

Aluminum Composite Panel
“PLAMETAL PW405/fr”
Fire Resistance Core

Product Specifications

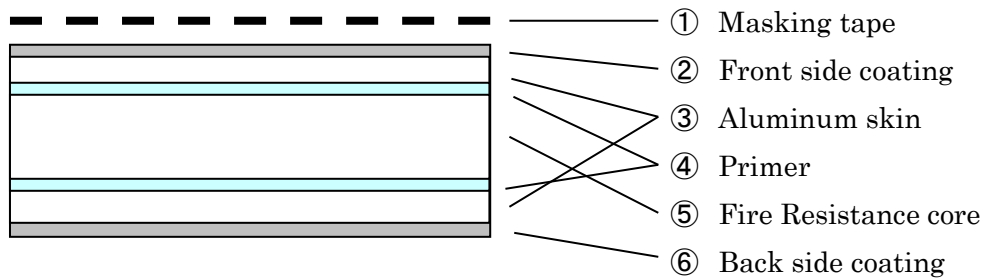


Sekisui Jushi Plametal Corporation

1. Application

This document describes the product of “Plametal PW405” manufactured by Sekisui Jushi Plametal Corporation.

2. Composition



① Masking tape:

Clear color or Printed tape
above $40\ \mu\text{m}$ thickness

② Front side coating (JIS H 4001):

Fluorine resin-baked coating after epoxy resin primer-baked coating
Coating thickness above $25\ \mu\text{m}$ (3 coat)

③ Aluminum skin:

Type JIS H 4000 A3004P or A3104P

Double-sided washing and Chromate treatment after degreasing

Thickness $0.5\pm 0.06\text{mm}$

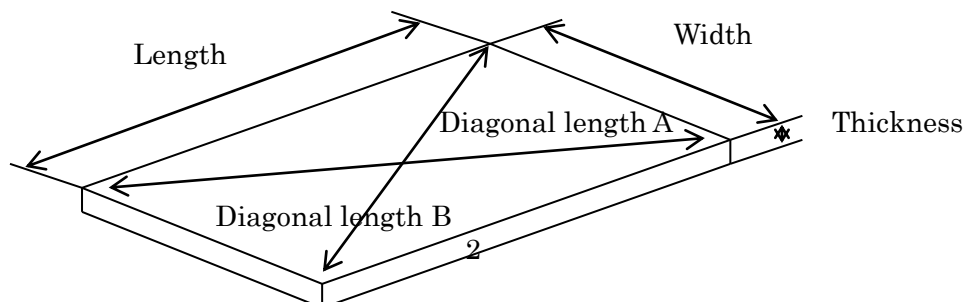
④ Primer: Special adhesive

⑤ Plametal core: Material Fire Resistance Mineral Filled Core

⑥ Back side coating: Polyester resin-baked coating above $5\ \mu\text{m}$ thickness

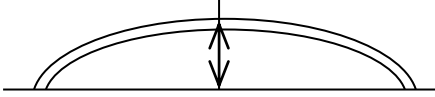
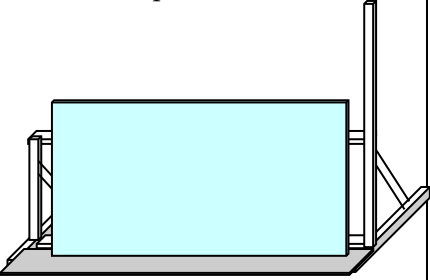
3. Size and dimension

3-1 Size



3-2 Size tolerance

Item	Size tolerance	Inspection method
Thickness (mm)	4.0mm \pm 0.5mm	JIS B 7502 Micrometer calliper
Width (mm)	\pm 2mm	JIS B 7512 Steel tape measure
Length (mm)	\pm 4mm	
Diagonal difference (mm) A-B	Below 5mm	

Item	Tolerance	Inspection method
Bow (mm)	Below 1.5mm per Length 1000mm. No warpage on edge 	To measure the gap on flat table
	Below 5.0mm per 1000mm 	To measure the gap between the measurement surface and product on special utensils

* Tolerance in case of custom ordered size is below. (unless any specific agreement)

Width: \pm 1mm Length: \pm 1mm

Diagonal difference: Below 1mm per length 1000mm

See the above table for 1mm per length less than 1000mm

4. Color and Appearance

Item	Inspection method	Tolerance
Color difference	To measure difference compared with standard color phase by Minolta CR-300	ΔE =below 1.5 for Solid color ΔE =below 2.0 for Metallic color
Appearance (scratch or blem etc)	Illuminance: above 700lux Visual acuity: above 0.7 Visual inspection from 1m away	No marked defect
Foreign substances on surface coating	Illuminance: above 700lux Visual acuity: above 0.7 Visual inspection from 1m away	“Dirt table for measuring” published by National Printing Bureau in Japan Below 0.5mm ² Not be serried to a limited area Not be formed at regular intervals

5. Mechanical Tests

- (1) Panel weight: 7.6 kg/ m²
- (2) Thermal expansion: 1.2 mm / m / 50°C
- (3) Mechanical properties as composite panel
- i) Tensile Strength Properties : ASTM E8/E8M:2016a
 - a) Maximum Tensile Strength, average 50.9 MPa
 - b) Offset Yield Strength (0.2%), average 44.4 Mpa
 - c) Elongation at Break, Average 15%
 - ii) Core Shear Properties : C393:2016
 - a) Core Shear Ultimate Stress, average 1.64 MPa
 - b) Flexural Strength, average 149.9 MPa
 - c) Flexural Modulus, average 30.2GPa
 - iii) Coefficient of Thermal Expansion : ASTM E831:2014
 - a) $\alpha_1(40^\circ\text{C to }60^\circ\text{C})$ 191.8 $\mu\text{m/m}^\circ\text{C}$
 - b) $\alpha_1(105^\circ\text{C to }115^\circ\text{C})$ 822.4 $\mu\text{m/m}^\circ\text{C}$
 - iv) Heat Deflection Temperature : ISO 75-2: 2013
 - a) Heat deflection temperature, average 126 °C
 - (v) Shear Test(by Punch Tool) : ASTM D732-17
 - a) Shear strength 36.60 MPa

5-2 Coating performance (FRW-91 Measured value)

Item	Condition	Measured value
Coating thickness	Eddy current type film thickness meter (3 coat)	25 μ m
Hardness	Mitsubishi UNI	3H
Adhesiveness	Grid cellotape	100/100
Shine	60° mirror gloss	29
Scratch resistance	Coin scratch	Good
Flexibility	1mm diameter 180° bend	Nothing abnormal detected
Secondary adhesiveness	Grid cellotape after exposure to 2 hours of boiling water	100/100
Solvent resistance	MEK rubbing test	nothing abnormal detected after 10 times
Acid resistance	5% sulfuric acid for 24hours	Nothing abnormal detected
Contamination resistance	Lipliner, Vinegar	Nothing abnormal detected
Oil resistance	Benzin for 10 days (spot test)	Nothing abnormal detected
Moisture resistance	Humidity 95% Temperature 50°C 1000 hours	Nothing abnormal detected
Salt spray resistance	1000 hours exposure to salt water	Nothing abnormal detected
Weather resistance	2000 hours sunshine weather meter	$\Delta E < 1.5$
	10 years exposure at 300m from the coastline of Chiba prefecture	Nothing abnormal detected

6. Printing on back side surface

Arrow mark & Color name & Lot No. for indicating color & coating line are printed on width center of back side surface.

Example (production date 2009/9/1 PW-91):

PW-91 J9014801