[0079] Pad **200** also comprises an additional perimeter channel~~hinge~~ **50**, which corresponds to the shape of the perimeter of the pad. Like hinge **38**, perimeter channel~~hinge~~ **50** has a width "$\mathbf{W_1}$" defined by the spacing between the perimeter of adjacent medallions and perimeter flange **40**, a depth "$\mathbf{D_1}$" defined by the spacing between the upper surface **34** of the medallions and the upper surface **10** of the pad **200**, and a thickness "$\mathbf{T_2}$" defined by the combined thicknesses of the inner and outer layers **16,17** and the cushioning material **15,** if any, disposed between the layers.

[0080] In the present embodiment, the thickness of the cushioning layer **15** disposed between the upper and lower layers **16,17** in hinges **38,50** is minimized during the manufacturing process, such that its thickness approaches zero in the hinges **38,50**. As a result, the cushioning material in the hinges **38,50** may not be visible to the naked eye, or only detectable using very sensitive thickness gauges.

[0081] The residual cushioning material remaining in between layers **16,17** assists in bonding layers **16,17** together in the hinges **38,50**. Depending on the materials used, the bonding between layers **16,17** may be at least partially a chemical, thermal and/or mechanical bond. For example, if the material used as the cushioning layer is a resin, the residual resin in the hinges **38,50** can function as an adhesive to bond layers **16,17** together. Use of the resin as a bonding agent is advantageous, because it eliminates the need for a separate adhesive in the very thin hinge areas, and it keeps the bond consistent and equally flexible throughout pad, thereby enhancing the durability of the pad.

[0082] Alternatively, if a fabric is used as one of layers **16,17**, the bond between the layers in the hinges may be at least partially mechanical, as a result of the resin being squeezed into opening or pores in the fabric, such that portions of layers **16,17** bond during manufacturing, resulting in "islands" of bonded layers **15,16,17** disposed between islands of bonded layers **16,17**.

[0083] By minimizing or eliminating the cushioning layer **15** in hinges **38,50**, the flexibility of the hinges is maximized, such that the entire pad **200** is capable of bending,

CLAIMS

1. A cushioning pad, comprising:

a first channel comprising a thickness and a width, the first channel comprising a continuous upper layer and a continuous lower layer, the continuous upper layer at least partially bonded to the continuous lower layer;

a cushioning region adjacent to the first channel, the cushioning region having a thickness greater than the thickness of the first channel, the cushioning region further comprising a cushioning material disposed between and bonded to the continuous upper layer and the continuous lower layer; and

a groove defined in the upper surface of the cushioning region, the groove comprising a thickness less than the thickness of the cushioning region and greater than the thickness of the first channel.

2. The cushioning pad of Claim 1, further comprising a perimeter flange and a perimeter channel, the perimeter flange spaced apart from the cushioning region by the width of the perimeter channel, the perimeter flange having a thickness greater than the thickness of the perimeter channel and less than the thickness of the cushioning region.

3. The cushioning pad of Claim 2~~1~~, wherein the perimeter flange comprises at least a portion of the cushioning material disposed between and bonded to the continuous upper layer and the continuous lower layer.

4. The cushioning pad of Claim 1, wherein the continuous upper layer is at least partially bonded to the continuous lower layer in the first channel by a plurality of portions of cushioning material disposed between and bonded to the continuous upper and lower layers.

5. The cushioning pad of Claim 1, wherein the first channel comprises a continuous layer of cushioning material disposed between and bonded to the continuous upper and lower layers.

6. The cushioning pad of Claim 1, wherein the first channel has a width ranging from about 1 mil to about 10 mils.

7. The cushioning pad of Claim 1, wherein the first ~~perimeter~~ channel has a width ranging from about 1 mil to about 10 mils.

8. The cushioning pad of Claim 1, wherein the first ~~perimeter~~ channel has a thickness ranging from about 1 mil to about 10 mils.

9. The cushioning pad of Claim 1, wherein the first ~~perimeter~~ channel has a thickness ranging ~~of about ranging~~ from about 5 mil to about 8 mils.

10. The cushioning pad of Claim 1, wherein the cushioning material comprises a density ranging from about 10 to about 30 pounds per cubic foot.

11. The cushioning pad of Claim 1, wherein the cushioning material comprises a density ranging from about 15 to about 25 pounds per cubic foot.

12. The cushioning pad of Claim 1, wherein the cushioning material is a rate dependent foam.

13. The cushioning pad of Claim 1, further comprising a garment, wherein the cushioning pad is attached to the garment by stitching.

14. The cushioning pad of Claim 13, wherein the garment is a compression sleeve, and the cushioning pad ~~medallion~~ is configured to correspond to an elbow joint.

15. The cushioning pad of Claim 13, wherein the garment is a compression leg sleeve, and the cushioning pad ~~medallion~~ is configured to correspond to a knee joint.

16. The cushioning pad of Claim 1, wherein the continuous upper and lower layers are polyester thermoplastic polyurethane.

17. The cushioning pad of Claim 1, wherein the continuous upper and lower layers are thermoplastic elastomer (TPE) film bonded to a layer spandex fabric, and the TPE layers are disposed adjacent to the cushioning material.

18. The cushioning pad of Claim 1, wherein the cushioning material is a cellular material comprising a plurality of cells having a minimum cell diameter, and the thickness of the cushioning material between the ~~inner~~ continuous lower layer and the ~~outer~~ continuous upper layer is less than the minimum cell diameter.

~~19.~~ The ~~A~~ cushioning pad of Claim 1, wherein the first channel is a perimeter channel, and further comprising ~~:~~

~~a perimeter channel comprising a thickness and a width, the perimeter channel comprising a continuous upper layer and a continuous lower layer, the continuous upper layer at least partially bonded to the continuous lower layer;~~

~~a cushioning region adjacent to the perimeter channel, the cushioning region having a thickness greater than the thickness of the perimeter channel, the cushioning region further comprising a cushioning material disposed between and bonded to the continuous upper layer and the continuous lower layer; and~~

19. a perimeter flange spaced apart from the cushioning region by the width of the perimeter channel, the perimeter flange having a thickness approximately equal to the combined thickness of the inner layer and the outer layer.

20. The cushioning pad of Claim 19, wherein the perimeter flange comprises at least a portion of the cushioning material disposed between and bonded to the continuous upper layer and the continuous lower layer.

21. The cushioning pad of Claim 19, wherein the continuous upper layer is at least partially bonded to the continuous lower layer in the perimeter channel by a plurality of portions

of cushioning material disposed between and bonded to the continuous upper and lower layers.

22. The cushioning pad of Claim 19, wherein the perimeter channel comprises a continuous layer of cushioning material disposed between and bonded to the continuous upper and lower layers.

23. The cushioning pad of Claim 19, wherein the perimeter channel has a width ranging from about 1 mil to about 10 mils.

24. The cushioning pad of Claim 19, wherein the perimeter channel has a width ranging from about 1 mil to about 10 mils.

25. The cushioning pad of Claim 19, wherein the perimeter channel has a thickness ranging from about 1 mil to about 10 mils.

26. The cushioning pad of Claim 19, wherein the perimeter channel has a thickness of about ranging from about 5 mil to about 8 mils.

27. The cushioning pad of Claim 19, wherein the cushioning material comprises a density ranging from about 10 to about 30 pounds per cubic foot.

28. The cushioning pad of Claim 19, wherein the cushioning material comprises a density ranging from about 15 to about 25 pounds per cubic foot.

29. The cushioning pad of Claim 19, wherein the cushioning material is a rate dependent foam.

30. The cushioning pad of Claim 19, further comprising a garment, wherein the cushioning pad is attached to the garment by stitching.

31. The cushioning pad of Claim 30, wherein the garment is a compression sleeve, and the cushioning pad is configured to correspond to an elbow joint.

32. The cushioning pad of Claim 30, wherein the garment is a compression leg sleeve, and the cushioning pad is configured to correspond to a knee joint.

33. The cushioning pad of Claim 19, wherein the continuous upper and lower layers are polyester thermoplastic polyurethane.

34. The cushioning pad of Claim 19, wherein the continuous upper and lower layers are TPE film bonded to a layer spandex fabric, and the TPE layers are disposed adjacent to the cushioning material.

35. The cushioning pad of Claim 19, wherein the cushioning material is a cellular material comprising a plurality of cells having a minimum cell diameter, and the thickness of the cushioning material between the inner layer and the outer layer is less than the minimum cell diameter.