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Chairman - SSPC India Chapter  
          March 4, 2005

**IIT Bombay**

M/s Kapoor Welding & Engineering Works,  
3/30 East Patel Nagar  
New Delhi – 1100 08

Ref : Your Letter dtd. Jan. 4, 2005

**Job. No. DRD/CN/ASK-83/04-05**

Dear Sir,

**Sub.: Testing of Aluminum Composite Panels Brand ALU-Bond USA . as per BPCL Testing procedure**

Find herewith the test report of ACM panels ( 3 colours ) 3mm thick, submitted to us for testing:

**1. Physical Properties of the Composites**

S. .N	Description	Reference ASTM /BPCL specifications	Pass Parameters	RESULTS
1	Panel wt (ACM) (Kg/m <sup>2</sup> )		3.8(±7%)	3.76
2	Peel Strength N/mm	ASTM D 903		3.94
3	Punch Shear Stress (N/mm <sup>2</sup> )	ASTM D 732		14.2
4	Flexure Rigidity ( Kg/cm <sup>2</sup> )	ASTM D 790		8.2

**2. Properties of Aluminum Skin**

1	Tensile strength (N/ mm <sup>2</sup> )	ASTM E8	150	159
2	0.2% Proof stress	ASTM E8	100	130
3	Modulus of elasticity (N/mm <sup>2</sup> )	ASTM E8	70000	72000
4	Elongation ( %)	ASTM E8	> 3	6
5	Linear thermal expansion ( mm/M)	ASTM D 698 (30-80°C)	1.2	0.023

  
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3. Test for Paint Finish				Yellow	Blue	White
1	DFT of coating ( $\mu\text{m}$ )	ASTM D1400/ ECCA T1	25	28	26	28
2	Abrasion resistance (mg in 1000 cycles)	ASTM D 4060	Less than 55 mg	26.1	23.8	34.4
3	Specular gloss at $60^\circ$	ASTM D523 / ECCA T2	25 -35	33	29	32
4	Color retention *	500h Test	5 units in 4000h	0	0	0
5	Gloss retention*	ASTM D 523 500h	60% in 4000h	100	100	100
7	Chalk Resistance*	ASTM D 4214 (500h)	8 units in 4000h	No Chalking was observed	No Chalking was observed	No Chalking was observed
8	Humidity *resistance	ASTM D2247 (500h)	No change in 3000h	No Change was noticed	No Change was noticed	No Change was noticed
9	Salt Spray Resistance *	ASTM B-117 500h		No change was noticed	No change was noticed	No change was noticed
10	Adhesion	ASTM D3359	No adhesion loss	100/100	100/100	100/100
11	Pencil Hardness			5H	5H	5H

\*Test are continued for further period up to 4000h

Test results pertain to the samples submitted to us

  
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          May 3, 2005

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Dear Sir.

**Sub.: Testing of Aluminum Composite Panels Brand ALU-Bond USA . as per IOCL  
Testing Standard**

Find herewith the test report of ACM panels ( 3 colours ) 3mm thick, submitted to us for testing:

**I. Physical Properties of the Composites**

S. N	Description	Reference ASTM /IOCL specifications	Pass Parameters	RESULTS
1	Panel wt (ACM) (Kg/m <sup>2</sup> )		3.8(±7%)	3.76
2	Peel Strength N/mm	ASTM D 903	5	7.24
3	Range of Application		- 50 to + 80°C	No damage was seen in this temperature range

**2. Properties of Aluminum Skin**

4	Tensile strength (N/mm <sup>2</sup> )	ASTM E8	150	159
5	0.2% Proof stress	ASTM E8	100	130
6	Modulus of elasticity (N/mm <sup>2</sup> )	ASTM E8	70000	72000
7	Elongation ( %)	ASTM E8	> 3	6
8	Linear thermal expansion ( mm/M)	ASTM D 698 (30-80°C)	1.2	0.023

  
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3. Test for Paint Finish						
				Orange	Blue	White
9	DFT of coating (µm)	ASTM D1400/ ECCA T1	25	28	26	28
10	Abrasion resistance (mg in 1000 cycles)	ASTM D 4060	Less than 55 mg	26.1	23.8	12.7
11	Specular gloss at 60°	ASTM D523 / ECCA T2	25 -35	33	29	32
12	Color retention *	500h Test	5 units in 4000h	0	0	0
13	Gloss retention*	ASTM D 523 500h	60% in 4000h	100	100	100
14	Chalk Resistance*	ASTM D 4214 (500h)	8 units in 4000h	No Chalking was observed	No Chalking was observed	No Chalking was observed
15	Humidity *resistance	ASTM D2247 (500h)	No change in 3000h	No Change was noticed	No Change was noticed	No Change was noticed
16	Adhesion	ASTM D3359	No adhesion loss	100/100	100/100	100/100

\*Test are continued for further period up to 4000h

Test results pertain to the samples submitted to us

  
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