Superwall HF

DESCRIPTION

Superwall HF 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.

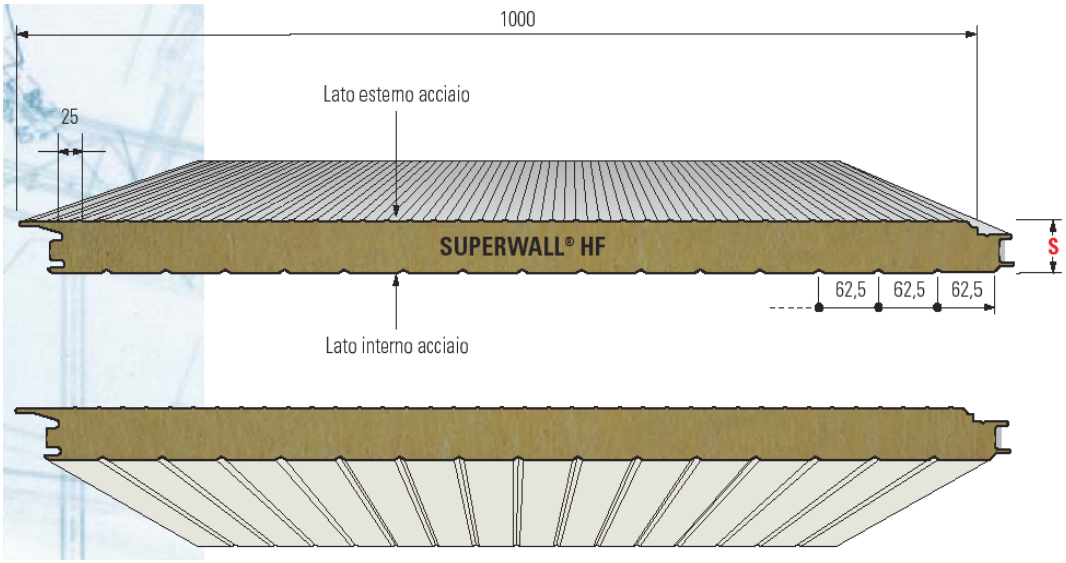
Superwall HF panel, manufactured in accordance with a system patented by Metecno, consists of two micro-ribbed steel sheets, with an insulation core of orientated fiber high density rockwool, arranged perpendicularly to the plane of the panel and positioned in strips, laid longitudinally with off-set joints and transversely compacted, in such a way as to completely fill the space between the metal facings.

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 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.

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 λ = 0.040 W / m K
- Coefficient of thermal transmittance U calculated in accordance with the UNI-EN 14509:2013

Spessore (mm)	50	60	80	100	120	150
Coefficiente U (W/m^2·K)	**0,88**	**0,74**	**0,51**	**0,40**	**0,33**	**0,27**

- Insulation density 100 kg/m^3 ± 2

FIRE REACTION

Superwall HF was tested according to following standards:

- **EN ISO 11925-2:2002** Reaction to fire tests - Ignitability of building products subjected to direct attack by a flame.
  Part 2: Test with a single source of flame
- **UNI EN 13823:2005** Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single object produced in combustion

Following the outcome of these tests were classified according to:

- **EN 13501-1:2007** Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests.

Classification obtained:

FIRE REACTION – OBTAINED CLASSIFICATION (for all thicknesses)		
FIRE	SMOKE	DROPS
A2	**s1**	**d0**

RESISTENZA AL FUOCO

The fire resistance is the quality of a construction element to maintain its mechanical stability, not to propagate flame and to retain the thermal insulation for an indicated time.

The fire resistance is in minutes, from the beginning of the heating period (trigger of the fire) until the moment in which the component under test finishes to satisfy the requirements.

Superwall HF panels have been tested according to following regulations:

- **UNI EN 1363-1: 2012** Fire resistance tests - General requirements
- **UNI EN 1364-1: 2002** Fire resistance tests for no load-bearing elements Wall

Following the outcome of these tests were classified according to:
EN 13501-2: 2009 Fire classification of construction products and building elements - Part 2: Classification using test data derived from fire resistance tests, excluding ventilation elements.

Classification obtained:

80 mm	100 mm	120 mm	150 mm
EI 20	**EI 60**	**EI 60**	**EI 60**

On request they can be supplied grading reports of resistance to fire
(*) For the conditions of assembly follow as reported in the test reports

SOUND INSULATION

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

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

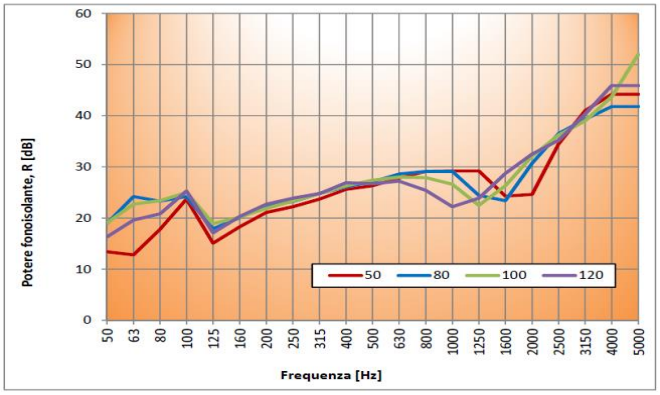
- **UNI EN ISO 10140-2:2010** Acoustics - Laboratory measurement of sound insulation of building elements

  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 Rw:

Thickness (mm)	50	80	100	120
Evaluation index Rw (db)	**28,7**	**29,1**	**28,9**	**28,5**



WEIGHT Panel weight (metal sheets thicknesses 0,6 mm + 0,6 mm)

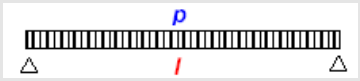
Thicknesses (mm)	50	60	80	100	120	150
Weight (kg/m^2)	**15,93**	**16,93**	**18,93**	**20,93**	**22,93**	**25,93**

LOAD CAPACITY

The following values (in daN/m^2) 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 100 mm.
The loads shown in bold and underlined refer to combinations for deflection l/100. The tables do not consider the effects due to the difference temperatures between the internal and external metal sheets, as per different climatic conditions.
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

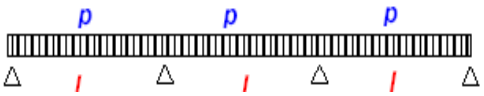
support width = **100** mm
steel thickness : **0,6+0,6**



mm	l =m	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6
50	p = daN/m^2	180	135	105	90	75	65	60			
60		220	165	130	110	90	80	70	60		
80		295	220	175	145	125	110	95	80	65	55
100		370	275	220	185	155	135	120	100	80	70
120		445	335	265	220	190	165	145	120	100	80
150		550	410	330	275	235	205	180	150	125	105

S

support width = **100** mm
steel thickness : **0,6+0,6**



Mm	l =m	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6
50	p = daN/m^2	160	120	95	75	60					
60		200	145	115	85	65	55				
80		260	185	135	100	80	65	50			
100		265	195	145	110	85	70	60	50		
120		265	195	155	120	95	75	65	55		
150		265	195	155	125	100	85	70	60	50	

JOINT

La sua particolare conformazione è studiata per il montaggio dei pannelli in orizzontale, garantendo una perfetta tenuta agli agenti atmosferici
The **Superwall HF** joint is of the concealed fixing type.
Its particular shape is designed for mounting in a horizontal panels, ensuring 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.

TOLLERANCES

- Steel thickness: according EN 10143:2006
- Panel thickness ± 2 mm
- Length : ± 5 mm x L ≤ 3000 mm ± 10 mm x L ≥ 3000 mm
- Module 1000: ± 2 mm
- Out of square: ± 6 mm

PACKAGES COMPOSITION

Panels are supplied packed and usually folded with extensible polythene film

TRASPORTATION 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.