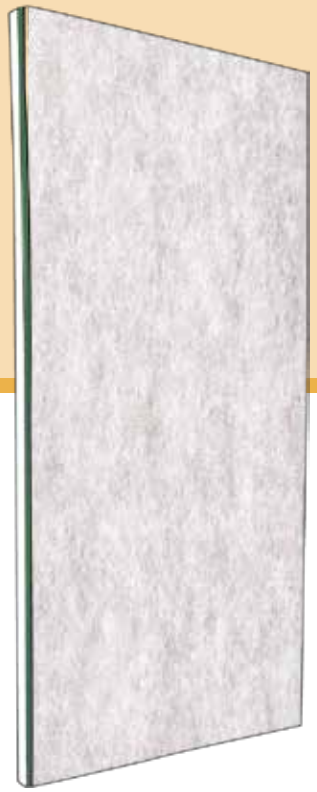
TOPSILENTDuogips

THERMAL-ACOUSTIC INSULATION IN PLASTERBOARD PANELS PRE-COUPLED WITH A HIGH DENSITY SOUND-RESISTANT FOIL WITH VERY HIGH CRITICAL FREQUENCY, NON-WOVEN POLYESTER FABRIC LINING WITH "ELASTIC NEEDLING", FOR INSULATING FALSE-WALLS GLUED IN VERY THIN LAYERS



GRANTS *LEED* CREDITS

1 PROBLEM

For the acoustic insulation of existent walls, there is often not enough room for a false-wall lined with plasterboard on a metal frame nor for the usual glued plasterboard false-walls pre-coupled with mineral wool.

2 SOLUTION

TOPSILENTDuogips offers acoustic insulation, even if minimal, but appreciable in existent walls with minimal thickness.

TOPSILENTDuogips is obtained by coupling a plasterboard panel with the TOPSILENTDuo foil, which in turn is made up of a high density sound-resistant foil lined with a non-woven polyester fabric obtained with a special "elastic needling" procedure, being an exclusive INDEX project.

The foil coupled with the plasterboard increases its weight and, seeing as it is elastic, modifies its critical frequency, while the non-woven fabric, even if thin, has a dynamic stiffness of $s' = 7$ MN/m^3. This is the outcome of the compromise between elasticity and sufficient resistance to crushing, such to work as a shock-absorbing spring that dampens the vibrations of the two masses in which it is inserted, being the old wall and plasterboard panel with the foil, and consequently reduces the transmission of noise.

The fibres are not irritant, they are flexible and do not crumble when compressed or folded and this makes them particularly suitable also in homes that are already inhabited.

As stated in the IEN G. Ferraris certificate n. 35561/08, the **TOPSILENTDuogips** panel, obtained by gluing the TOPSILENTDuo foil to a plasterboard panel, itself then glued to a plastered wall in cavity bricks 25×25×12 cm of a density of 153 kg/m^2, increased the thickness of the assembly by only 3 cm and the soundproofing power by $\Delta R_w = 7$ dB. Note that an increase in soundproofing power of $R_w = 6$ dB is a 75% reduction in the transmitted sound energy and 35% of perceived noise.

METHOD OF USE

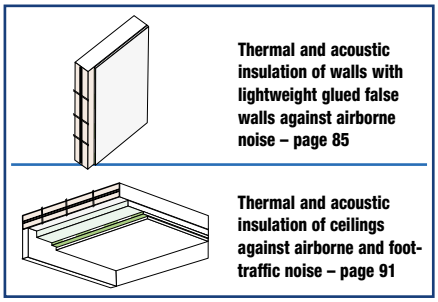
Spread GIPSCOLL glue (dotted or in strips) on the unwoven fabric side of the panels to be secured. Next, rest the panel against the wall, while keeping it detached from the floor with small wedges, which will be removed when the glue has set.

Next, fill the gap with an insulating seal in extruded polyethylene and grout the joining line of the panel with the special STUCCOJOINT sealer reinforced with NASTROGIPS tape.

Handle the panels with care and keep under cover.

APPLICATION FIELDS

TOPSILENTDuogips is used to insulate existing walls with the glued false wall system when there is insufficient space for other solutions.



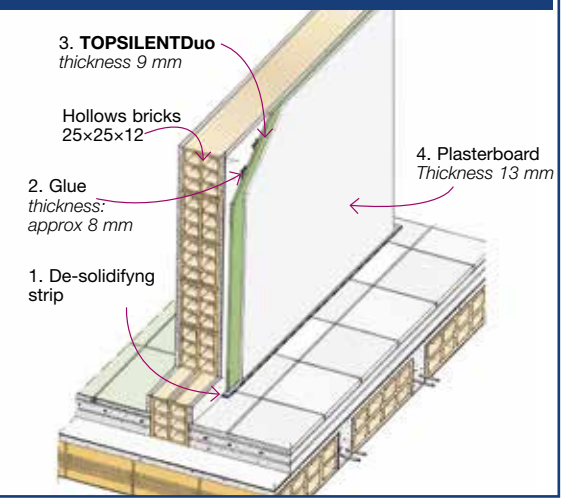
Thermal and acoustic insulation of walls with lightweight glued false walls against airborne noise – page 85

Thermal and acoustic insulation of ceilings against airborne and foot-traffic noise – page 91

Single wall (conventional brick) - thickness 12 cm, insulated with thin glued plasterboard

Certification "IEN G. Ferraris" n. 35561/08

SOUNDPROOFING POWER
$R_w = 51.9$ dB
$\Delta R_w = 7.0$ dB



TOPSILENTDuogips

Thickness		21.0 mm
Dimension		1.2×2.8 m
Mass per unit area		15 kg/m^2
Thermal resistance R	EN 12667	0.15 m^2 K/W
Dynamic stiffness	UNI EN 29052/1	s' = 7 MN/m^3
Resistivity to air flow r		14.9 KPas/m^2
Aqueous vapour diffusion coefficient		μ 100 000
Bending strength	EN 520	Conforming
Specific heat.		1.049 KJ/kgK
Fire reaction classification	EN 13501-1	**Class F**
Certification		

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