

A modern multi-story building with a complex, angular facade made of light-colored porcelain cladding. The building features large windows and a prominent overhang at the top. The sky is clear blue.

frontek
porcelain facades by extrusion

Technical Data

Frontek Porcelain Cladding

Contents

| | |
|---|---|
| 1. APPLICATION..... | 3 |
| 2. MANUFACTURING AND RANGE..... | 3 |
| 2.1 Dimensions..... | 3 |
| 2.2 Collections | 4 |
| 3. PERFORMANCE | 5 |
| 3.1 Strength and other related properties | 5 |
| 3.2 Weather and other resistance properties .. | 5 |
| 3.3 Wind load resistance properties | 6 |
| 3.4 Fire resistance properties | 6 |
| 3.5 Seismic resistance properties | 7 |
| 3.6 Other notable properties..... | 7 |
| 4. INSTALLATION | 8 |
| 5. COMPLETION | 8 |



1. APPLICATION

Internal and external cladding, soffit, flooring including high transit areas and raised access flooring, wet areas cladding.

2. MANUFACTURING AND RANGE

Frontek panels are manufactured under the **UNE-EN ISO 10545-2:1998** Standard “Ceramic tiles - Part 2: Determination of dimensions and surface quality”.

Frontek is made of extruded porcelain. During the fabrication process, the extruded mass is fired at more than 1300°C in the kiln achieving its characteristic strength, low porosity and fire resistance.

2.1 Dimensions

| Dimension and geometrical characteristics | Specification (mm) | Manufacturing Tolerance | Minimum Requirement* |
|---|---|--|--|
| Dimensions (W x L x D) | Standard sizes 405 x 800 x 20mm 405 x 1000 x 20mm | Width: +0.00%, -0.17% Length: +0.00%, -0.03% Thickness: ±10% | Width: ±2% Length: ±2% Thickness: ±10% |
| | Custom sizes: From: 300 x 800 x 20mm To: 1000 x 3000 x 20mm | | |
| Distortion | | <0.2% (L=900 mm) =1.6 mm | 3 mm |
| Straightness of the sides | | ±0.5% | ±0.6% |
| Surface flatness | | ±0.5% | ±1.5% |
| Weight (typical) | 32 kg/m ² | | |

* set by UNE-EN/ ISO 10545-2:1998



2.2 Collections

ST Stone Texture



S Smooth Surface



W Wood



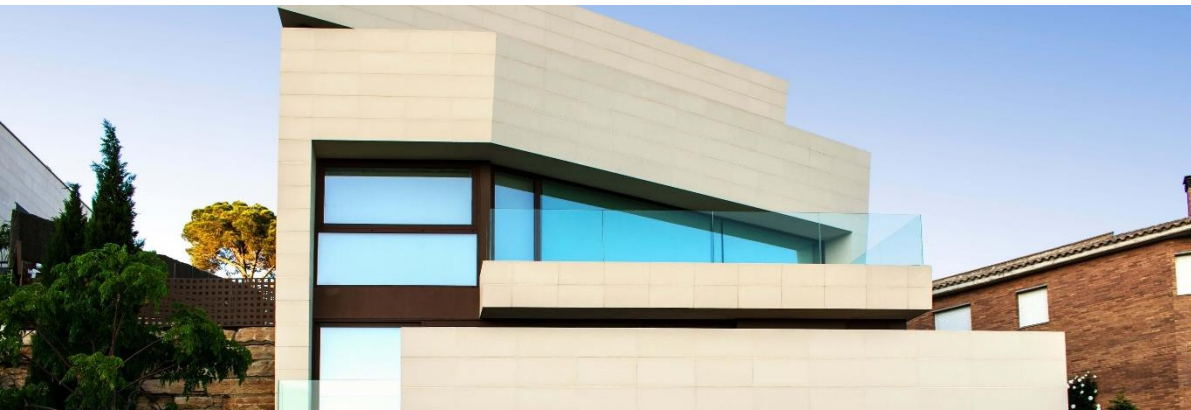
MT Metallic



V Volume



| Finishing characteristics | Description | Product Names |
|---------------------------|--|---|
| Textured | Traditional bush hammered stone texture | Iceberg, Urban, Canyon, Azabache, Jupiter, Sondra, Londres, ST Collection |
| Nature (Glazed) | Naturally occurring feature by porcelain extrusion process | S Collection |
| Volume | Serrated extrusions with various sections | V Collection |
| Metal | Metal-like finish porcelain panels | MT Collection |
| Timber | Timber-like finish porcelain panels | W Collection |



3. PERFORMANCE

3.1 Strength and other related properties

| Strength and other related properties | Australian Code | Frontek Value | Min requirement | Standard |
|---------------------------------------|-----------------|----------------------------|---------------------------------|-------------------------|
| Deep Abrasion | | ≤275 mm ³ | ≤275 mm ³ | UNE-EN ISO 10545-6:2012 |
| Breaking Load | AS 2049-2002 | 6529N (b=405 mm)=16.1 N/mm | Transverse: 4 N/mm ² | UNE-EN ISO 10545-5:2012 |
| Breaking Force | | 6000 N | | UNE-EN ISO 10545-4 |
| Impact resistance | | ≥ 0.60 | | UNE-EN ISO 10545-5 |
| Resistance to thermal shock | | Resistant | | UNE-EN ISO 10545-9 |
| Real density | | 1,500 kg/m ³ | | UNE-EN 772-13 |
| Modulus of rupture | | 28 N/mm ² | | UNE 14411 |
| Diffusion coefficient | | 50/100 | | UNE-EN 1745 (tabulated) |
| Lead and cadmium emission | | No significant emission | | UNE-EN ISO 10545-15 |
| Surface quality | | 100% defect-free | ≥ 95% defect-free | UNE-EN ISO 10545-2 |

3.2 Weather and other resistance properties

| Weather and other resistance properties | Australian Code | Frontek Value | Min requirement | Standard |
|---|-----------------|--|-----------------|--------------------------|
| Water absorption | AS 2049-2002 | <0.5% | <10% | UNE-EN ISO 10545-3:1997 |
| Freeze/ Thaw | AS 2049-2002 | 100 cycles without visible effects | 5 cycles | UNE-EN ISO 10545-12:1997 |
| Frost resistance | | Resistant | - | UNE EN ISO 10545-12 |
| Chemical resistance | | UA/ULA | UB Minimum | UNE EN ISO 10545-13 |
| Moisture expansion | | ≤0.1 mm/m | - | UNE EN ISO 10545-10 |
| Specific heat capacity | | 1.0 KJ/KgK | - | UNE EN 1745 (Tabulated) |
| Linear thermal expansion | | 5.7-5.8 x 10 ⁶ /°C | - | UNE EN ISO 10545-8 |
| Antibacterial activity | | Innocuousness and inhibition of microbial growth | - | UNE EN ISO 22196:2011 |

3.3 Wind load resistance properties

FRONTEK SYSTEM A

| | |
|-------------------|---|
| Subframe | Vertical distance between brackets: 800mm Maximum distance between vertical profiles and cladding fixings according to the plate format: 800mm Each plate is fixed on its four corners by clips |
| Cladding elements | FRONTEK – Largest format of plates 800mm x 405mm x 19.5mm |

| Pressure test at ultimate limit state | Standard |
|--|------------------|
| Frontek system is tested to positive and negative pressures of 5Kpa* | AS/NZS 4284:2008 |

*Substructure resistance to wind thrust and suction has been tested to 7.9 Kpa in a standard configuration (can be easily configured for higher performance if required). Frontek porcelain panels have been tested to an equivalent wind pressure of 14.75 Kpa.

3.4 Fire resistance properties

| Fire resistance properties | Australian Code | Frontek Value | Min requirement | Standard |
|---|------------------|---|-----------------|-------------------------|
| Combustibility | AS 1530.1 – 1994 | Non-combustible | Non-combustible | AS1530.1 |
| | | Euroclass A1 | | EN ISO 1182 |
| Fireproof | AS/NZ 3837 | Group 1 | | AWTA ISO 5660.1-2015 |
| Surface Burning Characteristics | AS 1530.3 | Ignitability = 0 Heat release = 0 Smoke release = 0 | | AWTA ISO 5660.1-2015 |
| Coefficient of linear thermal expansion | | $9 \times 10^{-5}/^{\circ}\text{C}$ | | UNE EN ISO 10545-8 |
| Coefficient of thermal conductivity | | $0.79 \text{ W/mk } \lambda_{10 \text{ dry}}$ | | UNE EN 1745 (Tabulated) |

3.5 Seismic resistance properties

FRONTEK SYSTEM A

| | |
|-------------------|---|
| Subframe | Vertical distance between brackets: 800mm Maximum distance between vertical profiles and cladding fixings according to the plate format: 800mm Each plate is fixed on its four corners by clips |
| Cladding elements | FRONTEK – Largest format of plates 800mm x 405mm x 19.5mm |

| Result | Standard |
|---|------------------|
| Complies with requirements at ± 75 mm in-plane deflection | AS/NZS 4284:2008 |
| Complies with requirements at -100 mm in-plane deflection | AS/NZS 4284:2008 |

3.6 Other notable properties

| Other notable properties | Description |
|--------------------------|---|
| Colour stable | UV resistant, guaranteed to 15 years. |
| Lifespan | Impervious over time, will not be affected by frost or thermal shock. |
| Marine Proof | Humid salty environment has no impact on porcelain cladding. |
| Pollution | High resistant to chemical aggressions even in high concentration. |
| Cleaning | Stain resistant, hygienic, and easy to clean due to very low porosity property. |
| Maintenance | Frontek does not require any special maintenance. |

Sebastopol Residences, Caulfield (VIC)



4. INSTALLATION

Frontek should be installed in accordance with the requirements of the Australian Building Code.

For installation guidance please check the technical binders provided for each system available below or contact us to receive further assistance from our technical office.

| Installation | Description | Technical details |
|-------------------------|--|--|
| Stud Wall | Clad with aluminium rails to galvanized or timber studs | Manual can be found here |
| Solid Wall | Clad with brackets directly to hollow brick or concrete | Manual can be found here |
| Unitised System | Pre-assembled modular cladding for faster installation | Manual can be found here |
| Slab to Slab | On-site cladding with mullions spanning slab to slab | Manual can be found here |
| Soffit | Cladding on ceiling areas | Manual can be found here |
| Solar Cells Integration | Solar cell panels are incorporated in Frontek facade cladding system | Manual can be found here |



5. COMPLETION

| Completion | Description |
|---------------|---|
| On completion | Cleaning with completed work using water and neutral soap |
| Maintenance | Requires little to no maintenance due to low water absorption |
| Warranties | 15 years manufacturing warranty |



frontek
porcelain facades by extrusion