

Wall construction and method of manufacturing a wall construction.

5 The invention relates to a wall construction comprising supporting poles and filling material cast between them.

Further, the invention relates to a method of manufacturing a wall construction, in which method supporting poles are mounted in place, a mould is mounted
10 in such a way that the supporting poles remain inside the mould and filling material is cast inside the mould between the supporting poles.

It is known to build different wall constructions, but the problem often is that manufacturing a wall construction is complicated, laborious and slow and
15 thus expensive. On the other hand, many insulations used for wall constructions cause problems with fire safety.

Finnish Publication 75 389 discloses a wall frame consisting of lightweight beams and foam concrete used as surface and filling material between the beams.
20 The wall is made in such a way that a casting mould is fastened on the lightweight beams and the foam concrete is sprayed inside the casting mould. For the construction of the wall are required separate heavy and expensive
25 moulds, due to which the wall is slow and expensive to manufacture.

German Offenlegungsschrift 42 15 081 discloses a clay wall element and a method of manufacturing it.
30 The element comprises supports and a filling of lightweight clay and also notches and pins for attaching an element to other elements. The element is cast inside separate moulds, due to which the wall is difficult and expensive to manufacture.

British Patent 1 599 033 discloses a wall construction comprising studs, to which are fastened plas-
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terboards. Further, porous plastics foam is cast between the plasterboards. However, the total costs of such a wall construction are high.

5 German Offenlegungsschrift 39 21 881 discloses a prefabricated wall element of wood. There are wooden parts both outside and inside the element in question and concrete shall be cast between them either in advance or on construction site. The material costs of such a wooden wall element are high and the element is
10 slow and difficult to manufacture.

Finnish Publication 932 441 discloses an insulated wall of a wooden house. This wall comprises an outer layer of wood and between the outer and the inner layer an insulation consisting of mortar layers and
15 layers of rammed chips. Such a wall has high material costs and is slow and complicated to manufacture.

An object of the present invention is to provide a wall construction, which is simple and stable and has a favourable price.

20 A further object of the invention is to provide a method of manufacturing a wall construction, by which method the wall construction can be made quickly and advantageously.

25 The wall construction according to the invention is characterized in that the wall construction comprises a close-meshed metal net attached at least to one side of the supporting poles, the metal net forming part of the wall construction and together with the filling material a reinforcement.

30 The method according to the invention is characterized in that a close-meshed metal net is attached at least to one side of the supporting poles, which net forms part of the mould, and that boards are attached at spaced intervals outside the metal net to support it,
35 whereby the metal net acting as a mould forms part of

the wall construction and together with the filling material a reinforcement.

5 The essential idea of the invention is that a close-meshed metal net forming part of the mould is attached to the supporting poles and boards are attached at spaced intervals outside the metal net. Subsequently, filling material is cast into spaces formed by the metal net and the supporting poles, whereby the net acting as a mould forms part of the wall construction and together
10 with the filling material a reinforcement. Further, the idea of an embodiment is that a mixture of lightweight aggregate and concrete is used as filling material.

The advantage of the invention is that a wall construction made by the method is fire safe, quick to
15 manufacture and simple and has a stable structure and a favourable price.

The invention will be described in greater detail in the attached drawings, in which

20 Figure 1 shows a wall construction according to the invention axonometricly and partly in cross-section,

Figure 2 shows the wall construction of Figure 1 from above and

25 Figure 3 shows another wall construction according to the invention from above.

Figure 1 shows a wall construction according to the invention. For making a wall construction, supporting poles 1 are erected at first. The supporting poles 1 preferably consist of impregnated wood and are fastened in place in their future position. The wooden supporting poles 1 constitute the main load-bearing structure. By using wooden supporting poles 1, a wall construction is simple, quick and advantageous to manufacture. A close-meshed metal net 2 is attached to both
30 sides of the supporting poles 1. The term "close-meshed"
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means in this connection that the wires of the metal net 2 are so close to each other that the filling material intended for the wall construction is not able to flow substantially through the metal net 2. The metal net 2 is fastened to the wooden supporting poles 1 in a simple manner and very quickly for instance by means of clamp nails, small hooks, small nails or the like. The metal net 2 may comprise several net parts positioned adjacent to each other in such a way that they partially overlap each other. The metal nets 2 are supported on the opposite side of the supporting poles 1 by means of boards at spaced intervals. The term "at spaced intervals" means in this connection that boards 3 adjacent to each other are not attached to each other, but they are positioned at such intervals that the metal nets 2 do not bulge substantially when filling material is introduced between them. Since the metal net is supported during casting by an outside boarding, the metal net wire does not need to be very thick, due to which chicken wire, for instance, can be used as the metal net 2. After boarding, the proper filling material of the wall construction is mixed of lightweight aggregate and concrete, for instance, and the mixture 4 in question is cast between the metal nets 2 in such a way that it fills the space between the supporting poles 1 and remains tightly adhered to them. The filling material can also be a mixture of for instance blast-furnace slag or some other material and concrete or some other material preferably having a light specific weight. However, the mixture 4 of lightweight aggregate and concrete is advantageous, as far as price and insulation and fire safety properties are concerned. After the mixture 4 has solidified, the boarding can be removed, if desired, or left in place for possible appearance lining. To improve the adherence between the supporting poles 1 and the

5 mixture 4, the supporting poles 1 may comprise, depending on constructions, for instance holes 5 or means of attachment, such as nails 6 or the like nailed into wooden poles, for instance. If desired, a finished wall construction can be coated for example with a plastering 7 or another similar material. Onto the supporting poles 1 can be fastened a horizontal cross-wood, to which for instance carrier beams of the roof can be attached.

10 On the one hand, the metal net 2 acts as a reinforcement and, on the other hand, as a casting mould and in a finished wall construction as a support corresponding to a concrete reinforcement and firmly attached to the filling material. Accordingly, the wall construction can act as a so-called bearing wall construction.

15 Figure 2 shows the wall construction of Figure 1 from above. The reference numerals of Figure 2 correspond to the reference numerals of Figure 1. The metal nets 2 are attached directly to the surface of the supporting poles 1, due to which there is substantially no mixture 4 of lightweight aggregate and concrete on the outer surfaces of the supporting poles 1.

20 Figure 3 shows another embodiment of the wall construction according to the invention. The reference numerals of Figure 3 correspond to the reference numerals of Figures 1 and 2. In the wall construction according to Figure 3, the metal nets 2 are attached to the supporting poles 1 by means of bearers 8. The supporting poles 1 then remain on all sides substantially inside the mixture of lightweight aggregate and concrete to be cast. An uncoated wall construction substantially uniform in appearance is thus provided, in which construction only the ends of the bearers 8 remain to be seen. In the cases shown in Figure and Figure 3, the wooden supporting poles 1 serve especially well as battens for nailing, which can be utilized for an easy fastening of

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a possible outer and inner lining of the wall construction.

5 The drawing and the description attached thereto are only intended to illustrate the idea of the invention. As to the details, the invention may vary within the scope of the invention. So the method and the wall construction according to the invention can be used for instance for repairing old buildings in such a way that supporting poles 1 are mounted on an old wall and
10 outside them a metal net 2 and a boarding. Subsequently, filling material, for example a mixture 4 of lightweight aggregate and concrete, is cast between the old wall and the metal net 2 and the boarding.

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Claims:

1. Wall construction comprising supporting poles (1) and filling material cast between them,
5 c h a r a c t e r i z e d in that the wall construction comprises the wooden supporting poles (1) and a close-meshed metal net (2) attached at least to one side of the wooden supporting poles (1), the metal net (2) forming part of the wall construction and together with the
10 filling material a reinforcement.
2. Wall construction according to claim 1, c h a r a c t e r i z e d in that the filling material is a mixture (4) of lightweight aggregate and concrete.
3. Wall construction according to claim 1,
15 c h a r a c t e r i z e d in that the filling material is a mixture of blast-furnace slag and concrete.
4. Wall construction according to any of the preceding claims, c h a r a c t e r i z e d in that the metal net (2) is attached to both sides of the supporting poles (1).
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5. Wall construction according to any of the preceding claims, c h a r a c t e r i z e d in that the supporting poles (1) are made of impregnated wood.
6. Wall construction according to any of the
25 preceding claims, c h a r a c t e r i z e d in that the supporting poles (1) have holes (5) for improving the adherence of the filling material.
7. Wall construction according to any of the preceding claims, c h a r a c t e r i z e d in that
30 the supporting poles (1) comprise means of attachment for improving the adherence of the filling material.
8. Wall construction according to any of the preceding claims, c h a r a c t e r i z e d in that there is a plastering (7) on the metal net (2).



9. Wall construction according to any of the preceding claims, characterized in that the metal net (2) comprises several net parts, which are positioned partly overlappingly.

5 10. Method of manufacturing a wall construction, in which method supporting poles (1) are mounted in place, a mould is mounted in such a way that the supporting poles (1) remain inside the mould and filling material is cast inside the mould between the supporting
10 poles (1), characterized in that the wall construction comprises the wooden supporting poles (1) and that a close-meshed metal net (2) is attached at least to one side of the wooden supporting poles (1), which net forms part of the mould, and that boards are
15 attached at spaced intervals outside the metal net (2) to support the metal net (2), whereby the metal net (2) acting as a mould forms part of the wall construction and together with the filling material a reinforcement.

20 11. Method according to claim 10, characterized in that a mixture (4) of lightweight aggregate and concrete is used as filling material.

12. Method according to claim 10, characterized in that a mixture of blast-furnace slag and concrete is used as filling material.

25 13. Method according to any of the preceding claims 10 to 12, characterized in that the metal net (2) is attached to both sides of the supporting poles (1).

30 14. Method according to any of the preceding claims 10 to 13, characterized in that poles made of impregnated wood are used as supporting poles (1).

15. Method according to any of the preceding claims 10 to 14, characterized in that the



supporting poles (1) are provided with holes (5) for improving the adherence of the filling material.

5 16. Method according to any of the preceding claims 10 to 15, characterized in that the supporting poles (1) comprise means of attachment for improving the adherence of the filling material.

17. Method according to any of the preceding claims 10 to 16, characterized in that the wall construction is coated with a plastering (7).

10 18. Method according to any of the preceding claims 10 to 17, characterized in that the metal net (2) comprises several net parts, which are positioned partly overlappingly.