

IMPROVED VACUUM FORMED VANITY TOP

The present invention relates to themoplastic moulded vanity tops of the type which have the basin lining and bench top outer surfaces vacuum formed in one piece.

It is now relatively common to produce a vanity top by first vacuum forming in one piece the interior of the basin bowl and bench top portion surrounding such bowl. This shell is then reinforced on the underside so as to achieve enhanced structural rigidity. In addition to such reinforcement additional filling and reinforcement is often provided about the waste and tap positions as the thickness of the shell at these positions is visible from the top side of the unit before installation.

The waste, tap and faucet appertures are usually drilled through the product and this operation may take place before reinforcement or after reinforcement. The drilling of the waste and/or tap appertures unfortunately slows down the manufacturing process considerably as the vacuum formed shell or fully

reinforced vanity top must reach a reasonable state of cure prior to the drilling operation in order to avoid damage to the unit during the drilling process. For example during the drilling process if an edge of the drill catches then the shell may be chipped. Alternatively if a vanity top which has not adequately cured is drilled then the drill may draw out pieces of fibre reinforcing and similarly damage the unit.

Accordingly it is an object of the present invention to ameliorate one or more of the above disadvantages associated with current manufacturing techniques for vacuum formed vanity units or at least to provide the market with an alternative.

According to the present invention there is disclosed a manufacturing technique for vacuum formed vanity tops wherein one or more of the waste tap or faucet positions are formed as downward projecting nipples in the thermoplastic shell; the extremities of the nipples adapted to be subsequently ground-off thereby opening the waste tap or faucet positions.

One embodiment of the present invention will now be described with reference to figure I hereof.

Figure I is a front to rear section through a vanity top produced in accordance with the present invention.

The vanity top of figure I may be produced by vacuum forming a poly methyl-methacrylate shell about an appropriately shaped mould. It will be observed that this shell 1 includes a nipple 2 at the waste position as well as further nipples 3 at the tap hole positions.

Tap holes and waste positions are normally provided in a vanity unit by drilling subsequent to the vacuum forming of the shell or subsequent to the vacuum forming and reinforcement of the shell. As abovementioned this drilling operation must await substantial curing of the product. Not only therefore does the drilling operation require a separate and distinct manufacturing step but the step usually requires a lapse of time to allow for curing.

It will be appreciated that in order to provide a tap hole or waste in the present invention it is merely necessary to sever the extremity 4 of the nipple by a trimming operation adjacent plane 5 in order that the waste be opened. A similar operation would be performed at the tap position 3. The location of plane 5 would depend upon the thickness of the reinforcing which the manufacturer proposed to be placed about the tap and waste positions. Trimming of vacuum formed shells is always necessary and consequently the trimming operation which cuts the nipple open through plane 5 can be undertaken at the same time as the normal trimming operation already involved in the manufacturing process. As this trimming operation does not involve cutting through the entire cross-sectional depth of the finished product there is no danger that such trimming will damage inadequately cured reinforcement material.

Although minimal reinforcing is normally placed about poly methyl-methacrylate shells in the basin area it is common to provide substantial thickness of reinforcement and/or filler material on the underside

of the benchtop adjacent the tap and faucet holes and furthermore to provide a thickened portion adjacent the waste position. The thickness adjacent the tap holes and waste position is not really necessary structurally although when the vanity unit is displayed on top of a cabinet these are the only positions through which a potential consumer may view the supposed cross-section of the unit. Additional thickness at these points tends to re-assure consumers who normally do not appreciate that a thin layer of fibreglass reinforcement is structurally adequate for basins and vanities. In addition to the structural requirement of a layer of fibreglass mat there may be considerable additional filler about the tap and waste holes and the nipple may accordingly be trimmed closer to its extremity 4 in order to provide an attractive finish covering the depth of filler material.

Filler material intended to add thickness to a basin shell is normally backfilled onto the unit with the unit in the inverted position. Use of the present manufacturing technique however gives rise to an alternate possible method of reinforcing the waste and

tap/faucet positions by use of an annular ring (not shown).

It will be appreciated that the nipple may serve to locate an annular ring of precast material about the waste and/or tap/faucet positions which ring may be glued or otherwise secured about the nipple prior to the trimming operation. Once the nipple is trimmed and the annular ring securely glued fibreglassed or otherwise secured in place the annular ring will serve to reinforce the area about the waste and to impart a secure solid sound to anyone wishing to "tap" test the basin in the area about the waste. The ring would also serve to resist the crushing forces which would be exerted by running up the large nut commonly utilised to secure basin waste plumbing in position. Such an annular ring could also be utilised at tap or faucet positions if required.

It has also been found that large preformed pieces of reinforcing material such as particle board can be affixed to the underside of vacuum formed vanity shells (with the exception of the bowl area) in order to

enhance the aforementioned "tap" testing performance of a vanity when the shell is constructed in accordance with the present invention. This is made possible as the tap and faucet apertures are drawn down so as to provide a finished appearance to the inside of such apertures thereby disguising the existence of such reinforcement material. Particle board is a perfectly adequate reinforcement material which would never become wetted when utilised in conjunction with a vanity top fabricated in accordance with the present invention although such a material would need to be disguised having regard to consumer prejudices against the use of timber in vanity units.



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The claims defining the invention are as follows:-

1. A manufacturing technique for vacuum formed vanity tops wherein one or more of the waste, tap or faucet positions are drawn, during the vacuum forming process, into downward projecting nipples in the thermoplastic shell comprising the vanity top; the extremities of the nipples adapted to be subsequently removed thereby opening the waste, tap or faucet positions.
2. A vanity top when when vacuum formed in accordance with the method of claim 1 hereof.
3. A method of forming a vanity top in accordance with claim 1 hereof wherein the extremities of the nipple or nipples are removed leaving a waste, tap or faucet position extending at least ten millimetres beneath the underside of the vacuum formed vanity shell.

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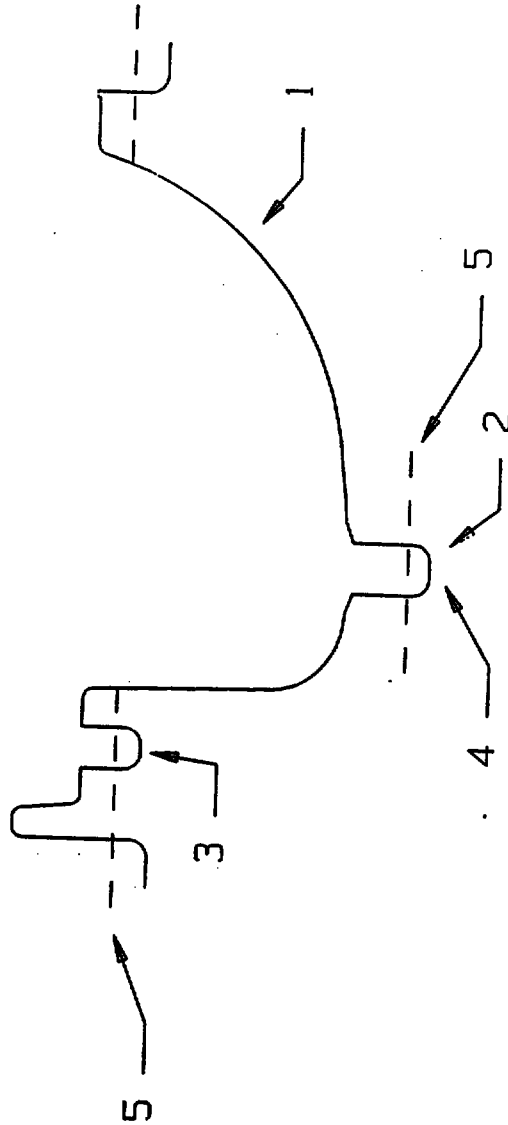
4. A manufacturing technique in accordance with claim 3 hereof wherein a preformed reinforcement material is secured to the underside of the shell at least extending over an area about one or more of the tap, faucet or waste positions.
5. A vanity top in accordance with claim 2 hereof wherein the underside of the vanity top, with the exception of the bowl area, is reinforced with a preformed material affixed thereto in such a manner that the existence of the preformed material beneath the vanity top is disguised by the vacuum formed material drawn down into the faucet and/or tap apertures.

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FIG. 1





The claims defining the invention are as follows:-

1. A manufacturing technique for vacuum forming vanity tops comprised of the steps of:
 - a) Drawing one or more of the waste, tap or faucet positions during the vacuum forming process into projecting nipples extending downwardly from the thermoplastic shell comprising the vanity top;
 - b) Subsequently removing the extremities of the nipple or nipples from the formed vanity top so as to open the waste, tap or faucet position.
2. A manufacturing technique in accordance with claim 1 wherein the removal of the extremities of the nipple or nipples is achieved by cutting the nipple along an axis substantially normal to that axis along which the nipple has originally been drawn.
3. A method of forming a vanity top in accordance with claim 1 hereof wherein the extremities of the nipple or nipples are removed leaving a waste, tap or faucet position extending at least ten millimetres beneath the underside of the vacuum formed vanity shell.



4. A manufacturing technique in accordance with claim 3 hereof wherein a preformed reinforcement material is secured to the underside of the shell at least extending over an area about one or more of the tap, faucet or waste positions.
5. A vanity when vacuum formed in accordance with the method of claim 1 hereof.
6. A vanity top in accordance with claim 2 hereof wherein the underside of the vanity, with the exception of the bowl area, is reinforced with a preformed material affixed thereto in such a manner that the existence of the preformed material beneath the vanity top is disguised by the vacuum formed material drawn down in to the faucet and/or tap apertures.

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(21) International Application Number: PCT/AU95/00570 (22) International Filing Date: 5 September 1995 (05.09.95) (30) Priority Data: PM 8024 5 September 1994 (05.09.94) AU (71) Applicant (for all designated States except US): FLAIR INTERNATIONAL PRODUCTS PTY. LTD. [AU/AU]; Unit 40/132 Hassall Street, Wetherill Park, NSW 2164 (AU). (72) Inventor; and (75) Inventor/Applicant (for US only): MENZIES, Brian [AU/AU]; Unit 40/132 Hassall Street, Wetherill Park, NSW 2164 (AU). (74) Agent: BLENKINSHIP, Julian; Barker, Blenkinship & Associates, P.O. Box 34, Chatswood, NSW 2067 (AU).		(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SD, SZ, UG). Published With international search report.
(54) Title: IMPROVED VACUUM FORMED VANITY TOP (57) Abstract A manufacturing technique for vacuum formed vanity tops (1) wherein one or more of the waste, tap or faucet positions are drawn, during the vacuum forming process, into downward projecting nipples (2, 3) in the thermoplastic shell comprising the vanity top; the extremities (4) of the nipples adapted to be subsequently removed thereby opening the waste, tap or faucet positions.		