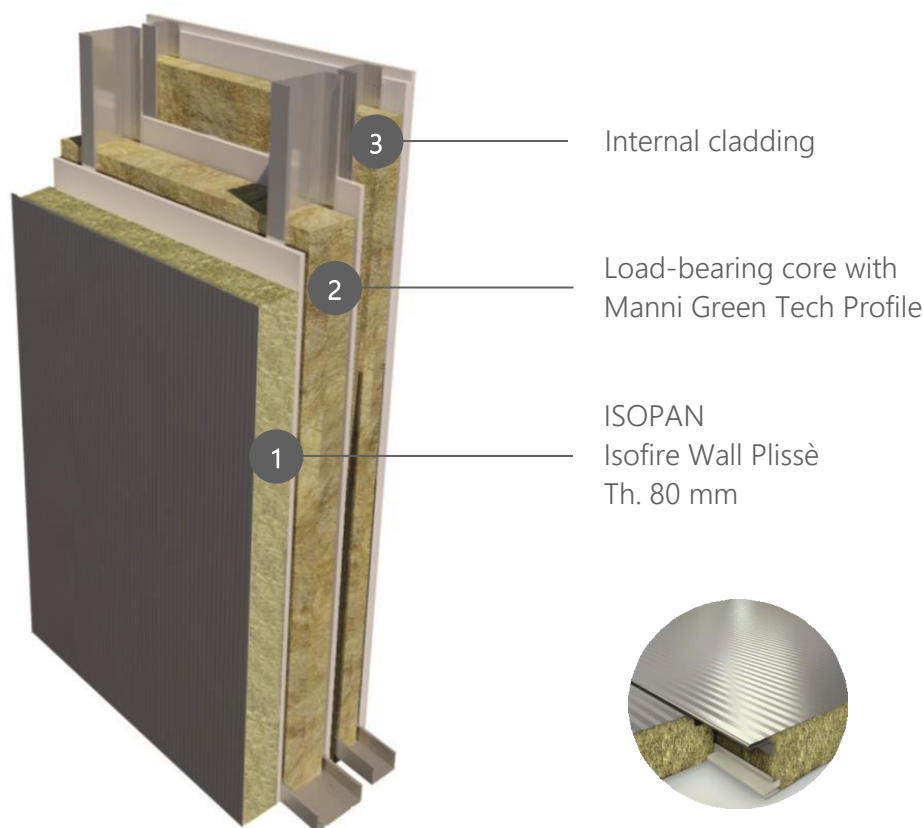




DELIFTA WE 3



BRIEF DESCRIPTION

DOUBLE-BEAM LOAD-BEARING OUTER FRAME WITH SANDWICH PANEL CLADDING.
perimeter load-bearing walls with structural MANNI GREEN TECH® light steel frame [Isf] metal frame and cladding in coated plasterboard sheets on the inside and reinforced concrete slabs and ISOPAN thermo-acoustic insulation system for finishing with ISOPAN sandwich panels mod. Isofire Wall Plisse' external side.

BENEFITS

- ✓ Speed of system installation
- ✓ High thermal performance
- ✓ High levels of sound absorption
- ✓ Without plaster: coloured sheet metal finish on façade
- ✓ Elimination of thermal bridges
- ✓ Living comfort
- ✓ Optimum thermal offset

RECOMMENDED FIELDS OF APPLICATION



Residential



Corporate locations



Warehouse



Touristic



Hospital



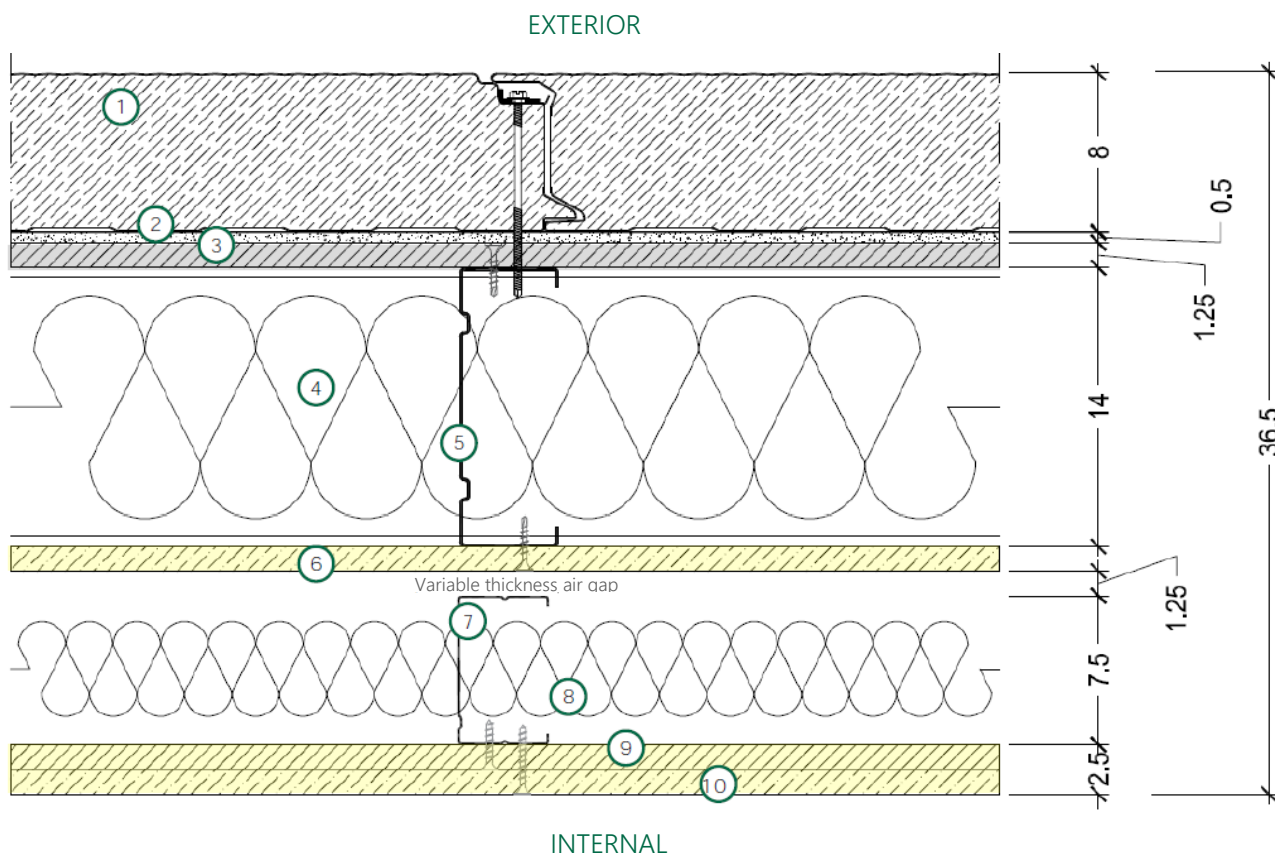
Trade





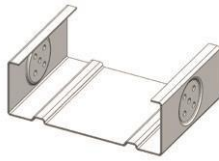
DETAILS OF LOAD-BEARING STEEL CONSTRUCTION ELEMENTS

External load-bearing cladding with structural Manni Green Tech Light Steel Frame with a total thickness of approximately 400 mm, consisting of the elements listed below:



- ① Insulation and finishing system with ISOPAN sandwich panels mod. ISOFIRE WALL PLISSE', 80 mm thick
- ② Cement-based reinforced skim coat with 5 mm thickness
- ③ MANNI GREEN TECH 12.5 mm thick fibre-reinforced cement slab
- ④ Rock wool insulation in double layer, 60+60 mm thickness and 70 Kg/m² density
- ⑤ Manni Green Tech steel load-bearing profiles 140 mm section [10/50/140/50/10 mm]
Guide with Manni Green Tech profile section 140 mm [10/50/140/50/10 mm]
- ⑥ Manni Green Tech "A" 12.5 mm thick coated plasterboard sheets + 25 mm thick air chamber
- ⑦ Steel counterpart structure with 75 mm thick steel profiles
- ⑧ Rock wool insulation 60 mm thick and 70 kg/m³ density
- ⑨ Manni Green Tech "A" 12.5 mm thick coated plasterboard sheets
- ⑩ Manni Green Tech "A" 12.5 mm thick coated plasterboard sheets with vapour barrier





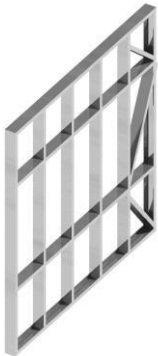
Manni Green Tech "C" profile
10/50/ 140/50/10.

DETAILS OF LOAD-BEARING STEEL CONSTRUCTION ELEMENTS:

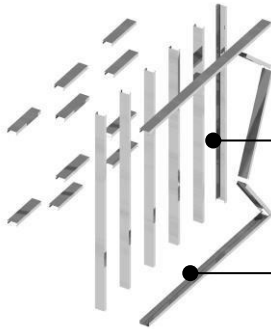
The load-bearing structure will be made with "CFS" profiles by assembling high-strength steel profiles S350GD + Z140, in accordance with standard UNI-EN 10346, cold-formed, with dimensions of :

Manni Green Tech "C" uprights
10/50/140/ 50 /10, placed at a centre-to-centre distance to be defined ⁽¹⁾

Manni Green Tech "C" guides
10/50/140/ 50/10 mm, thickness to be defined ⁽¹⁾



Wall structure
preassembled off-site



Wall structure
Unassembled profiles

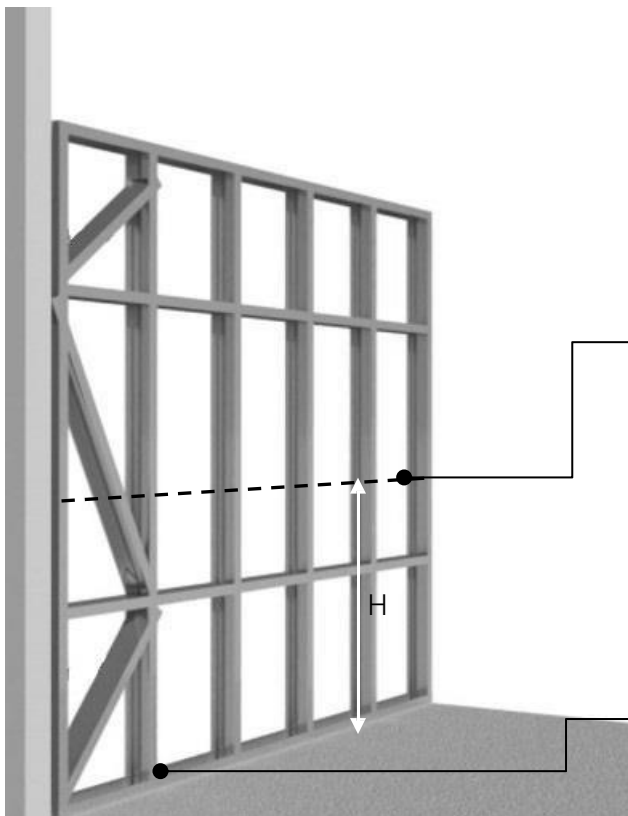
Frames insulated from the perimeter structures with 3.5 mm thick single-sided vinyl tape with an acoustic cutting function. The rails will be fixed to the floor at the base and top by means of dowels suitable for the support placed at a distance between centres to be defined ⁽¹⁾.

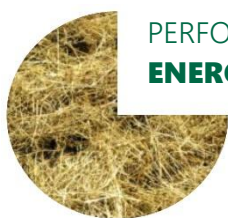
Connections between the rods will be made with self-drilling TEK screws, one to five in number depending on the structural dimensioning.

The vertical profiles can have holes along their core (Service Holes) with a diameter of approximately \varnothing 38.00 mm to allow the passage of ducts for the systems to be inserted in the thickness of the wall, at a variable height (H).

Intersections between profiles should be made by riveting or removing the stiffening lip to ensure the insertion of the incident profile, or the standard distances between rivets and profile edge.

The anchorages to the support surface will be made by means of brackets (HOLD DOWN) anchored to the uprights with self-drilling screws and to the foundation surface with suitably sized mechanical dowels.



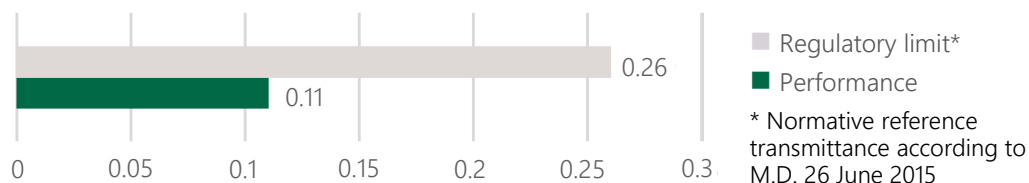


PERFORMANCE DETAILS:

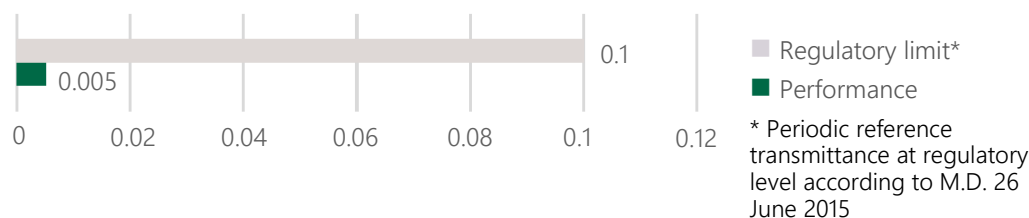
ENERGY EFFICIENCY PERFORMANCE OF THE OPAQUE ENVELOPE

Thickness	365 mm
Surface mass	95 kg/m ²
Resistance	8.64 m ² K/W
Attenuation factor	0.04

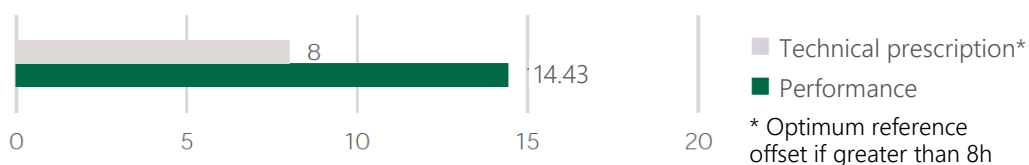
TRANSMITTANCE U
0.11 [W/m²K]



PERIODIC TRANSMITTANCE YIE
0.005 [W/m²K]



OFFSET
14.43 [h'm'']



NOTE:

The thermal aspect must be assessed by a thermal engineer with specific global analyses concerning not only the typical section of the wall but also thermal bridges, windows and systems, referring to the thermal behaviour of the building as a whole.

For further information please contact MANNI GREEN TECH Technical Service.

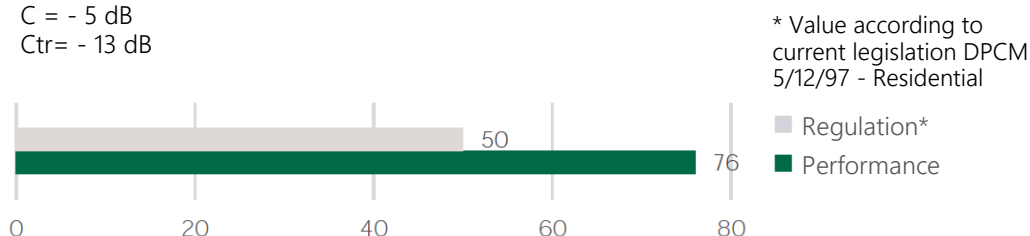


PERFORMANCE DETAILS:

SOUND INSULATION PERFORMANCE

Terms of correction:
C = - 5 dB
Ctr = - 13 dB

SOUNDPROOFING POWER:
Rw 76 [dB]



NOTE:

Analytical evaluation with 500 Hz evaluation index in the frequency range from 100 Hz to 3150Hz. The acoustic performance must be evaluated with specific global analyses concerning not only the values of soundproofing power "Rw" but also estimating the contributions (negative on the theoretical value) given by lateral transmissions and acoustic bridges.

For further information please contact MANNI GREEN TECH Technical Service.



SPECIFICATION ITEM

PERIMETER LOAD-BEARING WALLS WITH STRUCTURAL MANNI GREEN TECH® LIGHT STEEL FRAME [LSF] METAL FRAME AND CLADDING IN COATED PLASTERBOARD SHEETS ON THE INSIDE AND REINFORCED CONCRETE SLABS AND ISOPAN THERMO-ACOUSTIC INSULATION SYSTEM FOR FINISHING WITH ISOPAN SANDWICH PANELS MOD. ISOFIRE WALL PLISSE' EXTERNAL side.

Supply and installation of load-bearing walls in MANNI GREEN TECH® LIGHT STEEL FRAME, with a load-bearing metal frame and internal cladding in high-density coated plasterboard sheets and external cladding in fibre-reinforced cement slabs and finishing with thermo-acoustic sandwich panels, characterised by a thermal transmittance U of $0.11 \text{ W/m}^2\text{K}$, with a soundproofing power $R_w = 76\text{dB}$, with a total minimum thickness of 365 mm. The load-bearing structure will be made with MANNI GREEN TECH® "LFS" profiles, by assembling high-resistance steel profiles S350GD + Z140, according to the UNI-EN 10346 standard, cold-formed, with the following dimensions: C-shaped uprights with dimensions 50/140/50 mm and horizontal C-shaped rails with dimensions 50/140/50 mm. Internal counter-wall with C-shaped vertical uprights of dimensions 50/75/50 mm, staggered in relation to the external frame, and horizontal U-shaped rails of dimensions 40/75/40 mm. A double layer of rock wool insulation with a density of 70 kg/m^3 and a thickness of 60+60 mm each (tot.120 mm) is placed in the gap between the 140 mm section uprights. A layer of rock wool panels with a density of 70 kg/m^3 and a thickness of 60 mm is placed between the uprights of the 75 mm section internal frame. The external cladding consists of a façade cladding system made up of ISOPAN sandwich panels mod. ISOFIRE WALL PLISSE', 80 mm thick, applied on a layer of Manni Green Tech 12.5 mm thick fibre-reinforced cement slabs with a 5 mm thick reinforced cement-based skimming cycle. The cladding on the internal side of the MANNI GREEN TECH® LIGHT STEEL FRAME will consist of a single 12.5 mm thick coated plasterboard sheet. The internal cladding of the counter wall will consist of a double layer of cladding slabs, the first layer of which will be in contact with the frame made of very high density "DIFH1R" mod. Manni Green Tech Superior 12.5 mm thick and Manni Green Tech "A" coated plasterboard sheet combined with a 12.5 mm thick aluminium foil "vapour barrier". The installation procedures will be in accordance with UNI 11424:2015 and the manufacturer's instructions for installation in accordance with the MANNI GREEN TECH® System Technical Data Sheet.

REFERENCE LEGISLATION

The metal profiles indicated are to be dimensioned according to the actual design conditions. For further information please contact MANNI GREEN TECH Technical Service.

The geometry, the pitch of the uprights, the diagonals and any other element with structural value are determined and dimensioned on the basis of the loads laid down in the technical standards for construction M.D. 17/01/2018 – "Update of the new technical standards for construction" and its implementing Circular no. 7 of 21/10/2019 – "Instructions for the application of the Update of the Technical Standards for Construction" referred to in M.D. 17/01/2018.

The strengths of CFS structural elements are determined in accordance with the structural Eurocodes:

UNI En 1993-1-3:2005
Eurocode 3 Design of steel structures -
Part 1-3: General rules

Additional rules for the use of cold-bent profiles and thin sheets;

UNI EN 1993-1-5:2007
Eurocode 3 Design of steel structures - Part 1-5: Slab structural elements;

For seismic action reference is always made to the contents of M.D. 17/01/2018.





CERTIFICATIONS ENVIRONMENTAL SUSTAINABILITY



SLABS

All our slabs comply with the current CE marked reference standard in accordance with UNI EN 520:2009 "Gypsum plasterboards - Definitions, requirements and test methods".

All different slabs comply with specific standards.



INSULATING MATERIAL

All insulation materials used comply with current legislation

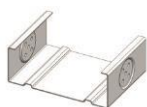
UNI EN 13162:2015 "Thermal insulation products for buildings - Factory made mineral wool (MW) products - Specification".



UNI EN 1090 -1:2012

"Execution of steel and aluminium structures - Part 1: Requirements for conformity assessment of structural components".

CE marking according to the European Regulation n.305/2011 (CPR, Construction Products Regulation)



Manni Green Tech "C" profile
10/ 50/ 140/ 50/ 10

STEEL SUSTAINABILITY

Complies with the UNI EN ISO 14021:2016 standard for recycled content.

The average annual recycled content of steel used by Manni Green Tech during 2019 was 60%, varying according to the type of steel and the type of supply required.

CAM Building all structures meet the minimum requirements imposed by the law on - MINIMUM ENVIRONMENTAL CRITERIA FOR THE CONTRACTING OF DESIGN AND WORK SERVICES FOR THE NEW CONSTRUCTION, RENOVATION AND MAINTENANCE OF PUBLIC BUILDINGS - Art. 2.4.2.5 Cast iron, iron, steel



MANAGEMENT & QUALITY

UNI EN ISO 9001:2015 for the following activity EA:17 - Design and construction of steel structures for civil industrial buildings and plants. Production of cold-formed steels for the building industry.

