

SEVEN brand Alloy 3003 aluminum composite panel test report

surface test(PVDF coating)

dimensions test

Test item	standard index	standard method
length tolerance	+/-3mm	GB/T17748-2008
width tolerance	+/-2mm	GB/T17748-2008
thickness tolerance	+/-0.2mm	GB/T17748-2008
diagonal tolerance	≤5mm	GB/T17748-2008
warp tolerance	≤5mm/m	GB/T17748-2008

coating test

Test item	standard index	standard method
aluminum thickness	0.5mm	
Alloy /temper of aluminum	3003H24	
coating thickness	two coating ≥23 three coating ≥25	ASTM B487-85 GB/T17748-2008
gloss	25-80	ASTM D523-89
gloss tolerance	≤10	GB/T9754
color difference	ΔE≤2.0	
pencil hardness	≥HB	ASTM D3363-05 GB/T6739
coating flexibility(T bend)	≤2T	ASTM D4145-83 GB/T17748-2008
mandrel bend test	Mandrel diameter for resistance to cracking: <3mm	ASTM D522-93a
coating adhesive	grille space 1mm, tape 3M 898#	ASTM D3359-08
	grille class 0	GB/T9286
	circle class 1	GB/T9286
impact resistance kg.cm	≥50kg.cm no depainting, no crack	GB/T1732
Cuping test		ASTM D4145-83
grinding resistance L/μm	≥5	GB/T4957
boiling water resistance 98°C ± 2°C, 2h	no change	GB/T17748-2008
pollute resistance	≤5%	GB/T9780
nitric acid resistance	no bubble, pulverization color difference ΔE≤5.0	GB/T11942
hydrochloric resistance	5% hydrochloric, 24h no change	GB/T17748-2008
alkaline resistance	5% sodium hydroxide 24h no bubble, pulverization color difference ΔE≤2.0	GB/T11942
oil resistance	20# oil, 24h no change	GB/T17748-2008
solvent resistance	no aluminium exposed, Butanone 200 times	GB/T17748-2008
scrub resistance	≥10000 cycles	
salt spray resistance	4000h no change	GB/T1771, GB/T1740
detergent resistance		ASTM D2248-01a

physical performance		
Test item	standard index	standard method
face density	5.48kg/m ²	ASTM D5947-06
face density tolerance	±0.5kg/m ²	
bending strength	≥100MPa	GB/T17748-2008
bending elastic modulus	≥2.0x10 ⁴ Mpa	GB/T17748-2008
180° peel strength	≥7.0N/mm	BG/T17748-1999
peel strength (separation speed:152.4mm/mm)	average ≥130 N.mm/mm min ≥120 N.mm/mm	GB/T17748-2008
temperature cycle resistance - 40°C to 80°C, 50 cycles	peel strength change ≤10%	GB/T17748-2008
	coating adhesive 1 class	
	surface no change	
shearing strength/ Mpa	≥22.0Mpa	ASTM D732-02, GB/T17748-2008
thermal expansion coefficient	≤4.00 x 10 ⁻⁵ °C ⁻¹	GB/T17748-2008
coefficient of liner thermal expansion	N2: 100ml/min	ASTM E831-06
heat distortion temperature	≥95°C	ASTM D648-07 GB/T17748-2008 GB/T 1634.2
hot water resistance	98°C+/-2°C,2h, no change	GB/T17748-2008
fire resistant		BS476 part 6 and part 7
	class c	GB 8624
flexural strength	127*12.80*4.04mm speed: 1.7mm/min span:64mm	ASTM D790-07
flexural modulus	127*12.80*4.04mm speed: 1.7mm/min span:64mm	ASTM D790-07
tensile strength	specimen: type 1 speed: 5mm/min	ASTM D638-03
tensile strength at yield	specimen: type 1 speed: 5mm/min	ASTM D638-03
wind pressure deformation	448Kg/m ²	ASTM E330-84*
water absorb	0%	ASTM D570
warter leakage	4.48X10-4Kg/m ²	ASTM E331-86