Taipei Arena / Taiwan

Hangzhou Grand Theater / China

National Center for Performing Arts / China

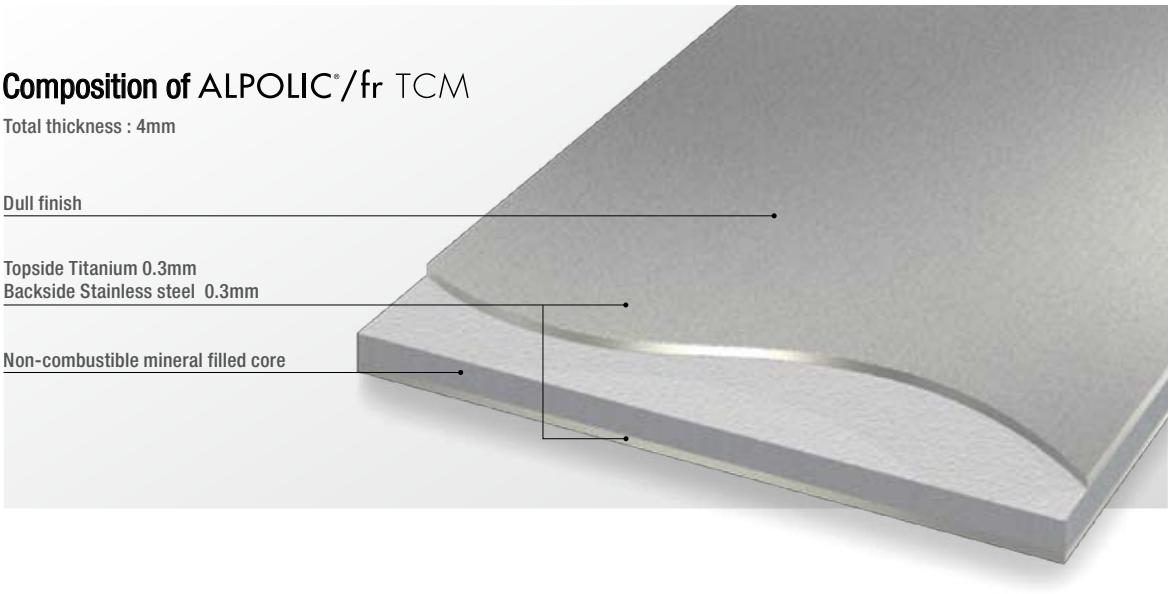
ALPOLIC®/fr TCM

ALPOLIC®/fr TCM is a titanium composite panel composed of a 0.3 mm thick titanium sheet on the topside, a non-combustible mineral-filled core and 0.3 mm thickness stainless steel sheet on the backside. Titanium metal quickly forms a stable oxide film (called "passivated film") at room temperature and is known for its unparalleled corrosion resistance. ALPOLIC®/fr TCM is suited to the external claddings and roof coverings of buildings located in highly corrosive environments.

99.5% **Titanium, the top surface metal skin of TCM, contains approx. 99.5% of pure-titanium.**

Composition of ALPOLIC®/fr TCM

Total thickness : 4mm



DIMENSION (STANDARD)

Thickness (tolerance ±0.2mm)	Standard Width (tolerance; ±2.0mm)	(Bow tolerance)
4mm	1000 (1219mm is available upon request)	±0.5% of the length and/or width
Skin thickness	**Length (tolerance; ±4.0mm)**	**(Squareness tolerance)**
0.3mm	<5000mm	Max 5.0mm

CHARACTERISTICS (FOR STANDARD DIMENSION)

		Method	Unit	ALPOLIC®/fr TCM
Physical properties	Thickness	–	–	**4mmt**
	Specific gravity	–	–	**2.33**
	Weight	–	kg/m^2	**9.3**
	Thermal expansion	ASTM D696	$\times 10^{-6}$/°C	**10.4**
	Thermal conductivity	Calculated value	W/m-K	**0.4**
	Deflection temperature	ISO 75-2	°C	**112**
Mechanical properties of composite material	Tensile strength	ASTM E8	MPa, N/mm^2	**69**
	0.2% proof stress	ASTM E8	MPa, N/mm^2	**60**
	Elongation	ASTM E8	%	**11.1**
	Flexural elasticity, E	ASTM C393	GPa, kN/mm^2	**49.0**
Sound Transmission Loss		ASTM E413	STC	**25**
Metal thickness with equivalent rigidity		Calculated value		**Titanium 3.1mm**