FIRE RESISTANT CONSTRUCTION BLOCK

# TECHNICAL FIELD

# The present disclosure relates generally to fire resistant construction blocks, systems, and related methods of use. More specifically, the disclosure relates to fire resistant construction blocks, systems, and related methods that can comply with the National Fire Protection Agency (NFPA) 285 standard fire test method.

BRIEF DESCRIPTION OF THE DRAWINGS

# The written disclosure herein describes illustrative embodiments that are non-limiting and non-exhaustive. Reference is made to certain of such illustrative embodiments that are depicted in the figures, in which:

# FIG. 1 is a front schematic view of a wall system that includes a fire resistant construction block in accordance with an embodiment of the present disclosure.

# FIG. 2A is a top perspective view of the fire resistant construction block of the wall system of FIG. 1.

# FIG. 2B is a detailed view of a portion of the fire resistant construction block of FIG. 2A.

# FIG. 3 is a bottom perspective view of a portion of the fire resistant construction block of FIGS. 2A and 2B.

# FIG. 4 is a side cross-sectional view of the fire resistant construction block of FIGS. 2A and 2B.

# FIG. 5 is a side cross-sectional view of a wall system in accordance with another embodiment of the present disclosure.

# DETAILED DESCRIPTION

# The components of the embodiments as generally described and illustrated in the figures herein can be arranged and designed in a wide variety of different configurations. Thus, the following more detailed description of various embodiments, as represented in the figures, is not intended to limit the scope of the present disclosure, but is merely representative of various embodiments. While various aspects of the embodiments are presented in drawings, the drawings are not necessarily drawn to scale unless specifically indicated.

# As used herein, the phrases “connected to,” “coupled to,” and “in communication with” refer to any form of interaction between two or more entities, including but not limited to mechanical, electrical, magnetic, electromagnetic, fluid, and thermal interaction. Two components may be coupled to each other even though they are not in direct contact with each other. For example, two components may be coupled to each other through an intermediate component.

# The present disclosure relates to fire resistant construction blocks, systems, and related methods of use. As detailed below, the fire resistant construction block can include a core. The block can also include a fire resistant coating that can inhibit or prevent the block from catching fire or combusting during a building fire.

# In some embodiments, the fire resistant construction block is employed in a wall system. For example, the block can be employed in a wall system on an exterior of a building structure. Such a system can also be referred to as an exterior wall system. The block can also be employed in interior wall systems if desired. In some embodiments, the block can be configured to help prevent, minimize, or reduce propagation of a fire along the wall system. For example, the block can be disposed above a window structure. In such instances, the block can be configured to help prevent, minimize, or reduce vertical propagation of a fire out the window and vertically up the wall of the building (e.g., from one story to another). In particular embodiments, a wall system (e.g., an exterior wall system) incorporating the block can be configured to comply with the National Fire Protection Agency (NFPA) 285 standard fire test method.

# NFPA 285 standard fire test method is a test method developed through a consensus process for determining the flammability characteristics of exterior non-load-bearing wall assemblies or panels where the walls are required to be noncombustible. The standard is used to evaluate the fire propagation characteristics of an exterior non-load-bearing wall assembly that is constructed using combustible materials or that incorporates combustible components within the wall assembly. The wall assembly needs to (1) resist flame propagation over the exterior face of the wall assembly; (2) resist vertical flame propagation within the combustible components from one story to the next; (3) resist vertical flame propagation over the interior surface of the wall assembly from one story to the next; and (4) resist lateral flame propagation from the compartment of fire origin to adjacent compartments or spaces. Building fires may propagate vertically through openings, such as windows, so construction materials that are able to meet the NFPA 285 standard fire test method are sought after.

# Without limitation, the fire resistant construction blocks, systems, and related methods disclosed herein can comply with the NFPA 285 standard fire test method. In particular, the fire resistant construction blocks, systems, and related methods can be used to (1) resist flame propagation over an exterior face of a wall assembly; (2) resist vertical flame propagation within the combustible components from one story to the next; (3) resist vertical flame propagation over the interior surface of a wall assembly from one story to the next; and/or (4) resist lateral flame propagation from the compartment of fire origin to adjacent compartments or spaces.

# FIG. 1 illustrates a schematic view of a wall system 100 in accordance with an embodiment of the present disclosure. It will be appreciated that the wall system 100 can be representative of an exterior wall system or an interior wall system. In certain embodiments, the wall system 100 complies with or otherwise meets the NFPA Code 285 standard fire test method.

# As shown in FIG. 1, the wall system 100 includes a fire resistant construction block 300. The block 300 is also coupled or otherwise attached to a building structure. For example, the block 300 can be coupled to a wall (e.g., an exterior wall) of the building structure. In some embodiments, the block can also be disposed above a window structure 200. In FIG. 1, for example, the block 300 is coupled above a top edge 202 of a window structure 200. The block 300 can be fire resistant such that the block 300 will not catch fire or combust during a building fire. Since the block 300 does not catch fire or combust, it can help prevent, minimize, or reduce propagation of a building fire from the window structure 200 to (and/or vertically up) the wall (e.g., the exterior wall) of the building. In some embodiments, the block 300 may be placed above every window in a building to help prevent, minimize, or reduce propagation of a building fire.

# The size and/or shape of the bock 300 can vary as desired. For example, as shown in FIG. 1, in some embodiments the length of the block 300 may extend beyond both lateral edges 204 and 206 of the window structure 200. In certain embodiments, the block 300 may have a length of at least 8 feet. However, the present disclosure is not so limited, and the length of the block 300 may be greater than or less than 8 feet. In some embodiments, the length of the block 300 may be dependent upon the length of the window structure 200 with which it may be used. As discussed previously, in some embodiments, the length of the block 300 may extend beyond the lateral edges 204 and 206 of the window structure 200. In other words, opposing edges of the block 300 may extend beyond opposing lateral edges 204 and 206 of the window structure 200. In other embodiments, the length of the block 300 may be the same length as the window structure 200. Stated another way, opposing edges of the block 300 may correspond with lateral edges 204 and 206 of the window structure 200.

# As further shown in FIG. 1, the wall system 100 may further include a wall covering 400. For example, the wall covering 400 may comprise bricks, stone, siding, stucco, etc. In the illustrated embodiment, for instance, a plurality of bricks are employed as the covering 400. The covering 400 may be coupled to other otherwise attached to the block 300. In particular embodiments, for example, the covering 400 is coupled to an outward facing surface of the block 300. Such a covering 400 can protect the block 300 from exposure to the elements. Such a covering 400 can also provide an aesthetic appearance to a building structure.

# The covering 400 can be applied in various ways. In some embodiments, for example, the covering 400 (e.g., a plurality of bricks) is coupled to the block 300 with an adhesive material. Exemplary types of adhesive materials that can be used, include, but are not limited to, construction adhesives. The covering 400 can also be coupled to the block 300 with a fastener, such as a mechanical fastener. Other methods of attaching the covering 400 to the block 300 are also contemplated.

# Various views of the block 300 are depicted in FIGS. 2A, 2B, 3, and 4. In particular, FIG. 2A illustrates a top perspective view of the block 300; FIG. 2B illustrates a detailed view of a portion of the block 300 of FIG. 2A; FIG. 3 illustrates a bottom perspective view of a portion of the block 300; and FIG. 4 illustrates a side cross-sectional view of the block 300. As shown therein, the block 300 may have a longitudinally elongate, polygonal shape. In certain embodiments, the block 300 can also be described as having a longitudinally elongate, trapezoidal or substantially trapezoidal shape. The block 300 also includes a front face 310, a rear face 320, a first side face (left face) 330, a second side face (right face) 340, a bottom face 350, and a top face 360.

# As further shown in the illustrated embodiment, the top face 360 of the block 300 can comprise an angled or sloped surface. As detailed below, the angled or sloped surface can be configured to direct water towards channels 302 in the block 300. In particular embodiments, the top face 360 comprises a surface that is sloped at an angle θ. Without limitation, the angle θ may range from between about 10 degrees and about 80 degrees, between about 20 degrees and about 70 degrees, or between about 30 degrees and about 60 degrees. **[[Is there a desired angle or slope?]]**

# The block 300 can also comprise various materials and/or layers. In some embodiments, the block 300 comprises a core 370. The core 370 can also comprise various materials. For example, in some embodiments, the core 370 comprises a polymeric material. Exemplary polymeric materials that can be used include, but are not limited to, polystyrene. **[[Are there any other materials to include?]]** The polymeric material can also comprise a foam, such as an open cell or closed cell foam. The polymeric material can be molded, cut into shape, and/or extruded. In certain embodiments, the polymeric material of the core 370 comprises a polystyrene foam. And in particular embodiments, the core 370 comprises an expanded polystyrene foam.

# FIG. 2B illustrates a breakaway view of the interior of the block 300 that illustrates the core 370. Additional layers are also depicted, including an optional intermediate layer 380 and a coating layer 390. In certain embodiments, an intermediate layer 380 is optionally applied over the core 370. For example, a mesh layer can be disposed as an intermediate layer 380 over the core 370. Various types of materials can be employed in this intermediate and/or mesh layer 380, including, but not limited to, fiberglass, metals, metal alloys, polymers, and combinations thereof. The intermediate or mesh layer 380 can help maintain the shape of the block 300. The intermediate or mesh layer 380 can also aid in coupling a coating 390 to the core 370.

# For example, in some embodiments, the block 300 comprises a fire resistant coating 390. The coating 390 can be disposed around a periphery of the core 370, and can cover at least a portion of, or the entire outer surface of the core 370. As shown in FIG. 2B, the intermediate or mesh layer 380 is disposed between the core 370 and the coating 390. In such embodiments, the intermediate or mesh layer 380 can help adhere or hold the coating 390 around the core 370. In other embodiments, no intermediate layer 380 is used, and the coating 390 is applied directly to the core 370.

# The coating 390 may comprise any suitable material that is fire resistant and/or can inhibit the block 300 from burning or combusting. In some embodiment, the fire resistant coating 390 is able to withstand temperatures to at least XXX° F while maintaining its structural integrity. **[[What types of temperatures should the coating/block withstand?]]** In certain embodiments, the coating 390 comprises a concrete, cement, or cementitious material. Other fire resistant materials can also be used.

# The fire resistant coating 390 can also help the block 300 comply with the NFPA 285 standard fire test method. For example, in some embodiments, the core 370 comprises a combustible material. Notwithstanding, the coating 390, which can comprise a fire resistant material, can inhibit or prevent the core 370 from combusting or burning. For instance, the coating 390 can inhibit or prevent oxygen from reaching the core 370, thereby inhibiting or preventing the core 370 from combusting and/or propagating a fire. In other embodiments, the coating 390 can minimize or reduce the combustibility of the core 370 and/or the block 300. In further embodiments, the core 370 comprises a material that is fire resistant, and the intermediate layer 380 and/or coating 390 are optional.

# As shown in the illustrated embodiment, the block 300 may further include a plurality of channels or grooves 302. The channels 302 may have a sufficient enough depth to allow the passage of water through the channels 302. For example, in some embodiments, the depth of the channels 302 may be a quarter inch or more. In other embodiments, the depth of the channels 302 may be more or less than a quarter inch. The channels 302 may extend from a top edge 322 of the rear face 320 to a bottom edge 324 of the rear face 320. The channels 302 may further extend from a rear edge 352 of the bottom face 350 to the front edge 354 of the bottom face 350. The channels 302 may have a substantially U-shaped or substantially rectangular cross-section; however, the channels 302 may include other cross-sectional shapes, such as triangular, half-circle, polygonal, etc. The channels 302 may also have an arc-shaped groove. In FIG. 2B, the hidden portions of the channels 302 are illustrated in broken lines.

# The channels 302 may be evenly spaced along the length of the block 300. In some embodiments, the channels 302 may be between about 6 and about 30 inches, between about 12 and about 24 inches, or between about 14 and about 18 inches apart. However, the present disclosure is not so limited and the channels 302 may be spaced more or less than 16 inches apart. In other embodiments, the channels 302 are not evenly spaced. For example, in certain embodiments, there may be a cluster of channels 302 close to each other, with other channels 302 spaced further away. In some embodiments, clusters of channels 302 may be disposed near the center of the block 300. In other embodiments, the cluster of channels 302 may be disposed at opposing ends of the block 300.

# FIG. 3 illustrates a bottom perspective view of a portion of the block 300. In particular, FIG. 3 illustrates the rear and bottom faces or surfaces 320, 350 of the block 300. FIG. 3 further depicts a channel 302, which extends continuously along the rear face 320 (e.g., from one edge 322 to another 324) and across the bottom face 350 (e.g., from one edge 352 to another 354) of the block 300. As previously discussed, when the block 300 is employed in a building structure, the channel 302 can be used to direct the flow of water around the block 300.

# FIG. 4 illustrates a side cross-sectional view of the block 300. As shown in FIG. 4, the block 300 includes an upper surface 360 that is sloped at angle θ1 in relation to the rear surface 320. The slope of the upper surface 360 can direct the flow of water towards the rear surface 320, and/or towards the channels 302 in the rear surface 320.

# As further shown in FIG. 4, the coating 390 can extend around or otherwise surround the perimeter or periphery of the core 370. An optional intermediate or mesh layer 380 is also depicted between the coating 390 and the core 370, and can also extend around all of, or a portion of the core 370. As previously discussed, the intermediate or mesh layer 380 can aid in coupling the coating 390 to the core 370.

# It will be appreciated that the block 300 can be formed in various ways. For example, as previously discussed, in some embodiments the core 370 comprises a polystyrene material that is molded, cut into shape, and/or extruded into shape. The channels 302 can also be cut into or otherwise formed into the core 370. After forming the channels 302, an intermediate layer 380 can optionally be disposed around at least a portion of (or the entirety) of the core 370. The coating layer 390 can then be applied. For instance, the core structure 370 (with or without an intermediate layer 380) can be dipped into a mixture of the coating material to coat the core structure 370. In other embodiments, the coating material can be painted on, pasted on, or otherwise applied to the surfaces of the core structure 370. The coating material can thereafter dry or otherwise cure to solidify on the surface of the core structure 370.

# FIG. 5 illustrates a cross-sectional view of the wall system 100 in accordance with another embodiment of the disclosure. The wall system 100 of FIG. 5 can be representative of a cross-sectional view taken from FIG. 1 across the view line 5-5. It will be appreciated, however, that the current disclosure is applicable to various types of wall structures 500, including those typically used in the building industry. Accordingly, while parts of the discussion are directed towards exterior wall structures 500, it will be appreciated that interior wall structures are also contemplated.

# As shown in FIG. 5, the wall structure 500 can include various types of support structures, substrates, and other components 510, 520, 530. For example, in some embodiments, the wall structure 500 comprises one or more supports 510 that are coupled to a substrate or sheathing 520. The wall structure 500 can also comprise a weatherization barrier 530 that is optionally disposed on the substrate 520. A flashing structure 540 can also optionally be used.

# With continued reference to FIG. 5, in the illustrated embodiment, the block 300 is coupled to the substrate 520. A weatherization barrier 530 is also optionally disposed between the substrate 520 and the block 300. In certain embodiments, there may also be an open space or void disposed between the weatherization barrier 530 and the block 300, or between the substrate 520 and the block 300. As further shown in FIG. 5, the block 500 is also coupled to the wall structure 500 at a location that is above a window structure 200. A flashing structure 540 disposed between the block 300 and window structure 200 is also shown.

# The block 300 can be coupled to the wall structure 500 (or a portion thereof, e.g., the substrate 520, flashing 540, etc.) in various ways. For example, in some embodiments, the block 300 is coupled to the wall structure 500 with an adhesive 550. Exemplary adhesives 550 that can be used include, but are not limited to, construction adhesives. Other methods of attaching the block 300 to the wall structure 500 are also within the scope of this disclosure, including, but not limited to, use of mechanical fasteners, etc. For example, one or more screws or nails may be used to couple block 300 to the wall structure 500.

# In certain embodiments, one or more wall panels 600 may be also be used in connection with the systems disclosed herein. For instance, one or more wall panels 600 may also be coupled to the wall structure 500. In the illustrated embodiment, a wall panel 600 is coupled to the wall structure 500 at a location that is above the block 300. Exemplary wall panels 600 that can be used include polystyrene panels, such as the panels described in U.S. Patent Nos. 6,516,578 and 7,121,051, each of which is incorporated by reference herein in its entirety.

# In some embodiments, the wall panel 600 may be coupled to the wall structure 500 (or substrate 520) with an adhesive 550 (e.g., a construction adhesive). Other methods of coupling the panel 600 are within the scope of this disclosure, including, but not limited to, use of mechanical fasteners (e.g., nails, screws, etc.). In some embodiments, the panel 600 may be formed from the same material as the core 370 of the block 300. In other embodiments, the panel 600 may comprise a different material from the core 370 of the block 300. In particular embodiments, the panel 600 may be fabricated from polystyrene foam, such as an expanded polystyrene foam.

# In certain embodiments, the wall panel 600 comprises a combustible material. In such embodiments, the block 300 may inhibit or prevent a fire from propagating (e.g., vertically propagating) along the wall panel 600. For instance, the block 300 may inhibit or prevent a flame from traveling upwards along the building structure 500. Further, in certain embodiments, a fire may cause at least a portion of the wall panel 600 to melt, without allowing the fire to propagate along the building. For example, at least a portion of the wall panel 600 may melt and flow along the top surface 360 and into the channels 302 of the block 300. Notwithstanding, the fire may be inhibited or prevented from traveling or propagating upwards along the building structure 500.

# With continued reference to FIG. 5, in certain embodiments, a covering 400 may also be applied to the block 300 and the panel 600. For example, in the illustrated embodiment, the covering 400 comprises a plurality of bricks 402, 404. A height of the front face 310 of the block 300 may approximate a height of two bricks. In some embodiments, for example, the height of front face 310 of the block 300 may range between 3 inches and 7 inches. As further shown in FIG. 5, in certain embodiments, a first brick (or covering unit) 402 may be attached to a bottom portion of the front face 310 of the block 300 and a second brick (or covering unit) 404 may be attached to a top portion of the front face 310 of the block 300 and to a bottom portion of a panel 600. Coupling a brick or covering unit 404 to both the block 300 and panel 600 can add stability to the building structure 500.

# As previously discussed, the covering 400 may be coupled to the block 300 and/or the panel 600 by an adhesive 550 (e.g., a construction adhesive). Other methods of attaching the covering 400 are also within the scope of this disclosure, such as use of mechanical fasteners, etc. The space or void between the bricks or covering units may also be filled with grout 410. In certain embodiments, the panel 600 may include a plurality of grooves or projections 610 that extend outward from a front face of the panel 600. The grooves or projections 610 may extend along the length of the panel 600 and provide a point of reference for a craftsman who adheres the covering 400 to the panel 600. The grooves or projections 610 can also be sized to fit a brick or covering unit. As illustrated in the FIG. 5, projections are disposed between adjacent vertical bricks or covering units.

# In some embodiments, a flashing structure 540 may be optionally disposed between the block 300 and the window structure 200. The flashing structure 540 may extend outwards beyond the block 300 and the covering 400. The flashing structure 540 may further include a lip 542 that projects outward and downward. The block 300 may be attached to the flashing structure via the adhesive 550. Other methods of attaching the panel 600 are within the scope of this disclosure, such as use of mechanical fasteners, etc. The flashing structure 540 may have a sloped surface 541 (e.g., between about 1 and about 15 degrees, between about 1 and about 10 degrees, or between about 1 and about 5 degrees), and may direct the flow of water outwards and away from the building structure 500.

# In some embodiments, the wall system 100 may also be configured to direct the flow of water around the block 300 and/or away from building structure 500. For example, water may penetrate the grout 410 or covering material, or may otherwise leak behind the covering 400. In such instances, the block 300 can be configured to direct the water toward the flashing 540 and eliminate the water through an opening 546 near the lip 542 of the flashing. In one embodiment, for example, the flow of water is directed (e.g., by gravitational forces) along the sloped surface 360 of the block 300 towards the rear face 320 and channels 302 of the block 320, as illustrated by arrow A1. When the water reaches a rear portion of the top face 360, the flow of water may enter the channels 302 and be directed downward as shown by the illustrated arrow A2. The water may then flow towards the opening 544 in the channel 302 of the bottom face 350 in the direction of the illustrated arrow A3. The flow of water is then expelled out of the exterior wall system 100 via an opening 546.

# Methods of using the fire resistant construction blocks are also disclosed herein. In particular, it is contemplated that any of the components, principles, and/or embodiments discussed above may be utilized in either a fire resistant construction block, system, or a method of using the same. An illustrative method of using a fire resistant construction block can include a step of coupling or attaching a fire resistant construction block to a substrate of a building. In some embodiments, the block is coupled above a window structure. The method can also include a step of coupling or attaching a wall panel to the substrate of the building. The method can further include a step of coupling a covering (e.g., a brick covering) to the front face of the construction block and a front face of the panel. Other method steps are also contemplated.

# Any methods disclosed herein include one or more steps or actions for performing the described method. The method steps and/or actions may be interchanged with one another. In other words, unless a specific order of steps or actions is required for proper operation of the embodiment, the order and/or use of specific steps and/or actions may be modified. Moreover, sub-routines or only a portion of a method described herein may be a separate method within the scope of this disclosure. Stated otherwise, some methods may include only a portion of the steps described in a more detailed method.

# Reference throughout this specification to “an embodiment” or “the embodiment” means that a particular feature, structure, or characteristic described in connection with that embodiment is included in at least one embodiment. Thus, the quoted phrases, or variations thereof, as recited throughout this specification are not necessarily all referring to the same embodiment.

# Similarly, it should be appreciated by one of skill in the art with the benefit of this disclosure that in the above description of embodiments, various features are sometimes grouped together in a single embodiment, figure, or description thereof for the purpose of streamlining the disclosure. This method of disclosure, however, is not to be interpreted as reflecting an intention that any claim requires more features than those expressly recited in that claim. Rather, as the following claims reflect, inventive aspects lie in a combination of fewer than all features of any single foregoing disclosed embodiment. Thus, the claims following this Detailed Description are hereby expressly incorporated into this Detailed Description, with each claim standing on its own as a separate embodiment. This disclosure includes all permutations of the independent claims with their dependent claims.

# Recitation in the claims of the term “first” with respect to a feature or element does not necessarily imply the existence of a second or additional such feature or element. It will be apparent to those having skill in the art that changes may be made to the details of the above-described embodiments without departing from the underlying principles of the present disclosure.

# CLAIMS

1. A fire resistant construction block comprising:

 a core comprising a polygonal shape including a front face, a rear face, a right face, a left face, a bottom face, and a top face;

a fire resistant coating surrounding the core;

 an intermediate layer disposed between the core and the fire resistant coating;

 wherein the fire resistant construction block comprises a plurality of channels; and

 wherein the top face comprises a sloped surface.

 2. The fire resistant construction block of claim 1, wherein the core comprises polystyrene.

 3. The fire resistant construction block of claim 1, wherein the fire resistant coating comprises concrete or cement.

 4. The fire resistant construction block of claim 1, wherein the intermediate layer comprises a mesh material.

 5. The fire resistant construction block of claim 4, wherein the mesh material comprises a metal, metal alloy, or fiberglass material.

 6. The fire resistant construction block of claim 1, wherein the sloped surface is angled between 10 degrees and 80 degrees.

 7. The fire resistant construction block of claim 1, wherein the channels extend vertically in the rear face of the block and extend horizontally in the bottom face of the block.

 8. The fire resistant construction block of claim 1, wherein the fire resistant construction block is configured to be disposed above a window of a building, and wherein the placement of the fire resistant construction block enables an exterior wall of a building to comply with a National Fire Protection Agency Code 285 standard fire test method.

 9. A wall system comprising:

 a construction block configured to be disposed above a window, the construction block comprising:

a core comprising a polygonal shape including a front face, a rear face, a right face, a left face, a bottom face, and a top face;

a fire resistant coating surrounding the core; and

 an intermediate layer disposed between the core and the fire resistant coating;

 wherein the fire resistant construction block comprises a plurality of channels, and

 wherein the top face comprises a sloped surface.

10. The wall system of claim 9, further comprising a flashing disposed between the window and the construction block.

 11. The wall system of claim 10, wherein the flashing is sloped at an angle, and wherein the angle is between 0 degrees and 5 degrees and extends beyond the fire resistant construction block.

 12. The wall system of claim 10, wherein the length of the construction block corresponds with the length of the window and opposing edges of the construction block correspond with opposing edges of the window.

 13. The wall system of claim 10, wherein the length of the construction block exceeds the length of the window and opposing edges of the construction block extend beyond opposing edges of the window.

 14. The wall system of claim 9, further comprising a panel disposed above the construction block.

 15. The wall system of claim 14, further comprising a plurality of bricks that are attached to a front face of the construction block and a front face of the panel.

 16. The wall system of claim 15, wherein the height of the construction block is at least 1 1/2 times the height of a brick of the plurality of bricks.

 17. The wall system of claim 9, wherein the channels extend vertically in the rear face of the block and extend horizontally in the bottom face of the block.

 18. The wall system of claim 9, wherein the fire resistant construction block is configured to be disposed above a window, and wherein the placement of the fire resistant construction block enables an exterior wall of a building to comply with a National Fire Protection Agency Code 285 standard fire test method.

 19. A method of attaching a wall system to a building, comprising:

 attaching a fire resistant construction block to a substrate of a building above a window of the building, the fire resistant construction block comprising:

a core comprising a polygonal shape including a front face, a rear face, a right face, a left face, a bottom face, and a top face;

a fire resistant coating surrounding the core; and

an intermediate layer disposed between the core and the fire resistant coating,

wherein the fire resistant construction block comprises a plurality of channels, and

wherein the top face comprises a sloped surface;

 attaching a panel to the substrate of the building above the fire resistant construction block; and

 attaching a covering to at least one of the construction block and the panel.

20. The method of claim 20, further comprising:

 attaching a flashing between the construction block and the window.

ABSTRACT

A fire resistant construction block that comprises a core comprising a polygonal shape including a front face, a rear face, a right face, a left face, a bottom face, and a top face. The fire resistant construction block further comprises a fire resistant coating surrounding the core and an optional intermediate layer disposed between the core and the fire resistant coating. The fire resistant construction block comprises a plurality of channels and the top face of the fire resistant construction block comprises a sloped surface. The fire resistant construction block can be configured to be disposed above a window of a building and the placement of the fire resistant construction block can enable an exterior wall of a building to comply with a National Fire Protection Agency Code 285 standard fire test method.