HIPERTEC® WALL

DESCRIPTION

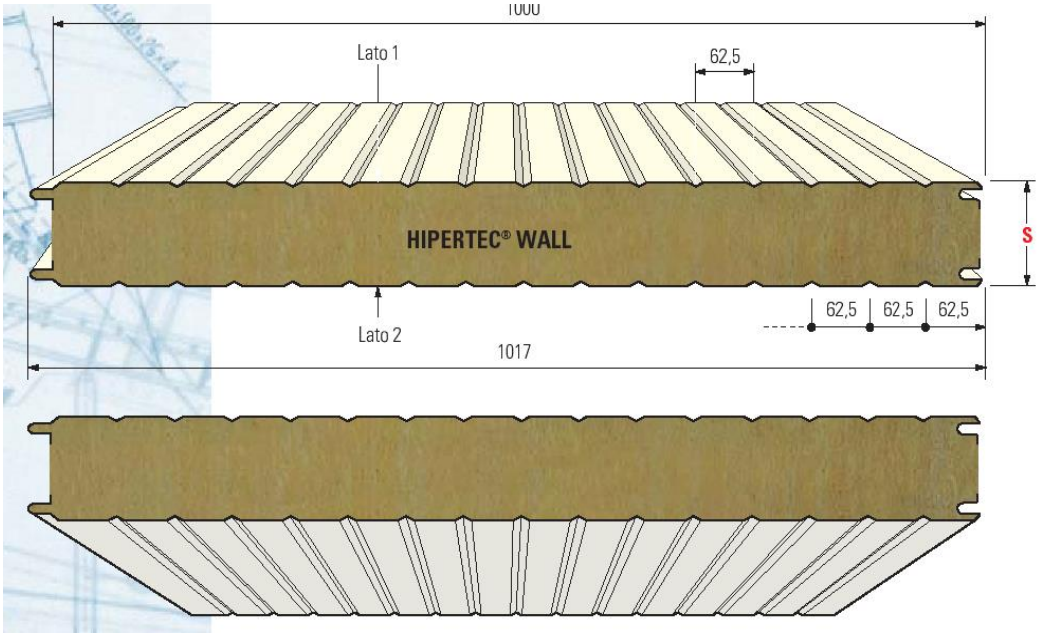
Hipertec® Wall is a self-supporting metal panel system insulated with rockwool for wall and partition applications, which require a high degree of fire resistance and acoustic insulation.

The **Hipertec® Wall** panel, manufactured in accordance with a system Patented by Metecno, consists of two micro-ribbed steel sheets.

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

The rockwool thermal insulation has a thickness S from 50 to 150 mm, depending from the environment conditions of the installation site and the necessary fire requirements.

GEOMETRICAL FEATURES



- Length: max. production length upon maximum transportable
- Working width: 1000 mm
- Core thickness: 50, 80, 100,120, 150 mm
- External sheet thickness: 0,6 mm
- Internal sheet thickness: 0,6 mm
- Thickness sheet tolerance: according EN 10143:2006
- Microribbed finishing

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.

STANDARD REFERENCE

- 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

Thickness (mm)	50	60	80	100	120	150
Coefficient U (W/m^2·K)	**0,77**	**0,64**	**0,48**	**0,39**	**0,32**	**0,26**

Insulation density 100 kg/m^3 ± 2

FIRE REACTION

Hipertec® Wall 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**

FIRE RESISTANCE

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.

Hipertec® Wall 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:

50 mm	60 mm	80 mm	100 mm	120 mm	150 mm
EI30 (*)	**EI30 (*)**	**EI60 (*)**	**EI120(*)**	**EI120(*)**	**EI120(*)**

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

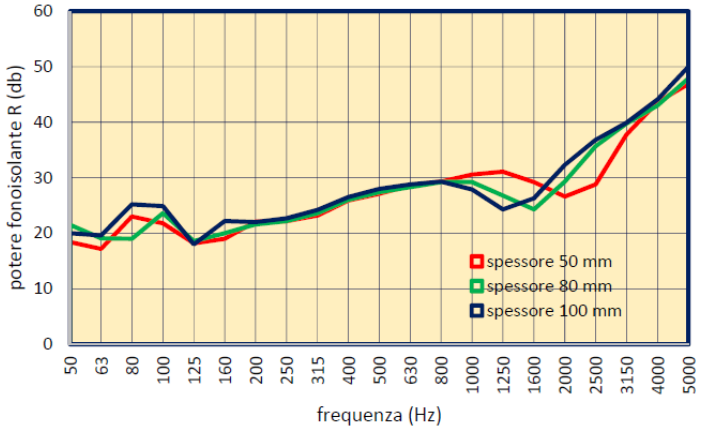
The sound insulation of a material is the quality to reduce the sound energy between two environments.

Hipertec® Wall 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
Evaluation index R_w (db)	**29,5**	**29,2**	**29,6**



WEIGHT

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

Thicknesses (mm)	50	60	80	100	120	150
Weight (kg/m^2)	**15,62**	**16,62**	**18,62**	**20,62**	**22,62**	**25,62**

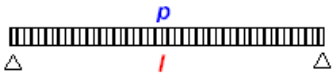
LOAD CAPACITY

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 120 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 : **120** mm

steel thickness : **0,6 mm +0,6 mm**

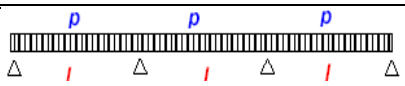


mm	l =m	1,5	2	2,5	3	3,5	4	4,5	5	5,5
50	p = daN/m	185	140	110	90	80	70	60	50	
60		225	165	135	110	95	80	75	60	50
80		300	225	180	150	125	110	100	80	65
100		375	280	225	185	160	140	125	100	85
120		455	340	270	225	195	170	150	125	100
150		570	425	340	285	240	210	190	155	125

S

support width : **120** mm

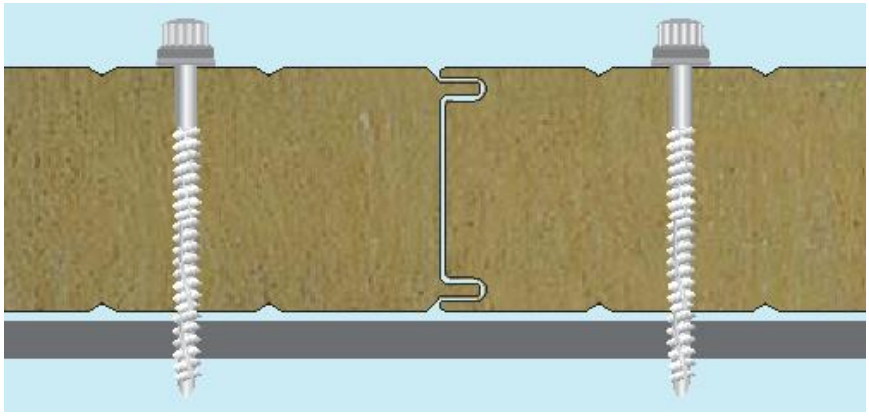
steel thickness : **0,6 mm + 0,6 mm**



mm	l =m	1,5	2	2,5	3	3,5	4	4,5	5	5,5
50	p = daN/m	165	120	95	80	65	50			
60		200	145	115	95	75	60			
80		275	200	155	115	90	70	55	50	
100		320	235	170	130	100	80	65	55	
120		320	235	180	140	110	90	75	60	50
150		325	240	190	150	120	95	80	70	60

JOINT

The joint has been properly designed to grant the acoustic performance and the fire reaction/resistance characteristics.



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.