UKAS PRODUCT CERTIFICATION
6762

THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS

In accordance with UKAS accreditation to ISO 17065
Certification is Hereby Granted

to

Gres de Aragón S.A.

Ctra. Escatrón, 9, 44600 Alcañiz, Teruel, Spain

for

"FAVEKER®"

Extruded Ceramic Tiles
Exterior Wall Cladding System
Test Method: NFPA 285-2019 Edition
(System Designation: N013B10-18)

which, subject to limitations described on the following pages and continued listing on www.tbwcert.com, complies with Product Certification Scheme *SD03 Exterior Wall Assemblies, Curtain Walls, Building Materials, Products & Assemblies*

In witness whereof, this Certificate is issued this 09th day of January 2023

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS
101816
CERTIFIED

Sandy Dweik
Chief Executive Officer

Nicholas Purcell
Director of Certification

Certificate Number: TBW0300865

Initial registration: September 15, 2022 Issued: January 9, 2023 Expiration: September 14, 2025
File Name: UL094_CRT_SD03FP_Issue2_(f) Issue 2

"FAVEKER®"
Extruded Ceramic Tiles
Exterior Wall Cladding System
(System Designation: N013B10-18)

A. Certification is given for the "FAVEKER®" Extruded Ceramic Tiles Exterior Wall Cladding System, which has **successfully met** the requirements for fire propagation characteristics when evaluated against NFPA 285-2019 Edition subject to the limitations below. Readers of this document should be familiar with the Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components and the requirements of ISO/IEC 17065:2012. The Certification will be listed on www.tbwcert.com while it remains current. This Certification is not valid if this product is not so listed.

B. The product is approved on the basis of TBWIC Product Certification Scheme SD03 for Exterior Wall Assemblies, Curtain Walls, Building Materials, Products & Assemblies, which includes pre-test sampling, evidence of performance (under report references UL096-1 Rev.0 and UL097 (Rev.01)), Technical Verification and Proof of Performance, compliance to Factory Production Control requirements and surveillance & Re-certification Inspection/ Audits.

C. Limitations:

C.1. This Certification covers the fire propagation characteristics of exterior wall assembly when evaluated against the NFPA 285-2019 Edition fire test method. The exterior wall assembly has been evaluated for fire propagation characteristics as specified in the following*:

a. The ability of the wall assembly to resist flame propagation over the exterior face of the wall assembly*;

b. The ability of the wall assembly to resist vertical flame propagation within the combustible components from one story to the next*;

c. The ability of the wall assembly to resist vertical flame propagation over the interior surface of the wall assembly from one story to the next*;

d. The ability of the wall assembly to resist lateral flame propagation from the compartment of fire origin to adjacent compartments or spaces*.

C.2. This Certification covers the performance of the exterior wall assembly when exposed to fire from an interior room that reaches flashover, breaks exterior windows and exposes the building façade. It is not intended to address the effect of exterior radiation from nearby fires but is relevant to fires that start at the exterior wall assembly*.

C.3. This Certification covers the exterior wall assembly in its entirety. It does not extend to individual components that comprise the exterior wall assembly (on their own).

C.4. The actual field installations of the exterior wall cladding system covered under this certification shall not limit the use of the methods and materials employed to seal the gap between the edge of the floor slab and the interior surface of the test specimen during the test, provided approved sealing methods and materials are used in the field*.

C.5. The design of the exterior wall assembly covered under this certification, including the exact specification of the components, method of fixing, and condition of such components which were subjected to the fire test, shall be duplicated when installed on the site. The design and components of the exterior wall cladding assembly are not permitted to be substituted, eliminated, or interchanged unless recognised and approved by this certification.

** NFPA 285-2019 Edition*

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C.6. This Certification does not address the following:

a. Air and Water Permeability
b. Measurement of heat transmission
c. Classification or definition of material as non-combustible
d. Any Resistance to Fire rating
e. The toxicity level of smoke developed during combustion
f. Effect of aggravated flame spread behaviour of an assembly resulting from the proximity of combustible materials
g. Effects of combustible accessories installed or fixed on the surface of exterior cladding material such as laminates, banners, signage, and alike
h. Effects of radiation from nearby fires

D. System Configuration

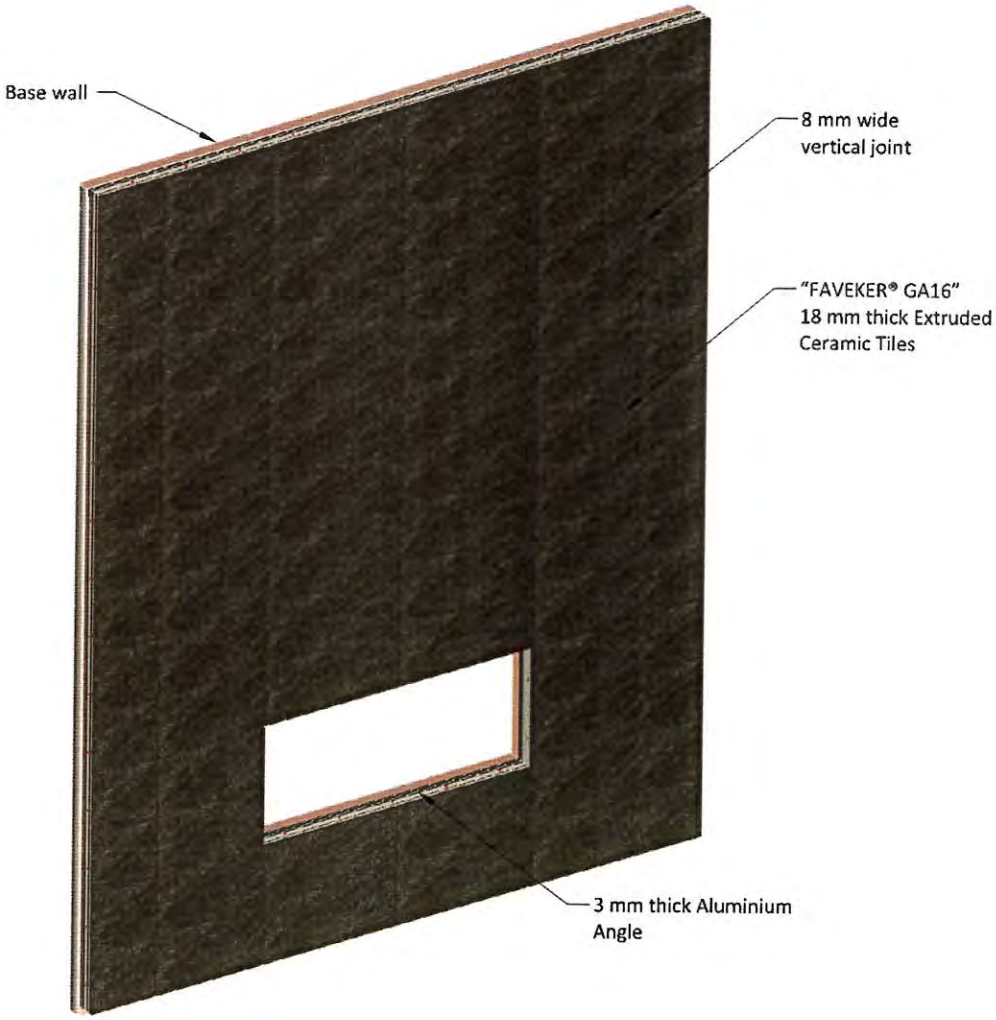

Figure 1. *"FAVEKER®" Extruded Porcelain Tiles Exterior Wall Cladding System*

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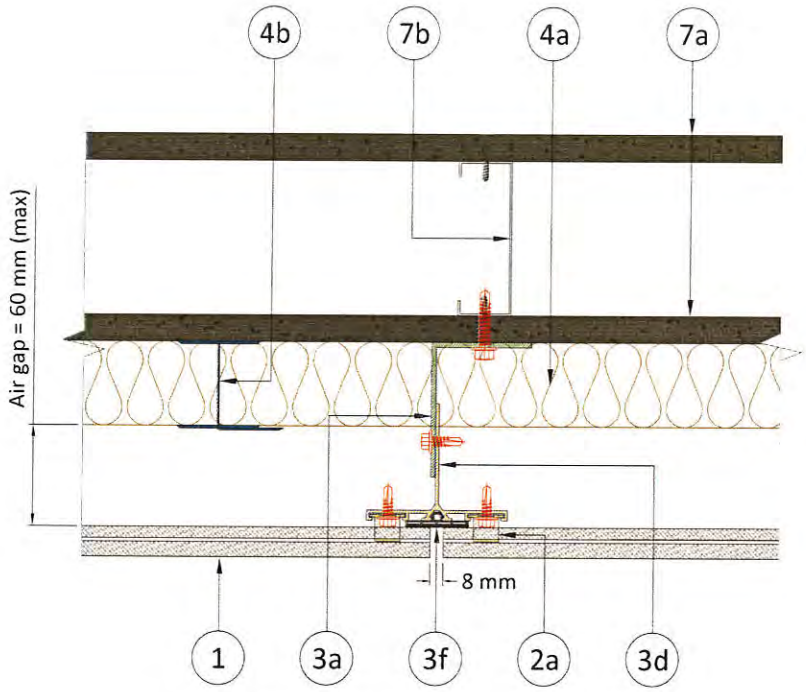

Figure 2. *Horizontal section – joint details*

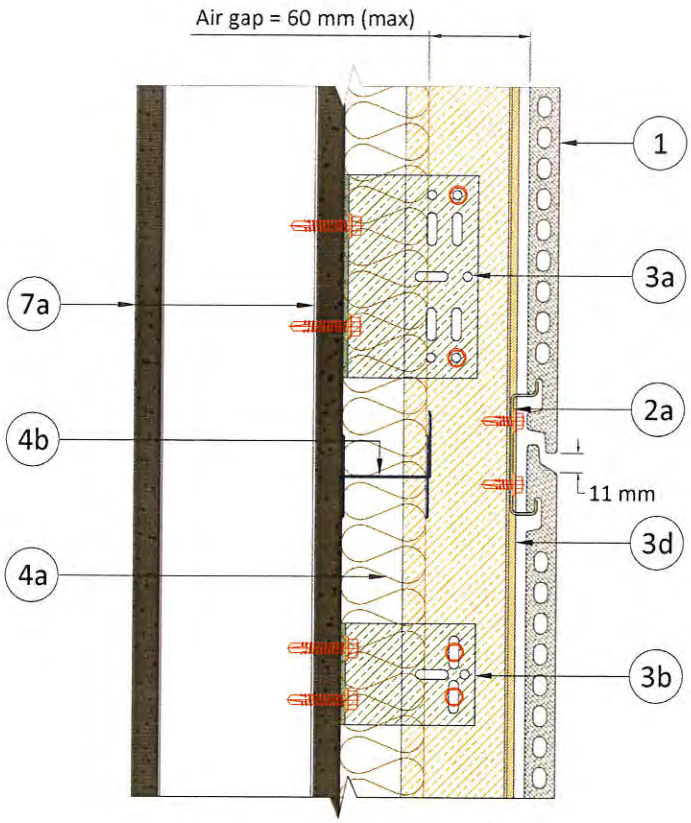

Figure 3. *Vertical section – joint details*

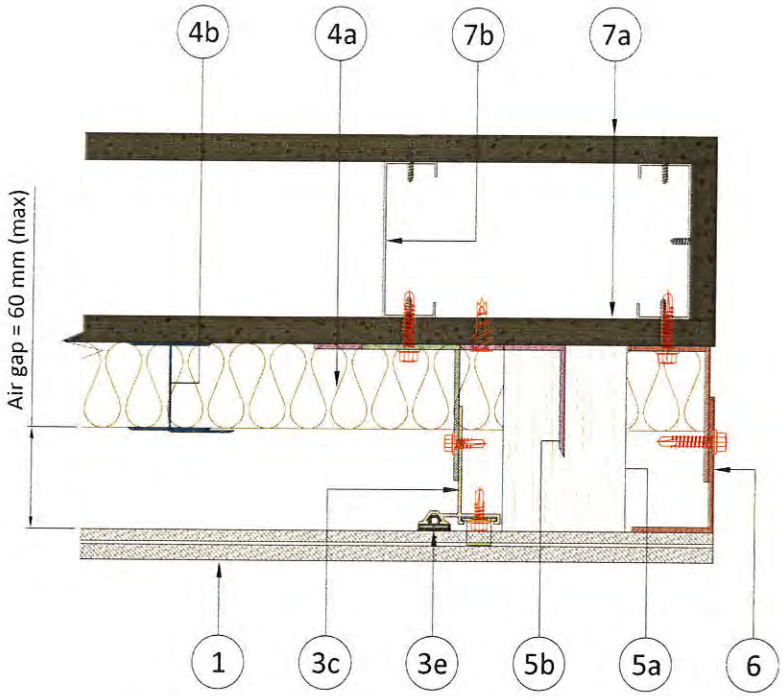

Figure 4. *Horizontal section – window details*

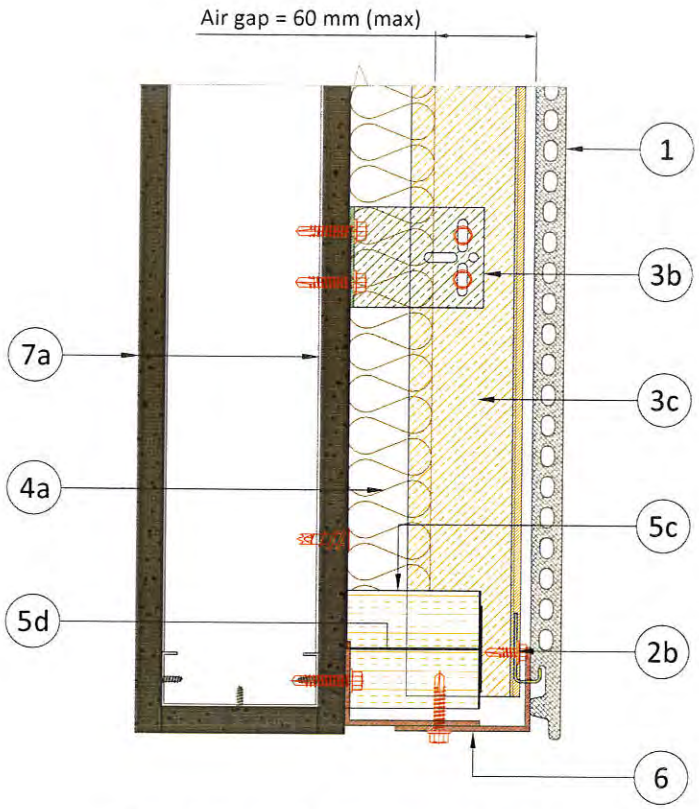

Figure 5. *Vertical section – window details*

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1. Cladding Element

"FAVEKER® GA16" 18 mm thick extruded ceramic tiles shall be hung to the runners through the slots at the top and bottom edges of the tiles using carrier profiles at the horizontal joints. A maximum gap of 8 mm shall be maintained on the horizontal joints. The details of the tiles are as follows:

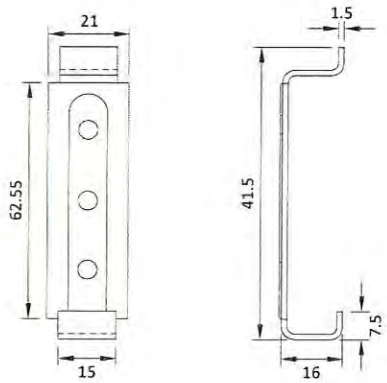
Table 1. *Extruded Ceramic Tile Details*

Reference	"FAVEKER® GA16"
Density	2300 ± 200 kg/m³
Panel Thickness	18 ± 1.8 mm
Maximum Panel Width	992 mm
Minimum Panel Width	471 mm
Maximum Panel Height	405 mm
Minimum Panel Height	305 mm

2. Cladding Fixing

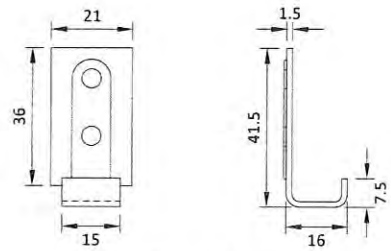
2a. Tile carrier profile

Reference: "Clip GA16 Double 13 mm"
Material: Stainless Steel (Grade: A2)
Fixing: Fixed to the vertical runners using Ø4.8 × 19 mm self-drilling hex head screws. The carrier profile shall be fixed on every horizontal joint between the tiles.



2b. Top and bottom tile carrier profile

Reference: "Clip GA16 Simple 13 mm"
Material: Stainless Steel (Grade: A2)
Fixing: Fixed to the vertical runners using Ø4.8 × 19 mm self-drilling hex head screws. The carrier profiles shall be fixed on the top and bottom terminations.



Note: All dimensions in millimetres (mm)

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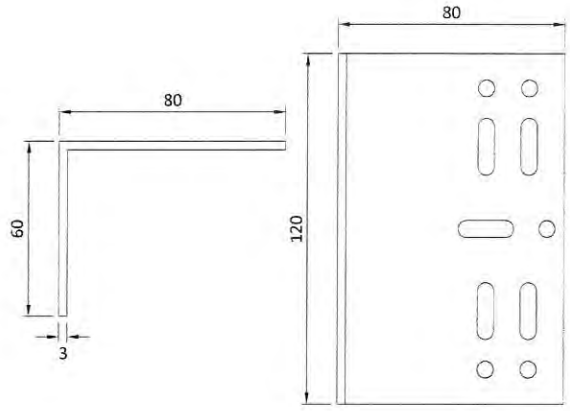
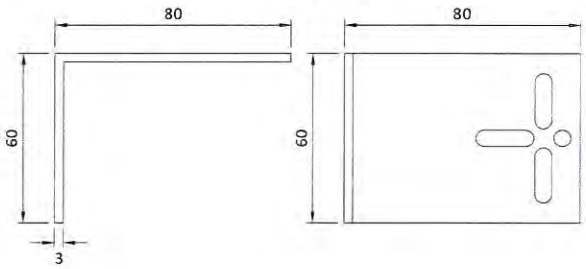
3. Sub-Frame

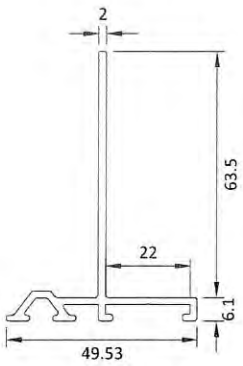
3a. Wall Brackets – Type 1
Reference: "BULTMEIER H60"
Material: Aluminium (Alloy 6063-T5)
Fixing: Fixed to the base wall at a nominal spacing of 490 to 900 mm vertically and 360 to 1000 mm horizontally, using 2 nos. of Ø5.5 × 22 mm hex head screw



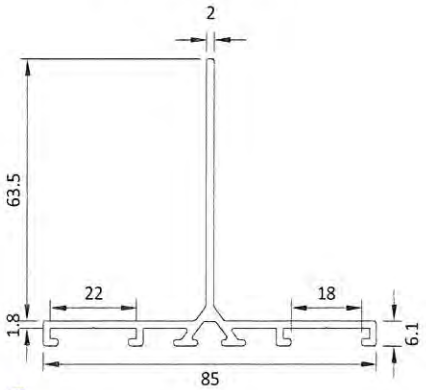
3b. Wall Brackets – Type 2
Reference: "BULTMEIER H120"
Material: Aluminium (Alloy 6063-T5)
Fixing: Fixed to the base wall at the top end terminations of the runners with a nominal horizontal spacing of 360 to 1000 mm, using 2 nos. of Ø5.5 × 22 mm hex head screw



3c. Runner – Type 1
Reference: "L grooved profile"
Material: Aluminium (Alloy 6063-T66)
Fixing: Fixed vertically against the wall brackets at termination locations, using Ø5.5 × 22 mm self-drilling hex head screws



3d. Runner – Type 2
Reference: "T grooved profile"
Material: Aluminium (Alloy 6063-T66)
Fixing: Fixed vertically against the wall brackets at intermediate locations, using Ø5.5 × 22 mm self-drilling hex head screws



Note: All dimensions in millimetres (mm)

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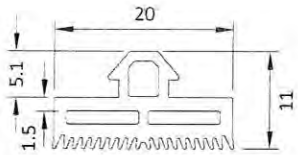
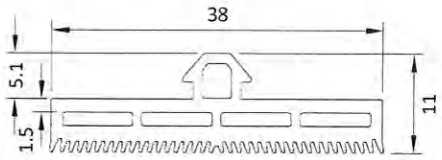
3e. Gasket – Type 1
Reference: "EPDM L profile"
Material: EPDM Rubber
Fixing: Pressure-fitted into the groove provided along the Type 1 runners



3f. Gasket – Type 2
Reference: "EPDM T profile"
Material: EPDM Rubber
Fixing: Pressure-fitted into the groove provided along the Type 2 runners



Note: All dimensions in millimetres (mm)

4. Exterior Insulation

4a. Mineral Wool

A single layer of mineral wool with Foil Scrim facing on one side, fixed to the base wall using metal insulation fasteners. A maximum air gap of 60 mm shall be maintained between the exterior insulation and the back of the tiles. The joints between the slabs shall be covered with 70 mm wide Aluminium foil tape (ZARA Tape).

Reference: "S2XX"
Manufacturer: Fujairah Rockwool Factory
Nominal Density: 50 kg/m³
Nominal Thickness: 50 mm
Dimension: 600 × 1200 mm (width × length)

4b. Insulation Fastener
Reference: "Craystik Self-Adhesive Grip Nails"
Manufacturer: Crayford Technologies Inc.
Description: Galvanised Steel insulation fastener with 50 × 50 × 1.5 mm plate
Dimensions: Ø2.5 × 115 mm
Application: 5 nos. fixed per slab.

5. Cavity Fire Barrier

5a. Vertical Cavity Barrier

A full-seal vertical cavity barrier shall be mechanically secured to the base wall using Siderise B65/110 G fixing bracket. The vertical cavity fire barrier shall be installed 45 mm from the vertical edges of the window opening and extend to the full height of the wall assembly.

Material: Pre-compressed Stonewool Lamella with an integral foil facing
Dimension: 115 × 75 mm (height × depth)
Nominal Density: 75 kg/m³
Reference: Siderise® RV-90/30
Manufacturer: Siderise Insulation Ltd. UK

5b. Vertical Cavity Barrier bracket

The brackets shall be bent into an "L" shape with the short leg fixed to the base wall using Ø13 × 31 mm metal anchor plugs and the long leg impaling the cavity barrier. The fixings shall be located at a nominal distance of 400 mm centres.

Material: Galvanised steel
Dimension: 220 × 25 × 1 mm (total length × height × thickness)
Reference: B65/110 G
Manufacturer: Siderise Insulation Ltd. UK

5c. Horizontal Cavity Barrier

An open-state horizontal cavity barrier shall be mechanically secured to the base wall using Siderise RS 350 G fixing bracket. The horizontal cavity fire barrier shall be installed at the horizontal edges of the window opening and every floor slab termination.

Material: Pre-compressed Stonewool Lamella with an integral foil facing
Dimension: 80 × 70 mm (height × depth)
Nominal Density: 75 kg/m^3
Reference: Siderise® RH25-90/30
Manufacturer: Siderise Insulation Ltd. UK

5d. Horizontal Cavity Barrier bracket

The brackets shall be bent into an "L" shape with the short leg fixed to the base wall using Ø13 × 31 mm metal anchor plugs and the long leg impaling the cavity barrier. The fixings shall be located at a nominal distance of 250 mm centres.

Material: Galvanised steel
Dimension: 355 × 25 × 1 mm (total length × height × thickness)
Reference: RS 350 G
Manufacturer: Siderise Insulation Ltd. UK

5e. Foil Tape

The adjoining edges and terminations of cavity barrier slabs shall be covered using 120 mm-wide foil tape (Siderise RFT 120).

6. Window Flashing

The window perimeter shall be covered with 2 nos. of Aluminium angle (Alloy 6063-T66), 80 × 50 × 3 mm (leg × leg × thickness). The first angle shall be fixed to the exterior face of the base wall using Ø5.5 × 35 mm self-drilling hex head screws at a nominal spacing of 400 mm centres. The second angle shall be pressure-fitted between the tiles and the runners, fixed to the first angle using Ø5.5 × 35 mm self-drilling hex head screws at a nominal spacing of 400 mm centres.

7. Substrate

7a. Interior & Exterior Gypsum Board

1220 × 2400 × 15.9 mm (width × length × thickness) Type X gypsum boards shall be fixed vertically onto 1.2 mm thick galvanised steel studs and tracks using Ø3.5 mm × 35 mm self-tapping screws. The board joints shall be covered with glass fibre multi-purpose self-adhesive plasterboard jointing tape and jointing compound. The screw heads shall also be covered with the jointing compound.

7b. Steel Studs and Tracks

Galvanised steel (ASTM A653/A653M- Commercial Grade) studs, 92 × 32 × 32 × 9 × 1.2 mm (web × flange × flange × lip × thickness) and tracks, 95 × 25 × 25 × 1.2 mm (web × flange × flange × thickness) welded directly to the test frame.

E. Approved Variations

The components of the "FAVEKER®" extruded ceramic tiles exterior wall cladding system listed below have been evaluated and assessed, based on the Field of Application report (Report Reference: UL097 (Rev.01)), as an acceptable alternative without affecting the fire propagation characteristics of the exterior wall cladding system.

Table 2. *Alternative components*

Component	GA16 FTS 502A	GA20 FTS 502B	GA20 FTS 502B+	GA20 FTS506	GA20 FTS506 GR	GA30 FTS 502B
Cladding Element	GA16	GA20	GA20	GA20	GA20	GA30
Cladding Fixing (Intermediate Tile carrier profile)	C intermediate profile	Clip GA20 Simple 15 mm	Clip GA20+ Simple 16 mm	L intermediate profile	L intermediate small rail	Clip GA30 Simple 19 mm
Cladding Fixing (Top/Bottom Tile carrier profile)	C start-end profile	Clip GA20 Simple 15 mm	Clip GA20+ Simple 16 mm	L start-end profile	L start-end small rail	Clip GA30 Simple 19 mm
Runner (Intermediate)	T profile	T grooved profile with EPDM	T+ grooved profile	T profile	T profile	T grooved profile with EPDM
Runner (Ends)	L profile	L grooved profile with EPDM	L+ grooved profile	L profile	L profile	L grooved profile with EPDM

F. Approved Manufacturing Location

Gres de Aragón S.A. – Faveker S.L.
Poligono El Regatillo 2,
Ctra. Alcorisa-Andorra, km. 3,5,
44550, Alcorisa, Teruel, Spain

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