TECHNICAL DATA SHEET

Wallshell® Thermal Panoply™ Rock Wool Panel

Wallshell®

Characteristics

Application

Use as the exterior wall panel component with exterior insulation and a decorative finish in Wallshell® exterior wall system.

Description

The thermal panoply consists of the fiber cement carrier board coated with weather barrier and decorative finish on the surface, adhered with a rock wool insulation board and backboard, steel brackets slotted into fiber cement carrier board slots, and steel anchors fastened the brackets to the substrate.

Panel

Thickness

Thickness of finish coating:	95~120 μm
Thickness of carrier board:	6 mm
Thickness of insulation board:	38, 44, 57, 70, 83, 95, 108, 121, 133, 146 mm
Thickness of backboard:	0, 2, 3, 4, 6 mm

Size

All measurements are in mm:
488x1220;
812x1220;
1220x406; 1220x610; 1220x1220;
2440x305; 2440x406; 2440x610; 2440x1220

Please refer to list of product catalog.

Attention: Wallshell® Thermal Panoply™ panel size is subject to be cut on-site to meet the technical requirements.

Panel Technical Data

Properties	Test Method	Average Value
Tensile Strength	ASTM C297	0.29 MPa Rock Wool was Damaged
Tensile Strength at Water	ASTM C297	0.25 MPa Rock Wool was Damaged
Mass Change after Freeze/Thaw Cycles	ASTM E2485	No Deleterious Effects (+0.25%)
Tensile Strength after 30 Freeze/Thaw Cycles	ASTM C297	0.30 MPa Rock Wool was Damaged
Falling Ball Impact	ASTM D1037	Pass (10J)
Flexural Strength	ASTM C1185	812 N/m^2
Water Absorption (24 hours)	ASTM C1185	12 g/m^2 (0.05%)
Single Fastener Transverse Wind Load	ASTM C1354	6.7 kPa
Thermal Resistance	ASTM C1155	0.79 $(m^2 \cdot K)/W$
Thermal Conductivity	ASTM C1114	1.26 $W/(m^2 \cdot K)$
Single Bracket Gravity Load	ASTM C1354	0.70 kN
Air Leakage (+300 Pa)	ASTM E283	0.75 $m^3/(m^2h)$
Air Leakage (-300 Pa)	ASTM E283	0.43 $m^3/(m^2h)$
Static Water Resistance (300 Pa)	ASTM E331	No Leakage
Negative Ultimate Pressure Load (58 mm Panel)	ASTM E330	6910 Pa
Finish Surface Acid Resistance	48 hour	No Abnormity
Finish Surface Alkali Resistance	96 hour	No Abnormity
Finish Surface Salt Resistance	500 hour	No Abnormity
Finish Surface Accelerated Aging	1000 hour	No Abnormity

Carrier Board Technical Data

Properties	Test Method	Average Value
Dimensional measurements	ASTM C1186	Pass
Flexural Strength (Equilibrium Conditioning)	ASTM C1185	26.1 MPa
Flexural Strength (Wet Conditioning)	ASTM C1185	18.1 MPa
Linear Change in Moisture Content	ASTM C1185	0.070%
Density	ASTM C1185	1.64 g/cm^3
Water Absorption	ASTM C1185	14.9%
Water Tightness	ASTM C1185	Pass
Freeze-Thaw	ASTM C1185	Pass
Insulation Non-Combustibility	ASTM E136	Pass
Combustion Characteristics Mass Loss	ASTM E136	16.33%
Combustion Characteristics Temperature Rise	ASTM E136	15 °C
Unit Weight	6mm thick carrier board	12.80 kg/m^2

Insulation Technical Data

Properties	Test Method	Average Value
Insulation Density	ASTM C303	103 kg/m^3
Insulation Fiber Diameter	ASTM C592	4.5 μm
Insulation Shot Content (≥0.25 mm)	ASTM C1135	3.0 %
Linear Shrinkage (70°C, 48 hr)	ASTM C356	0.0 %
Hydrophobicity	ASTM C1676	99.9%
Vapor Sorption (50°C, 95%RH, 96 hr)	ASTM C1104	0.4 %
Water Absorption (10 mm, 24 hr)	ASTM C1763	0.1 kg/m^2
Water Absorption (10 mm, 28 day)	ASTM C1763	0.6 kg/m^2
Flatwise Tensile Strength	ASTM C297	247 kPa
Compressive Strength	ASTM C165	184 kPa
Rock Wool Thermal Conductivity	ASTM C1114	0.048 W/(m·K)
Fungi Resistance	ASTM C1338	Pass
Moisture resistance factor	ASTM E96	1.5
Physical Property Requirement	ASTM C612	Type IVA
Shot content (diameter over 0.15mm)	ASTM C612	Pass (10.5%)
Heat shrinkage (649°C 24h)	ASTM C612	Pass
Rigidity (sagging distance)	ASTM C612	Pass (2mm)
Moisture absorption by mass (49°C, 95%RH, 96 h)	ASTM C612	Pass (0.5%)

Odor emission	ASTM C612	Pass
Corrosion test on metal plates	ASTM C612	Pass
Maximum use temperature (649°C)	ASTM C612	Pass
Stress corrosion test on austenitic stainless steel	ASTM C612	Pass
Surface Burning Characteristics	ASTM E84	Class A
Combustion Characteristics Duration of Flaming	ASTM E84	0 sec
Insulation Non-Combustibility	ASTM E136	Pass
Combustion Characteristics Mass Loss	ASTM E136	6%
Combustion Characteristics Temperature Rise	ASTM E136	11 °C
Unit Weight	38mm thick	3.91 kg/m^2
	44mm thick	4.53 kg/m^2
	57mm thick	5.87 kg/m^2
	70mm thick	7.21 kg/m^2
	83mm thick	8.55 kg/m^2
	95mm thick	9.79 kg/m^2
	108mm thick	11.12 kg/m^2
	121mm thick	12.46 kg/m^2
	133mm thick	13.70 kg/m^2
	146mm thick	15.04 kg/m^2

Backboard Technical Data

Glass-fiber reinforced concrete membrance

Properties	Test Method	Average Value
Surface Burning Characteristics	ASTM E84	Class A
Combustion Characteristics Duration of Flaming	ASTM E84	0 sec
Insulation Non-Combustibility	ASTM E136	Pass
Combustion Characteristics Mass Loss	ASTM E136	17.9%
Combustion Characteristics Temperature Rise	ASTM E136	24.5°C
Unit Weight	2mm thick	2.6 kg/m^2
	3mm thick	3.9 kg/m^2
	4mm thick	5.2 kg/m^2
	6mm thick	7.8 kg/m^2

LT Anchor System

T-profile Clip or L-profile Clip
L-profile Bracket or T-profile Rail
Adjuster
Fastener
Surfactant
Mortar

Please refer to installation manual.

Substrate Requirements

Structural Substrate, such as concrete share wall, or metal framed share wall that is established with vapor barrier.

Delivery

Packaging
Wooden crate

Storage

Storage Conditions
Dry condition

Application Requirements

Apply Wallshell® LS Surfactant:	Thoroughly cover all the panel surfaces
Apply Wallshell® SE Edge Sealant:	Thoroughly cover all the cuttings
Apply Wallshell® LM Mortar:	No less than 6.2 kg / m^2
Apply Wallshell® LF Fastener:	No less than 60 mm depth into the shear wall

Special Information

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