Yesograf. Improving the properties of gypsum and plasters

Material which improves the mechanical resistence up to 250% of inorganic materials widely used in construction such as gypsum

Yesograf is an addition that improves the mechanical resistance of gypsum and plaster composites, presented as a fine powder (up to 250%), increasing termal conductivity (up to 115%) and protects buildings from electromagnetic wave sources, at zero cost. Yesograf implies the revaluation of materials and contributes to a better durabilioty of the compound in contact with water.

Technology solution supported by the Technical University of Madrid

Technology solution

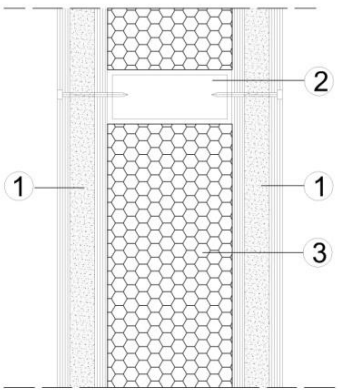
Yesograf is a material which adds an inert industrial waste as a fine powder and, when it is added to gypsum and plasters, mechanical resistence is improved and thermal conductivity, acoustic insulation and electromagnetic insulation are increased. Currently, it has zero cost as an additive, and it improves in a significant way gypsum based materials that commercially have low resistance.

In addition, based on these mixtures and adding sands, this solution enables to prepare mortars. These mixtures can be used in construction on site or in prefabricated materials such as gypsum boards or sandwich panels, among others.

Areas of application

- **Materials:** Materials revaluation, material ecology, improve of mechanical properties.
- **Energy:** Energy savings in buildings.
- **Environment:** It helps the management and recovery of waste.
- **Safety:** Building protection and insulation against electromagnetic waves.

"Addition, at zero cost, as a fine powder that improves mechanical properties and increases thermal conductivity of materials which are used for radiant solutions"



Detail of a partition with Yesograf on both sides (1), metalic or wooden strip as an structure (2) and insulation between boards (3). Preferably placed when it is dry.

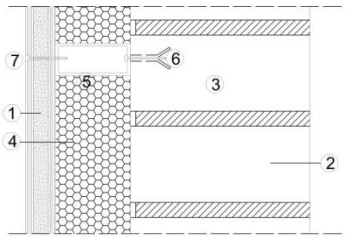
Market demands

- **Materials technology**

• It is necessary an increase in the resistance and durability of materials based gypsum or plaster used in construction.

- **Energy efficienty**

• Since RD 235/2013 was published, the certificate of energy efficiency for buildings is required.



Detail of a board with gypsum and Yesograf (1) front (2). It is installed in the outer side of the ceramic brick (3) or in another material, and the insulation (4) strips (5) or metalic brackets or made of another resistant materia, fixed on the front (6) where the board is srcrewed (7). Preferably placed when it is dry.

"Yesograf improves properties of gypsum and plaster based materials, which are a great share of this market"

Market potential

- **Material technology**

• Short and long-term predictions at construction sector in Europe are reasonably good. In this way, 2014 experienced a clear growth (+1,2%) after six years. In the next years greater growths are expected: 2,4% in 2016 and 2,6% in 2017 [Fundación Laboral de la Construcción – Jun 2015].

- **Energy efficiency**

• The Ministry of Industry values in 206 million the contribution of companies to the European Energy Efficiency Fund [Europa Press – Dic 2015].

• Worldwide investments in EE for buildins, whose consumption is more tan 30% of global energy demand. It is estimated in 90 thousand million dollars in 2014 an it is expected to be 125 thousand million dollars in 2020 [energiaysociedad.es – Nov 2015].

• The difference between a G building and another one sorted as an A ascend to € 2300 a year [El Mundo – Marzo 2015].

Competitive advantages

• Improvement of mechanical resistance up to 250% in inorganic materils widely ised in construction suh as gypsum.

•Thermal conductivity in increased a 115%.

• Global inner termal losses can be reduced up to 8%, resulting in energy savings in buildings.

•Materials revaluation. Zero cost solution.

•Innocuous addition

•Protects buildings from electromagnetic waves sources, acting as a cover.

References

- Wide experience in industrial applications development.

IPR

- Patent granted in Spain [P201431878]
- International patent through PCT [PCT/ES2015/070906]

Development stage

- ◯ Concept
- ◯ R & D
- ⊕ Lab Prototype
- ◯ Industrial Prototype
- ◯ Production

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