

Summary of Technical Data – ALPOLIC™/fr SCM linen finish Stainless Steel Composite Material

1. General

ALPOLIC™/fr SCM linen finish is a stainless steel composite material with fire retardant core, used as an exterior and interior cladding on new buildings and retrofit applications. The material is manufactured by Mitsubishi Chemical Infratec Co., Ltd. and furnished by approved dealers or distributors.

Note: Specification data may be changed in part without affection of material quality.

2. Product composition

ALPOLIC/fr SCM linen finish is composed of a fire-retardant core sandwiched between two skins of 0.3mm thick stainless steel:

Composition

Skin material;	0.3mm thick stainless steel sheet, 316L grade on the both top and reverse sides
Core material;	mineral-filled fire-retardant core

The core has the same contents as the established fire retardant core of ALPOLIC/fr. The topside surface is protected with a self-adhesive peel-off protective film consisting of two polyethylene layers of white and black. According to weathering tests under normal outdoor conditions, the protective film will withstand six months' exposure without losing its original peel-off characteristic or causing stains or other damages.

3. Surface finish

Linen pattern embossed finish

4. Product dimension and tolerance

(1) Panel thickness:	4 mm
(2) Panel size:	Width = 1219 mm Length = less than 5000 mm
(3) Product tolerance	
Width:	±2.0 mm
Length:	±4.0 mm
Thickness:	±0.2 mm
Bow:	Maximum 0.5% (5mm/m) of the length or width
Square-ness (diagonal difference):	Maximum 5.0 mm

5. Principal properties

- (1) Panel weight: 10.2 kg/m²
- (2) Thermal expansion: 16.6×10⁻⁶ /°C
- (3) Deflection temperature (ISO 75): 113°C
- (4) Sound transmission loss (ASTM E413): 30 STC (Sound Transmission Class)
- (5) Mechanical properties of SCM
- a. Tensile strength (ASTM E8): 110 MPa or N/mm²
 - b. 0.2% proof stress (ASTM E8): 59 MPa or N/mm²
 - c. Elongation (ASTM E8): 55.6 %
 - d. Flexural elasticity, E (ASTM C393): 65.9 GPa or kN/mm²
- (6) Mechanical properties of skin metals:
- 316L grade
 - a. 0.2% proof stress: 205 MPa or N/mm²
 - b. Elasticity: 193 GPa or kN/mm²

6. Fire performance

In Japan, SCM is approved as a non-combustible material for exterior and interior uses, based on the fire test results of the heat release test (ISO 5660-1) and the gas toxicity test. The tests done in accordance with the UK and USA standards are only general tests for building materials, but SCM is virtually approved as an eligible material for external claddings and roof coverings in most countries on the basis of the extensive fire test results on ALPOLIC/fr SCM 4mm has passed the following fire tests.

Country	Test standard	Result & Classification
U.K.	BS476 Part 6	Class 0
	BS476 Part 7	Class 1
U.S.A.	Tunnel test (ASTM E-84)	Class A/Class 1
Japan	Heat release test (ISO 5660-1) & gas toxicity test	Non-combustible material. Certificate No. NM-0229

7. General notes

(1) Processing method

The machinability of stainless steel is low. Therefore, we need special machines and tools for cutting and grooving SCM panels. Use a square shear or a CNC router for cutting, and use a CNC router or a V-cut machine (planer) for grooving. Refer to the fabrication manual for details.

(2) Prevention of galvanic corrosion

Stainless steel belongs to the noble metal in corrosion potential. If dissimilar metals are used for assembling SCM panels, the corrosion of the less noble metal may be accelerated with galvanic corrosion under moist circumstances. Use stainless steel rivet and stainless steel bolt/nut for joining. Use stainless steel angle and flange for accessory, if possible. When aluminum extrusions are used for accessory, insulate the aluminum surface electrically with anodizing or coating.

(3) Color variation among production lots

It is possible that the color of SCM slightly varies among production lots and the inconsistent color is visible after installation. This is caused by the slight color difference between stainless steel coils. In order to prevent this problem, we recommend placing the total requirement in one order or allotting the panels with adequate grouping arrangement.

The material properties or data in this leaflet are portrayed as general information only and are not product specifications. Due to product changes, improvements and other factors, Mitsubishi Chemical Infratec Co., Ltd. reserves the right to change or withdraw information contained herein without prior notice.

©2022 Mitsubishi Chemical Infratec Co., Ltd. All rights reserved.