

## TEST REPORT



Report No. : TV-25-00998A

Page No. : 1 OF 2

Issuance Date : Dec. 1, 2025

Reissuance Date : Dec. 1, 2025

KWO LIN CO., LTD.

No. 19, Gongye 15th Rd., Taiping Dist., Taichung City 411, Taiwan (R.O.C.)

Product Name

Fluorocarbon Powder Coating

Product Type

FR Series

Product Submitted By

KWO LIN CO., LTD.

Other Information

1. Q panel AL-36 Test board as substrate.

2. Thickness 3 mm of aluminum substrate is used for the Impact Test.

Date of Sample Received Mar. 10, 2025

Date of Testing

Mar. 10, 2025~Nov. 10, 2025

Remark

The information mentioned in the above section and the following report content marks # are provided by Client.

(Exclude Test Witnessed By, Test Method, Number of test, Date of Sample Received and Date of Testing)

## Test Result :

Test Item	Test Method	Result
Coating thickness ( $\mu$ m)	ASTM D7091-22	74
Gloss (Angle 60)	ASTM D523-14(2018)	70
Film hardness by pencil test	ASTM D3363-22	H
Impact test (5/8", 160in-lb)	ASTM D2794-93(2024)	No peeling
Abrasion resistance(L)	ASTM D968-22	80 (Note 5)
Film adhesion by tape test	ASTM D3359-22	
a. Dry		5B (100/100)
b. Wet		5B (100/100)
c. Boiling water		5B (100/100)
Resistance to chemical	AAMA 2605-22	
a. Muriatic acid resistance		No blistering, no change
b. Detergent resistance (72h)		No blistering, no change
c. Mortar resistance		No blistering, no change
d. Nitric acid resistance ( $\Delta$ E)		No color change (0.14)
e. Window cleaner resistance (24h)		No blistering and noticeable change in appearance examined by the unaided eye and no removal of film under the tape within and outside of the cross-hatched area.
Moisture resistance (38°C, 100%RH, 4000h)	ASTM D2247-15(2020)	No foaming
Saly spray test (5%NaCl, 4000h)	ASTM B117-19	No blistering or rust

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The required specification(s) offered in this test report is/are for reference only.  
The conformity judgment is at the Applicant's final verdict.

*Wang Ming Hsun*  
Signed for and on behalf of  
SGS Taiwan Ltd.

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## Test Result :

Test Item	Test Method	Result
Weather test(5000h)		
a. Surface	ASTM G155-21/	No blistering or damage
b. Gloss retention rate (%)	ASTM D523-14(2018)/	87
c. Color difference measurement ( $\Delta E$ )	ASTM D2244-23	0.07
Cyclic corrosion test (2000h)	AAMA 2605-22/ ASTM G85-19	Rating of failure at scribe : 9 Rating of blisters : 10

Note : 1. The Coating thickness, Film Hardness by Pencil Test, Gloss, Impact test, Bending test, Resistance to Acid, Resistance to Alkaline, Resistance to boiling water, Film Adhesion by Tape Test, Resistance to chemical - Muriatic Acid Resistance / Nitric Acid Resistance / Mortar Resistance, Weather tests are accredited by TAF. Detergent Resistance & Window Cleaner Resistance, Abrasion test, Cyclic Corrosion tests are subcontracted to SGS Material and Engineering Laboratory -Kaohsiung. (TAF accreditation No.: 0526 , Report No.KV-25-03921, KV-25-02854)

2. Item Description: : Coating

3. Weather test condition : Ref. ASTM G155-21 (Cycle 1)

Typical Irradiance :  $0.35 \text{ W}/(\text{m}^2 \cdot \text{nm})$

Wavelength : 340 nm

Filter : Daylight

Exposure Cycle : 102 min light , 50%RH , at  $63 \pm 2^\circ\text{C}$  black panel temperature and  $44^\circ\text{C}$

chamber air temperature ; 18 min light and water spray and  $44^\circ\text{C}$  chamber air temperature

4. Cyclic Corrosion test condition :

(1). Salt Solution Concentration : 0.05 wt % NaCl and 0.35 wt %  $(\text{NH}_4)_2\text{SO}_4$

(2). Cyclic test: spray 1 h / ( $24 \pm 3$ )  $^\circ\text{C}$   $\rightarrow$  dry 1 h / ( $35 \pm 2$ )  $^\circ\text{C}$

(3). Volume of salt solution collected ( $\text{mL}/\text{hr}/80\text{cm}^2$ ) : 1.0 ~ 2.0

(4). pH of Collected Solution : 5.0~5.4

(5). The Tested Surface is Supported From the Vertical : (6 to  $45^\circ$ )

5. Abrasion Resistance test conditions:

(1). Average film thickness: 2.67 mil

(2). Abrasion coefficient (A) calculated result: 30.0 L/mil;

(3). Abrasion coefficient (A) calculation formula:  $A = L / \text{mil}$  (L: sand volume; mil: film thickness)

1 mil = 25.4  $\mu\text{m}$

6. Salt Spray Test Conditions:

(1) Type of salt used in preparing the salt solution

: Class 1

(2) Concentration of solution collected

:  $5 \pm 1$  w/v % NaCl

(3) Type of water used in preparing the salt solution

: Distilled water

(4) The temperature within the exposure zone

:  $35.0 \pm 2.0$

of the closed cabinet ( $^\circ\text{C}$ )

(5) Salt solution collected ( $\text{mL}/\text{h}/80\text{cm}^2$ )

: 1.6 (Avg.)

(6) Air pressure (kPa)

: 101

(7) pH of collected solution

: 6.8 (Avg.)

(8) Method of Cleaning specimen

: Maintain initial condition prior to test ;

After test by  $38^\circ\text{C}$  warm water cleaning & dry

(9) Method of supporting or suspending article in the

sail spray chamber

:  $15^\circ$

(10) Description of protection used

: Paraffin sealing

7. The testing site is the same as the laboratory address.

8. This Test Report is an additional original report of TV-25-00998. Issued date : Dec. 1, 2025.

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