SUMMARY

[0006] According to a first aspect of the present invention, there is provided a duct panel comprising:

a laminate structure having an insulation layer disposed between a first support layer and a second support layer, the laminate structure having an end width; and

an end cap attached to the end width and configured to be coupled to a mounting flange, wherein the mounting flange is configured to mount the duct panel,

wherein the end cap and the mounting flange comprise different materials~~.~~, and wherein the mounting flange and the second support layer form a unitary construction.

[0007] The insulation layer may comprise polyisocyanurate (PIR).

[0008] The end cap may comprise a plastic material and the mounting flange may comprise a metal.

[0009] The plastic material may be polyvinyl chloride (PVC).

[0010] The first support layer may be configured to form an internal surface of a duct and may comprise a material selected from a group consisting of galvanised steel, aluminium and stainless steel.

[0011] The second support layer may be configured to form an external surface of the duct may comprise a material selected from a group consisting of galvanised steel, aluminium and stainless steel.

[0012] The mounting flange may extend outwardly relative to the second support layer.

[0013] The mounting flange may be removably attached to the second support layer.

[0014] ~~The mounting flange and the second support layer may form a unitary construction.~~

[0015] The end cap may comprise a locking member, wherein the locking member is configured to engage with a corresponding locking member of the mounting flange.

[0016] According to a second aspect of the present invention, there is provided a duct section comprising a plurality of duct panels as defined in the first aspect, the duct panels forming an enclosed cross-section.

[0017] Adjacent duct panels may be attached to each other along a length-wise direction of each panel using a locking mechanism.

[0018] According to a third aspect of the present invention, there is provided a method of manufacturing a duct panel, the method comprising the steps of:

disposing an insulation layer between a first support layer and a second support layer to form a laminate structure, the laminate structure having an end width;

attaching an end cap to the end width; and

coupling a mounting flange to the end cap,

wherein the end cap and the mounting flange are made of different materials; and

wherein the mounting flange and the second support layer form a unitary construction.

[0019] The insulation layer may be made of polyisocyanurate (PIR).

[0020] The end cap may be made of a plastic material and the mounting flange may be made of a metal.

[0021] The plastic material may be polyvinyl chloride (PVC).

[0022] The first support layer may be made of a material selected from a group consisting of galvanised steel, aluminium and stainless steel.

[0023] The second support layer may be made of a material selected from a group consisting of galvanised steel, aluminium and stainless steel.

[0024] According to a fourth aspect of the present invention, there is provided a method of installing a duct, the method comprising:

assembling a plurality of duct panels as defined in the first aspect to form a duct section; and

CLAIMS

1. A duct panel comprising:

a laminate structure having an insulation layer disposed between a first support layer and a second support layer, the laminate structure having an end width; and

an end cap attached to the end width and configured to be coupled to a mounting flange, wherein the mounting flange is configured to mount the duct panel,

wherein the end cap and the mounting flange comprise different materials~~.~~, and wherein the mounting flange and the second support layer form a unitary construction.

2. The duct panel as claimed in claim 1, wherein the insulation layer comprises polyisocyanurate (PIR).

3. The duct panel as claimed in claim 1 or 2, wherein the end cap comprises a plastic material and wherein the mounting flange comprises a metal.

4. The duct panel as claimed in claim 3, wherein the plastic material is polyvinyl chloride (PVC).

5. The duct panel as claimed in any one of the preceding claims, wherein the first support layer is configured to form an internal surface of a duct, the first support layer comprising a material selected from a group consisting of galvanised steel, aluminium and stainless steel.

6. The duct panel as claimed in claim 5, wherein the second support layer is configured to form an external surface of the duct, the second support layer comprising a material selected from a group consisting of galvanised steel, aluminium and stainless steel.

7. The duct panel as claimed in claim 6, wherein the mounting flange extends outwardly relative to the second support layer.

8. The duct panel as claimed in claim 7, wherein the mounting flange is removably attached to the second support layer.

~~9. The duct panel as claimed in claim 7, wherein the mounting flange and the second support layer form a unitary construction.~~

~~10~~9. The duct panel as claimed in any one of the preceding claims, wherein the end cap comprises a locking member, wherein the locking member is configured to engage with a corresponding locking member of the mounting flange.

~~11~~10. A duct section comprising a plurality of duct panels as claimed in any one of claims 1 to ~~10~~9, the duct panels forming an enclosed cross-section.

~~12~~11. The duct section as claimed in claim ~~11~~10, wherein adjacent duct panels are attached to each other along a length-wise direction of each panel using a locking mechanism.

~~13~~12. A method of manufacturing a duct panel, the method comprising the steps of:

disposing an insulation layer between a first support layer and a second support layer to form a laminate structure, the laminate structure having an end width;

attaching an end cap to the end width; and

coupling a mounting flange to the end cap,

wherein the end cap and the mounting flange are made of different materials~~,~~ and

wherein the mounting flange and the second support layer form a unitary construction.

~~14~~13. The method as claimed in claim ~~13~~12, wherein the insulation layer is made of polyisocyanurate (PIR).

~~15~~14. The method as claimed in claim ~~13~~12 or ~~14~~13, wherein the end cap is made of a plastic material and wherein the mounting flange is made of a metal.

~~16~~15. The method as claimed in claim ~~15~~14, wherein the plastic material is polyvinyl chloride (PVC).

~~17~~16. The method as claimed in any one of claims ~~13~~12 to ~~16~~15, wherein the first support layer is made of a material selected from a group consisting of galvanised steel, aluminium and stainless steel.

~~18~~17. The method as claimed in any one of claims ~~13~~12 to ~~17~~16, wherein the second support layer is made of a material selected from a group consisting of galvanised steel, aluminium and stainless steel.

~~19~~18. A method of installing a duct, the method comprising:

assembling a plurality of duct panels as claimed in any one of claims 1 to ~~10~~9 to form a duct section; and

mounting the duct section to at least one adjacent duct section using the respective mounting flanges.