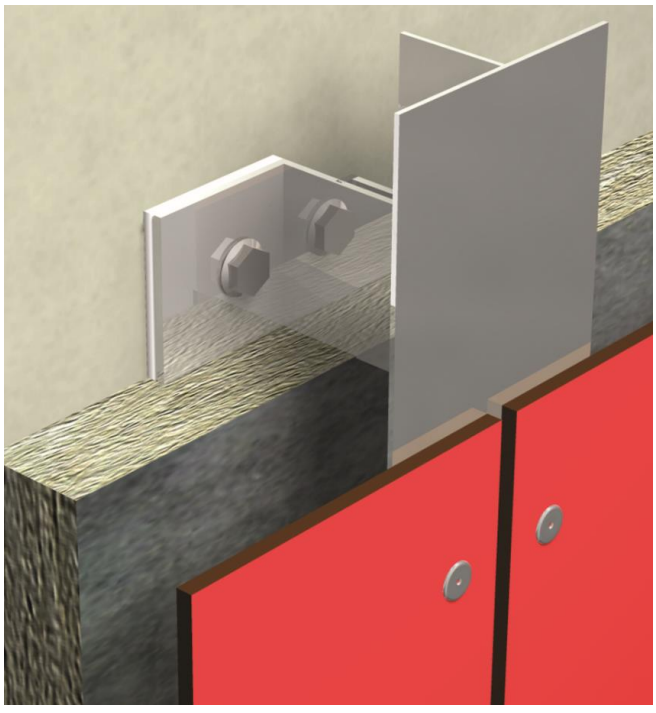
4705

# Certificate for the UL Mark – Performance of Curtain Walling and Rainscreen Cladding

## Section 1 – Certificate Details:

| | | | |
|---|---|---|---|
| **Customer Name:** | FunderMax GmbH | **Certification Body:** | UL International (UK) Ltd |
| **Customer Address:** | Klagenfurter Straße 87-89<br>9300 St. Veit/Glan<br>Austria | **Certification Body Address:** | Halesfield 2<br>Telford<br>Shropshire<br>TF7 4QH |
| **UL Scheme:** | BSFO Performance of Curtain Walling and Rainscreen Cladding Issue 1.0 | **Certificate Number:** | R40532-2 |
| **Date of Certification Commencement:** | 29th September 2019 | **Date of Certification Expiry:** | 28th September 2025 |
| **Certificate Compiled by:** | Mark Swanborough<br>Certification Leader | **Certificate Approved by:** | Michael Wass<br>Engineering Manager |
| **Signed:** | | **Signed:** | |

## Section 2 – Product covered by this Certificate:



| System Name | System Type |
|---|---|
| Max Compact Exterior F-Quality cladding system | Rainscreen Cladding system based on HPL according to EN438 |

**This Certification Covers**

- A detailed overview of the certified product
- An initial assessment of the certified company's factory production control system.
- A review of the products documentation to help demonstrate compliance with the applicable requirements of the NHBC standard 2018 chapter 6.9.
- An assessment of the certified products contribution to any key requirements of the building regulations.
- An overview of the certified company's product installation requirements and procedures.
- An overview of all supporting test documentation used for the product evaluation.
- Ongoing surveillance of the certified company's factory production control system and procedures.
- The conditions under which this product certification is valid.

**Section 3 – Product Specification and full description of the certified product**

**Product Description**

The Max Compact Exterior F-Quality panel is an architectural high-pressure laminated facade panel according to EN 438-6 and labelled with CE-Mark requirements according to EN438-7, with a highly weather resistant surface and features a flame-retardant core. The Max Compact Exterior F-Quality panels are installed on the Aluminium Alloy Nvelope NV1 System.

**Product details**

| | |
|---|---|
| Full product name: | **Max Compact Exterior F-Quality** |
| Product type: | **Rainscreen cladding Panel** |
| Product description: | **phenolic resin based High pressure laminate acc. to EN438** |
| Company name: | **FunderMax Gmbh** |
| Manufactured by: | **FunderMax Gmbh IZ-NÖ-Süd Straße 3 2355 Wiener Neudorf Österreich** |

**Support Framing and bracketry**

| | |
|---|---|
| Type: | **Nvelope NV1 System** |
| Material: | **Aluminium Alloy** |
| Vertical rail Ref: | **T rail 02/T60-100-2.2-4850 – 60 x 100 x 2.2mm**<br>**L rail 02/L60-40-2.2-4850 – 60 x 40 x 2.2 mm** |
| Horizontal rail Ref: | **Pressed Aluminium Top Hat 125 x 25 mm x 3 mm** |
| Fixing method (rail to backing wall): | **Ejot Stainless Steel Fixing Screws** |
| Fixing Ref: | **EJOT – JT3-FR6-5.5 x 25 mm.** |
| Fixing method (rail to rail): | **Wall Bracket to Top Hat 2no 6.3 x 3 8 mm TEK Screws**<br>**Wall Bracket to Rail 2no 5.5 x 20 mm TEK Screws** |
| Fixing Ref: | **6.3x38 Bi-Met Fastener with 16 mm Washer (SS)**<br>**5.5x20 Self Drive TEK Screw (SS)** |
| Max Span between vertical rails: | **600 mm** |
| Max Span between horizontal rails: | **816 mm** |
| Brackets ref: | **Nvelope NV1 01/VB060S-6.5 – 60 mm Vertical Bracket**<br>**Single 6.5mm Fix Hole + Isolator.** |

**Panels/tiles**

| | |
|---|---|
| Material: | **Max Compact Exterior F-Quality** |
| Material ref (source, spec): | **Phenolic resin based High pressure laminate acc. to EN438** |
| Finish: | **NT** |
| Thickness: | **6 mm** |
| Reinforcing: | **Cellulose fibre** |
| Max height of panel: | **4100 mm** |
| Max width of panel: | **1854 mm** |
| Max size of panel by area (m2): | **7.60 m2** |
| Fixing method: | **Aluminium Rivet** |
| Bracket/clip ref: | **Not applicable** |
| Further info | **See figure 1.0** |

**Interface Details (curtain wall to window inserts)**

| | |
|---|---|
| Window interface detail: | **Sealed with EPDM Gasket and sealant/Compriband. Outer face sealed with Wraptite tape with externally applied Sika silicone seal. Interior sealed with Sika silicone seal and expanding type foam tape combined with EPDM sealant.** |
| Door interface detail: | **Not applicable** |

**Backing Wall**

| | |
|---|---|
| Structural support type: | **SFS or Concrete** |
| Insulation type: | **Site specific** |
| Insulation thickness: | **Site specific** |
| Airtight membrane: | **Proctors Wraptite Self Adhesive Membrane** |
| Watertight membrane: | **Proctors Wraptite Self Adhesive Membrane** |
| Particle board detail: | **Cembrit 9mm Thick Windstopper Extreme Cement Particle Board** |
| Sealants and tapes: | **10mm Wraptite Tape & Cembrit 50mm Windstopper Tape** |
| Fixings ref: | **Metsec Assembly - Shallow Head Steel TEK Screw 5.5mm x 25mm<br>Cembrit Board to Metsec –Wafer CSK Ribbed Head Wing Tipped Screw 4.8mm x 38mm** |

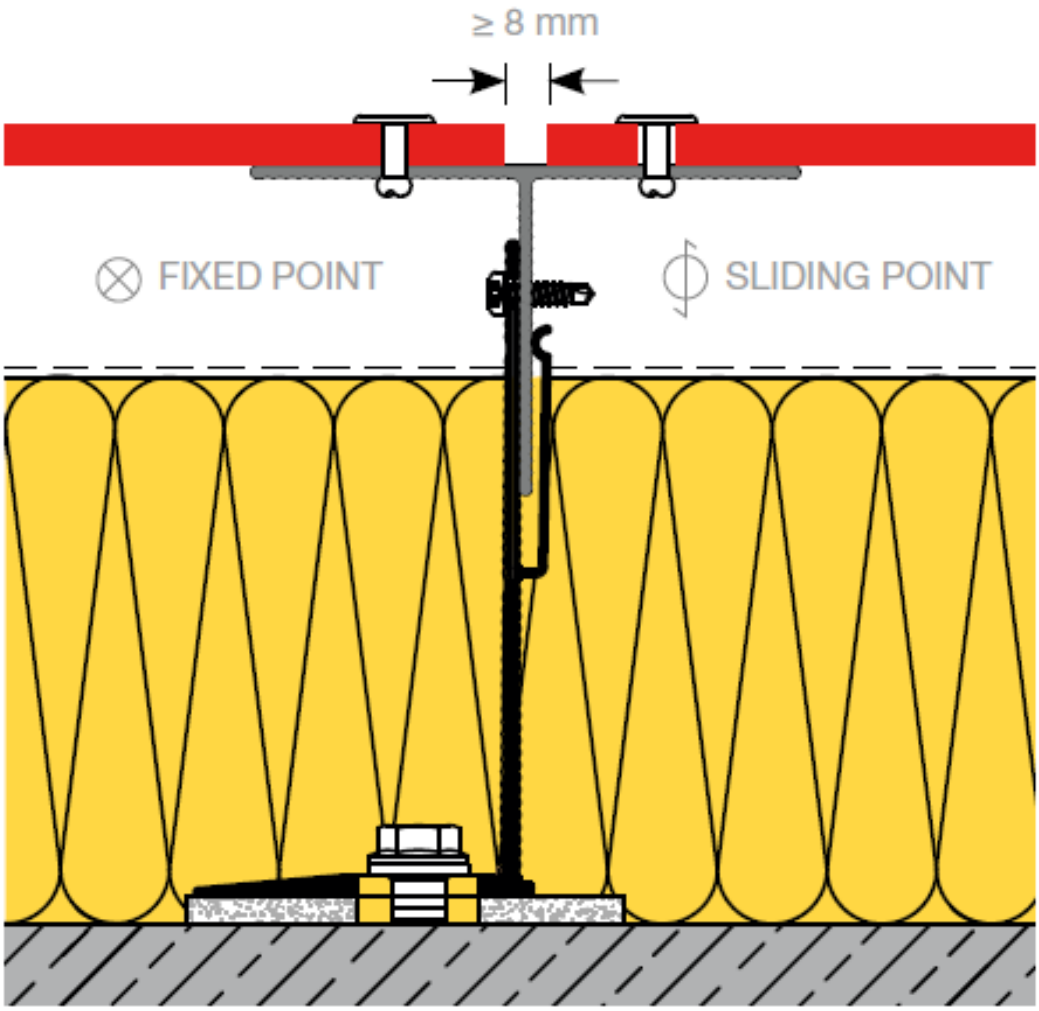
**Drainage**

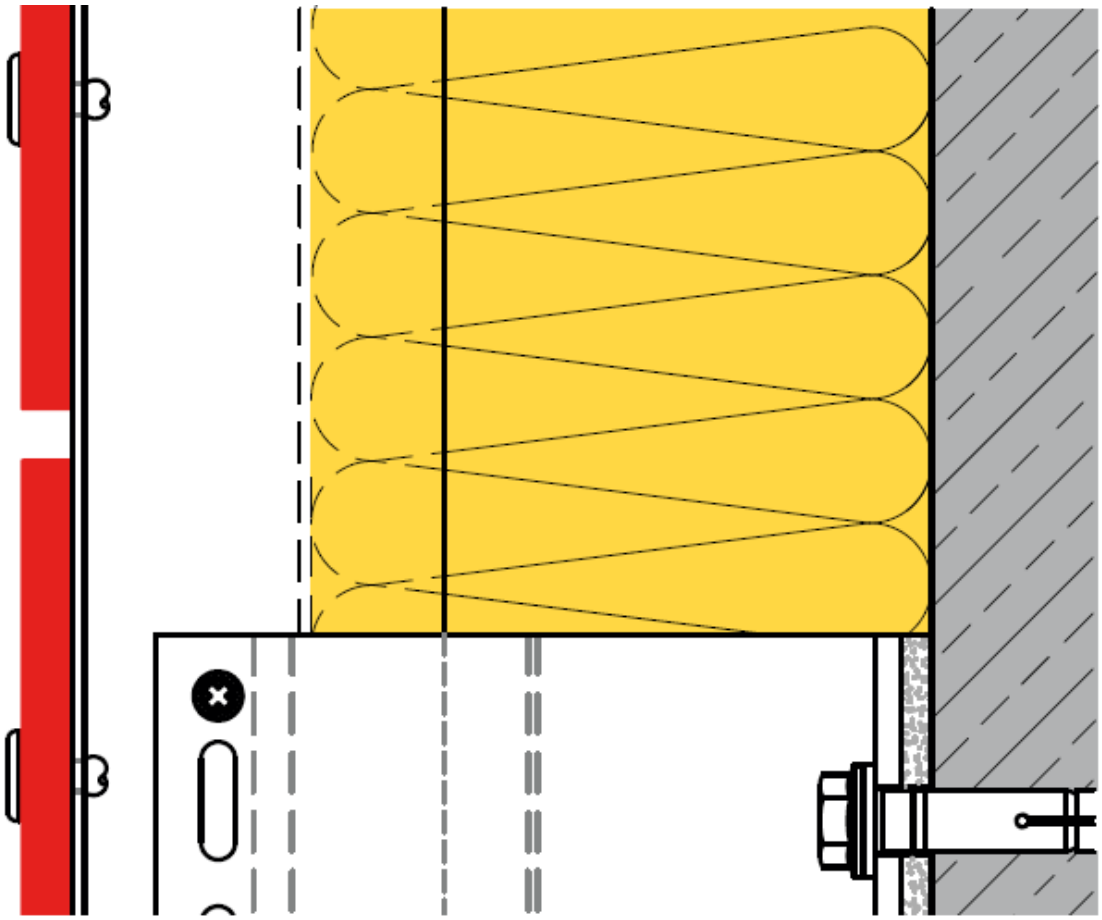
| | |
|---|---|
| Drainage type (pressure equalised etc.): | **Head & Cill of Rig – Continuous 10mm Wide Gap** |
| Drainage specification and weep holes etc. | **Window to Window Cill – 2 no 80mm x 5mm Gaps** |

**Additional brackets & Fixings Ref:**

| | |
|---|---|
| Ref | **Galvanised Steel Support for Cross Beam Infill** |

**Figure 1.0 – Vertical and Horizontal Panel Joints**





**Section 4 – Factory Production Control**

The Max Compact Exterior F-Quality cladding panels are manufactured at IZ-NÖ-Süd Straße 3 2355 Wiener Neudorf in Austria. The support frame, fixings and other materials are externally sourced from the companies approved supplier chain. An initial factory production control audit has been carried out at the certified products manufacturing site to assess the effectiveness of the following:

- Contract review – enquiries, quotations and orders
- Production planning and organisation
- Control of purchasing, including supplier approvals
- Control and storage of incoming materials and components
- Control of documentation related to the production, quality control/inspection, packaging and despatch
- Identification and traceability of certified products
- Ongoing production inspection, testing and records thereof
- Maintenance of production equipment
- Training Records of personnel
- Internal audit reports including non-conformances and corrective actions
- Customer complaint procedures
- Installation guide and processes
- Non-conforming products
- Labelling of products

Wintech witnessed the production processes of The Max Compact Exterior F-Quality cladding panels and it can be confirmed that FunderMax GmbH procedures and controls were carried out as specified/documented and were in line with the WinMark certification scheme requirements. The manufacturing site will be subjected to annual audits to ensure ongoing compliance and effectiveness.

**Section 5 – Design documentation review of the certified product**

A review of the certified products documentation was conducted in order to help demonstrate compliance with the appropriate sections of the NHBC Standard requirements section 6.9. At least the following requirements were evaluated in the review and were found to show evidence that complies.

3.1 Loads and movements

The Max Compact Exterior F-Quality cladding system, including brackets and fixings, allow movement without causing damage or deformation, and calculations carried out by structural engineers to demonstrate that loads are safely transferred to the building. Recommended fastening spaces are based on calculations in accordance to Eurocode EN 1991-1-4.

3.2 Support and Fixings

The Max Compact Exterior F-Quality cladding system has demonstrated that it can be securely fixed with suitably durable fixings to ensure adequate in-service performance. A TN76 impact test has been carried out on this system by a UKAS accredited laboratory – see section 6 for further details.

3.3 Durability

The product provides satisfactory durability (subject to routine inspection and maintenance). The system has been designed to avoid the need for disproportionate work when repairing or replacing individual components. Corrosion resistant fixings are used and bimetallic corrosion has been considered. Test data has been supplied to demonstrated compliance to EN 438-7 4.13.

3.4 Interfaces

The Max Compact Exterior F-Quality cladding system has suitable interfaces and resists the penetration of water and wind, and has designed to be weather resistant. A CWCT Section 9 hose test was conducted on a window interface installed in the system.

3.5 Insulation

Insulation is to be supplied by others, FunderMax can supply further details on the appropriate location of insulation.

3.6 Damp proofing and vapour control

The Max Compact Exterior F-Quality cladding system, including damp proofing materials and Tyvek® FireCurb® Membrane is designed to adequately resist the passage of water into a building and allows water vapour to pass outwards. Cavity trays are fitted at the base of the system and above any openings.

3.7 Electrical continuity and earth bonding

The operation and maintenance guide Technique Exterior supplied with the Max Compact Exterior F-Quality cladding system specifies electrical continuity and earth bonding is to be managed by separate contactors onsite during installation.

3.8 Maintenance

The operation and maintenance guide Technique Exterior supplied with the Max Compact Exterior F-Quality cladding system details appropriate access arrangements for the purposes of cleaning, inspection, maintenance and repair. The operation and maintenance guide Technique Exterior supplied with the Max Compact Exterior F-Quality panels provides further details.

3.10 Ventilation screens

Any ventilation openings are protected from the entry of birds and animals, A 304 grade steel mesh or aluminium mesh is to be specified for use when required.

3.11 Handling and storage

An onsite assessment of the manufacturer confirmed that materials, products and systems are protected and stored in a satisfactory manner to prevent damage, distortion, uneven weathering and any degradation. The safe handling of panels is detailed further in the product guide Technique Exterior.

3.12 Acoustic performance
The system has been designed to consider the passage of airborne and impact sound within the building. Please refer to the product guide Technique Exterior for more details.

3.13 Weather resistance
The Max Compact Exterior F-Quality Cladding System has been designed to resist the passage of water to inside the building. A CWCT Sequence B test has been carried out on this system by a UKAS accredited laboratory – see section 6 tests 5 and 6 for further details.

3.14 Thermal bridging and condensation
The Max Compact Exterior F-Quality Cladding System has been designed so that thermal bridging is considered and managed effectively. Please refer to the Max Compact Exterior F-Quality technical manual "Technique Exterior" for more details.

3.15 Air infiltration
The cladding system has air barriers and vapour barriers drawings can be provided by FunderMax GmbH to support this.

3.16 Opening doors and lights
Openable windows are installed so that they fit neatly and have minimal gaps to ensure effective weatherproofing of the system is maintained, detailed drawings created by FunderMax GmbH are available on request.

## Section 6 – Comments on the certified products contribution to The Building Regulations

A top level review of the key related requirements from The Building Regulations 2010 (England and Wales) was conducted based on the information declared by FunderMax GmbH and the data provided for the documentation review. The following comments have been made on whether the certified product can contribute to the Building Regulations requirements.

**The Building Regulations 2010 (England and Wales)**

| Requirement | Comment/s |
|---|---|
| A.1 Loading | The Tolerance & Movement Report provided gives confidence that this regulation is contributed towards by the product certified. |
| B2(1) Internal fire spread (linings) and B4 (1) External fire spread | Panels were tested in accordance with EN 13501-1 and graded B2-s1, d0. The Nvelope NV1 aluminium brackets, rails, and associated fixings are non-combustible. This gives confidence that this regulation is contributed towards by the product certified. |
| C2 (B) Resistance to moisture | The CWCT Report provided gives confidence that this regulation is contributed towards by the product certified. |
| 7. Materials and workmanship | The evidence of method statements and staff training provided gives confidence that this regulation is contributed towards by the product certified. |

## Section 7 – Product installation

**General**
This product must be installed in accordance with the FunderMax GmbH recommendations and the requirements of this certificate. FunderMax GmbH have specified that product Installers can be trained and approved by them directly. All trained and approved installers will be issued with an appropriate in-house certificates/training evidence.

**Product delivery**
The product is delivered to the UK banded on wooden pallets transported in shipping containers, with heavy-duty packaging. Each delivery is labelled with details including; order number, location, product name, type, size, quantity and weight.

**Site survey**
FunderMax GmbH have specified that prior to installation of the m.look Cladding System; a pre-installation survey of the property has to be carried out by the installer to determine whether the site is suitable for product installation and if any repairs are required to the building wall.

**Section 8 - Supporting CWCT test documentation**

**General**
Air and water testing of the m.look Cladding System was carried out in accordance with the CWCT Standard test sequence B. The Panels tested were of a similar size and configuration to those which will be provided by FunderMax GmbH. The product was installed on a SFS backing wall.

**Test sample size and configuration**
The product testing was accordance with UL International (UK) Ltd, guidance document WEL 354. The sample was 5.0 m wide by 8.0 m in height featured a corner detail and was installed on an SFS backing wall.

**Testing carried out**
CWCT Test Methods for Building Envelopes – Dec 2005; Sections 7, 9, 11, 12 & CWCT TN 76. The testing was conducted on the 18th September 2018 and completed on the 24th September 2018.

**Test laboratory**
Wintech Engineering Ltd, Telford, Shropshire TF1 4QH (UKAS 2223)

**Test Results (reference report number R20556)**

| Test type | Peak Test Pressure | Result | Date of test | Classification |
|---|---|---|---|---|
| Test 1 – Water Penetration (Dynamic Aero Engine) | 600 Pa | Pass | 18.09.18 | - |
| Test 2 – Water Penetration (Hose) | - | Pass | 18.09.18 | - |
| Test 3 – Wind Resistance (Serviceability) | 2400Pa | Pass | 18.09.18 | - |
| Test 4 – Wind Resistance (Safety) | 3600 Pa | Pass | 18.09.18 | - |
| Test 5 – Impact Resistance (Retention of performance of exterior wall surfaces) - External | - | Class 1 | 24.09.18 | CAT B |
| Test 6 – Impact Resistance (Safety to persons) - External | - | Neg Risk | 24.09.18 | CAT B |

**Conclusion**
A review of the test report demonstrated that the test sample successfully passed all of the above CWCT test requirements. The test sample was supplied and erected on to the test laboratory's test chamber by FunderMax GmbH. The dismantling was conducted on 5th October 2018 by representatives of FunderMax GmbH and was witnessed in full by Wintech Engineering Ltd testing personnel. The report states that there was no water evident in the system in parts designed not to be wetted following the system dismantle. For further details, please request a copy of test report R18508.

**Section 9 – Certification conditions**

This UL Certificate:

1. Covers the product/system that is named and described on the front page only.
2. Should be read in conjunction with the UL Mark – Performance of Curtain Walling and Rainscreen Cladding and Cladding Support Systems for Use in the United Kingdom.
3. Is granted to the company listed front page only.
4. Subject to availability of the referenced manufacturers system information
5. Is valid within the UK only.
6. Will remain valid for the period listed on the front page provided that the product and the manufacturer comply with the UL Mark requirements.

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