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WATERPROOFING PASTE

The present invention concerns a waterproofing paste, in particular for coating wall surfaces in foundations.

5 It is known that, in building industry, the foundation walls against which the surrounding ground is leant are protected, before the filling up, from the direct contact with ground to prevent said walls from being affected by humidity or water possibly impregnating the ground.

10 To this aim, waterproof films or sheaths adhering to the walls are provided, or paints or varnishes creating a waterproof film are applied on said walls.

In both cases, the protection must exhibit no discontinuity, since any interstice, even of small size, or any more or less diffused
15 porosity would make the intervention useless.

In the first case, in which films or sheaths are used, apart from the costs of the films or sheaths themselves, the problem arises of the costs needed for their application and/or their maintenance in position before the filling up. Moreover, also the additional costs for
20 the measures to be taken to ensure continuity between the different parts positioned with adjoining or superimposed ends should be included.

In the second case, in which paints or varnishes are used, the coating must be applied as a single-film layer to prevent trickling.
25 Thus, a plurality of subsequent coats is needed for a complete covering. The system is expensive because labour cost doubles or triples if two or three coats are required. The costs to be incurred moreover depend on the amount of material being applied.

The final thickness is limited to the sum of the thicknesses of
30 the individual films applied.

Another problem that is decisive for the good quality of the interventions is related with the ability of the protecting materials

(films, sheaths, paint or varnish layers) to resist to deterioration that could result in discontinuities upon the filling up.

It is known that, at present, filling up near foundations is carried out by mechanical means and that the filling material is not
5 soft soil, free from foreign bodies, but it consists of the previously removed earth combined with greater or smaller amounts of brick fragments, concrete pieces resulting from demolitions and so on.

Thus, to ensure that no damage occurs to the protecting materials applied to the walls, panels (such as polystyrene panels or
10 the like) should be applied before the filling up to prevent contact of said protecting materials with the filling materials. Moreover, hard components of bigger or lesser size and with more or less sharp edges should be removed. It is easy to understand how this could be expensive.

15 The above drawbacks are obviated by using the paste according to the present invention, which is based on polymerisable resins loaded with plastic grains.

The paste has a mortar-like consistency, it may be applied by means of a spatula or a trowel and it does not trickle along the
20 surfaces of vertical walls.

The paste consists of suitable acrylic resins, generally with an aqueous vehicle and with a single component, that can become polymerised in air and are mixed with plasticising resins generally
25 of monomer type, and plastic grains, such as PVC or rubber grains or the like, are dispersed therein.

The grain load (the amount of which is variable and preferably is in the range 5% to 80%) is determined every time depending on the requirements of the individual cases.

The paste is applied in a thick layer on the walls to be coated,
30 and a self-levelling continuity is obtained even where the anchoring surface has irregularities of any kind.

The anchoring does not require any primer, provided however

that friable or powder portions as well as non-anchored foreign bodies are removed.

If necessary, several layers of the paste made in accordance with the invention could be applied.

5 When polymerisation is complete, the applied paste forms a continuous waterproof sheath with high resistance to tensile stresses and to breaking and with a good degree of flexibility. It can be said that the sheath forms an "overcoat" protection in respect of the surfaces to which it is applied.

10 As described above, the elastic sheath is manufactured with rather limited costs as far as both the material (notwithstanding the relatively great thicknesses) and the labour are concerned.

A decisive factor is that, when using said sheath according to the invention, the filling up could take place without need for
15 excessive precautions and expedients, so that the costs of the filling up lie within the normal range.

The invention is shown by way of example in the accompanying drawings, in which:

- Fig. 1 schematically shows a portion of a wall structure, having
20 applied thereto the waterproofing paste of the invention, before the filling up;
- Fig. 2 schematically shows detail Y of Fig. 1 in enlarged scale; and
- Fig. 3 is a view similar to Fig. 1, showing the coated wall structure after the filling up.

25 Referring to the drawings, there is shown a part of building foundations or the like, where a wall structure 1 is coated with a waterproof coating 2 made of the paste according to the invention. As shown in Fig. 2, coating 2 comprises a matrix 6 obtained from air-polymerisable resins, in particular acrylic resins, in which grains
30 7 are dispersed. Preferably said grains are plastic grains.

The paste for coating 2 is applied with a certain advance with respect to the filling up, in order it is completely polymerised when

filling up takes place. The paste is moreover applied to a substantial thickness and it penetrates into recesses 5 of wall 1, thereby forming a self-levelling coating.

During the filling up, space 4 between coated wall structure 1
5 and surrounding ground 3 is filled with earth material 8 into which pieces 9 of hard and sharp-cornered materials (e. g. brick or concrete fragments) are embodied. During filling up, said pieces 9 of hard and sharp-cornered materials may arrive in contact with waterproofing coating 2 on wall 1, as shown at locations 10. Yet the
10 contact does not give rise to discontinuity or abrasion or tearing in waterproofing paste 2, as clearly shown in Fig. 3. An essential feature of waterproofing paste 2 according to the invention is just its ability to resist to such hard and sharp-cornered materials.

It is clear that the above description is given only by way of non
15 limiting example and that any other solution, even representing an improvement, which a skilled in the art can put in practice when using the teaching of the invention, is included in the scope of the invention.

Thus for instance, the paste made in accordance with the
20 invention can be used not only for forming waterproof coating on walls in foundations, whether subjected to filling up or not, but it can be used also for coating of surfaces in general, not only in masonry but also wooden or metallic or plastic surfaces. The paste could act also as a plaster or a paint. In such case it might have any
25 of a wide variety of colours, and this is achieved by a suitable choice of the resins and by the possible addition of pigments.

Patent Claims

1. A waterproofing paste comprising polymerisable resins (6), characterised in that it is loaded with plastic grains (7).
2. A waterproofing paste as claimed in claim 1, characterised in
5 that said plastic grains (7) are PVC or rubber grains.
3. A waterproofing paste as claimed in claim 1 or 2, characterised in that said plastic grains (7) are included in a percentage in the range 5% to 80%.
4. A waterproofing paste as claimed in any preceding claim,
10 characterised in that the polymerisable resins (6) loaded with plastic grains (7) are acrylic resins.
5. A waterproofing paste as claimed in any preceding claim, characterised in that the polymerisable resins (6) use an aqueous solvent.
- 15 6. A waterproofing paste as claimed in any preceding claim, characterised in that said polymerisable resins (6) are polymerisable in air.
7. A waterproofing paste as claimed in any preceding claim, characterised in that it further comprises plasticising resins for
20 increasing the paste density.
8. A waterproofing paste as claimed in claim 7, characterised in that the plasticising resins are generally of monomer type and also use an aqueous vehicle.
9. A waterproofing paste as claimed in any preceding claim,
25 characterised in that it is also loaded with non-plastic grains.
10. A waterproofing paste as claimed in any preceding claim, characterised in that, once resin polymerisation is complete, it forms a resilient sheath that is resistant to tensile stresses, shocks, abrasion and tearing.
- 30 11. A waterproofing paste as claimed in any preceding claim, characterised in that it is applied as a waterproofing coating (2) onto a wall surface (1) in building foundations before filling up.

12. A waterproofing paste as claimed in any of claims 1 to 10, characterised in that it acts as is applied as a waterproofing plaster or thick painting on a surface made of masonry, wood, metal or plastics.
- 5 13. A waterproofing paste as claimed in any preceding claim, characterised in that it is a coloured paste.
14. A waterproofing paste as claimed in claim 13, characterised in that it includes coloured resins (6) and/or pigments added to the resins (6).