

HIPERTEC® ROOF SOUND G5

DESCRIPTION

Hipertec® Roof Sound G5 is a self-supporting panel, insulated with rockwool for industrial roof applications, which require a high performance of sound absorption and high performance of sound insulation.

For the installation of this panel is required a minimum slope of 7%.

Metecno produces the **Hipertec® Roof Sound G5** with a patented system.

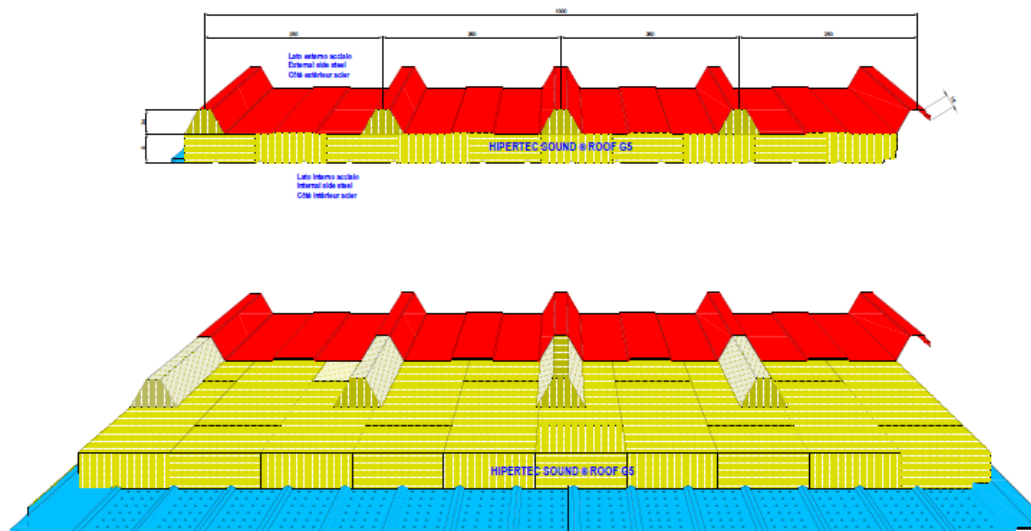
The external side of the panel is made of a metal corrugated steel, galvanized and pre-painted.

The internal side is made of a micro-perforated metal steel, galvanized and pre-painted.

Between the two sheets there is a layer of insulation with oriented fibers of high-density rock wool, 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. This layer is stuck to the steel facings by a polyurethane glue.

PLEASE NOTE: for a correct use of this panel it is necessary to conduct 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, 80, 100, 120, 150 mm
- ◆ External sheet thickness: 0,6 mm
- ◆ Internal sheet thickness: 0,5 mm (perforated)
- ◆ Thickness sheet tolerances: according EN 10143:2006
- ◆ N° of ribs (external side): 5
- ◆ Depth rib: 35 mm
- ◆ Pitch of rib: 250 mm

METAL FACINGS

PREPAINTED COATINGS PROTECTION

REFERENCE STANDAR

INSULATION CORE

SOUND ABSORPTION

- ◆ 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.

- ◆ All the pre-painted elements are supplied with adhesive polythene strippable film that allows to avoid layer coating damages. In case the material express demanded without protecting film, METECNO ITALIA is not responsible for surface coatings damages.
- ◆ The protective film which covers the panels must be completely taken off during panel assembly and in any case within and not exceeding three months' time from the material production date.

- ◆ Steel: Minimum quality S250 GD - UNI EN 10346:2015

- ◆ Rockwool with oriented fibers.
- ◆ Declared thermal conductivity $\lambda = 0,040$ Watt/m K (thermal conductivity measured longitudinally to the fibers)
- ◆ Coefficient of thermal transmittance U calculated in accordance with the UNI-EN-ISO 6946:2007:

Thickness (mm)	50	80	100	120	150
U coefficient (W/m ² ·K)	0,64	0,43	0,37	0,30	0,25

Insulation density 100 kg/m³ ± 8

The sound absorption of a material is its ability to transform the acoustic energy into thermal energy (vibration) reflecting a very little fraction of the sound 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 **Hipertec® Roof sound G5** panels it is obtained, instead, a pleasant feeling of noise attenuation.

Hipertec® Roof sound G5 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 **Hipertec® Roof sound G5** panels are tested in accordance with the regulations:

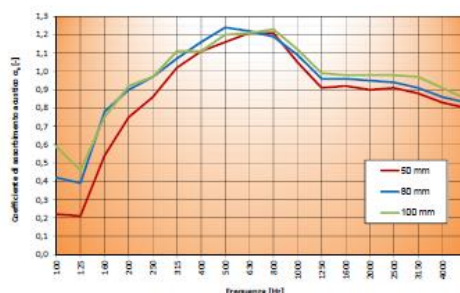
- ◆ UNI EN ISO 354:2003 Acoustic - Measurement of sound absorption in a reverberation room.
- ◆ UNI EN ISO 11654:1998 Acoustic - acoustic absorbers and machinery - sound absorption rating.

SOUND INSULATION

Weighted sound absorption coefficient:

Thickness - mm	50	80	100
α_w	0,95 (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.

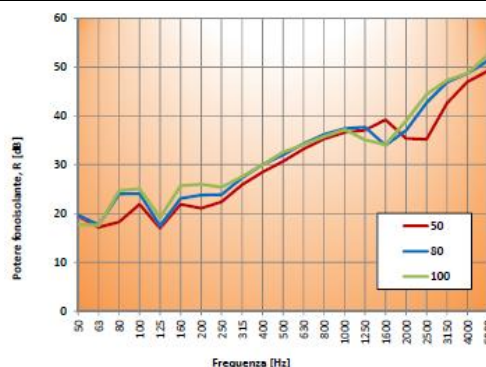
The sound insulation of a material is the quality to reduce the sound energy between two environments

Hipertec® Roof sound G5 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 sound insulation power R_w :

Thickness (mm)	50	80	100
Indice di valutazione R_w (db)	34,2	35,2	35,6



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	80	100	120	150
Weight (kg/m ²)	14,79	17,79	19,79	21,79	24,79

LOAD CAPACITY

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.

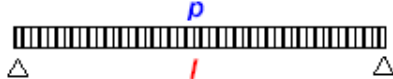
The loads shown in bold and underlined refer to combinations for deflection $l/200$.

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.

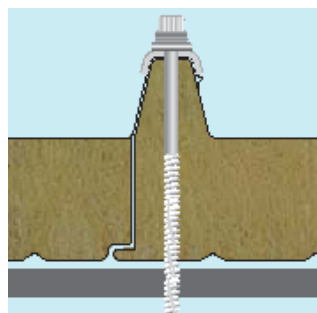
Further tests may be required by contacting the METECNO ITALIA Technical Department.

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

S		Larghezza efficace appoggio = <u>120</u> mm Valori riferiti a pannelli con lamiere 0,6+0,5 forata 																	
		l=m	1,5	1,75	2	2,25	2,5	2,75	3	3,25	3,50	3,75	4	4,25	4,50	4,75	5	5,25	5,50
mm																			
50	p = daN/ m		195	165	140	125	110	100	<u>75</u>	<u>60</u>	<u>50</u>								
80			300	255	220	195	175	155	140	130	<u>115</u>	<u>95</u>	<u>80</u>	<u>65</u>	<u>55</u>				
100			370	315	275	240	215	195	175	160	150	<u>130</u>	<u>110</u>	<u>95</u>	<u>80</u>	<u>65</u>	<u>55</u>	<u>50</u>	
120			440	375	325	290	255	230	210	195	180	165	<u>145</u>	<u>125</u>	<u>105</u>	<u>90</u>	<u>80</u>	<u>70</u>	<u>60</u>
150			530	455	395	345	310	280	255	235	215	200	185	165	145	130	115	100	<u>90</u>

JOINT

The particular molding of the joint has been especially designed in order to avoid water infiltration.



SPECIFIC ACCESSORIES

- ◆ Ribs closing buffers;
- ◆ Ridge in sheared and bent hinge.

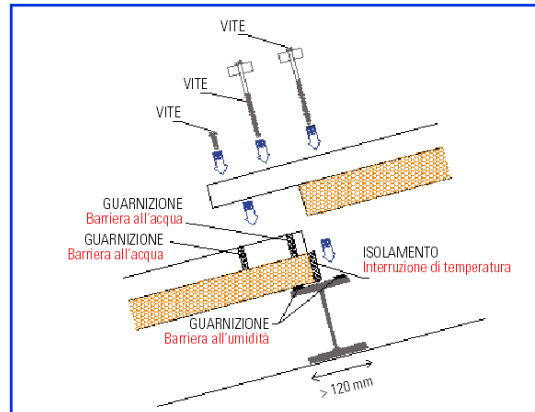
ROOF ASSEMBLY

In order to assure the right water outflow as well as to avoid oxidation

phenomena on metallic supports, the panels must be assembled with a slope not lower than 7%.

For pitched roofs made with more than one panel in longitudinal direction, it's necessary to overlap the panels (see below).

The overlap length must be sufficient to avoid water infiltration.



METECNO ITALIA recommends to ask the preparation for the end-lapping in order to avoid any infiltration into the insulation or inside the building.

After the installation of the panels and the flashings, metallic scraps must be removed from the roof to avoid trigger corrosion and avoid the correct flow of water or production an accumulation of unwanted and aggressive substances.

For more information about installing, please see the technical manual.

FIXING

Fixing using screws ϕ 6,3 mm.

The fixing methods are given in the technical manual.

TOLERANCES

- ◆ Steel thickness: according EN 10143:2006
- ◆ Pannel thickness: ± 2 mm
- ◆ Length: ± 5 mm $\times L \leq 3000$ mm ± 10 mm $\times L \geq 3000$ mm
- ◆ Modulus 1000: ± 2 mm
- ◆ Out of square: ± 6 mm

PACKAGING

Panels are supplied packed and usually folded with extensible polythene film

TRANSPORTATION 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 that otherwise do not have a suitable loading floor.
- ◆ METECNO ITALIA recommends that vehicles are covered to prevent

USE LIMITATIONS

MAINTENANCE

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, it is necessary 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 damage 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.

It is recommended a thermos hygrometric check-up. 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.

All roofs even those made with metal panels, require periodical maintenance. It is recommended a thorough inspection of the roof, at least yearly, in order to check the condition.

A regular cleaning of the cover with particular attention to areas not subjected to the washing action of rain water, where it can form concentrations of corrosive substances for the metal support, is also recommended, in order to maintain the aesthetic characteristics and physical properties of the elements and to prolong the efficiency of the protective coating.

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