between the shielding panels and a metalic reflection foil, which is necessary to get the full performance of the ferrite absorbers. Additionally, this structure shields the cables from RF generated by test instruments in the chamber.	No gap between absorbers and shielding panel. Installation of cables and tubes not possible behind wall absorbers.
10.	In many countries the official national regulations for waste disposal ask for separation of different materials . Many years later after the cabin will have finished its lifetime, this will be no problem, since the panels are made just from sheet steel.	In many countries the official national regulations for waste disposal ask for separation of different materials. After the cabin has finished its lifetime, metal sheets have to be separated from the wood chip board. This is difficult, makes a lot of work, or is expensive.
11.	Optionally: Frankonia chambers can be lined with uncombustable pyramid absorbers (can not be set to fire).	Not available at competitor.

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