

AN IMPROVED VESSEL

Mineral water and other beverages may be supplied in vessels made from thin and flexible synthetic material, such a vessel
5 being formed by welding together two overlapped films or layers of such material so as to define at least one end wall and two lateral walls.

In order to improve the utility of such a vessel, there is
10 provided, in accordance with one aspect of the invention, a vessel formed from a thin and flexible synthetic material comprising superimposed layers bonded together along weld lines to define a main cavity for the contents of the vessel,
15 one of said weld lines being spaced from an edge of the vessel so as to define an elongate secondary cavity separated from said main cavity by the said weld line and extending along an edge of the vessel, there being no aperture through the layers in the region of the secondary cavity, the contents of the main cavity being pourable from the vessel following cutting through
20 the layers so as to open the cavity at a corner spaced from said one weld line, a solid reinforcement being disposed within said secondary cavity thereby to reinforce the vessel as a whole and to serve as a handle during pouring.

25 The solid reinforcement (which may be in the form of a tube or strip of cardboard wood or rigid plastics) may be inserted in the secondary cavity before the welding operation is completed to close the secondary cavity. An alternative form of reinforcement is a solid phase discontinuous material, for example
30 granules of a synthetic material, which is packed into the

secondary cavity while one edge thereof remains open prior to the completion of the welding operation.

Alternatively, a solid reinforcement may be formed within the
5 secondary cavity, for example by injecting into the cavity a
liquid which solidifies in situ, for example by cooling at
ambient temperature. A material may be chosen which expands
after it has been introduced, the material selected preferably
10 having an expansion temperature which is substantially lower
than the temperature of deterioration of the film from which
the container is formed. In this way, a rigid handle is
obtained which is light in weight and substantially undeform-
able, and which absorbs impacts without the risk of damage
and so eliminates any possibility of leakage of the contents
15 of the main cavity.

Accordingly, the invention also provides a method of making
a vessel, comprising welding superimposed layers of thin
and flexible material so as to form a main cavity for the
20 contents of the vessel and a secondary cavity separated
from the main cavity by a weld line, there being no aperture
through the layers in the region of the secondary cavity,
and injecting into the secondary cavity a flowable material,
and allowing or causing the flowable material to set, so as
25 to form a pouring handle.

The invention will now be described in greater detail by
way of example only with reference to the accompanying drawings,
wherein:

Figure 1 is a diagrammatic side elevation of a vessel embodying the invention,

5 Figure 2 is a section taken on the line A-A in Figure 1,

10 Figures 3 to 5 each show a cross-section similar to that shown in Figure 2 through a respective different embodiment in each case,

Figure 6 illustrates to a larger scale the insertion of a needle to fill the secondary cavity of the embodiment shown in Figure 5, and

15 Figure 6b shows the withdrawal of the needle during a subsequent stage.

Referring to Figures 1 and 2 of the drawings, a vessel which may for example contain mineral water or other beverage is formed from a film of synthetic plastics material cut to shape and folded to provide two superimposed layers which are welded where indicated by double lines to form a large pocket portion defining a main or primary cavity 101 and a small pocket portion defining a secondary cavity 102 separated from each other by the weld line 103. The secondary cavity is further defined by the weld lines 104, 105 and 106. Remote from the secondary cavity 102, the vessel has a projecting portion which may be cut through to form a lip or spout through which the contents of the cavity 101 may be poured. To facilitate holding of the vessel during pouring, the small pocket portion is reinforced and a degree

of rigidity given to the vessel as a whole, by locating a solid tube 107 of wood, cardboard or synthetic material within the cavity 102. During manufacture, the tube is inserted through any edge by which the cavity is defined before that edge is welded, a convenient edge being that defined by weld line 105.

In the embodiment shown in Figure 3, the secondary cavity 102 contains a rigid element in the form of a flat strip 107a.

In the embodiment shown in Figure 4, the secondary cavity contains granules 110 of synthetic material packed into the cavity through a filling orifice not visible in the drawing and sealed by the completion of the welding operation.

In the embodiment shown in Figure 5, the secondary cavity contains an expanded synthetic material 111. As shown in Figure 6a, the secondary cavity may be filled with such material by inserting into the cavity a needle 112 through which the synthetic material is discharged into the cavity, whereafter the needle is removed as depicted in Figure 6b, the synthetic material then expanding and becoming rigid as it cools. The orifice through which the needle is passed may have been left open during the welding stage or may be formed by the needle itself. The orifice may be closed by a subsequent welding operation, or in an alternative may be blocked by a material injected into the cavity as it expands and solidifies.



CLAIMS

1. A vessel formed from a thin and flexible synthetic material comprising superimposed layers bonded together along weld lines to define a main cavity for the contents of the vessel, one of said weld lines being spaced from an edge of the vessel so as to define an elongate secondary cavity separated from said main cavity by the said weld line and extending along an edge of the vessel, there being no aperture through the layers in the region of the secondary cavity, the contents of the main cavity being pourable from the vessel following cutting through the layers so as to open the cavity at a corner spaced from said one weld line, a solid reinforcement being disposed within said secondary cavity thereby to reinforce the vessel as a whole and to serve as a handle during pouring.
2. A vessel according to claim 1, wherein the solid reinforcement is formed from wood, cardboard or a rigid synthetic material.
3. A vessel according to claim 1 or claim 2, wherein the solid reinforcement is of cylindrical cross-section.
4. A vessel according to claim 1 or claim 2, wherein the solid reinforcement is flat.
5. A vessel according to claim 1, wherein the solid reinforcement is an expanded synthetic material.
6. A method of making a vessel, comprising welding superimposed layers of thin and flexible synthetic material so as to form a main cavity for the contents of the vessel and a secondary cavity separated from the main cavity by a weld line, there being no aperture through the layers in the region of the secondary cavity and injecting into



- 6 -

the secondary cavity a flowable material, and allowing or causing the flowable material to set, so as to form a pouring handle.

- 5 7. A method as claimed in claim 6, wherein
the flowable material expands and solidifies during
cooling at ambient temperature.
8. A method according to claim 6 or claim 7,
10 wherein the flowable material is injected by a
needle inserted through an orifice and the orifice
is blocked by welding.
9. A vessel substantially as hereinbefore
15 described with reference to and as illustrated in
Figures 1 and 2 or any of Figures 3 to 5 of the
accompanying drawings.
10. A method substantially as hereinbefore
20 described with reference to Figure 6a and 6b of the
accompanying drawings.

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