CLAIMS

1. A fire-stopping product comprising a resilient, porous material at least partially impregnated with an intumescent agent,
wherein the resilient, porous material is held in compression by a releasable restraint,
wherein the restraint yields on exposure to heat or flames.

2. A fire-stopping product according to claim 1, wherein the resilient, porous material is further at least partially impregnated with a binder.

3. A fire-stopping product according to claim 2, wherein the binder comprises one or more of an acrylic binder, polyvinyl acetate, polyvinyl acrylate, polyvinyl chloride mixed polymerisates, polychloroprenes and carbonisers, such as for example phenolic resins, melamine resins, polyimides or polyacrylonitrile.

4. A fire-stopping product according to claim 2, wherein the binder comprises an acrylic binder.

5. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the intumescent agent includes at least one of: graphite, polyphosphate, melamine, pentaerythritol, titanium dioxide and exfoliated vermiculite.

6. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the intumescent agent comprises graphite.

7. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the intumescent agent comprises graphite and ammonium polyphosphate.

8. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the resilient, porous material has a porosity of 10-100 pores per lineal inch (ppi).

9. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the resilient, porous material comprises an open-cell foam or a non-woven material.

10. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the resilient, porous material comprises a polyurethane (PU) open-cell foam.

11. A fire-stopping product according to ~~any one of claims 1 to 9~~claim 1, wherein the resilient, porous material comprises a non-woven material comprising at least one of polymeric fibres, metallic fibres and inorganic fibres.

12. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the weight ratio of the resilient, porous material to the combined weight of the intumescent agent, and, if ~~including any~~a binder is present, the binder is from 1:1 to 1:8 by dry weight.

13. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the product is in the form of a tape.

14. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the product has the shape of a plate.

15. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the restraint is in the form of a tape, thread, film, extruded tube, net, or shrink-wrapped tubing.

16. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the restraint is polymeric.

17. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the restraint comprises one or more polymers selected from polyethylene, polymethylmethacrylate, polystyrene, polyvinylchloride, polypropylene and acrylonitrile butadiene styrene.

18. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the restraint comprises low-density polyethylene (LDPE).

19. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the restraint comprises a thread.

20. A fire-stopping product according to ~~any one of claims 1 to 14~~claim 1, wherein the restraint is a meltable solid impregnated into the resilient, porous material.

21. A fire-stopping product according to claim 20, wherein the meltable solid is a wax.

22. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the restraint yields by undergoing a physical and/or chemical transformation.

23. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the restraint yields by burning, melting, softening or undergoing a glass transition.

24. A fire-stopping product according to ~~any one of the preceding claims~~claim 1, wherein the intumescent agent has an intumescence temperature and wherein the restraint yields at a temperature below the intumescence temperature.

25. An insulated building façade comprising an external wall and a cladding layer substantially parallel to the external wall, wherein the external wall and the cladding layer define an air gap there between,

wherein a fire-stopping product is disposed within the air gap and is attached to a part of a face of the cladding layer or a face of the external wall and

is expandable to fill the distance between the cladding and the thermal insulation when contacted with the heat of a fire,

wherein the fire-stopping product comprises a resilient, porous material at least partially impregnated with an intumescent agent,

wherein the resilient, porous material is held in compression by a releasable restraint, and

wherein the restraint is released by melting or softening on exposure to hot gases from a fire.

26. An insulated building façade according to claim 25, wherein a face of the external wall adjacent to the air gap is provided with a layer of thermal insulation, such that the air gap is defined by the layer of thermal insulation and the cladding layer.

27. An insulated building façade according to claim 25 ~~or claim 26~~, wherein the fire-stopping product is in the form of a tape oriented in a substantially horizontal position relative to the façade.

28. A method of manufacturing a fire-stopping material comprising the steps:

a. providing a resilient, porous material;
b. providing a solution of an intumescent agent;
c. impregnating the resilient, porous material with the solution;
d. drying the solution, thereby removing liquid;
e. compressing the resilient, porous material;
f. constraining the resilient, porous material in its compressed state with a restraint.

29. A method according to claim 28, wherein the step of constraining the resilient, porous material comprising impregnating the compressed resilient, porous material with a meltable solid in its liquid state and then allowing the liquid to cool and solidify, thereby maintaining the resilient, porous material in its compressed state.

30. A method according to claim 28, wherein the step of constraining the resilient, porous material comprises affixing a polymeric mechanical restraint around at least a portion of the outside of the resilient, porous material.