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Lift shaft door



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The invention relates to a lift shaft door comprising a door panel, which consists at least of a front wall and a back wall which are connected together by thermally releasable connecting means.

A lift door leaf has become known through European patent application EP 1 083 290, in which connecting means are provided between a front wall and back wall and release under heat effect, wherein in addition at least one heat-resistant connection is provided. The heat-resistant connection ensures that in the case of fire the lift door leaf does not collapse and thus can be handled as a whole, whilst the connection, which is releasable under heat effect, between front wall and back wall enables a relative movement between the two walls in the case of fire. Gluing over an area is provided as the connection releasable under heat effect, whilst rivets or screws in an upper receptacle for fastening the lift door leaf to a suspension carriage are used as heat-resistant connections. In this manner it is achieved that, in the case of fire, on dissolution of the connection which is not heat-resistant the front wall and back wall can displace relative to one another.

In this lift door leaf the entire closing edge is formed by the front wall. In the case of fire, i.e. with heat action on the front wall and with dissolution of the glue connections which are not heat-resistant, the front wall and therewith the closing edge will curve so that the door gap can enlarge to an impermissible width, whilst the back wall is hardly curved.

The invention is based on the object of proposing a lift shaft door according to the introduction which guarantees that gap widths of impermissibly large size do not occur by heat effect in the case of fire.

This object is met by the invention indicated in claim 1.

At least a part of the closing edge of the respective door panel (2, 3) thereby consists of a profile member (7, 8) formed by the back wall (5) or thermally non-detachably fastened thereto.

The advantages achieved by the invention are particularly to be seen in that in the case of fire the back walls, notwithstanding stronger curvature of the front door walls of the door panel, and thus the closing edges fastened thereto remain straight. A further advantage

resides in the fact that in the case of one and the same back wall the closing edge can be of variable design by fitting differently shaped profile members, which allows a more rational production and reduces manufacturing costs.

The invention is explained in more detail in the following by reference to an embodiment in conjunction with the drawing, in which:

Fig. 1 shows a view of a lift shaft door with two door panels,

Fig. 2 shows a partial cross-section according to the line II-II in Fig. 1 in schematic illustration and enlarged scale and

Fig. 3 shows a partial cross-section through a lift shaft door with only one door panel.

In Figs. 1 and 2 a lift shaft door, which has two door panels 2, 3, is denoted by 1. The door panels 2, 3 each consist of a front wall 4 and a back wall 5, which are connected together by means of an adhesive 6 illustrated in the drawing by dashed lines. The adhesive 6 is of such a nature that it dissolves in the case of greater heat, for example in the case of a fire. The back wall 5 has at least a part of a closing edge of the respectively concerned door panel 2, 3, wherein the closing edge itself is preferably a profile member 7, 8 separate from the back wall 5 and fastened thereto by, for example, rivets 9. That offers the advantage that, through selection of the shape of the profile members 7, 8, closing edges extending in a different manner can be realised for one and the same back wall.

The profile member 7 of one door panel 2 and the profile member 8 of the other door panel 3 form, in the closed state of the lift shaft door 1, a rearward door gap 10, which differs with respect to gap direction and/or lateral position from the forward door gap 11, which is formed in the forward region of the lift shaft door 1 by the closing edges of the front walls 4. The rearward door gap 10 can thereby extend, for example, obliquely relative to the forward door gap 11 and in that case cross an axis 12 of symmetry of the lift shaft door 1.

In the event of a fire the glue connection dissolves due to the strong heating, so that the back walls 5 are separated from the front walls 4. In that case the front walls 4 directly exposed to the fire curve, whilst the back walls 5 and thus also the profile members 7, 8

which are fastened thereto and form the rearward door gap 10 substantially retain the original shape, so that the door gap 10 between the stated profile members 7, 8 does not enlarge and the fire cannot go through to the lift shaft.

Fig. 3 shows a door panel according to the invention in a lift door with only one door panel. By contrast to the embodiment according to Fig. 2 where the closing edges of two door panels form a door gap, in this arrangement the door gap is formed between the closing edge of a door panel 2 and a door post 13. The profile member of this arrangement is correspondingly shaped and forms a rearward door gap 10 with the door post 13.

Patent Claims

1. Lift shaft door comprising a door panel (2, 3) with a closing edge, wherein the door panel (2, 3) consists of at least a front wall (4) and a back wall (5), which are connected together by thermally releasable connecting means, characterised in that at least a part of the closing edge of the respective door panel (2, 3) consists of a profile member (7, 8, 14) formed by the back wall (5) or thermally non-detachably fastened to this back wall (5).
2. Lift shaft door according to claim 1, characterised in that in the closed state of the lift shaft door (1) the profile member (7; 14) of the door panel (2) forms with the profile member (8) of an opposite door panel (3) or with a door post (13) a rearward door gap (10).
3. Lift shaft door according to claim 2, characterised in that the rearward door gap (10) differs from the forward door gap (11) with respect to gap direction or lateral position, wherein the forward door gap (11) is formed either by the closing edge parts of two front walls (4) or by the closing edge part of a front wall (4) and a door post (13).
4. Lift shaft door according to claim 3, characterised in that in the case of a multi-panel lift shaft door (1) the rearward door gap (10) extends obliquely relative to the forward door gap (11), wherein it crosses an axis (12) of symmetry of the lift shaft door (1).