



Test Report

Client : M Metal Pte Ltd, 5 Kian Teck Drive, Singapore 628822 **Report Date :** May 17, 2011

Applicant(Address) : Lydia Chou (No. 369, Yuliao Road, Qiaotou District, Kaohsiung City 82544, Taiwan (R.O.C.)) **Report No. :** L110503

Product Type : Pre-painted sheet (ColorLume® VF-20L, PVDF 70/30)

Test Purpose : Sample quality test.

Sample Description : Specimen from Yieh Phui's production line.

Specification : ASTM A755M, with substrate ASTM A792M SS GR.550 AZM150(BMT), Top : PVDF (25 μm), Back PE (Service).

Order Dimensions : Normal thickness—0.420 mm, Normal width—1215 mm

Test Item & Result : (Temp. : 25°C , R.H. : 55%)

Approved item by TAF	Test item	Test Standard (Method)	Correspond to Singapore Standard 370	Specifications	Result
✓	Specular Gloss	ASTM D 523-08	SS 5 Part E1	30 units maximum.	Q.C. Pass 22.3 to 23.6 units
✓	Reverse Impact Resistance	JIS K5600-5-3	ISO 6272	No cracking of paint film.	Q.C. Pass No cracking of paint film.
✓	Cross Cut Adhesion (1 mm spacing)	JIS K5600-5-6	ISO 2409	Classification 0.	Q.C. Pass Classification 0.
✓	T-bend test	ASTM D 4145-10	AS 2728	No paint film removal at 5T or 6T.	Q.C. Pass No paint film removal at 5T.
✓	Accelerated weathering	ASTM G 154-06	Similar to SS Part G4	【 3000 hours test 】 No cracking, blistering, corrosion of base metal and color change(ΔE)≤4	Q.C. Pass No cracking, blistering, corrosion of base metal and color change(ΔE)≤2
✓	Humidity Resistance	JIS K5600-7-2	SS 5 Part G6	【 1000 hours test 】 (a)Surface with scribe line. ◎ No blistering of organic coating or corrosion of base metal. ◎No loss of adhesion beyond 2mm from scribe line. (b)Surface without scribe line. ◎ No blistering of organic coating or corrosion of base metal.	Q.C. Pass (a)Surface with scribe line. ◎No blistering of organic coating or corrosion of base metal. ◎No loss of adhesion beyond 2mm from scribe line. (b)Surface without scribe line. ◎No blistering of organic coating or corrosion of base metal.

NOTE : Approved item marked with " ✓ " means the item is approved by TAF.



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Approved by Paster Ming Confirmed by Jing-Hsu Summarized by C. P. Shih



Approved item by TAF	Test item	Test Standard (Method)	Correspond to Singapore Standard 370	Specifications	Result
✓	Salt Spray Resistance	ASTM B 117-09	SS 5 Part G1	<p>【 1000 hours test 】</p> <p>I. Seal edges. (a)Surface with scribe line ◎No blistering of organic coating or corrosion of base metal. ◎No loss of adhesion beyond 2mm from scribe line.</p> <p>(b)Surface without scribe line. ◎No blistering of organic coating or corrosion of base metal.</p> <p>II. 3 out of 4 sides unsealed. Surface without scribe and assessed at a distance of 25 mm beyond the edges. ◎Density of Blistering—Rating 2. ◎Size of Blisters—Class 3. ◎No corrosion of base metal.</p>	<p>Q.C. Pass</p> <p>I. Seal edges. (a)Surface with scribe line. ◎No blistering of organic coating or corrosion of base metal. ◎No loss of adhesion beyond 2mm from scribe line.</p> <p>(b)Surface without scribe line. ◎No blistering of organic coating or corrosion of base metal.</p> <p>II. 3 out of 4 sides unsealed. Surface without scribe and assessed at a distance of 25 mm beyond the edges. ◎Density of Blistering—Few. (Similar to Rating 2 in SS 5 Part G1) ◎Size of Blisters—Size No. 6 (Similar to Class 3 in SS 5 Part G1) ◎No corrosion of base metal.</p>
	Acid Resistance (10% v/v Hcl)	JIS K5600-6-1	ISO 2812	<p>【 Spot test in 72 hours 】 No blistering or visual change.</p>	<p>Q.C. Pass No blistering or visual change.</p>
✓	Dry Film Thickness	ASTM D 7091-05	SS 5 Part B1	Average of triple-spot test $\geq 22 \mu\text{m}$.	<p>Q.C. Pass Average of triple-spot test : 22.5 to 25.1 μm.</p>
✓	Pencil Hardness	ASTM D 3363-09e2	ASTM D 3363	HB minimum	<p>Q.C. Pass HB no scratch.</p>
✓	Colour	ASTM D 2244-11	Similar to SS Part E3	$\Delta E \leq 1.5$ (Slight colour difference)	<p>Q.C. Pass $\Delta E : 0.20$ to 0.36 (Slight colour difference.)</p>
✓	Metallic Coating Mass	CNS 1247 section 3.2	—	Total coating mass of both sides of triple-spot test $\geq 150 \text{ g/m}^2$	<p>Q.C. Pass 152.7 to 159.2 g/m^2</p>
✓	Mechanical Properties	JIS Z2241	—	Yield Strength $\geq 550 \text{ Mpa}$ Tensile Strength $\geq 570 \text{ Mpa}$	<p>Q.C. Pass Yield Strength : 702 to 767 Mpa Tensile Strength : 707 to 759 MPa</p>

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