

SUPERWALL HF SOUND

DESCRIPTION

Superwall HF Sound is a self-supporting metal panel system, insulated with rockwool, with a concealed-fixing method for high quality industrial and commercial buildings, where good aesthetics are paramount in combination with high performance of sound absorption and high performance of sound insulation.

Superwall HF Sound, manufactured according with a system patented by Metecno, consists in two micro-ribbed zinc-coated and prepainted steel sheets. One sheet is micro-perforated.

Between the sheets there is an insulation core of orientated fiber high density rockwool, arranged perpendicularly to the plane of the panel and positioned in strips, laid longitudinally with off-set joints and transversely compacted, in such a way as to completely fill the space between the metal facings.

This core is pasted to the metal by a poliurethanic glue.

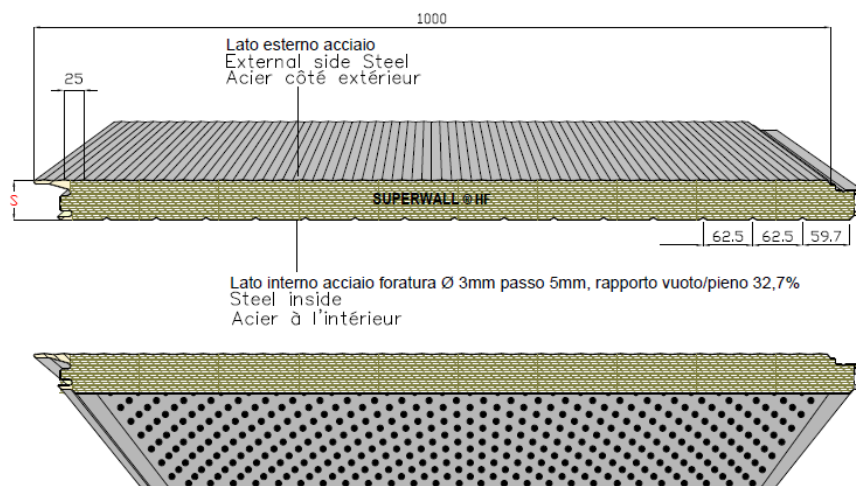
The special double labyrinth joint of this panel, provide excellent performance for mechanical resistance and insulation, the panel external micro-V increases the aesthetic appeal of this panel.

Superwall HF Sound can be mounted in vertically and horizontally direction.

For the particular shape of the joint, blind fastening are applied to the V-cut on the male edge of the outside sheet. Two screws with center distance of 30 mm should be used for each panel and each stud.

PLEASE NOTE: for a correct use of this panel it is highly recommended the conduction of a thermos hygrometric evaluation directed by a technician.

GEOMETRICAL FEATURES



- ◆ Length: upon customer request with max length of transportation
- ◆ Working width: 1000 mm
- ◆ Core thickness: 50, 60, 80, 100, 120 e 150 mm
- ◆ External sheet thickness: 0,6 mm, internal 0,6 mm
- ◆ Thickness sheet tolerance: according EN 10143:2006
- ◆ Finishing: External diamond, internal micro-ribbed

METAL BASE

- ♦ Galvanized and pre-painted steel on continuous lines with cycles based on polyester resins, super-polyester, PVDF (polyvinylidene fluoride), on the visible side; a back-coat is applied on the internal side of the sheets.

PREPAINTED COATINGS PROTECTION

- ♦ All the pre-painted elements are supplied with adhesive polythene strippable film that allows to avoid layer coating damages.
- ♦ The protective film, which cover the coated panels, must be completely removed during panel assembly and in any case within and not exceeding three months' time from the material production date.

REFERENCE STANDARD

- ♦ Steel: minimum quality S250 GD - UNI EN 10346:2015

INSULATION

- ♦ Rockwool with orientated fibre.
- ♦ Declared thermal conductivity $\lambda = 0.042 \text{ W / m K}$
- ♦ Coefficient of thermal transmittance U calculated in accordance with the UNI-EN 6946:2007

Thickness (mm)	50	60	80	100	120	150
Global coefficient of thermal exchange U (W/m ² ·K)	0,72	0,61	0,47	0,38	0,32	0,26

- ♦ Insulation density $100 \text{ kg/m}^3 \pm 2$

SOUND ABSORPTION

Sound absorption of a materiali is its ability in converting acoustic energy in kinetics energy (vibrations) reflecting a minimum share of the acoustic waves which hit it.

In constructions built with traditional materials, such as bricks, marbles and glasses, which do not possess sound-absorbing characteristics it will produce a reverberation effect due to the reflection on these materials of the sound waves which leads to an overall increase of the noise level with the unpleasant consequences for who is present in the room in object.

With the use of **Superwall HF Sound** panels it is obtained, instead, a pleasant feeling of noise attenuation.

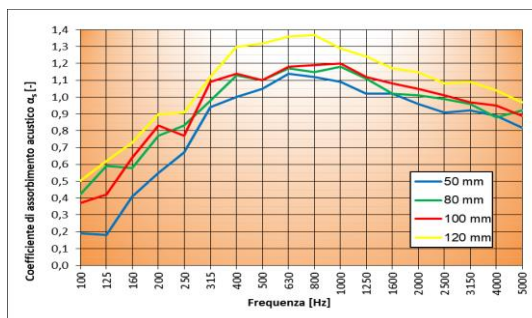
Superwall HF Sound is particularly indicated in the interventions of acoustic reclamation, in fact, it provides an excellent shock absorbing performance of the sound waves and reverberation time correction of a wide range of frequencies. The **Superwall HF Sound** panels are tested in accordance with the regulations:

- ♦ UNI EN ISO 354:2003 Acoustic - Measurement of sound absorption in a reverberation room.
- ♦ UNI EN ISO 11654:1998 Acoustic - acoustic absorbers and machinery - sound absorption rating.

Weighted sound absorption coefficient:

Thickness - mm	50	80	100	120
α_w	0,95 (Classe A)	1,00 (Classe A)	1,00 (Classe A)	1,00 (Classe A)

The chart shows the trend of the absorption coefficients at the various frequencies



On request we can provide the test reports of the absorption phono measures.

SOUND INSULATION

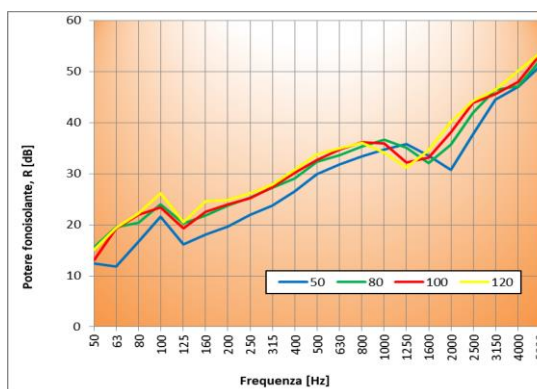
The sound insulation of a material is the quality to reduce the sound energy between two environments

Superwall HF Sound panels have been tested according to the following regulations:

- ♦ **UNI EN ISO 10140-2:2010** Acoustics - Laboratory measurement of sound insulation of building elements
Part 2: Measurement of airborne sound insulation.
- ♦ **UNI EN ISO 717-1:2013** Acoustics – Acoustic insulation verification in buildings and in building elements
Part 1: Airborne sound insulation.

Assessment indexes of power sound insulation R_w :

Spessore (mm)	50	80	100	120
Indice di valutazione R_w (db)	32,3	34,7	35,0	35,4



On request we can provide the test reports of the measures of power sound insulation

WEIGHTS Panel weight (metal sheet thickness 0,6 mm + 0,5 mm)

Thickness (mm)	50	60	80	100	120	150
Weight (kg/m ²)	13,87	14,87	16,87	18,87	20,87	23,87

Le informazioni riportate sulla presente scheda tecnica possono essere modificate, in qualsiasi momento e senza preavviso da parte di METECNO ITALIA, a seguito dell'aggiornamento tecnologico dei prodotti

LOAD CAPACITIES

The following values (in daN/m²) are for uniformly distributed loads, for panels made from sheet steel minimum quality S250GD and have been calculated in accordance with standard product EN 14509:2013.

The width of the support/frame is considered 120 mm.

The loads shown in bold and underlined refer to combinations for deflection $l/200$.

The tables do not consider the effects due to the difference temperatures between the internal and external metal sheets, as per different climatic conditions.

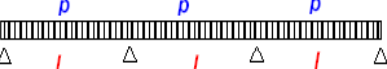
The effects of a long period (creeping) are not considered.

Further tests may be required by contacting the METECNO ITALIA Technical Department.

It is responsibility of the design engineer to check the fasteners according to the design loads.

S	Larghezza efficace appoggio = 100 mm								
	Lamiere spessore nominale 0,6 mm + 0,5 mm								
mm	l = m	1,5	2,0	2,5	3,0	3,50	4,0	4,5	5,0
50	p = daN/m ²	175	110	70					
60		210	135	85	60				
80		285	180	115	80	60			
100		365	230	145	100	75	55		
120		440	280	180	125	90	70	55	
150		550	350	225	155	115	85	65	55

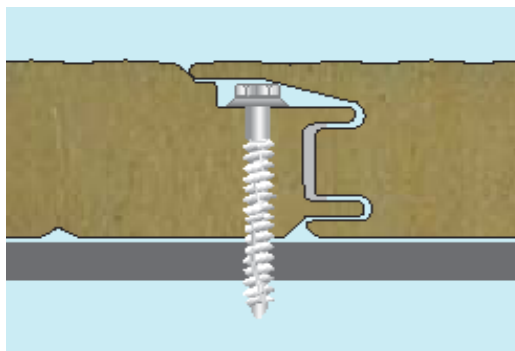
S	Larghezza efficace appoggio = 100 mm								
	Lamiere spessore nominale 0,6 mm + 0,5 mm								
mm	l = m	1,5	2,0	2,5	3,0	3,50	4,0	4,5	5,0
50	p = daN/m ²	150	80	50					
60		175	95	60					
80		210	120	75	55				
100		240	145	95	65				
120		255	160	105	75	55			
150		260	180	120	85	65	50		

S	Larghezza efficace appoggio = 100 mm									
	Lamiere spessore nominale 0,6 mm + 0,5 mm									
mm	l = m	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	
50	p = daN/m²	145	80	55						
60		165	95	60						
80		200	120	80	55					
100		225	135	90	65	50				
120		240	150	105	75	55				
150		260	170	120	85	65	50			

JOINT

Superwall HF Sound joint is a hidden joint.

Its particular conformation is studied for horizontal assembling, and guarantees a perfect tightness to atmospheric agents.



FIXING

Fixing is achieved using screws ϕ 6,3 mm.

The fixing methods are given in the technical manual.

TOLERANCES

- ♦ Steel thickness: according EN 10143:2006
- ♦ Panel thickness $\pm$ 2 mm
- ♦ Length : $\pm$ 5 mm x L $\leq$ 3000 mm $\pm$ 10 mm x L $\geq$ 3000 mm
- ♦ Module 1000: $\pm$ 2 mm
- ♦ Out of square: $\pm$ 6 mm

PACKAGES COMPOSITION

Panels are supplied packed and usually folded with extensible polythene film

TRANSPORT AND STORAGE

LOAD VEHICLE

- ♦ The packs of panels are loaded on vehicles and placed generally two in the width direction and three in the direction of the height.
- ♦ The goods will be placed on the vehicles according to the instructions received from the driver, who is the only responsible for the integrity of the load.
- ♦ METECNO ITALIA is not responsible for the loading of vehicles already partially occupied by other materials, or do not have a suitable loading floor.
- ♦ METECNO ITALIA recommends that vehicles have to be covered to prevent damage due to bad weather.

The customer, who provides the transport directly, will give necessary disposition.

UNLOADING VEHICLE WITH CRANE

- ◆ It is necessary to use a crane equipped with carrying pole and suitable belts, and to interpose special spacers to prevent the damage of the panels with the belts.

UNLOADING VEHICLES WITH FORKLIFT

- ◆ When handling the packs of panels with forklift, take care of the length of the packs and their possible bending in order to avoid damage on the bottom side of the pack.
- ◆ The forks must have enough width and possibly protected with cardboard or polystyrene to avoid damages on the panels.

STORAGE

If the panels are stored outside, they must be protected from rain to avoid stagnation of moisture as it can cause damage on the coated surfaces.

USE LIMITATIONS

A thermo hygrometric check is recommended. Under special conditions (i.e. high humidity in the indoor environment), you can have the formation of condensation inside the panel; if these conditions persist for a sufficiently long time, it may promote the natural oxidation of the substrate and accordingly reduce the degree of adhesion to the insulating material.

MAINTENANCE

Periodical maintenances are required on all walls even on the metallic panels. A yearly careful inspection is recommended to verify the conservation grade of the building.

A regular cleaning of the panels is suggested, to keep the elements in good conditions and to extend the durability of their paint.

Particular attention is also necessary in places where the rainwater do not reach the panels and where it is possible to have concentration of dangerous substances.

If any problem arise during the periodical inspection, it must be removed immediately with an extraordinary action.