composite reinforced material that facilitates weight reduction while being easy to manufacture and maintains the necessary strength of the component.

SUMMARY

[6a] In an aspect, there is provided a method for forming an overmoulded assembly, the method comprising:

conforming a planar body of fibre reinforced material (CFRM) to a shape of a shape defining member, the material comprising continuous fibres in a synthetic matrix and the shape defining member defining an internal volume of a closed cross-section portion of a vehicle reinforcing member;

bonding a first edge portion of the CFRM body to a second edge portion of the CFRM body thereby to form, around the shape defining member, the closed cross-section portion of the vehicle reinforcing member; and

overmoulding a shell onto the vehicle reinforcing member and a further vehicle reinforcing member to integrally connected the shell and CFRM body, while keeping the shape defining member in the closed-cross-section portion.

[6b] In another aspect, there is provided a method of manufacturing a reinforcing structural member of a vehicle seat, the vehicle seat comprising a seat portion and a seatback connected to the seat portion by a tilt adjustment mechanism, the tilt adjustment mechanism comprising two movably connected tilt adjustment members moveable relative to each other to allow tilt adjustment of the seatback relative to the seat portion, one of the two tilt adjustment members being on each of the seat portion and seatback, the method comprising:

forming an overmoulded assembly of a seat element using the method as defined above, the seat element being one of the seat portion and seatback; and

attaching one of the two tilt adjustment members to the overmoulded assembly for connecting the overmoulded assembly to the other of the two tilt adjustment members and thereby to connect the seat portion and seatback.

[6c] In another aspect, there is provided a system for fabricating an overmoulded assembly comprising:

a shape defining member defining an internal volume of a closed cross-section portion of a vehicle reinforcing member, the vehicle reinforcing member formed, in use, from a planar body

of continuous fibre reinforced material (CFRM) comprising continuous fibres in a synthetic matrix;

a first mould member, the first mould member and shape defining member being configured to be brought together to with the CFRM body therebetween, to form a closed cross-section portion from the CFRM body, the closed cross-section portion being formed around the shape defining member;

a bonding device movably mounted to the first mould member and movable towards the shape defining member in use to bond a first edge portion and a second edge portion of the CFRM body together to form the vehicle reinforcing member; and

an overmoulding mould for use in overmoulding a shell onto the vehicle reinforcing member and a further vehicle reinforcing member to integrally connected the shell and CFRM body, while keeping the shape defining member in the closed-cross-section portion.

[7] In an example, a method for forming a vehicle reinforcing member may be provided. The method may include:

18. A method of manufacturing a reinforcing structural member of a vehicle seat, the vehicle seat comprising a seat portion and a seatback connected to the seat portion by a tilt adjustment mechanism, the tilt adjustment mechanism comprising two movably connected tilt adjustment members moveable relative to each other to allow tilt adjustment of the seatback relative to the seat portion, one of the two tilt adjustment members being on each of the seat portion and seatback, the method comprising:

forming an overmoulded assembly of a seat element using the method of any one of claims 1 to 17, the seat element being one of the seat portion and seatback; and

attaching one of the two tilt adjustment members to the overmoulded assembly for connecting the overmoulded assembly to the other of the two tilt adjustment members and thereby to connect the seat portion and seatback.

19. The method of claim 18, wherein the seat element is the seatback, the tilt adjustment mechanism comprises a hinge mechanism on each of two opposed sides of the seatback, one of the hinge mechanisms comprising the tilt adjustment members and the other hinge mechanism also comprising two movably connected tilt adjustment members moveable relative to each other to allow tilt adjustment of the seatback relative to the seat portion, the method comprising:

forming the further vehicle reinforcing member in accordance with the method of any one of claims 1 to 17, the vehicle reinforcing member and further vehicle reinforcing member each comprising a tilt adjustment member from the respective hinge mechanism and extending along the two opposed sides of the seatback from the respective hinge mechanism to a point further away from the respective hinge mechanism; and

overmoulding the shell onto the vehicle reinforcing member and further vehicle reinforcing member, to integrally connected the shell, vehicle reinforcing member and further vehicle reinforcing member.

20. A system for fabricating an overmoulded assembly comprising:

a shape defining member defining an internal volume of a closed cross-section portion of a vehicle reinforcing member, the vehicle reinforcing member formed, in use, from a planar body of continuous fibre reinforced material (CFRM) comprising continuous fibres in a synthetic matrix;

a first mould member, the first mould member and shape defining member being configured to be brought together to with the CFRM body therebetween, to form a closed cross-section portion from the CFRM body, the closed cross-section portion being formed around the shape defining member;

a bonding device movably mounted to the first mould member and movable towards the shape defining member in use to bond a first edge portion and a second edge portion of the CFRM body together to form the vehicle reinforcing member; and

an overmoulding mould for use in overmoulding a shell onto the vehicle reinforcing member and a further vehicle reinforcing member to integrally connected the shell and CFRM body, while keeping the shape defining member in the closed-cross-section portion.

21. A system according to claim 20,

wherein the system is configured to fabricate a tapered vehicle reinforcing member.

22. A system according to claim 20 or 21,

wherein the shape defining member is tapered in a longitudinal direction of the shape defining member,

23. A system according to any one of claims 20 to 22,

wherein the shape defining member defines a tapered internal volume of the closed cross-section portion of the vehicle reinforcing member.

24. The system of any one of claims 20 to 23, further comprising a second mould member movably mounted to the first mould member and movable, in use, to bring the second mould member into contact with the CFRM body to bring a first edge portion of the CFRM body into conformity with the shape defining member.

25. The system of claim 24, further comprising a third mould member, the second mould member and third mould member being mounted to a reciprocating device attached to the first mould member, the reciprocating device in use bringing the second mould member into contact with the first edge portion, then removing the second mould member from contact with the first edge portion and bringing the third mould member into contact with a second edge portion of the CFRM body to bond the second edge portion to the first edge portion.