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(21) International Application Number: PCT/AU96/00541 (22) International Filing Date: 30 August 1996 (30.08.96) (30) Priority Data: PN 5167 1 September 1995 (01.09.95) AU (71) Applicant (for all designated States except US): ARMACEL PTY. LIMITED [AU/AU]; 321 Mona Vale Road, Terrey Hills, NSW 2084 (AU). (72) Inventor; and (75) Inventor/Applicant (for US only): MATICH, Frank, Anthony [AU/AU]; 5 Nangana Road, Bayview, NSW 2104 (AU). (74) Agent: SPRUSON & FERGUSON; G.P.O. Box 3898, Sydney, NSW 2001 (AU).		(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, 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). Published With international search report.
(34) Title: LAYERED STRUCTURAL ARTICLES		
(57) Abstract WO 95/23682 A1, based on International Patent Application No. PCT/AU95/00100 filed on 28 February 1995, relates to fabrication of structurally strong articles from inherently weak materials, such as expanded polystyrene, coated with one or more layers of thermoplastic sheet materials, such as amorphous polyethylene terephthalate (APET). The present invention is an improvement of the above and provides interior members, which are either inherently fluid permeable or which may be perforated to become so. The interior members are provided for decoration, increased strength and other individual properties and are sandwiched or encapsulated by the heat deformable outer layer(s). The method of forming the layered structural article consists of selecting a plurality of shape defining members (81, 82, 83), not inherently load bearing, but at least partially fluid permeable, locating the members (81, 82, 83) one above the other to form a stack (80), heating one or more thermoplastic sheets for the external skin (87), moving the heated sheet(s) (87) in relation to stack (80) to bring them into position overlying stack (80), applying a fluid pressure differential between opposite ends of stack (80), so that members (81, 82, 83) of stack (80) are compressed and sheet(s) (87) conformed to the shape of stack (80), and air trapped between stack (80) and sheet(s) (87) and also within stack (80) passes out of stack (80), and then cooling the thermoplastics sheet(s) (87). The net result is covering sheet(s) or skin (87) tensioned in all directions. Various applications are disclosed for the structure, namely, building elements, advertising signs, motor vehicle panels, bolsters, brass plates, pallets, surfboards and sailboards.		