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61/182,987 1 June 2009 (01.06.2009) US(71) Applicant (for all designated States except US): **ALCOA INC.** [US/US]; Alcoa Corporate Center, 201 Isabella Street, Pittsburgh, Pennsylvania 15212-5858 (US).

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(54) Title: FIRE RESISTANT SYSTEMS, METHODS AND APPARATUS

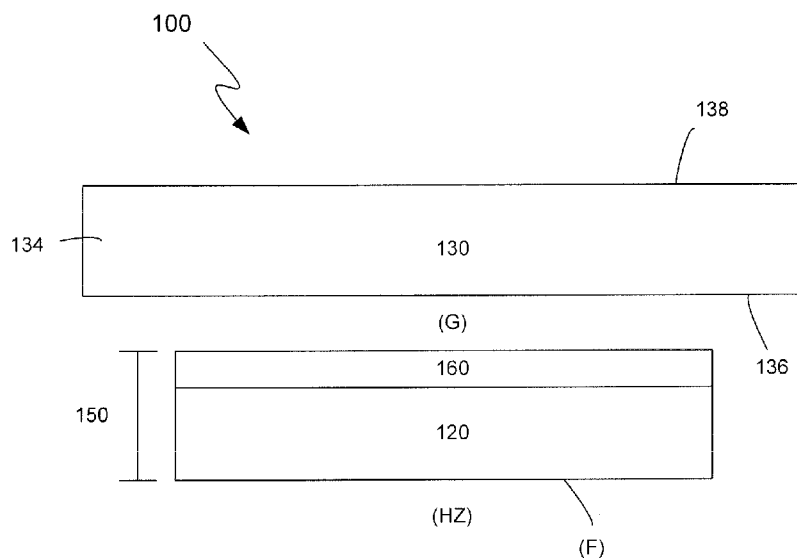


FIG. 1

(57) Abstract: The present disclosure relates to fire-resistant systems, methods, and apparatus. In one embodiment, a fire-resistant system includes a fire-resistant panel and a protected material coupled to the fire-resistant panel. The fire-resistant panel includes a passive layer and a back layer. The passive layer comprises a phyllosilicate material. The back layer comprises an inorganic material and may be coupled to the passive layer. Optionally, the fire-resistant panel may include a secondary layer comprising a functional material, where the functional material comprises one of a phase change material or an endothermic material.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/036933**A. CLASSIFICATION OF SUBJECT MATTER*****E04C 2/26(2006.01)i, E04B 1/94(2006.01)i***

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)

E04C 2/26; H01B 7/29; C11D 3/02; C08L 101/00; C08J 5/18; C04B 35/653; H01B 3/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: fire-resistant, phyllosilicate, panel, binder, board

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 2004-0195736 A1 (DIETRICH PANTKE et al.) 07 October 2004 See abstract, [0025], [0062]–[0092] and claims 1, 10	48,52 1-47,49-51,53
X A	WO 02-16479 A1 (SEKISUI CHEMICAL CO., LTD.) 28 February 2002 See abstract, page 4 lines 25-28 and claims 1, 5, 15	52 1-51,53
A	US 2004-0186041 A1 (ANTJE WENZEL et al.) 23 September 2004 See the whole document	1-53
A	US 2008-0093107 A1 (AMIGOUET PASCAL et al.) 24 April 2008 See the whole document	1-53

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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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