

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
28 December 2006 (28.12.2006)

PCT

(10) International Publication Number  
WO 2006/138455 A3

(51) International Patent Classification:

B32B 3/12 (2006.01) E04C 2/34 (2006.01)  
E04C 1/00 (2006.01) B29C 37/00 (2006.01)  
E04C 2/32 (2006.01)

(21) International Application Number:

PCT/US2006/023295

(22) International Filing Date: 15 June 2006 (15.06.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/690,585 15 June 2005 (15.06.2005) US

(71) Applicant (for all designated States except US): **PANTERRA ENGINEERED PLASTICS, INC.** [US/US]; Two Stamford Landing, Suite 100, Stamford, CT 06902 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ST. DENIS, Thomas** [US/US]; 44 Yarmouth Road, Rowayton, CT 06853 (US). **KARAMANIS, Gabriel, M.** [US/US]; 30 Downs Avenue, Stamford, CT 06902 (US).

(74) Agent: **GREELEY, Paul, D.**; Ohlandt, Greeley, Ruggiero & Perle, L.L.P., One Landmark Square, 10th Floor, Stamford, CT 06901-2682 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:  
16 April 2009

(54) Title: HOUSING CREATED FROM HIGH STRENGTH EXPANDED THERMOFORMABLE HONEYCOMB STRUCTURES WITH CEMENTITIOUS REINFORCEMENT

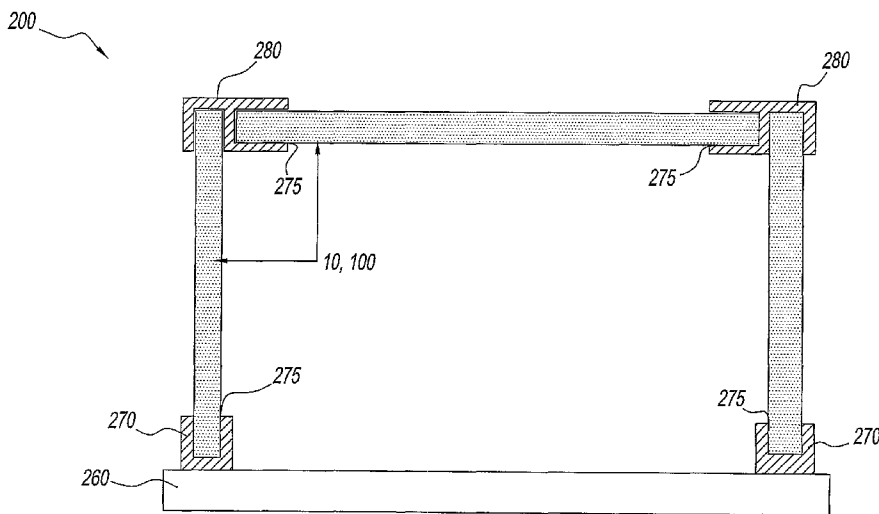


Fig. 5

(57) Abstract: A method for producing an engineered building material comprising at least a first and second cementitious reinforced expanded honeycomb product (10, 100), the method comprising: affixing at least one end of the first cementitious reinforced expanded honeycomb product (10) to at least one end of the second cementitious reinforced expanded honeycomb product (100) via a coupler device (280).

WO 2006/138455 A3

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/23295

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC: **B32B 3/12( 2006.01);E04C 1/00( 2006.01),2/32( 2006.01),2/34( 2006.01);B29C 37/00( 2006.01)**

USPC: 156/71,145,242,244.11,244.15;52/220.1-220.4,576,578,583.1

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 156/71, 145, 242, 244.11, 244.15; 52/220.1-220.4, 576, 578, 583.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,000,194 (Nakamura) 14 December 1999 (14.12.1999), Col 2, lines 8-26; Col 4, lines 26-41, Col 5, lines 39-44; Col 5, line 56 to Col 6, line 3; Col 6, lines 8-13; Col 8, lines 58-60, and Table 4	1-14
Y	US 5,483,778 (Scrivener) 16 January 1996 (16.01.1996), Col 3, lines 64-67, Col 3, lines 7-16, Col 4, lines 4-23	1-14
Y	US 3,811,814 (Earle et al) 21 May 1974 (21.05.1974), Col 2, lines 28-36, Col 5, lines 28-34, Col 6, lines 20-50, Col 7, lines 28-58,	2 and 14
Y	US 4,313,993 (McGlory) 2 February 1982 (02.02.1982), Col 3, lines 14-17, Col 4, lines 8-37	3-5 and 12
Y	US 6,673,415 (Yamazaki et al) 6 January 2004 (06.01.2004), Col 3, lines 20-51	8 and 9

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

17 March 2008 (17.03.2008)

Date of mailing of the international search report

**11 APR 2008**

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

*Philip C. Tucker*  
Philip C. Tucker  
Telephone No. 703-308-0661