such as silica, alumina, basalt or ceramic fibers; carbon fibers; and metal fibers, such as silver, copper or steel fibers.

The textile comprising the glass fibers and optionally the other fibers also comprises an organic binder, the role of which is to bond the fibers together and to “consolidate” them, which confers better mechanical properties on the textile, in particular a stiffness sufficient to be able to be easily handled without the risk that it may be torn.

The organic binder in accordance with the invention contains one or more organic polymers having a glass transition temperature (Tg) which varies from -10 to +25°C, measured by differential scanning calorimetry according to the standard ISO 11357-1:2009. Preferably, the glass transition temperature varies from 0 to +10°C.

Advantageously, all the organic polymers present in the organic binder have a glass transition temperature within the limits indicated above.

Generally, the organic polymer is chosen from copolymers of an olefin, such as ethylene, propylene, butylene or isobutylene, and of vinyl acetate, copolymers of vinyl acetate and of (meth)acrylic acid or of (meth)acrylate, copolymers of (meth)acrylate and of a monomer other than vinyl acetate, in particular styrene, homopolymers of (meth)acrylic acid or of acrylate, terpolymers of vinyl acetate, of an olefin and of a vinyl ester monomer, and acrylonitrile polymers, in particular copolymers of acrylonitrile and of (meth)acrylate, especially of acrylonitrile and of methyl methacrylate, and terpolymers of acrylonitrile, of butadiene and of styrene. Copolymers of (meth)acrylate and of styrene are preferred, in particular copolymers of butyl acrylate and of styrene.

The glass textile in the nonwoven form in accordance with the invention is obtained by applying an aqueous organic binder composition to the glass textile formed by the dry route or the wet route and by then subjecting the textile to a heat treatment in order to remove the water.

In the dry-route process, molten glass present in a furnace is conveyed toward a group of bushings from which filaments flow out by gravity and are drawn by a gaseous fluid. The mineral filaments are collected on a conveyor, where they become entangled, forming a mat.

comprising at least one organic polymer exhibiting a glass transition temperature which varies from -10 to +25°C, for improving the acoustic properties, in particular the acoustic insulation properties, of a plaster-based board comprising a core made of plaster positioned between two coating layers, in which said textile constitutes the coating layer or layers and/or is embedded in the core made of plaster. The present invention also relates to a process for improving the acoustic properties of a plaster-based board comprising the provision of a textile as described above, including glass fibers and an organic binder comprising at least one organic polymer exhibiting a glass transition temperature which varies from -10 to +25°C, and the incorporation of said textile in the plaster-based board, the textile constituting a coating layer and/or being embedded in the core made of plaster.

Another subject matter of the present invention relates to the use of a plaster-based board in accordance with the invention for improving the acoustic insulation in a building. The present invention also relates to a process for improving the acoustic insulation in a building, comprising the installation of a plaster-based board according to the invention in order to form wall surfaces, false ceilings, floors and/or partition walls.

The plaster-based board in accordance with the invention can be used as is or in combination with another material, for example a mineral or wood wool, or a polymer, in order to form an acoustic and/or thermal panel, or else an interlayer polymer film providing the bonding between two plaster-based boards, in order to form a composite panel.

This board can be used to form wall surfaces, false ceilings, floors and partition walls.

The examples which follow make it possible to illustrate the invention without, however, limiting it.

EXAMPLES 1 TO 10

Plaster-based boards comprising one or two textiles in accordance with the invention are manufactured under the following conditions:

a) a plaster composition is prepared by introducing 1000 g of calcium sulfate hemihydrate, 5 g of starch, 0.1 g of a setting accelerator (fine gypsum treated with sucrose), 0.05 g of a setting retarder (Plast Retard L, sold by Sicit

CLAIMS

1. A plaster-based board comprising a core made of plaster positioned between two coating layers, **characterized in that** it comprises a textile including glass fibers and an organic binder comprising at least one organic polymer exhibiting a glass transition temperature which varies from -10 to +25°C, said textile constituting the coating layer or layers and/or being embedded in the core made of plaster.

2. The board as claimed in claim 1, **characterized in that** the textile is a nonwoven or a fabric.

3. The board as claimed in claim 1 or 2, **characterized in that** the textile includes at least 80% by weight of glass fibers, preferably at least 90%.

4. The board as claimed in one of claims 1 to 3, **characterized in that** the glass fibers are individual filaments having a diameter which varies from 5 to 30 µm, strands comprising a plurality of these glass filaments (base strand) or an assemblage of several base strands.

5. The board as claimed in one of claims 1 to 4, **characterized in that** the textile includes up to 20% by weight of fibers different in chemical nature from the glass fibers, preferably natural organic or synthetic fibers, polymer fibers, mineral fibers, carbon fibers and metal fibers.

6. The board as claimed in one of claims 1 to 5, **characterized in that** the organic polymer is chosen from copolymers of an olefin, such as ethylene, propylene, butylene or isobutylene, and of vinyl acetate, copolymers of vinyl acetate and of (meth)acrylic acid or of (meth)acrylate, copolymers of (meth)acrylate and of a monomer other than vinyl acetate, in particular styrene, homopolymers of (meth)acrylic acid or of acrylate, terpolymers of vinyl acetate, of an olefin and of a vinyl ester monomer, and acrylonitrile polymers, in particular copolymers of acrylonitrile and of (meth)acrylate, especially of acrylonitrile and of methyl methacrylate, and terpolymers of acrylonitrile, of butadiene and of styrene.

7. The board as claimed in claim 6, **characterized in that** the organic polymer is a copolymer of butyl acrylate and of styrene.

8. The board as claimed in one of claims 1 to 7, **characterized in that** the organic polymer has a glass transition temperature (Tg) which varies

from 0 to +10°C.

9. The board as claimed in one of claims 1 to 8, **characterized in that** the textile contains from 10 to 50% by weight of organic binder, calculated on the basis of the solid matter, preferably from 15 to 25%.

10. The board as claimed in one of claims 1 to 9, **characterized in that** the textile exhibits a weight per unit area which varies from 10 to 800 g/m², preferably from 20 to 600 g/m², advantageously from 30 to 500 g/m² and better still from 35 to 120 g/m².

11. The board as claimed in one of claims 1 to 10, **characterized in that** it has a thickness which varies from 6 to 25 millimeters and is preferably of the order of 12.5 millimeters.

12. The use of a plaster-based board as claimed in one of claims 1 to 11 for improving the acoustic insulation in a building.

13. The use of a textile, including glass fibers and an organic binder comprising at least one organic polymer exhibiting a glass transition temperature which varies from -10 to +25°C, for improving the acoustic properties of a plaster-based board comprising a core made of plaster positioned between two coating layers, in which said textile constitutes the coating layer or layers and/or is embedded in the core made of plaster.