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(54) FIREPROOF GLASS PANEL

(57) The fireproof glass panel composed of the spacer frame and at least two glass sheets with the fireproof gel (hydrogel) between them and the glass edge sealing unit, characterized in that the spacer frame (3) is made of metal or plastic reinforced with glass fibre, whereas the glass edge sealing unit consists of the sealing compound (4) and the expanding tape (5) of thickness at least 0.8 mm and variable chemical composition but always of such physical an chemical properties that allow to increase the tape volume under high temperature at least a dozen or so times.

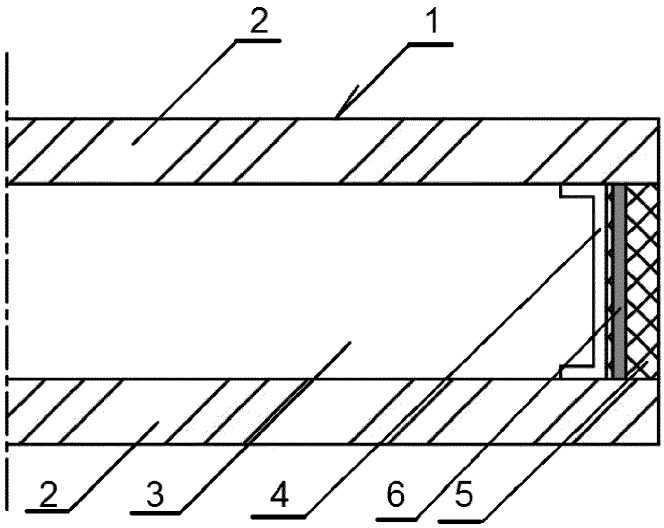

Fig. 2

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Description

[0001] The subject matter of the invention is a fireproof glass panel of increased safety level designed for both outdoor and indoor applications in buildings that can be mounted in any type of firefighting builders' joinery and in plasterboard walls as well as in more and more popular frameless systems.

[0002] The purpose of the invention is a solution development to protect a gap in the fireproof glass panel, between the glass and the neighbouring glass or the wall structure, against hot gases or fire penetration and, consequently, to increase safety of the partition where the fireproof glass has been used.

[0003] A flat element aggravating ignition is known from the PCT patent application no. PCT/CH2000/000360; the element is built of several firefighting glass panels (2, 3), where the side edges (9, 10) of the vicinal glass panels (2, 3) adhere each other. In the intermediate area (26), between the side edges (9, 10), the sealing system (7) is built-in and it includes an additional element (22) and flexible sealing elements (23, 24). Glass panels (2, 3) consist of several sheets of glass (16) and firefighting layers (18) placed between them; these layers extend up to the edges (9, 10) and, in the side edge areas, they are sealed with the insulating material (20). A flat element aggravating ignition is built of several firefighting glass panels (2, 3), where the side edges (9, 10) of the vicinal glass panels (2, 3) adhere each other. In the intermediate area (26), between the side edges (9, 10), the sealing system (7) is built-in and it includes an additional element (22) and flexible sealing elements (23, 24). Glass panels (2, 3) consist of several sheets of glass (16) and firefighting layers (18) placed between them; these layers extend up to the edges (9, 10) and, in the side edge areas, they are sealed with the insulating material (20).

[0004] The essence of the invention consists in that the fireproof glass panel (composed of a spacer frame, at least two glass panels and fireproof gel (hydrogel) between them as well as the unit sealing the glass edge) is characterized in that the spacer frame is made of metal or plastic reinforced with glass fibre. The glass edge sealing unit consists of the sealing compound and the expanding tape of thickness at least 0.8 mm, of variable chemical composition but always of such physical and chemical properties that allow the increase of the tape volume at least a dozen or so times under high temperature.

Polyurethane is the preferable sealing compound.

Thiorubber is the preferable sealing compound.

Silicone is the preferable sealing compound.

Preferably, the expanding tape is 2 mm thick.

[0005] The advantage of the solution is that the fireproof glass according to the invention meets the fire insulating power and leaktightness criteria according to PN-EN 1363-1.

[0006] The fireproof window panel is built of sheets of glass separated with the colourless hydrogel. Its layer thickness decides on the fire resistance class. This gel is manufactured by the Applicant according to their own protected recipe.

[0007] The fireproof glass panel is manufactured using the technology developed by the Applicant - POLFLAM.

[0008] The used technology allows production of the fireproof glass of exceptional advantages.

[0009] The subject matter of the invention is shown in the Figures. Fig. 1 shows the cross-section of the end fragment of the glass currently being manufactured. Fig. 2 shows the cross-section of the end fragment of the glass according to the invention.

[0010] The fireproof glass panel (1) consists of the spacer frame (4) and at least two glass sheets (2) and the gel (3) (hydrogel) inbetween that is manufactured by the Applicant according to their own protected recipe and the unit (7) to seal the glass edge. The spacer frame (4) is made of metal or plastic reinforced with glass fibre. The glass edge sealing unit (7) consists of the sealing compound (5) and the expanding tape (6) of thickness at least 0.8 mm, of variable chemical composition but always of such physical and chemical properties that allow the increase of the tape (6) volume at least a dozen or so times under high temperature.

[0011] The sealing compound (5) can be made of different flexible sealing materials. Most often, this is polyurethane, thiorubber or silicone.

[0012] The expanding tape (6) is the material that can have different chemical composition. Its most important characteristic consists in its ability to increase its volume under fire or high temperature between a dozen or so times and even several dozen times. The minimum thickness of the expanding tape (6) is 0.8 mm but the expanding tape (6) can have different thickness - preferably about 2 mm.

Claims

1. The fireproof glass panel composed of the spacer frame and at least two glass sheets with the fireproof gel (hydrogel) between them and the glass edge sealing unit, **is characterized in that** the spacer frame (**3**) is made of metal or plastic reinforced with glass fibre whereas the glass edge sealing unit consists of the sealing compound (**4**) and the expanding tape (**5**) of thickness at least 0.8 mm and variable chemical composition but always of such physical an chemical properties that allow to increase the tape volume under high temperature at least a dozen or so times.

2. The fireproof glass panel according to claim 1, **is characterized in that** the sealing compound (**4**) is polyurethane.

3. The fireproof glass panel according to claim 1, **is**

characterized in that the sealing compound (**4**) is thiorubber.

4. The fireproof glass panel according to claim 1, **is characterized in that** the sealing compound (**4**) is silicone.

5. The fireproof glass panel according to claim 1, **is characterized in that** the expanding tape (**5**) is 2 mm thick.

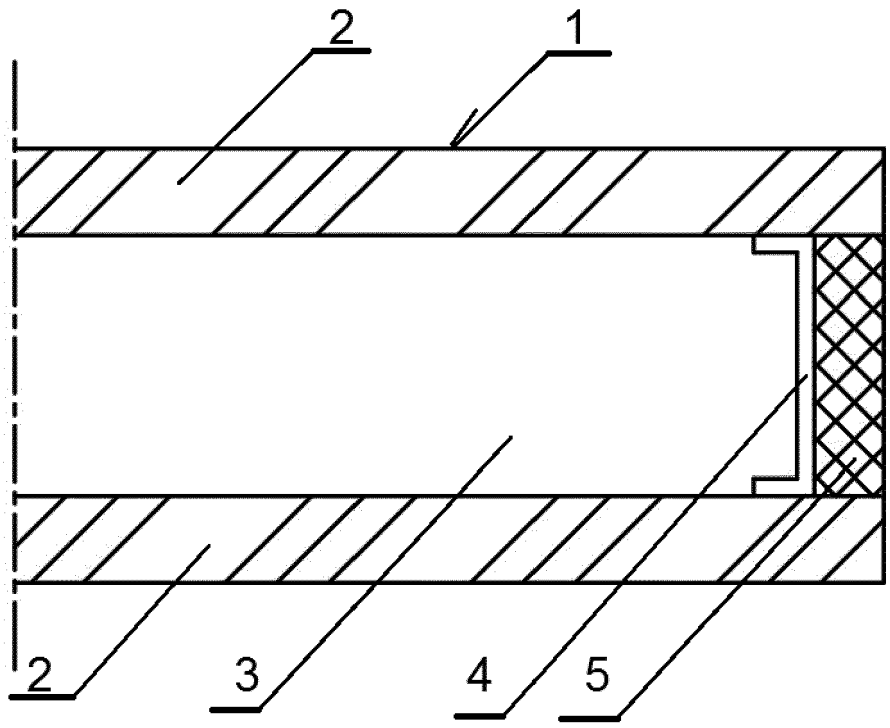

Fig. 1

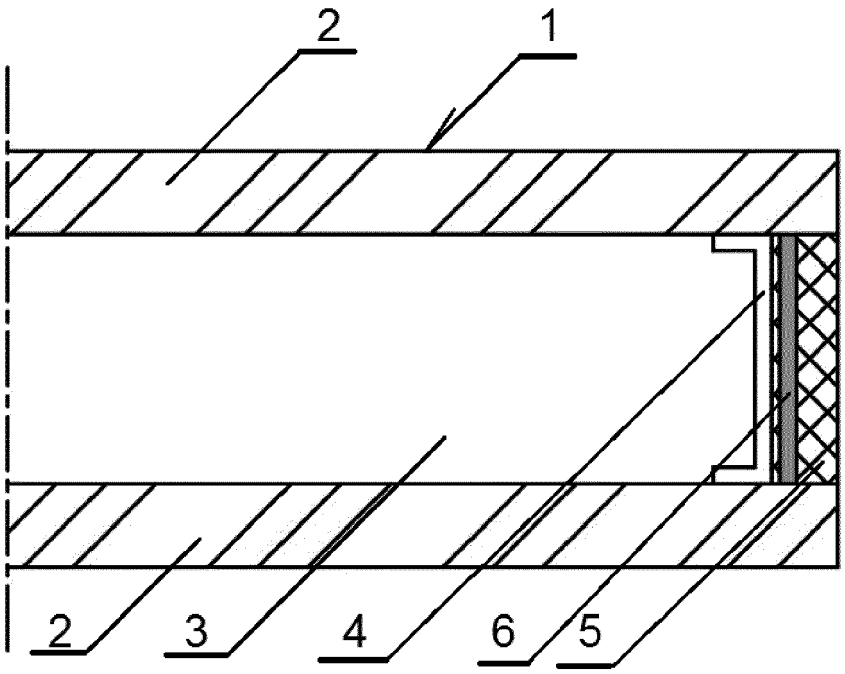

Fig. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 18 19 0648

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 20 2009 011374 U1 (PROMAT GMBH [DE]) 12 November 2009 (2009-11-12) * paragraph [0020] - paragraph [0021]; figures *	1-5	INV. E06B5/16
X	DE 20 2009 002800 U1 (PROMAT GMBH [DE]) 14 May 2009 (2009-05-14) * paragraphs [0009], [0017]; figure 2 *	1-5	
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TECHNICAL FIELDS SEARCHED (IPC)
E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	28 January 2019	Verdonck, Benoit

CATEGORY OF CITED DOCUMENTS

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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