



# TEST CERTIFICATE

Sample: Composite Paper Honeycomb Panel  
Sample Description: Composite Paper Honeycomb Panel

Ref. No.:POFISE2324-000040, Date: 02/05/2023  
Issued To: Hexpressions Megatech Private Limited  
A-10, IInd Floor, Vinay Apartment,  
Nityanand Nagar, Queens Road,  
Jaipur-302021, Rajasthan.

Report No: 21009807/B  
Report Issue Date: 21/06/2023  
Job Code: STRC/21008992  
Date of testing: 05/06/2023-19/06/2023  
Sample Received On: 05/06/2023  
Sample Qty.: 1 Full Panel  
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S.No.	Test Parameters	Results	Test Method
<b>Mechanical Testing</b>			
1.	<b>Flexural Strength (As Modulus of Rupture), MPa</b>	-	ASTM C 1185
(i)	<b>Dry Condition</b>	-	-
	Along the Fiber	0.50	-
	Across the Fiber	0.51	-
(ii)	<b>Wet Condition</b>	-	-
	Along the Fiber	Not Applicable	-
	Across the Fiber	Not Applicable	-
2.	<b>Modulus of Elasticity, MPa</b>	-	ASTM C 1185
(i)	<b>Dry Condition</b>	-	-
	Along the Fiber	18.37	-
	Across the Fiber	20.07	-
(ii)	<b>Wet Condition</b>	-	-
	Along the Fiber	Not Applicable	-
	Across the Fiber	Not Applicable	-
3.	Density, Kg/m <sup>3</sup>	304.8	ASTM C 1185
4.	Moisture Content, %	4.94	ASTM C 1185
5.	<b>Moisture Movement, %</b>	-	ASTM C 1185
	Along the Fiber	0.051	-
	Across the Fiber	0.059	-
6.	Water Absorption, %	28.9	ASTM C 1185
7.	Falling Ball Impact ( Height of drop that produced failures ) mm	450	ASTM D 1037

*MuKesh*

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*Santram*  
**Santram Rajput**  
Technical Manager



*Ranjit*  
**Ranjit Kumar Jha**  
Assistant Technical Manager

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S.NO.	Test Parameters	Results	Test Method
8.	<b>Compression, Mpa</b>	-	ASTM C364
	Edge wise, Mpa	0.755	-
	Flat wise, Mpa	0.078	-
9.	Screw Withdrawal Test ( Face), N	261	ASTM D 1037
10.	Fire Flammability Test (Rate of Burning), mm/sec	Self Extinguish	ASTM D 635
11.	<b>Chemical Resistance Test</b>	-	ASTM D 1308
	Acetic Acid (3%)	Visual Defects Found	-
	Ethyl Alcohol (50% Volume)	No Visual Defects Found	-
	Acetone (Volatile Reagent)	No Visual Defects Found	-
	Lubricating Oil	Visual Defects Found	-
	Distilled Water Hot	No Visual Defects Found	-
	Acid Solution	No Visual Defects Found	-
	Alkali Solution	No Visual Defects Found	-
	Detergent Solution	No Visual Defects Found	-
	Soap Solution	No Visual Defects Found	-
	Distilled Water Cold	No Visual Defects Found	-
	Fruit	No Visual Defects Found	-
	Mustard Oil	Visual Defects Found	-
	Tea	Visual Defects Found	-

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*Santram Rajput*  
Santram Rajput  
Technical Manager



*Pankaj Kumar Jha*  
Pankaj Kumar Jha  
Assistant Technical Manager

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## TEST CERTIFICATE

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Flexural Strength (As Modulus of Rupture), MPa (Dry Condition)	
Standard Test Method	ASTM C1185
Specimen Size	-
Length of Sample, mm	305
Width of Sample, mm	152
Thickness of Sample, mm	68
Specimen ID	Flexural Strength (MOR), MPa
Along the Fiber	
1	0.51
2	0.49
3	0.52
4	0.46
5	0.50
Average	0.50
Across the Fiber	
1	0.53
2	0.51
3	0.51
4	0.51
5	0.51
Average	0.51

*Mukesh*

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*Santram*

**Santram Rajput**  
Technical Manager



*Pankaj*

**Pankaj Kumar Jha**  
Assistant Technical Manager

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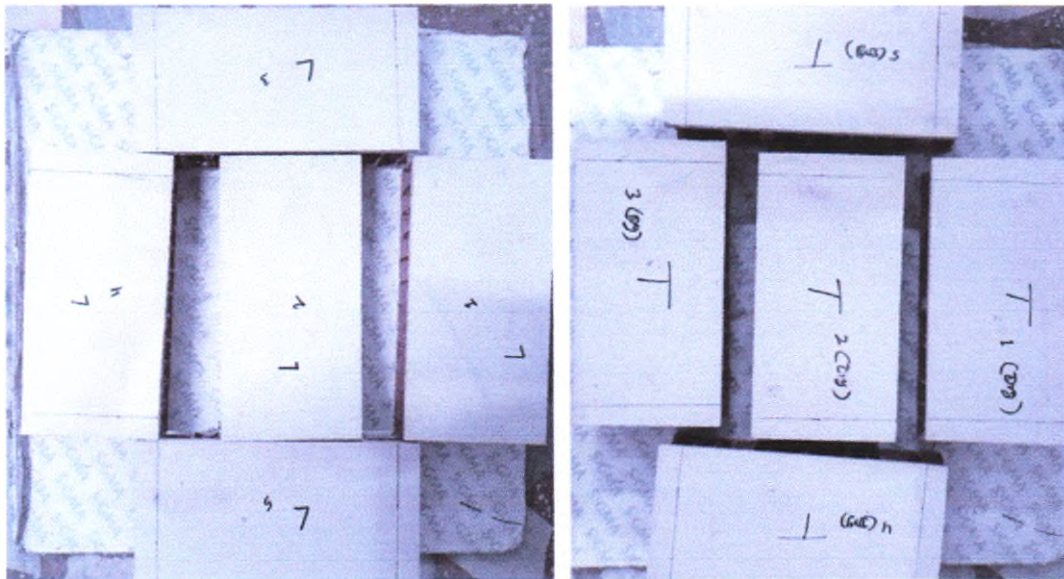
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### Sample Image

### Flexural Strength (As Modulus of Rupture), MPa



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Assistant Technical Manager



## TEST CERTIFICATE

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Modulus of Elasticity, MPa (Dry Condition)		
Standard Test Method		ASTM C1185
Specimen Size		-
Length of Sample, mm		305
Width of Sample, mm		152
Thickness of Sample, mm		68
Specimen ID	Modulus of Elasticity, MPa	
Along the Fiber		
1	18.37	
2	17.36	
3	17.14	
4	19.17	
5	19.82	
Average	18.37	
Across the Fiber		
1	18.98	
2	21.44	
3	18.34	
4	19.59	
5	22.04	
Average	20.07	

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Pankaj Kumar Jha  
Assistant Technical Manager

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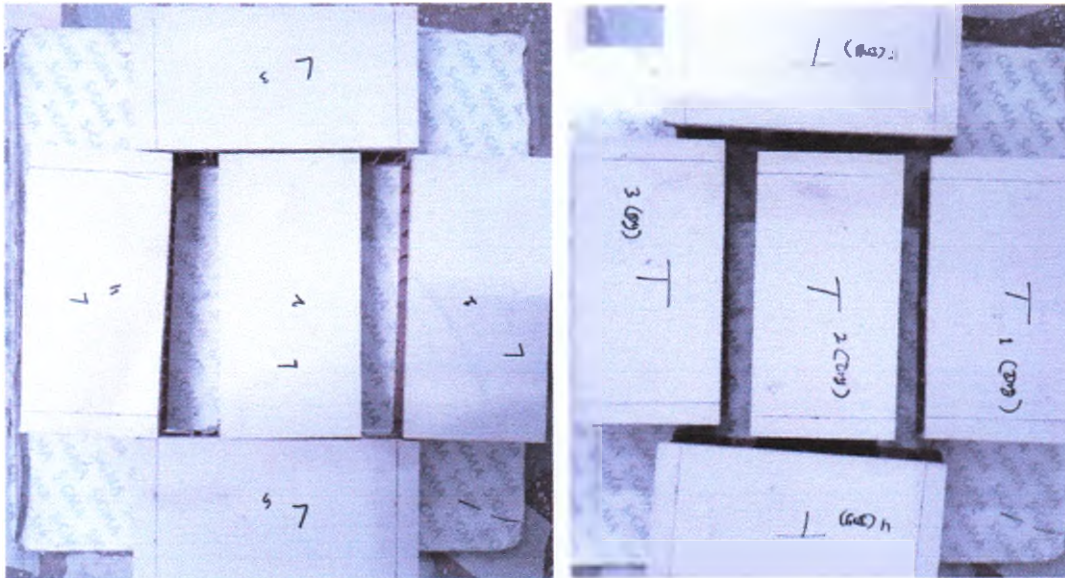
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**Sample Image**

**Modulus of Elasticity, MPa**



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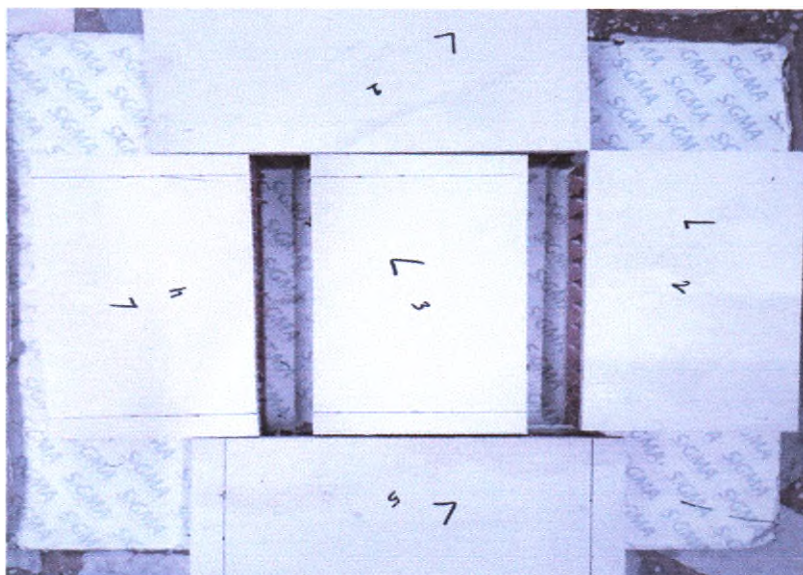
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Density, Kg/m <sup>3</sup>	
Standard Test Method	ASTM C1185
Specimen Size	-
Length of Sample, mm	305
Width of Sample, mm	152
Thickness of Sample, mm	68
Specimen ID	Density, kg/m <sup>3</sup>
1	315.1
2	320.0
3	298.6
4	290.7
5	299.7
Average	304.8

Sample Image  
Density



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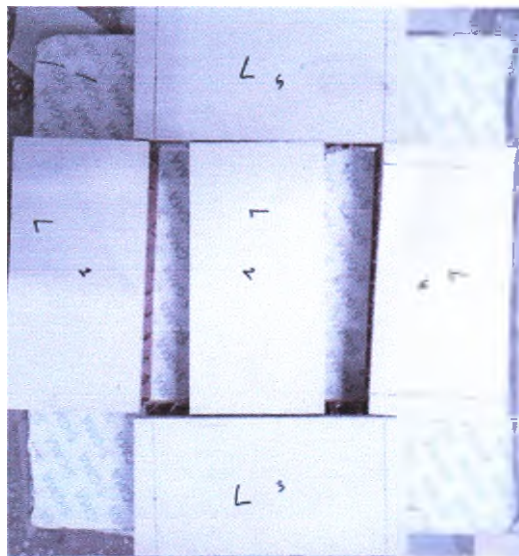
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<b>Moisture Content, %</b>	
Standard Test Method	ASTM C1185
Specimen Size	-
Length of Sample, mm	305
Width of Sample, mm	152
Thickness of Sample, mm	68
<b>Specimen ID</b>	<b>Moisture Content, %</b>
1	3.74
2	3.90
3	4.92
4	6.90
5	5.24
<b>Average</b>	<b>4.94</b>

**Sample Image  
Moisture Content**



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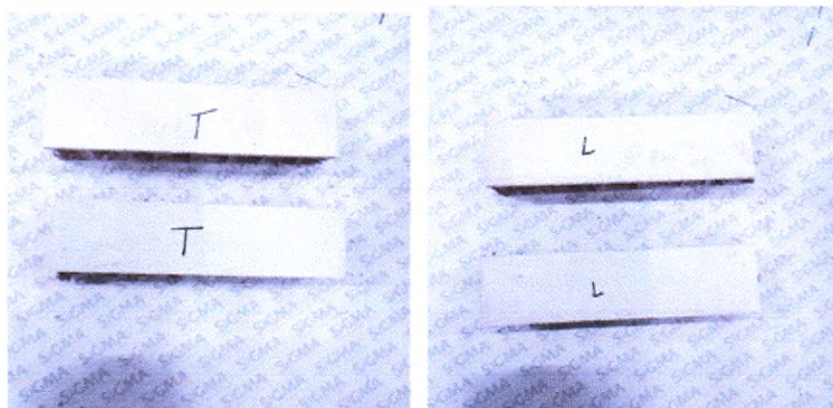
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Moisture Movement, %		
Standard Test Method		ASTM C1185
Specimen Size		-
Length of Sample, mm		305
Width of Sample, mm		76
Thickness of Sample, mm		68
Specimen ID	Moisture Movement, %	
<b>Along the Fiber</b>		
1	0.052	
2	0.049	
Average	0.051	
<b>Across the Fiber</b>		
1	0.056	
2	0.062	
Average	0.059	

### Sample Image Moisture Movement



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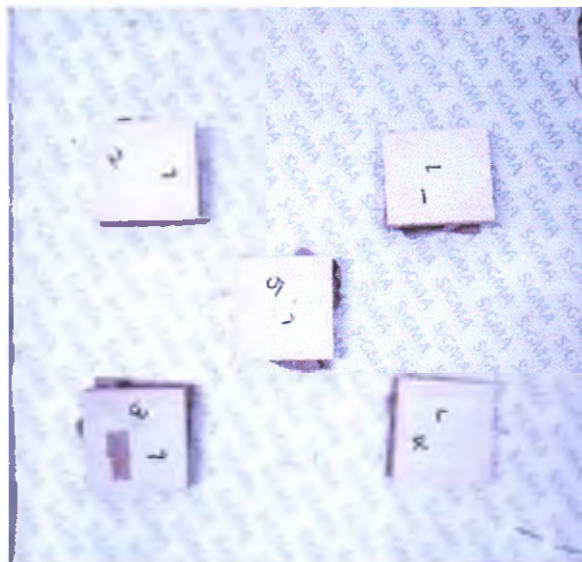
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Water Absorption, %		
Standard Test Method		ASTM C1185
Specimen Size		-
Length of Sample, mm		100
Width of Sample, mm		100
Thickness of Sample, mm		68
Specimen ID	Water Absorption, %	
1	30.4	
2	26.2	
3	27.2	
4	30.9	
5	30.1	
Average	28.9	

**Sample Image  
Water Absorption**




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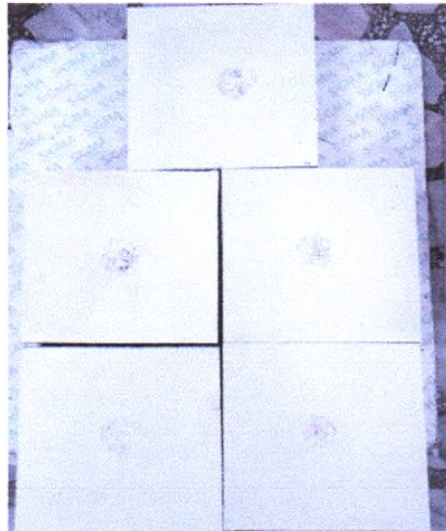
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Falling Ball Impact (Height of Drop that Produced Failures), mm	
Standard Test Method	ASTM D 1037
Specimen Size	-
Length of Sample, mm	254
Width of Sample, mm	228
Thickness of Sample, mm	68
Specimen ID	Height of Drop that Produced Failures, mm
1	450
2	425
3	475
4	425
5	475
Average	450

**Sample Image**  
**Falling Ball Impact**



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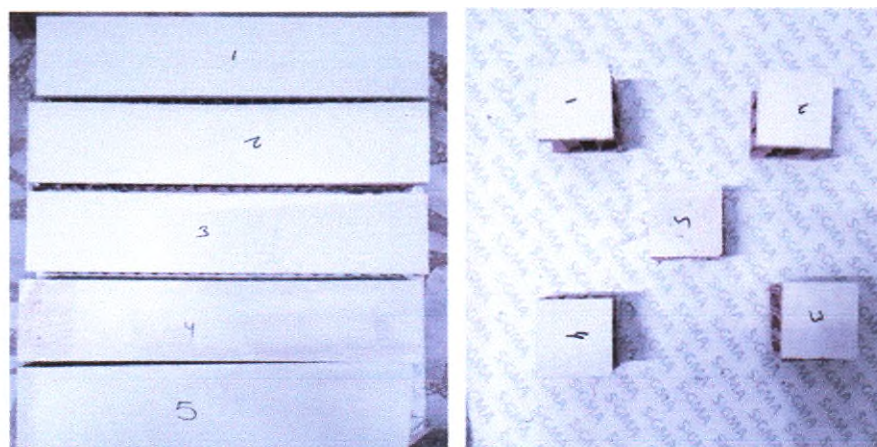
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<b>Compression, MPa</b>		
Standard Test Method		ASTM C 364
Specimen Size	Edge Wise	Flat Wise
Length of Sample, mm	544	80
Width of Sample, mm	136	80
Thickness of Sample, mm	68	68
Specimen ID	Compression, MPa	
<b>Edge wise</b>		
1	0.753	
2	0.757	
3	0.755	
4	0.758	
5	0.753	
<b>Average</b>	<b>0.755</b>	
<b>Flat wise</b>		
1	0.078	
2	0.074	
3	0.074	
4	0.084	
5	0.079	
<b>Average</b>	<b>0.078</b>	

Sample Image  
Compression



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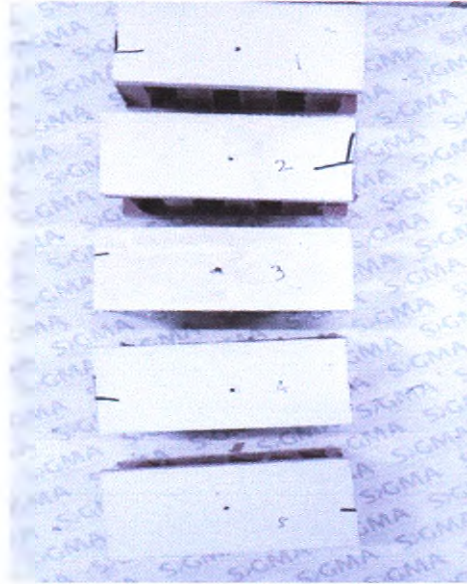
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Screw Withdrawal, N	
Standard Test Method	ASTM D 1037
Specimen Size	-
Length of Sample, mm	152
Width of Sample, mm	76
Thickness of Sample, mm	68
Specimen ID	Screw Withdrawal, N
1	274
2	238
3	254
4	281
5	259
Average	261

Sample Image  
Screw Withdrawal



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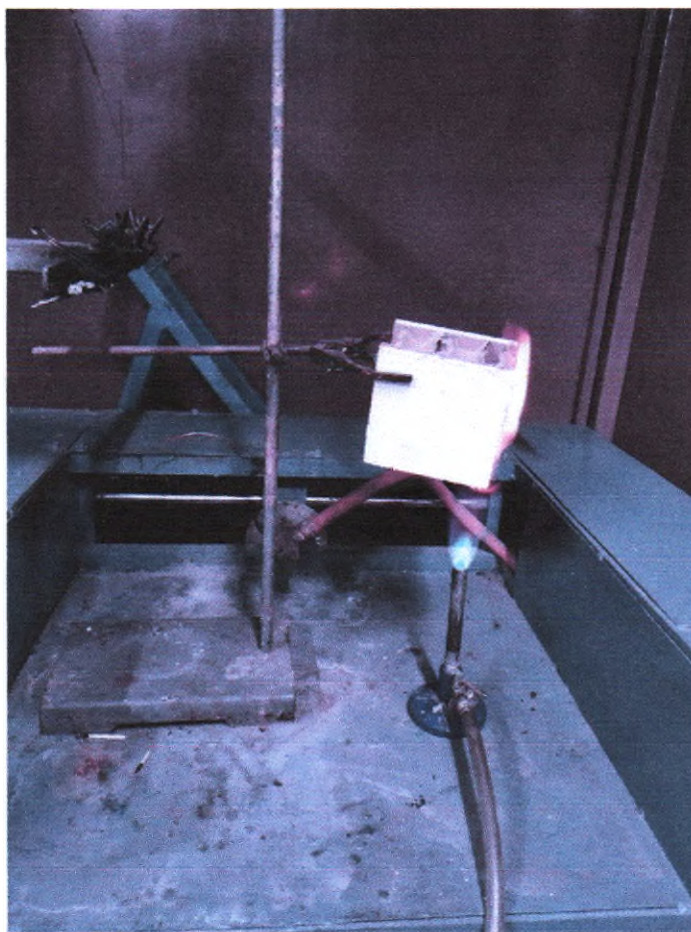
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<b>Fire Flammability Test (Rate of Burning), mm/sec</b>	
Standard Test Method	ASTM D 635
Test Results	Self Extinguish

Sample Image  
Flammability Test



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# TEST CERTIFICATE

Report No.: 21009807/B

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**Test** : Chemical Resistance Test  
**Standard Test Method** : ASTM D 1308 (Spot Test, Covered Method)  
**Test Start Date and Time** : 16/06/2023 (5:40 pm)  
**Test End Date and Time** : 17/06/2023 (9:40 Am)  
**Test Duration** : 16 hours

**Test Details:** Place the coated panel on flat surface. Then put few drops of chemical listed below on to the coated panel. Then cover with watch glass and expose for 16 hours. After 16 hours, wipe the spot clean and examine immediately for effects.

## Results

S No.	Chemical Name	Effect of Chemical on Coated panel
1.	Acetic Acid (3%)	Visual Defects Found
2.	Ethyl Alcohol (50% Volume)	No Visual Defects Found
3.	Acetone (Volatile Reagent)	No Visual Defects Found
4.	Lubricating Oil	Visual Defects Found
5.	Distilled Water Hot	No Visual Defects Found
6.	Acid Solution	No Visual Defects Found
7.	Alkali Solution	No Visual Defects Found
8.	Detergent Solution	No Visual Defects Found
9.	Soap Solution	No Visual Defects Found
10.	Distilled Water Cold	No Visual Defects Found
11.	Fruit	No Visual Defects Found
12.	Mustard Oil	Visual Defects Found
13.	Tea	Visual Defects Found

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*(Signature)*  
**Santram Rajput**  
Technical Manager



*(Signature)*  
**Pankaj Kumar Jha**  
Assistant Technical Manager

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**Sample Image****Chemical Resistance**

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**Decision Rule:** The decision rule as per SOP DR01 is applied wherever statement of conformity to a specification or standard provided in the test report.

\*\*\*\*\*End of Report\*\*\*\*\*

STRC/7.B/F/TC/Z/00

  
**Santram Rajput**  
Technical Manager



  
**Bankaj Kumar Jha**  
Assistant Technical Manager