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Filler piece for sealing cables

In German Offenlegungsschrift 3,148,386 there is described a filler piece which comprises a profiled piece of plastic material and a coating of hot-melt adhesive.

5 Used as the plastic material, were, for example, thermoplastics, i.e. similar materials to those also used as cable insulations. The hot-melt adhesives are of course of such a nature that they adhere well on such materials. The hot-melt adhesive melts when a shrink tube

10 is shrink-fitted around the assembly comprising filler piece and cables.

However, it has been found that, in the case of the conventional fillers, the bond, and consequently the sealing, in central regions was not optimum. The present

15 invention is based on the object of overcoming this disadvantage of known filler pieces. This object is achieved by the combination of features according to Claim 1.

The present invention is based on the realization

20 that the inadequate bonding in the case of conventional filler pieces could be attributable to an insufficient melting of the hot-melt adhesive in central regions. Elastomers have a significantly better thermal conductivity than thermoplastics. With the filler pieces

25 according to the invention as claimed in Claim 1, the effect is therefore achieved that, during the shrink-fitting of the shrink tube, the heat rapidly flows even into the interior and a uniform temperature distribution over the cross-section is achieved. As a result, the hot-

30 melt adhesive is melted even in central regions and therefore bonds well with the cables. Consequently, a good, closely bonded assembly is achieved.

Elastomeric profiled pieces additionally have the major advantage that the recesses in the form of cylinder

35 segments can enclose the cable over more than 180°. The filler pieces can then be snap-fitted onto the cables concerned.

Elastomeric profiled pieces have not been considered until now because the known hot-melt adhesives

adhere relatively poorly to the commercially available elastomers or polymer blends. The measures according to Claims 3 and 4 overcome this difficulty.

Exemplary embodiments of the invention are explained below with reference to the drawings, in which:
5 Fig. 1 shows a perspective view of a filler piece,
Fig. 2 shows a cross-section through another embodiment, and
Fig. 3 shows a cross-section through the profiled
10 element of a third embodiment.

The filler pieces represented comprise an elastomeric profiled piece 1 having a plurality of recesses 3, 4, in the form of circular-cylinder sectors, and a sheathing of a hot-melt adhesive 2. In the case of
15 the embodiment according to Fig. 1, the recesses 3 enclose an angle of more than 180° . The relatively thick cables to be used there are thus snap-fitted into the recesses 3. The profiled piece 1 preferably consists of SBR/NBR/polychloroprene. To improve the adhesion with
20 respect to the hot-melt adhesive, either an adhesion-activating additive, in particular based on an anhydride-modified EVA comonomer, is added to the material of the profiled piece 1 during its production. Alternatively, it is also possible to treat the surface of the elastomeric
25 filler piece 1 with an adhesion promoter, for example by a halogenizing preparation with polychloroprene solution, or by a hydroaromatic cyclization or polarization of the profiled piece 1, which, when obtaining the hot-melt adhesive bond, during heating up to 190°C leads to
30 diffusion crosslinking with the hot-melt adhesive 2.

Suitable as the hot-melt adhesive are heteropolar and two-component hot-melt adhesives, in particular polyamide, EVA, PU, acrylate and epoxy two-component hot-melt-adhesives.

35 The hot-melt adhesive 2 may also extend only over part of the length of the profiled piece 1.



Patent claims

1. Filler piece for sealing cables, comprising an elastomeric profiled piece (1) having a plurality of recesses (3, 4), in the form of circular-cylinder sectors, and a sheathing of a hot-melt adhesive (2).
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2. Filler piece according to Claim 1, the elastomeric profiled piece consisting of SBR/NBR/poly-chloroprene.
3. Filler piece according to Claim 1 or 2, the elastomeric material of the profiled piece containing an adhesion-activating additive, in particular based on an anhydride-modified EVA comonomer.
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4. Filler piece according to Claim 1 or 2, the surface of the elastomeric profiled piece (1) being treated with an adhesion promoter.
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5. Filler piece according to Claim 4, the adhesion promoter being a halogenizing preparation with poly-chloroprene solution.
6. Filler piece according to Claim 4, the surface of the profiled piece being hydroaromatically cyclized or polarized in such a way that, on heating to the melting temperature of the hot-melt adhesive, a diffusion cross-linking with the hot-melt adhesive occurs.
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7. Filler piece according to one of Claims 1 to 6, the sheathing extending only over part of the length of the profiled piece (1).
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