

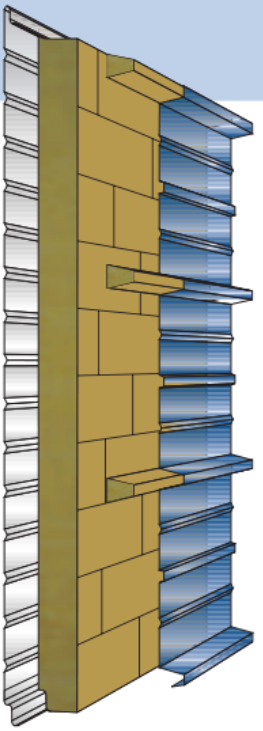
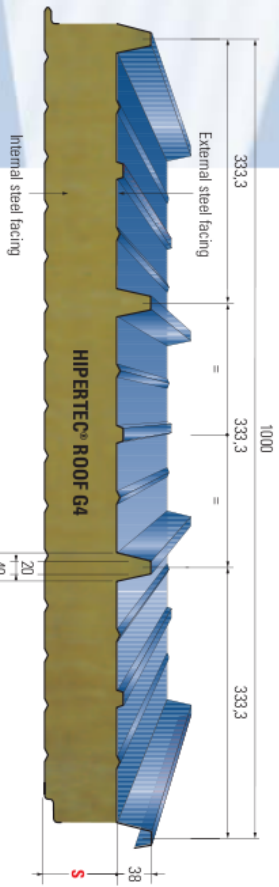
# Hipertec® Roof G4



Self-supporting metal panel system insulated with rockwool for roof and wall applications, which require a high degree of fire resistance and high degree sound insulation.

The HIPERTEC® ROOF panel, manufactured in accordance with a system patented by Metecno, consists of a profiled external steel sheet and an internal micro-ribbed steel sheet, with an insulation core of orientated fibre 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.

Maximum panel length: L = 15,500 mm.  
For additional technical information, refer to the HIPERTEC® ROOF technical manual.



Profiled roof system, slope  $p \geq 7\%$ , insulated with rockwool, resistance to fire and sound insulation

### Resistance to fire

Resistance to fire is the ability of the building element to limit the spread of flame, and retain the integrity of the thermal insulation for a period of time. The performance of panel systems when tested is expressed in minutes from ignition to the conclusion of the test, which is determined as the failure point at which the panels ceases to comply with the requirements of the specific test. The significant test performances are as follows:

- MECHANICAL STRENGTH (R) IMPERMEABILITY TO GAS (E) THERMAL INSULATION (I)
- The HIPERTEC® ROOF panels were tested at the Istituto Giordano S.p.A. on unloaded structures to comply with Ministerial Circular no. 91 dated 14/9/61 and achieved the following results:

| ROOF POSITION | HIPERTEC® ROOF thickness     | REI     | certificates                    |
|---------------|------------------------------|---------|---------------------------------|
| WALL POSITION | HIPERTEC® ROOF thickness 100 | REI 120 | certificates n° 93595 / 1463 RF |
|               | HIPERTEC® ROOF thickness 80  | REI 60  | certificates n° 93594 / 1462 RF |
|               | HIPERTEC® ROOF thickness 50  | REI 30  | certificates n° 93593 / 1461 RF |

- MAJOR PRODUCT TECHNICAL APPROVAL
- Agreement tecnico ITC 629 / 04 • Zilassung Dltch Z - 10.4 - 237

### Reaction to fire

Reaction to fire is the degree in which a material resists combustion, as regard to this, materials are assigned a class (0 through 5), the higher the class, the higher the degree of combustion. The HIPERTEC® ROOF panels, thicknesses 50 - 80 - 100 mm, tested:

- At the Istituto Giordano S.p.A., pursuant to the Ministerial Decree of 26/6/84, have been classified Q1 for reaction to fire, both in the roof position and in the wall position.
- At the MPA Dresden according to EN 13823 and EN 11925-2 for reaction to fire, have been classified, according to EN 13501-1 as A2, S1, D0.

Since the panel consists of two steel facings with a layer of rockwool insulation sandwiched between, the Class 0 refers to the external surfaces, with Class 1 referring to the insulation core. Tests have been also made at foreign institutes with the following results:

Germany: Panel class B1, insulation class A1 - France: class M0.

### Sound insulation

The sound insulation of a material (for example a panel) is given by the ability to reduce the passage of sound energy between two locations. The HIPERTEC® ROOF panel has been tested to UNI 8270/7 and ISO 717/82 standards and, for the thicknesses 50 - 80 - 100 mm, obtained valuation indices of  $R_w = 29-30$  dB.

### Table of safe spans

Values guaranteed with steel sheets, thickness 0.6 + 0.5 mm. The spans  $l$  in metres, as a function of a uniformly distributed load  $p$  (daN/m<sup>2</sup>), have been obtained from tests carried out in ITC laboratories and calculated to provide:

- Deflection limit:  $f \leq l/200$  of the span
- Operation stresses:  $1/2.5$  of the limit moment and  $1/2.5$  of the limit shear.

| S<br>mm | K                           |                           | Panel weight<br>kg/m <sup>2</sup> | Steel thickness<br>0.6-0.5 | P = daN/m <sup>2</sup> |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|-----------------------------|---------------------------|-----------------------------------|----------------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|         | Kcal<br>m <sup>2</sup> h °C | Watt<br>m <sup>2</sup> °C |                                   |                            | 80                     | 100  | 120  | 150  | 200  | 250  | 300  | 80   | 100  | 120  | 150  | 200  | 250  | 300  |
| 50      | 0.61                        | 0.71                      | 16.22                             |                            | 4.55                   | 3.78 | 3.23 | 2.65 | 2.02 | 1.67 | 1.32 | 3.98 | 3.65 | 3.23 | 2.65 | 2.02 | 1.67 | 1.32 |
| 80      | 0.41                        | 0.47                      | 19.22                             |                            | 5.96                   | 5.56 | 4.83 | 3.96 | 3.06 | 2.49 | 2.12 | 5.14 | 4.81 | 4.51 | 3.96 | 3.06 | 2.49 | 2.12 |
| 100     | 0.33                        | 0.39                      | 21.22                             |                            | 6.06                   | 5.76 | 5.46 | 4.83 | 3.75 | 3.05 | 2.58 | 5.66 | 5.28 | 4.96 | 4.59 | 3.75 | 3.05 | 2.58 |
| 120     | 0.28                        | 0.33                      | 23.22                             |                            | 6.10                   | 5.87 | 5.64 | 5.28 | 4.41 | 3.60 | 3.04 | 6.15 | 5.73 | 5.39 | 4.97 | 4.39 | 3.60 | 3.04 |
| 150     | 0.23                        | 0.27                      | 26.22                             |                            | 6.71                   | 6.46 | 6.20 | 5.81 | 4.85 | 3.96 | 3.34 | 6.77 | 6.30 | 5.93 | 5.47 | 4.83 | 3.96 | 3.34 |

