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Declaration under Rule 4.17:

Published:
— with international search report
(88) Date of publication of the international search report: 16 October 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: IN SITU MOLDED THERMAL BARRIERS

(57) Abstract: The invention provides methods, systems, and devices for installing barriers in openings or gaps in or between structures such as walls, ceilings, and floors. At least one barrier molding bag is positioned in the hole or gap, and a flowable firestop material that is preferably operable to cure or harden, such as a hydratable cementitious slurry, is introduced into the bag to create a barrier in the hole or gap.
A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : E04B 1/00
US CL : 52/746.05, 749.15, 520.5, 741.4, 749.1, 525.7, 741.5, 407.5, 406.2, 817
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. : 52/745.05, 749.18, 520.8, 741.4, 749.1, 525.7, 741.5, 407.5, 406.2, 817

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

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>US 4,988,406 A (NELSON) 29 January 1991, columns 1-10.</td>
<td>1-11, 14-24, 26-33</td>
</tr>
<tr>
<td>Y</td>
<td>US 4,424,867 A (MALLOW) 10 January 1984, columns 1-12.</td>
<td>12, 13</td>
</tr>
<tr>
<td>A</td>
<td>US 4,850,385 A (HARBEKE) 25 July 1989, columns 1-6.</td>
<td>1-33</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C. See patent family annex.

Date of actual completion of the international search
10 APRIL 2003

Date of mailing of the international search report
14 MAY 2003

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Form PCT/ISA/110 (second sheet) (July 1995)
## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(9)(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.:
   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:

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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

Please See Extra 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. [x] 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. 1-83

**Remark on Protest**

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

[ ] No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet(1)) (July 1998)
BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING
This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single
inventive concept under PCT Rule 18.1. In order for all inventions to be searched, the appropriate additional search
fees must be paid.

Group I, claim(s)1-58, drawn to a method for installing a barrier.
Group II, claim(s) 54-50, drawn to a firestop molding bag.
The inventions listed as Groups I and II do not relate to a single inventive concept under PCT Rule 18.1 because,
under PCT Rule 18.2, they lack the same or corresponding special technical features for the following reasons: Groups
I and II have different classifications. Group I is classified in class 52 subclass 745.05, and Group II is classified in
class 52 subclass 817.