MICROLAB TESTING PRIVATE LIMITED
An ISO/IEC 17025 MATERIAL TESTING LABORATORY
Accredited by NABL vide Certificate Number TC-14728
D25, Ambattur Industrial Estate, Chennai – 600058
Ph: 044-26242525/044-26244399,
Email: cre@microlabtesting.com
Web: www.microlabtesting.com

TC-14728

Test Report

TC1472825000033528F

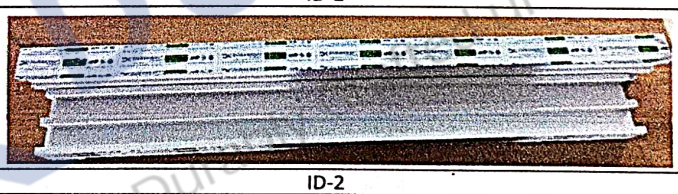
Customer:	Report No.:	TR/24-25/2291-1
M/s. Durakraft Extrusions Private Limited	Report Date:	22-05-2025
D-22, C/o M/s JA & Associates, Meerut Road, Meerut Road Industrial Area ,City:Ghaziabad ,201003	Customer Ref. No.:	Letter
	Ref. Date	03-02-2025
	Sample Received Date:	06-02-2025
	Date Of Completion:	22-05-2025

Test Performed by: VINAY KUMAR.T.V.

1) Sample details :

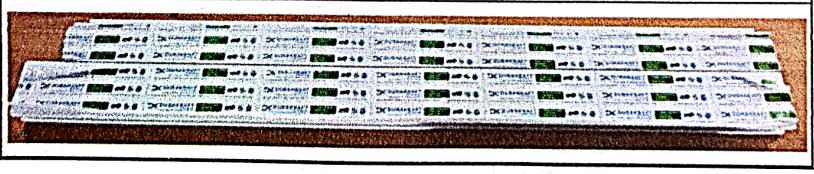
Sn	Item	Description
1	Name of the sample	UPVC Profile – ID-1
		UPVC Profile – ID-2
		UPVC Profile – ID-3
4	Lot No	FEB072025
5	Material Test std	EN12608
6	Test Item	Artificial Weathering Test
7	Lab sample ID number	TRC-2291
8	Discipline	Plastics and plastic products
9	Pre-condition start Date & Time	09-02-2025 @ 10.00AM
10	Pre-condition end Date & Time	10-02-2025 @ 10.00AM
11	Testing start Date & Time	10-02-2025 @ 10.00 am
12	Testing End Date & Time	6-04-2026 @ 07.00 AM
13	Sample drawn by	Customer
14	Received Sample Image	

ID-1



ID-2

ID-3



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2) Test flow of - Artificial weathering durability - uPVC profiles as per the test std EN12608-1:2016-08,item 5-9-3

Step No	Flow	Remarks
Step -1	EN12608	Select the product std According To The Requirement
Step -2	Wavelength – Range / Irradiance[E] / 1-Cycle condition 300-800 nm / 550 W/m² / Spray cycle : 114 min – Dry, 6 min- Water spray, Temperature : BST: 65°c, RH :65 %, Chamber temperature :45-50°C 300-400 nm / 60 W/m² @ 340 nm / 0.51 W/m²	Select the wavelength range , We selected 550 w/m2 at 300-800 nm
Step -3	To Confirm the climate Moderate [M]: Solar energy Estimated [Total irradiance] 4 GJ/m²/ Year; Xenon test Exposure Hours for 5 years Equivalent 4020 Severe [S]: Solar energy Estimated [Total irradiance] 6 GJ/m²/Year; Xenon test Exposure Hours for 5 years Equivalent 6067	Select the Climate type fort usage of zone M- Moderate Zone S-Severe zone For 5 Years equivalent ,the radiation exposure will be fixed M = 12 GJ/m²/5YEARS
Step -4	Calorimetric assessment for Every 1000 Hrs: Δb* ≤3; ΔE ≤5	Weathered part and reference zero weathered part ,Color Difference value & color co ordinates difference shall meet the requirement after xenon exposure .

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3) Solar radiation exposure Time Vs Radiation Doses Requirement : EN12608-1

Step No	EN12608-Moderate	EN12608-Severe
Long Term avg (kcal/cm2)	94.65	142.83
Long Term avg (kLy Langley)	94.29	142.29
Long Term avg (kWh/m2)	1100	1660
Long Term avg (GJ/m2)	3.96	5.98
Radiation doses (GJ/m2) - 1year	1.59	2.40
Radiation doses (GJ/m2) - 5Years	7.96	12.01
Exposure time (Hrs) - 1year	804	1213
Exposure time (Hrs) - 5year	4020	6067

4) Weathering Test cycle Details : DIN EN 513 :1999-10 METHOD -2 [Severe Climate zone S]

Sn	Item	Condition
1	Light source	Xenon -arc source
2	Light filter	Terrestrial Day light Simulation
3	Black Standard Temperature	65±3°C
4	white Standard Temperature	45-50°C
4	Relative Humidity	65±5% RH
5	Spray Cycle	6 min water spray Cycle
		114 min Dry Spray Cycle
7	Spectral Irradiation	550 w/m2 at 300-800 nm
8	Total irradiance	20 GJ /m2
9	Total Hrs	421 Days & 10101 Hrs

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5) Fastness to weathering Requirement : DIN EN 12608-1:2016-08 ,ITEM 5.9.3

Description		EN12608-Moderate	EN12608-Severe
Colorimetric assessment by Spectrophotometer [DIN EN ISO 11664-4] Range 360-750 nm Light –d65 ,10°	Color difference : ΔE	≤ 5	≤ 5
	Color coordinate difference : Δb*	≤ 3	≤ 3
Visual assessment by Gray scale & std ISO 4582 :2017-18 [DIN EN 20105-A02]	Gray scale measurement	Grade ≥ 3	Grade ≥ 3
	Appearance	Upvc profile surface Shall be free of stains ,blister,crack ,damage .	

6) Test Result Summary Details : Fastness to weathering :

6.1) Visual assessment :

Test method	Requirement	Observation		Result
Visual assessment by Gray scale & STD ISO 4582 :2017-18 [DIN EN 20105-A02]	Appearance by visual : The uPVC profile surface appearance shall be free of defects like of stains ,blister,crack Gray scale : Grade ≥ 3	ID-1	No stains ,blister,crack on the surface of the product were observed Gray scale : Grade 4.0	OK
		ID-2	No stains ,blister,crack on the surface of the product were observed Gray scale : Grade 4.5	OK
		ID-3	No stains ,blister,crack on the surface of the product were observed Gray scale : Grade 4.0	OK

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6.2) Colorimetric assessment : After 2500 Hrs (4.9GJ/m²)

Color coordinates	Sample as supplied			Sample after weather			Color difference		
	S1	S2	S3	S1	S2	S3	S1	S2	S3
L*	93.53	93.23	93.43	93.83	93.42	93.65	0.3	0.19	0.22
a*	1.18	1.12	1.22	1.48	1.35	1.44	0.3	0.23	0.22
b*	1.12	1.10	1.05	0.8	0.86	0.78	-0.32	-0.24	-0.27
ΔE*ab							0.5	0.4	0.4

Test method	Requirement	Observation		Result
Colorimetric assessment by Spectrophotometer [DIN EN ISO 11664-4] Range 360-750 nm Light –d65 ,10°	Color difference : ΔE:≤5	ID-1	0.5	OK
		ID-2	0.4	OK
		ID-3	0.4	OK
	Color coordinate difference : Δb* : ≤ 3	ID-1	-0.32	OK
		ID-2	-0.24	OK
		ID-3	-0.27	OK

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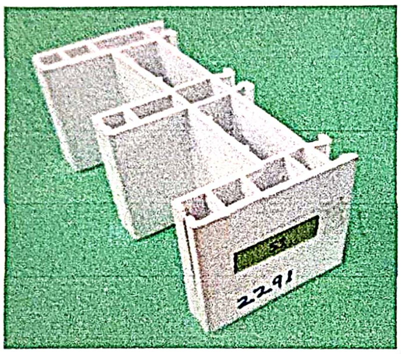
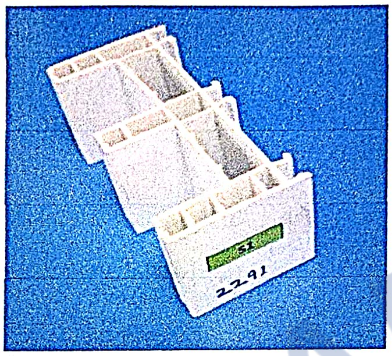
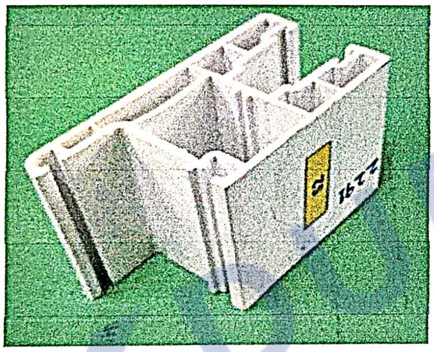
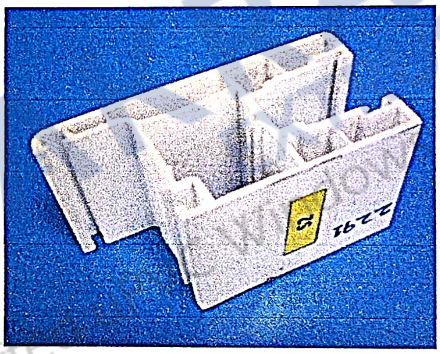
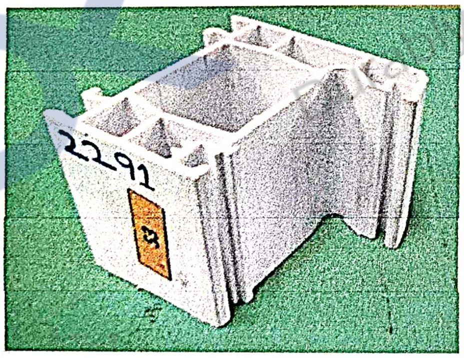
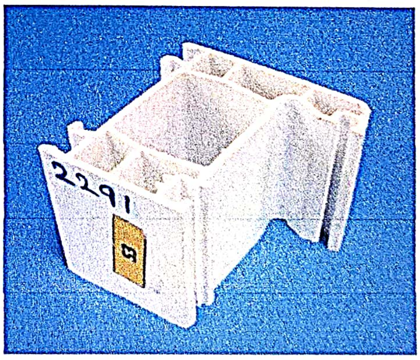
7)Test part image:

Test hours	BEFORE TEST	AFTER 2500 HRS
ID-1		
ID-2		
ID-3		

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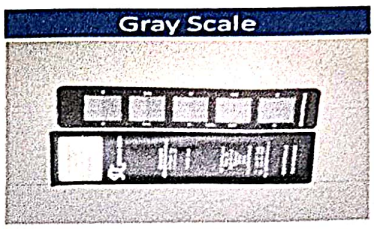
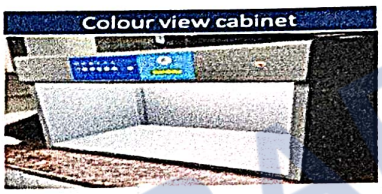
8) Test Equipment:

Equipment photo	Quality Assessment Equipments
	  

9) Test Equipment Details:

Equipment name	Model	Equipment ID	Calibrated date	Calibration Next Due
Xenon chamber	SX-5500-H	E202682345	15-11-2024	14-11-2025
Spectro guide glass	3nh/NS810	MTPL/PT/65	15-11-2024	14-11-2025
Colorview cabinet	AT6005	MTPL/PT/24	15-11-2024	14-11-2025

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10) Conformity:

Conclusion : Pass

The assessment according DIN EN 12608-1: 2016-08, related to an irradiation dose equivalent of 4.9 GJ/m², regarding Resistance to artificial weathering (fastness to weathering and resistance to weathering), classification to climate zone S (severe climate) were met.

For MICROLAB

B.Sudharsan
Technical Director

Authorized Signatory

---------- **End of Test Report** ----------