addition, the mechanical properties of this material are scarcely adapted for this type of application (cable taping).

It is also known to disperse mica flakes in a polymer, typically by using an intermediate step to place them in suspension or solution. Japanese document JP-60/253 105 A2 describes metal wires (described as resistant to dielectric breakdown and resistant to piercing) formed by applying onto a conductor a 28 µm layer of a mixture comprising an aromatic polyimide and 1 to 33 % mica particles. Mica is present as a filler, in particular in the form of dispersed particles and used to reinforce the polymer.

Aims of the Invention

The present invention aims to provide a mica strip intended for taping electric cables which does not have the disadvantages of prior art insulating tapes.

In particular, the present invention aims to propose a mica-based insulating product having high fire resistance.

The present invention also aims to propose a solution with which it is possible to replace the use of substrates currently used such as glass silk or scrim by a lower cost material that is easy to manufacture but having equivalent or better flame performance than that of the materials currently used as substrate.

Finally, the present invention aims to prevent the risks of adherence between the successive turns of the taped product forming the cable, a problem that is often encountered with the currently used tapes or substrates.

Other advantages will become apparent in the description of the invention.

Summary of the Invention

The present invention concerns a multilayer strip ~~(1)~~ comprising at least:

- an essentially mica-based layer ~~(3)~~;

- a polymer layer ~~2~~ comprising 60 to 85 % by weight of a mineral filler ~~(4)~~ and 15 to 40 % by weight of a polymer, wherein said polymer is selected from the group consisting of polyolefin, polyester, polyamide and halogenated polyolefins.

By « essentially mica-based layer » is meant a mica layer optionally comprising small amounts of impurities and optionally associated with an impregnating resin.

By impregnating resin is meant a resin added by capillarity to the mica paper after the forming thereof.

According to preferred embodiments of the invention, the multilayer strip comprises at least one or any suitable combination of the following characteristics:

- said ~~polymer is selected from the group consisting of polyolefin,~~ polyester is~~(in particular~~ PET and/or its copolymers~~)~~; said polyamide is~~(in particular~~ PA6, PA6.6, PA11, PA12, ...~~)~~ and said halogenated polyolefins is~~(in particular~~ PVC, PVDF and/or PTFE~~)~~;

- the polymer is a polyolefin selected from the group consisting of polyethylene, polypropylene, copolymer of propylene and copolymers of ethylene and an alpha-olefin comprising 3 to 8 carbons;

- the polyolefin is a polyethylene or a mixture of polyethylenes of different densities;

- the polymer comprises (consists of) HDPE;

- the essentially mica-based layer is a layer of mica paper, optionally impregnated with a resin;

- the impregnating resin of the mica layer is silicone-based;

- the essentially mica-based layer (3) is laminated to the polymeric layer (2) by means of an adhesive, said adhesive preferably being an adhesive of silicone type;

- the mineral filler is selected from the group consisting of calcium carbonate, calcium sulphate, barium sulphate, aluminium silicate (hydrated such as kaolinite for example), alumina, aluminium hydroxide (ATH), magnesium, zinc oxide, mica, chalk, talc, titanium dioxide, silica,

CLAIMS

1. Multilayer strip ~~(1)~~ comprising at least:
   - an essentially mica-based layer ~~(3)~~;
   - a polymeric layer ~~(2)~~ comprising 60 to 85 % by weight of a mineral filler ~~(4)~~ and 15 to 40 % by weight of a polymer,

wherein said polymer is selected from the group consisting of polyolefin, polyester, polyamide and halogenated polyolefins.

2. The multilayer strip according to claim 1, wherein the polymer is a polyolefin selected from the group consisting of polyethylene, polypropylene, copolymer of propylene and copolymers of ethylene and at least one alpha-olefin comprising 3 to 8 carbons.

3. The multilayer strip according to claim 2, wherein the polyolefin is a polyethylene or a mixture of polyethylenes of different densities.

4. The multilayer strip according to claim 3, wherein the polyethylene comprises a HDPE.

5. The multilayer strip according to any of the preceding claims, wherein the essentially mica-based layer is a layer of mica paper optionally impregnated with a resin.

6. The multilayer strip according to claim 5, characterized in that the impregnating resin of the mica layer is silicone-based.

7. The multilayer strip according to one of the preceding claims, wherein the essentially mica-based layer ~~(3)~~ is laminated to the polymeric layer ~~(2)~~ by means of an adhesive, said adhesive preferably being an adhesive of silicone type.

8. The multilayer strip according to any of the preceding claims, wherein the mineral filler is selected from the group consisting of calcium carbonate, calcium sulphate, barium sulphate, aluminium silicate (hydrated such as kaolinite for example), alumina, aluminium hydroxide (ATH), magnesium, zinc oxide, mica, chalk, talc, titanium dioxide, silica, clay (such as bentonite or montmorillonite), kieselguhr (diatoms) or dolomite and mixtures thereof.

9. The multilayer strip according to any of the preceding claims, wherein the mineral filler is selected from the group consisting of calcium carbonate, diatoms (kieselguhr) and/or silica and mixtures thereof.

10. The multilayer strip according to any of the preceding claims, wherein the polymeric layer has a porosity ~~(5)~~ comprised between 40 and 75 % by volume, preferably between 50 and 60 % by volume.

11. The multilayer strip according to claim 10, wherein the porosity of the polymeric layer ~~(2)~~ is of closed type.

12. The multilayer strip according to any of the preceding claims, wherein the polymeric layer ~~(2)~~ further comprises a coupling agent allowing the coupling of the mineral filler with the polyolefin.

13. The multilayer strip according to claim 12, wherein the coupling agent is a silane, preferably a beta-(3,4-epoxycyclohexyl)ethyl trimethoxy-silane.