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TEST REPORT

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PROJECT CODE	:	PT07774
PROJECT TITLE	:	GENERAL TESTING

TEST SUBJECT & TEST METHOD	:	1) PULL-OFF ADHESION STRENGTH ON CONCRETE	ASTM D7234-22
		2) SCRUB RESISTANCE OF WALL PAINTS	ASTM D2486-17 (2025)
		3) RESISTANCE TO CHEMICAL REAGENTS	ASTM D543-21
		4) TENSILE & ELONGATION	ASTM D412-16 (2021)
		5) ACCELERATED WEATHERING - XENON-ARC (720 HOURS)	ASTM G151-19 & ASTM G155-25

JOB REFERENCE	:	T25-56615
PRODUCT NAME	:	YHCOAT-901 DECO
DATE RECEIVED	:	29-AUG-2025
DATE OF REPORT	:	12-DEC-2025
TOTAL PAGES	:	9 (INCLUDING COVER PAGE)

TEST SUMMARY

Product Name: YHCOAT-901 DECO

No	Test Subject	Test Method	Test Results	
1	Adhesion to Concrete	ASTM D7234-22	Mean Adhesion Strength :	**2.36 MPa**
2	Scrub Resistance	ASTM D2486-17 (2025)	Mean Scrub Resistance :	**1120 Cycles**
3	Chemical Resistance (7 days)	ASTM D543-21	**Refer to Page 5**	
4a	Tensile & Elongation (Before Chemical Exposure)	ASTM D412-16 (2021)	Median Tensile Strength at Break :	**2.91 N/mm2**
			Median Elongation at Break :	**301 %**
4b	Tensile & Elongation (After 7 days Immersion in 2% H_2SO_4)		Median Tensile Strength at Break :	**9.93 N/mm2**
			Median Elongation at Break :	**379 %**
4c	Tensile & Elongation (After 7 days Immersion in 0.1% NaOH + Saturated $Ca(OH)_2$)		Median Tensile Strength at Break :	**3.35 N/mm2**
			Median Elongation at Break :	**167 %**
4d	Tensile & Elongation (After 7 days Immersion in 2 parts $Ca(OH)_2$ + 2 parts NaOH + 0.12 parts $CaCl_2$ + 96 parts Water)		Median Tensile Strength at Break :	**6.07 N/mm2**
			Median Elongation at Break :	**94 %**
5	Accelerated Weathering - Xenon-Arc (720 Hours)	ASTM G151-19 & ASTM G155-25	**Refer to Page 7**	

APPLICATION PROCEDURE

Product Name	Form	Quantity	Batch Number	Colour	Received Date	Application Thickness	No of Coats	Expected DFT
YHCoat-901 Deco	Liquid	1 Pail	N/A	White	29-Aug-2025	0.3 - 0.5 kg/m^2	2	~0.65 mm

As per the sample TDS, the following details are the recommended application procedure for YHCoat-901 Deco:

1. Surface of the cementitious substrates were flat grinded and the non-adherent substrates were cleaned from dust and loose particles prior to the coating application.
2. YHCoat-901 Deco was stirred until homogeneous and the first coat at 0.3-0.5 kg/m^2 spreading rate was applied onto the cementitious substrates using roller brush and onto the non-adherent substrates using a film applicator.
3. After about 12 hours curing at standard laboratory condition, the second coat of YHCoat-901 Deco was applied as per step #3 and all the coated substrates were allowed to cure for 7 days prior to the testing.

TEST RESULTS

1. ADHESION TO CONCRETE (ASTM D7234-22)

Sample Reference	**YHCOAT-901 DECO**					
Test Substrate	>28 Days Concrete, 300mm x 300mm x 50mm					
Preparation Date	01-Sep-2025 to 02-Sep-2025			**Preparation Method**	Roller Brush	
Curing Condition	(23 ± 2) °C and (50 ± 10) %RH			**Curing Duration**	7 days	
Type of Adhesive	2-component epoxy			**Curing Time**	24 hours	
Equipment Model	PROCEQ DY-216			**Equipment S/N**	DT02-004-0020	
Loading Fixture	Ø 50 mm			**Cal. Due Date**	03-Nov-2025	
Test Condition	23 °C, 50 %RH			**Rate of Pull**	0.2 MPa/s	
Test Date	09-Sep-2025			**Coating Thickness**	533 µm	
Specimen Reference	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
Pull-Off Adhesion Strength (MPa)	2.41	2.13	2.33	2.31	2.66	2.31
Mode of Failure	10% B 85% C 5% D	15% A 75% C 10% D	5% B 80% C 15% D	10% A 10% C 80% D	15% C 85% D	15% A 20% C 65% D
Average Pull-Off Adhesion Strength (MPa)	**2.36**					

Remarks: *Refer to the Annex for the photograph.*

Table 1. Pull-Off Adhesion Mode of Failure (ASTM D7234-22)

Classification	Description
A	Concrete Substrate: Bulk Cement Paste and Fractured Aggregate
B	Concrete Substrate: Bulk Cement Paste Without Fractured Aggregate
C	Concrete Substrate: Thin Layer of Cementitious Material or Laitance
D	Cohesive Failure of YHCoat-901 Deco
D/Y	Adhesive Failure Between YHCoat-901 Deco and Epoxy
Y	Cohesive Failure of Epoxy

2. SCRUB RESISTANCE (ASTM D2486-17 (2025))

Sample Reference		YHCOAT-901 DECO		
Preparation Date		08-Oct-2025	Wet Film Thickness	0.18 mm*
Curing Condition		(23 ± 2) °C and (50 ± 5) %RH	Curing Duration	7 days
Test Date		15-Oct-2025	Test Method	Method A
Specimen Reference		SR1	SR2	Mean
Total Scrub Cycles	1st Cycle: 0-400	No Loss in Paint Film	No Loss in Paint Film	
	2nd Cycle: 401-800	Non-Continuous Loss in Paint Film After 700 Cycles	Non-Continuous Loss in Paint Film After 800 Cycles	
	3rd Cycle: 801-1200	Continuous Loss in Paint Film After 1090 Cycles	Continuous Loss in Paint Film After 1150 Cycles	Continuous Loss in Paint Film After 1120 Cycles

Remarks: ** Application thickness is as per ASTM D2486 requirements.*

3. CHEMICAL RESISTANCE (7 DAYS) (ASTM D543-21)

Sample Reference	YHCOAT-901 DECO				
Preparation Date	06-Oct-2025 to 07-Oct-2025			Preparation Method	Film Applicator
Curing Condition	(23 ± 2) °C and (50 ± 10) %RH			Curing Duration	7 days
Test Procedure	Practice A - Immersion Test			Chemical Reagents	See Below
Test Temperature	(23 ± 2) °C			Test Duration	7 days
Test Date	14-Oct-2025 to 21-Oct-2025			Sample Thickness	500 - 700 µm
Visual Assessment	Cracking	Blistering	Firmness	Texture	Others
Chemical Solution 01: 2% H_2SO_4 Solution	None	None	Slight Softening	Slight Pitted Texture	None
Chemical Solution 02: 0.1% NaOH + Saturated $Ca(OH)_2$	None	None	Slight Hardnening	Pitted Texture	None
Chemical Solution 03: 2 Parts $Ca(OH)_2$ + 2 Parts NaOH + 0.12 Parts $CaCl_2$ + 96 Parts Water	None	None	Hardnening	Pitted Texture	None

4. TENSILE & ELONGATION (ASTM D412-16 (2021))

Sample Reference	YHCOAT-901 DECO					
Test Method	Test Method A - Dumbbell and Straight Specimens					
Preparation Date	06-Oct-2025 to 07-Oct-2025			Preparation Method	Film Applicator	
Curing Condition	(23 ± 2) °C and (50 ± 10) %RH			Curing Duration	7 days	
Specimen Shape	Dumbbell Specimen			Die Type	Die C (Metric)	
Test Condition	(23 ± 2) °C and (50 ± 10) %RH			Extension Rate	500 mm/min	
Chemical Exposure	None					
Test Date	14-Oct-2025					
Specimen Reference	**TEC_0-1**	**TEC_0-2**	**TEC_0-3**	**TEC_0-4**	**TEC_0-5**	**Median**
Specimen Thickness (µm)	610	615	743	744	790	743
Maximum Tensile Load (N)	11.04	11.18	12.50	13.01	13.17	12.50
Maximum Tensile Strength (N/mm^2)	3.02	3.03	2.81	2.91	2.78	2.91
Tensile Load at Break (N)	10.77	11.13	12.48	13.01	12.92	12.48
Tensile Strength at Break (N/mm^2)	2.94	3.02	2.80	2.91	2.73	2.91
Elongation at Break (%)	316	273	301	337	299	301

Sample Reference	YHCOAT-901 DECO					
Chemical Exposure	After 7 Days in Chemical Solution 01					
Test Date	22-Oct-2025					
Specimen Reference	**TEC_1-1**	**TEC_1-2**	**TEC_1-3**	**TEC_1-4**	**TEC_1-5**	**Median**
Specimen Thickness (µm)	631	578	718	617	540	617
Maximum Tensile Load (N)	10.00	9.62	11.49	10.84	9.42	10.00
Maximum Tensile Strength (N/mm^2)	2.64	2.77	2.67	2.93	2.91	2.77
Tensile Load at Break (N)	9.93	9.54	11.29	10.82	9.42	9.93
Tensile Strength at Break (N/mm^2)	9.93	9.54	11.29	10.82	9.42	9.93
Elongation at Break (%)	370	377	423	379	427	379

4. TENSILE & ELONGATION (ASTM D412-16 (2021))

Sample Reference	YHCOAT-901 DECO					
Chemical Exposure	After 7 Days in Chemical Solution 02					
Test Date	22-Oct-2025					
Specimen Reference	TEC_2-1	TEC_2-2	TEC_2-3	TEC_2-4	TEC_2-5	Median
Specimen Thickness (µm)	469	528	500	495	508	500
Maximum Tensile Load (N)	10.46	9.46	9.71	10.63	10.42	10.42
Maximum Tensile Strength (N/mm^2)	3.72	2.99	3.24	3.58	3.42	3.42
Tensile Load at Break (N)	9.86	9.22	9.38	10.17	10.21	9.86
Tensile Strength at Break (N/mm^2)	3.51	2.91	3.13	3.42	3.35	3.35
Elongation at Break (%)	159	195	192	167	152	167

Sample Reference	YHCOAT-901 DECO					
Chemical Exposure	After 7 Days in Chemical Solution 03					
Test Date	22-Oct-2025					
Specimen Reference	TEC_3-1	TEC_3-2	TEC_3-3	TEC_3-4	TEC_3-5	Median
Specimen Thickness (µm)	651	653	594	600	650	650
Maximum Tensile Load (N)	26.61	29.43	30.23	29.79	28.06	29.43
Maximum Tensile Strength (N/mm^2)	6.81	7.51	8.48	8.28	7.19	7.51
Tensile Load at Break (N)	22.62	23.79	24.47	23.23	23.36	23.36
Tensile Strength at Break (N/mm^2)	5.79	6.07	6.87	6.45	5.99	6.07
Elongation at Break (%)	84	94	94	106	92	94

5. ACCELERATED WEATHERING - XENON-ARC (720 HOURS) (ASTM G151-19 & ASTM G155-25)

Sample Reference		**YHCOAT-901 DECO**			
Test Substrate		Cement Fibreboard, 150 mm x 75 mm x 5 mm			
Preparation Date		06-Oct-2025 to 07-Oct-2025		**Preparation Method**	Roller Brush
Curing Condition		(23 ± 2) °C and (50 ± 10) %RH		**Curing Duration**	>7 days
Test Procedures	**Exposure Method**	**Cycle 1 - Exposure using Daylight Filters (Artificial Weathering)**			
	Equipment Model	Q-Lab Q-SUN Xe-2-HSE			
	Light Source (Usage)	Air-Cooled Xenon-Arc Lamp (1812 Hours)			
	Filter (Usage)	Daylight-Q Filter (5724 Hours)			
	Irradiance Level	Narrowband (340 nm): 0.35 ± 0.02 W/(m^2 · nm)			
	Radiometer Details	Q-SUN UC20/340 Radiometer (S/N: 25-07138-14-UC20/340)			
	Temperature Sensor	Black-Panel Thermometer (BPT), Vertical Mounted (90°)			
	Specimen Mounting	Vertical Mounted (90°) on Stainless Steel Frame			
	Specimen Positioning	Auto-Rotate			
	Exposure Settings	102 min Dry at (63 ± 2.5) °C (Light Only) 18 min Water Spray on Exposed Surface (Light + Water Spray)			
	Chamber Temperature & Relative Humidity	(44 ± 2) °C and (50 ± 10) %			
	Exposure Duration	720 hours			
	Test Date	28-Oct-2025 to 02-Dec-2025			
Specimen Reference		**Xe1**	**Xe2**	**Xe3**	**Control**
Visual Assessments (After 720 Hours)	**Blistering**	Blistering 0	Blistering 0	Blistering 0	Blistering 0
	Cracking	Cracking 0	Cracking 0	Cracking 0	Cracking 0
	Peeling	Peeling 0	Peeling 0	Peeling 0	Peeling 0
	Change in Colour	Yellowing 2	Yellowing 2	Yellowing 2	Yellowing 0
	Other Observations	-	-	-	-

5. ACCELERATED WEATHERING - XENON-ARC (720 HOURS) (ASTM G151-19 & ASTM G155-25)

Table 2. Rating Scheme for Intensity of Changes, BS EN ISO 4628-1: 2016

Rating	Intensity of Change
0	Unchanged, i.e. no perceptible change
1	Very slight, i.e. just perceptible change
2	Slight, i.e. clearly perceptible change
3	Moderate, i.e. very clearly perceptible change
4	Considerable, i.e. pronounce change
5	Very marked change

Figure 1. After Xenon Arc Accelerated Weathering (720 Hours)

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ANNEX

Figure 2. Sample As Received (29-Aug-2025)

Figure 3. Pull-Off Adhesion to Concrete Substrate