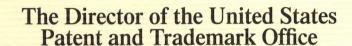
# The United States of America



Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

# **United States Patent**

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Michelle K. Lee

Director of the United States Patent and Trademark Office



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# (12) United States Patent

Angenendt et al.

(54) THERMALLY INSULATING FIRE-PROTECTION MOLDING AND PROCESS FOR PRODUCING SAME

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 252 days.

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§ 3/1 (c)(1), (2), (4) Date: **Apr. 30, 2013** 

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Nov. 24, 2015

(52) U.S. Cl.

58) Field of Classification Search

See application file for complete search history.

(56) References Cited

**U.S. PATENT DOCUMENTS** 

6,987,076 B1 1/2006 Jubb et al. 8,968,464 B2 \* 3/2015 Angenendt et al. ............ 106/708

### FOREIGN PATENT DOCUMENTS

EP	0829459	3/1998
EP	1201703	5/2002
EP	1484292	* 12/2004
EP	1484294	12/2004
EP	1591598	11/2005
EP	1992597	11/2008
GB	2341607	3/2000
WO	2011104005	9/2011
WO	2011104006	9/2011

<sup>\*</sup> cited by examiner

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## (57) ABSTRACT

The thermally insulating fire-protection molding is characterized in that it contains at least one lightweight filler, one reaction product of the thermal curing of an organic-inorganic hybrid binder, one mineral that eliminates water, and also fibers and/or wollastonite, and is impermeable to smoke.

12 Claims, 1 Drawing Sheet