

Claims

1. Conduit through which at least one pipe or cable  
5 extends, wherein the conduit has an inner wall and is provided with a system for sealing in the conduit space that is unoccupied by the at least one pipe or cable, wherein the system comprises:  
10 at least one rubber element for providing in the conduit a support-structure which is clamped-in in the space that is unoccupied by the at least one pipe or cable; and a sealant layer against the support-structure for sealing off at least one end of the conduit between the inner wall and the at least one  
15 pipe or cable, wherein each rubber element is made of a fire-resistant vulcanized rubber of a thermally substantially non-expandable type, and wherein the sealant is made of a fire-resistant polymer which is also of the thermally substantially non-expandable  
20 type, wherein the polymer is vulcanizable at room temperature under exposure to humidity or has vulcanized, wherein the sealant layer has a thickness in a range of 14 to 16 mm, and most preferably has a thickness of 15 mm, wherein each rubber element is a  
25 longitudinal element, and wherein each longitudinal element has a length in a range of 12 to 14 cm, and preferably has a length of 13 cm.
- 2 Conduit according to claim 1, wherein at least one of  
30 the rubber elements comprises a mantle-wall.
3. Conduit according to claim 2, wherein at least one of the mantle-walls is provided with a slit which extends over the full length of the rubber element.  
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4. Conduit according to claim 2 or 3, wherein at least one of the mantle-walls is closed in itself.

5. Conduit through which at least one pipe or cable extends, wherein the conduit has an inner wall and is provided with a system for sealing in the conduit space that is unoccupied by the at least one pipe or cable, wherein the system comprises:  
a plurality of rubber elements for providing in the conduit a support-structure which is clamped-in in the space that is unoccupied by the at least one pipe or cable; and a sealant layer against the support-structure for sealing off at least one end of the conduit between the inner wall and the at least one pipe or cable, wherein each rubber element is made of a fire-resistant vulcanized rubber of a thermally substantially non-expandable type, and wherein the sealant is made of a fire-resistant polymer which is also of the thermally substantially non-expandable type, wherein the polymer is vulcanizable at room temperature under exposure to humidity or has vulcanized, wherein at least one of the rubber elements comprises a mantle-wall, and wherein at least one of the mantle-walls is provided with a slit which extends over a full length of the rubber element.
6. Conduit according to claim 5, wherein at least one of the mantle-walls is closed in itself.
7. Conduit according to claim 5 or 6, wherein the sealant layer has a thickness in a range of 14 to 16 mm, and preferably has a thickness of 15 mm.
8. Method for sealing a conduit having an inner wall and having at least one pipe or cable extending through the conduit, wherein the method comprises:
- placing at least one rubber element in the conduit in space that is unoccupied by the at least one pipe or cable, so that therewith a clamped-in support-

structure is provided, the support-structure being such that on each side thereof space remains available for applying a sealant layer within the conduit and against the support-structure for sealing off a respective end of the conduit; and

- applying a sealant layer against the support-structure for sealing off a respective end of the conduit, the sealant layer having a thickness in a range of 14 to 16 mm, and preferably has a thickness of 15 mm,

wherein each rubber element is made of a fire-resistant vulcanized rubber of a thermally substantially non-expandable type, and wherein the sealant is made of a fire-resistant polymer which is vulcanizable at room temperature under exposure to humidity and which is also of the thermally substantially non-expandable type.

9. Method for sealing a conduit having an inner wall and having at least one pipe or cable extending through the conduit, wherein the method comprises:

- placing a plurality of rubber elements in the conduit in space that is unoccupied by the at least one pipe or cable, so that therewith a clamped-in support-structure is provided, wherein the placing comprises placing one of the rubber elements around one of the pipes or one of the cables, that one rubber element being provided with a mantle-wall having a slit over a full length of the rubber element, the support-structure being such that on each side thereof space remains available for applying a sealant layer within the conduit and against the support-structure for sealing off a respective end of the conduit; and
- applying a sealant layer against the support-structure for sealing off a respective end of the conduit, wherein each rubber element is made of a fire-resistant vulcanized rubber of a thermally

substantially non-expandable type, and wherein the sealant is made of a fire-resistant polymer which is vulcanizable at room temperature under exposure to humidity and which is also of the thermally substantially non-expandable type.

10. Conduit or method according to any one of the previous claims, wherein rubber or polymer of the thermally substantially non-expandable type comprises rubber respectively polymer which is free from components which would on heating cause the rubber respectively the polymer to expand to an extent larger than the extent to which the rubber respectively the polymer itself expands on such heating.

11. Conduit or method according any one of the previous claims, wherein the rubber comprises a silicone based rubber.

12. Conduit or method according any one of the previous claims, wherein the polymer comprises a silicone based polymer.

13. Conduit or method according to any one of claims 1 - 12, wherein the longitudinal rubber element is a tubular element, or wherein a number of the longitudinal rubber elements can together form one tubular element.

14. Conduit or method according any one of the previous claims, wherein the rubber has a hardness in a range of 70 to 78 Shore A, preferably about 74 Shore A.

15. Conduit or method according to any one of the previous claims, wherein the rubber element is cylindrical in shape.

16. Conduit or method according to claim 15, wherein at least one the cylindrically shaped rubber elements has an outer diameter in a range of 16 mm to 40 mm.
- 5 17. Conduit or method according to claim 15 or 16, wherein the cylindrically shaped rubber element is a tubular element having an inner diameter in a range of 10 mm to 32 mm.
- 10 18. Conduit or method according to any one of the previous claims, wherein the sealant has after vulcanization a hardness in a range of 35-50 Shore A, preferably 40-45 Shore A.
- 15 19. Conduit or method according to any one of the previous claims, wherein each rubber element and/or the sealant is non-ignitable at a temperature of 400°C.
- 20 20. Conduit or method according to any one of the previous claims, wherein each rubber element and/or the sealant has an oxygen index of 45% or higher.
- 25 21. Conduit or method according to any one of the previous claims, wherein each rubber element and/or the sealant has a colour which contrasts with black.
22. Conduit or method according to claim 21, wherein the colour is red brown or white.
- 30 23. Conduit or method according to any one of the previous claims, wherein the conduit has in the axial direction a length in a range of 15-17 cm, and preferably has a length of 16 cm.
- 35 24. Conduit or method according to any one of the previous claims, wherein the conduit is of a metal or a metal alloy.

25. Conduit or method according to any one of the previous claims, wherein the conduit comprises a through hole in a concrete wall or ceiling
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26. Conduit or method according to any one of the previous claims, wherein the conduit has an inner wall that comprises hydrous phyllosilicate mineral material, preferably coated with a fire retardant coating.
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27. Conduit or method according to any one of the previous claims, wherein the conduit has an inner wall comprising a glass-filled hard engineering plastic.
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