

One of the major advantages offered by twin skin metal systems since their launch in the late 70's has been their ability to resist fire and offer a Class '0' surface spread of flame as the minimum standard when tested to BS 476: Part 3: 2004.

The ability to utilise the CA Building Products Therma-quilt glass fibre insulation in built up roofs and walls allows us to maintain the comfort and protection of proven non-combustibility.

Therma-quilt as a standalone component has been tested to provide a reaction to fire classification A1 when tested to BS EN 13501-1: 2007 and achieved "non-combustible" classification in accordance with BS 476: Part 4: 1970. Furthermore, to assist the specifiers and end clients recognition, Therma-quilt insulation has been assessed by the LPCB as being classified "non-combustible" in its own right (LPCB Certificate No. 472a*). This feature provides tremendous comfort to insurers by logically proving that, should any naked flames access the CABP roof and wall cladding systems cavity, Therma-quilt will NOT add to the fire load. No other glass fibre insulation is listed in the Loss Prevention Certification Board 'Red Book' (www.redbookonline.com). It therefore must be assumed that, should a naked flame access other insulations, they may contribute to the spread of fire.

Tested by the LPCB to LPS 1181 the CABP roof and wall cladding systems and achieved Grade EXT-B assemblies, LPCB Certificate No. 443a*. Proving that the assembly and the components used, including the insulation will not contribute to fire growth, as indicated in Images 1 & 2 below.

Insulated foam filled panels are available with Polystyrene (EPS), Polyurethane (PUR), Polyisocyanurate (PIR) or Man Made Mineral Fibre (MMMf) insulation. There is much opinion supported by historic evidence that the most combustible panels are those utilising polystyrene, followed by the Polyurethane and Polyisocyanurate products.

Fire Brigade authorities have stated that in fire situations they will only enter buildings using these combustible, structurally unstable, toxic / noxious gas producing panels solely to defend life. Otherwise, the fire will only be fought from outside to extinguish the fire or prevent spread. It has also been stated that Fire Brigade authorities whilst being concerned with both fire spread and smoke emission are mainly concerned by the instability of insulated foam filled panels

which when exposed to the extreme heat of the fire disintegrate and collapse inwards into the building. This weakness is a potential hazard to those fighting the fire and people trying to evacuate the building.

In comparison, the CABP roof and wall cladding systems are site assembled incorporating benign components which, do not collapse, fuel flame, produce toxic / noxious gases, or hinder fire fighters or evacuees and provide a substantial period of time to help bring the fire under control and building evacuation, safely.

CABP roof and wall cladding systems are logically safe, healthy and environmentally friendly, which are economical in comparison with many other systems and provide a beneficial and practical solution to specifiers where fire and its consequences are a serious issue in building design.



Image 1



Image 2

Image 1 indicates the result of an actual fire that occurred at Thurrock, when the insulated panels to the roof and wall cladding contributed to the fire load. However, the standard Twin-Therm® wall cladding around the doors is still intact.

The effect of the fire damaged panels at the top of the elevation on an adjacent building, which were removed and replaced, whereas the Twin-Therm® element below was unaffected.

CABP have two tested FireWall systems; both of which achieve 240 minutes of structural integrity whilst the construction utilising rock fibre semi-rigid slabs achieves 30 minutes of insulation integrity, the more cost effective FireWall utilises glass fibre insulation in lieu of rock fibre which achieves 15 minutes insulation integrity.

To achieve the periods of integrity as stated, the systems must be constructed either with a fire protected eaves beam or cladding rail (by others), or the wall cladding sat directly on to a concrete slab, which effectively supports the wall. In addition, the steelwork designer / installer must confirm the secondary steelwork is adequate to provide the fire boundary condition requirements.

For other manufacturers / suppliers to achieve a FireWall performance in terms of insulation integrity, the insulation, generally a roll (glass or rock), must be dressed over the outer flange of the spacer ensuring a thickness of 8mm after the external weather sheet is fixed, which is extremely difficult to achieve. Indeed over a period of time, due to wind loads acting upon the building, the external weather sheets effectively are loose when the insulant breaks down between the external sheet and the spacer system.

* For copies of the LPCB Certificates, please contact CA Group Technical Department; technical@cagroup.ltd.uk

Twin-Therm® FW30

The Twin-Therm® FW30 FireWall achieves great fire performance due to the design of the system for U-values ranging from 0.35 to 0.20W/m²K, which incorporate;

Rock Fibre Semi-rigid Slabs

...specifically designed to suit the space between the liner panel and external weather sheet, ensuring a tight fit, not allowing slumpage of the insulation that is associated with insulation supplied in rolls (glass or rock). Also, this FireWall only has one layer of insulation, most other systems utilise two layers (generally rolls) which leads to installation problems and slumpage.

High Density Thermal Break Strip

...secured at the base of the Matrix Spacer brackets eliminating the need to dress insulation over the front face of the spacer, as indicated in Image 3 below.

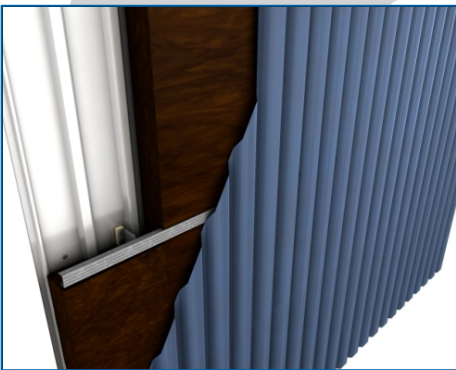


Image 3: Twin-Therm® FW30

CA Building Products' Twin-Therm® FW30 FireWall design has been tested to BS476: Part 22: 1987 and achieves 240 minutes integrity and 30 minutes insulation integrity. Refer to Exova *warringtonfire* 'WF Assessment Report 313436*', (copies of certificate available upon request) and has also been assessed by the LPCB to LPS 1181; the Twin-Therm® FW30 FireWall design has been accredited with a Grade 'EXT-A30' assembly, LPCB Certificate No. 443a*.

Twin-Therm® FW15

The Twin-Therm® FW15 FireWall also achieves great fire performance due to the design of the system for U-values ranging from 0.35 to 0.20W/m²K, which incorporate;

Glass Fibre Insulation

...one layer specifically designed to suit the space between the liner panel and external weather sheet, ensuring a tight fit, not allowing slumpage, unlike some other glass fibre systems which incorporate two layers (or rolls) of insulation.

High Density Thermal Break Strip

...secured at the base of the Matrix Spacer brackets eliminating the need to dress insulation over the front face of the spacer, as indicated in Image 4 below.



Image 4: Twin-Therm® FW15

CA Building Products' Twin-Therm® FW15 FireWall design has been tested to BS476: Part 22: 1987 and achieves 240 minutes integrity and 15 minutes insulation integrity. Refer to Exova *warringtonfire* 'WF Test Report 313435*', (copies of test report or assessment available upon request) and has also been assessed by the LPCB to LPS 1181; the Twin-Therm® FW15 FireWall design has been accredited with a Grade 'EXT-A15' assembly, LPCB Certificate No. 443a*.

Feature Band Detail

CA Building Products in conjunction with various architects and developers have designed a feature band detail utilising 2 or 3mm thick aluminium PPC coated flashings as detailed on our standard drawings. An assessment has been undertaken by Exova *warringtonfire* in terms of the integrity of the wall construction when an aluminium skin is utilised in the external surface of the FireWall construction.

To achieve a FireWall construction, with the use of the aluminium feature band, a metal skin, 0.4mm thick minimum, **MUST** be installed directly behind the aluminium flashing, as detailed on our standard drawings. In doing so, the FW30 and FW15 FireWall construction performances are not compromised. Without this steel plate, the claims of a FireWall construction cannot be validated.

Structural Integrity Only FireWall

In addition to the 240 minute integrity FireWall constructions, the standard Twin-Therm® wall cladding system (complete with liner panel side lap rivets as required with all FireWall constructions) for U-values ranging from 0.35 to 0.20W/m²K, has been assessed by Exova *warringtonfire* and achieves 60 minutes structural integrity only (and zero insulation integrity), refer to Exova *warringtonfire* 'WF Assessment Report 313437*', (copies of certificate available upon request) and has also been tested by the LPCB to LPS 1181 the standard Twin-Therm® wall design has been accredited with a Grade 'EXT-B' assembly, LPCB Certificate No. 443a*.

This 60/0 system does not comply with Building Regulations Approved Document B, but on occasions, clients and architects request 1hr FireWalls for structural integrity only, so the most economical way to achieve this is by installing standard Twin-Therm®. In terms of support and steelwork requirements, the same applies to this construction, as with all constructions; *the systems must be constructed either with a fire protected eaves beam or cladding rail (by others), or the wall cladding sat directly on to a concrete slab, which effectively supports the wall. In addition, the steelwork designer / installer must confirm the secondary steelwork is adequate to provide the fire boundary condition requirements.*

* For soft/hard copies of the LPCB Certificates or Exova *warringtonfire* reports, please contact CA Group Technical Department; technical@cagroup.ltd.uk

SolarWall® FW30 & FW15

As an additional metal skin to the Twin-Therm® FW30 or FW15 FireWalls, the SolarWall® FW30 & FW15 FireWall systems, have been positively assessed by Exova *warringtonfire* to achieve 240/30 or 240/15 respectively.

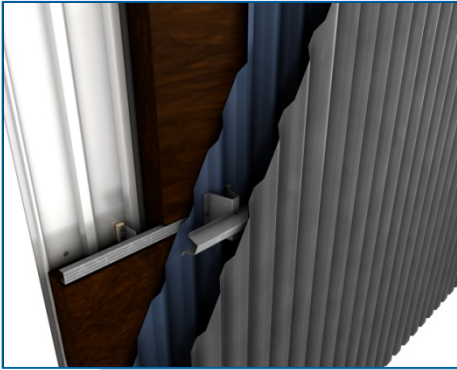


Image 5: Twin-Therm® SolarWall® FW30

PlanoWall FW30 & FW15

As an additional metal skin to the Twin-Therm® FW30 or FW15 FireWalls, the PlanoWall FW30 & FW15 FireWall systems, have been positively assessed by Exova *warringtonfire* to achieve 240/30 or 240/15 respectively.

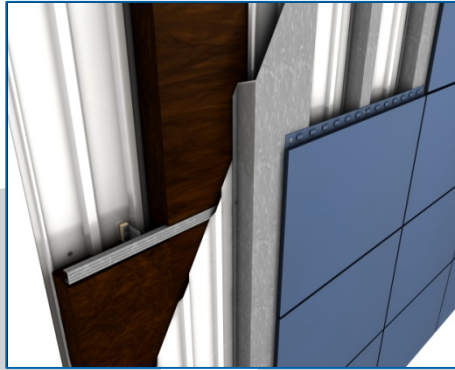


Image 7: Twin-Therm® PlanoWall FW30

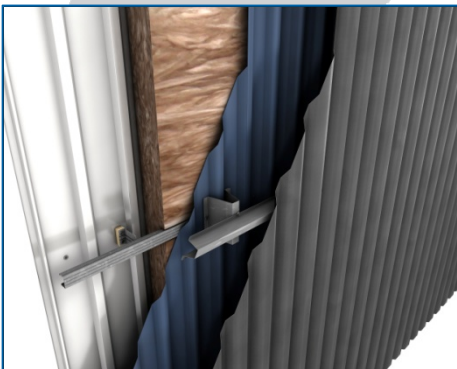


Image 6: Twin-Therm® SolarWall® FW15

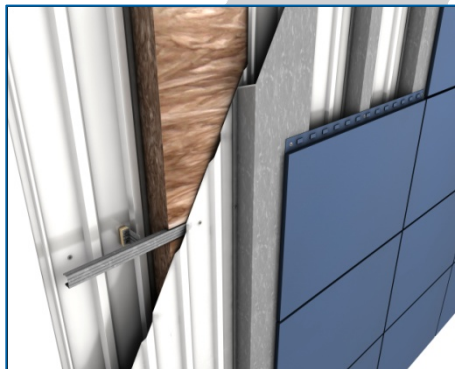


Image 8: Twin-Therm® PlanoWall FW15

CA Building Products' SolarWall® FW30 & FW15 FireWall and PlanoWall FW30 & FW15 FireWall designs have been assessed by Exova *warringtonfire* to BS476: Part 22: 1987 and achieves respective structural and insulation integrity;

- Refer to Exova *warringtonfire* 'WF Assessment Report 313436*', (for SolarWall® FW30 & PlanoWall FW30) and has also been assessed by the LPCB to LPS 1181; which have been accredited with a Grade 'EXT-A30' assembly, LPCB Certificate No. 443a*.
- Refer to Exova *warringtonfire* 'WF Assessment Report 313435*', (for SolarWall® FW15 & PlanoWall FW15) and has also been assessed by the LPCB to LPS 1181; which have been accredited with a Grade 'EXT-A15' assembly, LPCB Certificate No. 443a*.

BUILDING PRODUCTS

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