

Claims

1. A ventilation duct for a fire rated ventilation duct wall penetration, said ventilation duct comprising one or more metal sheets forming said duct, wherein
5 said metal sheet duct is covered on the outside by a heat insulating material, and said duct includes elongated stiffening members located on the outside of the duct and attached to said metal sheets,
characterised in that
the stiffening members each comprise a metal profile and at least one non-
10 combustible bar of inorganic material, wherein the metal profile is fixed to the metal sheet of the duct and retaining the at least one non-combustible bar by at least partly encircling the bar.
2. A ventilation duct according to claim 1, wherein the stiffening members extend
15 transversely to the longitudinal extension of the duct.
3. A ventilation duct according to claim 1 or 2, wherein the metal profile is U-shaped with exterior mounting flanges so that a longitudinal groove is provided which is configured to tightly receiving the at least one non-combustible bar,
20 preferably two non-combustible bars.
4. A ventilation duct according to any one of the preceding claims, wherein the at least one non-combustible bar is glued to the metal profile.
- 25 5. A ventilation duct according to any one of the preceding claims, wherein the metal profile is a steel profile.
6. A ventilation duct according to any one of the preceding claims, wherein the at least one non-combustible bar is based on gypsum, calcium silicate or cement.
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7. A ventilation duct according to claim 6, wherein the at least one non-combustible bar does not comprise a heat insulation material.

8. A ventilation duct according to any one of the preceding claims, wherein the stiffening members are fastened to the metal sheet duct by a plurality of rivets and/or screws.
- 5 9. A ventilation duct according to any one of the preceding claims, wherein the heat insulating material is also arranged on the outside of the stiffening members.
- 10 10. A ventilation duct according to any one of the preceding claims, wherein the heat insulating material is mineral wool, preferably stone wool.
11. A ventilation duct according to any of the preceding claims, wherein the duct has a square or rectangular cross-section.
- 15 12. A ventilation duct according to any of the preceding claims, comprising two or more stiffening members, such as four stiffening members.
13. A ventilation duct according to any of claims 11-12, wherein the stiffening members are located along a longer side of the rectangular duct.
- 20 14. A ventilation duct according to claim 12, wherein the two stiffening members are located along the longer sides of the rectangular duct.
- 25 15. A ventilation duct according to any of the preceding claims, wherein the stiffening members are located on one side and/or both sides of the wall penetration.
- 30 16. A ventilation duct according to claim 15, wherein the duct is essentially vertically oriented, and the stiffening members are located on the upper side of the wall penetration, in particular on the upper side of a deck or floor.
17. A method of manufacturing and installing a ventilation duct in a fire rated ventilation duct wall penetration, said method comprising the steps of:

- providing a ventilation duct section comprising one or more metal sheets forming said duct section,
 - mounting elongated stiffening members located on the outside of the duct section and attached to said metal sheets, wherein the stiffening members each comprises a metal profile and at least one non-combustible bar of inorganic material, wherein the profile is fixed to the metal sheet of the duct section and retaining the non-combustible bar by at least partly encircling the bar, and
 - positioning the ventilation duct section with stiffening members through an opening in a building structure, such as a partitioning wall, a deck or a floor,
 - covering said metal sheet duct section and the stiffening members with the non-combustible bars by a heat insulating material, and
 - sealing the gap between the outer surface of the insulation material and the opening in the building structure.
18. A method according to claim 17, whereby the stiffening members extend transversely to the longitudinal extension of the ventilation duct.
19. A method according to claim 17 or 18, whereby the metal profile is U-shaped with exterior mounting flanges so that a longitudinal groove is provided which is configured to tightly receiving the at least one non-combustible bar, preferably two non-combustible bars.
20. A method according to any one of claims 17 to 19, whereby the at least one non-combustible bar is glued to the metal profile.
21. A method according to any one of claims 17 to 20, whereby the stiffening members are fastened to the metal sheet duct by a plurality of rivets and/or screws.
22. A method according to any one of claims 17 to 21, whereby the heat insulating material is also arranged on the outside of the stiffening members.
23. A method according to any one of claims 17 to 22, wherein the heat insulating material is mineral wool, preferably stone wool.

24. A method according to any one of claims 17 to 23, whereby the wall penetration may be through a separating building structure, which is either vertical or horizontal in orientation.

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25. A method according to any one of claims 17 to 24, whereby a gap between the outer surface of the insulation material and an opening in a building structure is sealed, preferably with an intumescent which is capable of swelling when exposed to heat.