



SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH

(A unit of Shriram Scientific and Industrial Research Foundation)

19, University Road, Delhi – 110007 (India)
An ISO - 9001, 14001 & OHSAS 18001 Certified Institute

Website : www.shriraminstitute.org
E-mail id : customercare@shriraminstitute.org

TEST CERTIFICATE

NO : C1/0000008176

Report Rev NO : 2

Issued To :

Client Code : (KOLK01A0421)
ALUDECOR LAMINATION PRIVATE
LIMITED,
SUIT NO. 52, 5TH FLOOR,
IRN MUKHERJEE ROAD,
KOLKATA
WEST BENGAL-700001

Date : 9/22/2015
Job No : 11011516/1/50
Booking No : PJ1516/1/54
Booking Date : 7/14/2015
Customer Ref No. :
Customer Ref Dt. :

One sample described as Aluminum Composite Panel, C- marked as AL – 45, with 0.5 mm thick aluminium coil, was received.

"The sampling was not carried out by Shriram Institute for Industrial Research. The sample particulars provided in the test certificate are based on declaration by the party".

S.No. Tests

Results

Protocol/method used

Mechanical Properties of Aluminium Coil/Aluminium skin :

1.	Tensile strength, MPa	152	As per guidelines of ASTM E 8
2.	Elongation, %	6.5	As per guidelines of ASTM E 8
3.	0.2 % proof Stress, MPa	136	As per guidelines of ASTM E8
4.	Modulus of Elasticity, MPa	60237	As per guidelines of ASTM E 8

AUTHORISED SIGNATORY
EMPLOYEE CODE:(4159)



SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH

(A unit of Shriram Scientific and Industrial Research Foundation)

19, University Road, Delhi – 110007 (India)
An ISO - 9001, 14001 & OHSAS 18001 Certified Institute

Website : www.shriraminstitute.org
E-mail id : customercare@shriraminstitute.org


TEST CERTIFICATE

NO : C1/0000008176

Report Rev NO : 2

Paint Properties of Aluminium Coil/Aluminium skin :

5.	Top coat paint thickness, micron	25	Using Alcometer
6.	Gloss at 60° angle	26	As per guidelines of ASTM D 523
7.	Formability (T-Bend)	No cracks in the Coating by tape observed at 0T.	As per guidelines of ASTM D 4145
8.	Reverse Impact (Cross Hatch)	No lifting of the Paint by tape was observed.	As per guidelines of ASTM D 3359
9.	Hardness-Pencil		As per guidelines of ASTM D 3363
	a) Gauge Hardness	No cut on the surface of the film is observed.	
	b) Scratch Hardness	No rupture or scratch of the coating is observed up to 6H.	
10.	Abrasion Resistance (Falling sand)	Substrate not exposed after 50 Liter of sand.	As per guidelines of ASTM D 968
11.	Surface Resistance, Ω	1.6×10^{12}	As per guidelines of ASTM D 257
12.	Adhesion test		As per guidelines of ASTM D 3359
	(i) Dry	The edges of cuts are completely smooth, non of square of the lattice is detached.	
	(ii) Wet	The edges of cuts are	


AUTHORISED SIGNATORY
EMPLOYEE CODE:(4159)



SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH

(A unit of Shriram Scientific and Industrial Research Foundation)

19, University Road, Delhi – 110007 (India)
An ISO - 9001, 14001 & OHSAS 18001 Certified Institute

Website : www.shriraminstitute.org
E-mail id : customercare@shriraminstitute.org

TEST CERTIFICATE

NO : C1/0000008176


Report Rev NO : 2

Physical Properties of Aluminium Composite Panel

14.	Thickness of Panel, mm	4.0	Using Micrometer.
15.	Aluminium Coil Thickness, mm Top	0.5	Using micrometer
16.	Aluminium Coil grade (skin) (Chemical analysis %by mass)	Grade 5005, Grade 3105 (Side-I) (Side-II)	As per ASTM B209M, Arc spectrophotometer
	Copper	<0.01	0.02
	Silicon	0.05	0.30
	Iron	0.28	0.47
	Manganese	0.05	0.37
	Aluminium	98.6	98.4
	Magnesium	0.90	0.43
	Chromium	0.05	<0.01
	Tin	0.016	0.016
	Zinc	<0.01	0.016
17.	Weight, Kg/ m ²	5.7	Weighing Balance & Caliper Vernier

Mechanical Properties of Aluminium composite Panel:

18.	Tensile strength, MPa	48	As per guidelines of ASTM E 8
19.	Elongation, %	22	As per guidelines of ASTM E 8
20.	0.2 % proof Stress, MPa	41	As per guidelines of ASTM E8
21.	Flexural Strength, MPa	116	As per guidelines of ASTM D 790
22.	Formability (T-bend, top painted surface)	No cracking of Paint was observed	As per guidelines of ASTM D 1737
23.	Bond Strength, MPa	See note*	As per guidelines of ASTM D 1623
24.	Water Absorption, % (23±1°C for 24 hours)	Nil	As per guidelines of ASTM D 570


AUTHORISED SIGNATORY
EMPLOYEE CODE:(4159)



SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH

(A unit of Shriram Scientific and Industrial Research Foundation)

19, University Road, Delhi - 110007 (India)
An ISO - 9001, 14001 & OHSAS 18001 Certified Institute

Website : www.shriraminstitute.org
E-mail id : customercare@shriraminstitute.org

TEST CERTIFICATE

NO : C1/0000008176

Report Rev NO : 2

completely smooth,
non of square of the
lattice is detached.

(iii) Boiling Water

The edges of cuts are
completely smooth,
non of square of the
lattice is detached

13. Chemical Resistance Test,

As per guidelines of
ASTM D 543

(i) 10% HCl
(1 hrs)

No visual Change
as decomposition,
discoloration swelling,
clouding, bubbling,
is observed.

(ii) 20 % H_2SO_4
(72 hrs)

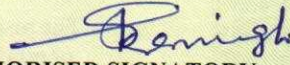
No visual Change
as decomposition,
discoloration swelling,
clouding, bubbling,
is observed.

(iii) 20% NaOH
(18 hrs)

No visual Change
as decomposition,
discoloration swelling,
clouding, bubbling,
is observed.

(iv) 3% Detergent solution
(38° for 72 hrs)

No visual Change
as decomposition,
discoloration swelling,
clouding, bubbling,
is observed.


AUTHORISED SIGNATORY
EMPLOYEE CODE:(4159)



SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH

(A unit of Shriram Scientific and Industrial Research Foundation)

19, University Road, Delhi – 110007 (India)
An ISO - 9001, 14001 & OHSAS 18001 Certified Institute

Website : www.shriraminstitute.org
E-mail id : customercare@shriraminstitute.org

TEST CERTIFICATE

NO.: C1/0000015496

Issued To:

Client Code : A0421
ALUDECOR LAMINATION PRIVATE
LIMITED,
SUIT NO. 52, 5TH FLOOR,
IRN MUKHERJEE ROAD,
KOLKATA
WEST BENGAL-700001
Kind Attn: MR. PARVEEN MAHAJAN

Date 12/10/2015

Job No. 1509-1-141-3948

Booking No. RG1516/1/5973

Booking Date 29/09/2015

Customer Ref No. -

Customer Ref Date 29/09/2015

Sample Description :

ONE SAMPLE DESCRIBED AS ALUMINIUM COMPOSITE PANEL (ACP), 4 MM ACP, MARKED AS AL-45 WITH 0.5MM THICK ALUMINUM COIL, WAS RECEIVED.

The sampling was not carried out by Shriram Institute for Industrial Research. The sample details provided in the test certificate are based on the declaration by the party.

S.No	Tests	Results	Protocol Adopted
1	Flexural Modulus, MPa	12676	ASTM D-790-08
2	Shear Strength, MPa	18	ASTM D 732-08
3	Peel Strength, N/mm	9	ASTM D-903-08

DOR:29-09-2015

DOC:09-10-2015

AUTHORISED SIGNATORY
EMPLOYEE CODE : (4159)