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Published:
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(88) Date of publication of the international search report: 17 March 2005

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(54) Title: DURABLE BUILDING ARTICLE AND METHOD OF MAKING SAME

(57) Abstract: A durable, nailable, lightweight and fire resistant fiber cement article that can be a cost-effective substitute for conventional building materials is provided. The fiber cement article can be profiled to resemble a roofing article such as a wood shake or slate. The fiber cement article incorporates a hydrophobe and a viscosity enhancing agent that are each selected to control the rate of hydration of the binder. The fiber cement article is durable, is walkable and nailable without cracking during installation and maintains walkablilty after exposure in service.

WO 2004/113248 A3

INTERNATIONAL SEARCH REPORT

International Application No
PC[redacted]S2004/019980

A. CLASSIFICATION OF SUBJECT MATTER*
IPC 7 C04B28/02 E04D1/04 E04D1/16 E04D1/30

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)
IPC 7 C04B E04D

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 practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/32830 A (HARDIE JAMES RES PTY LTD ; LUO CAIDIAN (US); MERKLEY DONALD J (US)) 25 April 2002 (2002-04-25) cited in the application the whole document	1-3, 5-10, 22-24
Y		4,11-16, 25
X	WO 02/28795 A (HARDIE JAMES RES PTY LTD ; LUO CAIDIAN (US); MERKLEY DONALD J (US)) 11 April 2002 (2002-04-11) the whole document	1-3, 5-10, 22-24
X	WO 02/28796 A (HARDIE JAMES RES PTY LTD ; LUO CAIDIAN (US); MERKLEY DONALD J (US)) 11 April 2002 (2002-04-11) the whole document	1-3, 5-10, 22-24

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
15 September 2004	20. 01. 05

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Gattinger, I

Form PCT/ISA/210 (second sheet) (January 2004)

INTERNATIONAL SEARCH REPORT

International Application No
PC[redacted]S2004/019980

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GB 2 148 871 A (PILKINGTON BROTHERS PLC) 5 June 1985 (1985-06-05) the whole document	4
Y	EP 0 173 553 A (MARLEY TILE AG ; MARLEY ROOF TILE (GB)) 5 March 1986 (1986-03-05) page 1, lines 28-36	11
Y	US 2003/054123 A1 (BLACK ANDREW J ET AL) 20 March 2003 (2003-03-20) cited in the application paragraphs [0011], [0013], [0018], [0022], [0025]	12-16,25
A	EP 0 347 092 A (REDLAND ROOF TILES LTD) 20 December 1989 (1989-12-20) the whole document	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/019980

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 1-16,22-25 (in part)
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-16, 22-25

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 1-16,22-25 (in part)

Present claims 1-16 and 22-25 relate to a product and method defined by reference to a desirable characteristic or property, namely
1) ratio of Modulus of rupture (MOR) to modulus of elasticity (MOE)
2) density
3) nailability
4) resistance to stress induced cracking

The claims cover all products and methods having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products and methods. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product and method by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible.

Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to
products (and methods for preparing said products) comprising a hydraulic binder, aggregate, lightweight aggregate (as specified in the description at page 6; paragraph [0021], fibres and a waterproofing agent.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-16,22-25

cementitious composition comprising a hydraulic binder, fibres, aggregate, lightweight aggregate and a waterproofing agent as well as roofing article derived from said composition adn method for preparing said article

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2. claims: 17-21,26

roofing article comprising two roofing tiles connected to each other

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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