



Sturdo
RESTROOM CUBICLES & LOCKERS



Test Reports

BIS APPROVED THIRD PARTY TEST REPORT



GUJARAT TEST HOUSE

Plot No. 292, Road No. 4, G.I.D.C. Kathwada, Ahmedabad-382 430. (Gujarat) INDIA
(M) +91 93747 30350, 98250 63601, 99099 69603 • E-mail : gth292@gmail.com/ info@gthah.com • Website : www.gthah.com

TEST REPORT

Format No.:GTH/QR/24/1

Issued to:

GREENLAM INDUSTRIES LTD.

Plot No.E/176-179,SP 2,Phase-II,RIICO Ind.Area,
P.O.Behror,Dist;Alwar(Rajasthan)
PINCODE- 301 701,

TEST REPORT AS PER IS : **2046-1995** [WITH AMENDMENT NO{S}]Page : **1** of 4

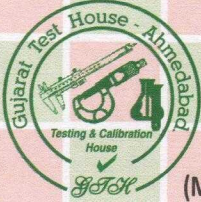
Your Ref.:	Letter	Report No.:	149/23/PLY/GTH/GIL-B	Dt.of Receipt :	17.03.2023
Ref.Dt. :	11.03.20232	Report Dt. :	18.04.2023	Dt.of Test Start:	20.03.2023
				Dt.of Test End :	15.04.2023

PART-A : PARTICULARS OF SAMPLE SUBMITTED:

- a) Nature of Sample : Decorative Thermosetting Synthetic Resin Bonded Laminated Sheet.
- b) Grade/Variety/Type/Class : HGS -S- 3-3-3
- c) Brand Name,if any : -
- d) Declared Value,if any : 2440 X 1220 X 1mm
- e) Sample Code No. : -
- QR Code No. : -
- f) Batch No.& Date of Mfg. : -
- g) Quantity : 1
- h) Mode of Packing : Packed with kraft paper
- i) Manner of Seal & : -
- j) Manner of Signature : -
- k) Any other information : -

PART-B: SUPPLIMENTRY INFORMATIONS:

- A)Reference to the sampling procedure, wherever applicable :N-A-
- B) Supporting to the documents for the measurement taken and result derived like graph,tables,sketches,and/or photographs as appropriate to test report, if any [To be attached] : N-A-
- C)Deviation from the test methods as prescribed in relevant ISS/work instruction, if any : N-A-



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PART C : TEST RESULTS:

Sr.	Test	Cl.No.	Test Method	Required Value	Unit	Result															
1	REQUIREMENTS:	5																			
1.1	Colour & pattern	5.1	IS:2046	As per Standard shade card submitted by Customer/Party	-	Satisfactory															
1.2	Surface finish	5.2	IS:2046	At different viewing angle there shall be no significant difference between sample and standard shade card submitted by Customer/Party.	-	Satisfactory															
1.3	Reverse side/Bonding	5.2.2	IS:2046	The reverse side of sheets having only one decorative surface shall be suitable for adhesive bonding if so required.	-	Satisfactory															
1.4	Nominal Thickness	5.3	IS:2046	See Table No.5	mm	1.09															
1.5	Surface defects	5.4.1.1	IS:2046	When surface viewing at a distance of 1.5 mtr. the surface defect may contamination area equivalent to 1.0 mm ² /m ²	-	Satisfactory															
1.6	Fiber hair scratches	5.4.1.2	IS:2046	The length of defects shall not more than 10mm/m ²	-	Satisfactory															
1.7	Accumulated (combinations) of surface defect	5.4.1.3	IS:2046	Two type of defect shall not exceed half of the level prescribed in 5.4.1.1 & 5.4.1.2	-	Satisfactory															
1.8	Edge defect	5.4.2	IS:2046	Visual defects may be present on all four edges provided that the defect free length & view are not more than 20 mm shorter than the nominal length & width	-	Satisfactory															
1.9	Broken corners	5.4.3	IS:2046	One broken corner ≤ 30mm Two broken corner ≤ 15 mm are allowed	-	Satisfactory															
1.10	Sanding defect	5.4.4	IS:2046	Slight chatter marks are allowed	-	Satisfactory															
1.11	Warping(flatness)	5.4.5	IS:2046	<table border="1"> <thead> <tr> <th>Composition</th> <th>Thickness, t</th> <th>Maximum Warp</th> </tr> </thead> <tbody> <tr> <td>Single-Faced</td> <td>1 < 2.0</td> <td>120mm</td> </tr> <tr> <td>Laminate</td> <td>2.0 ≤ t < 5.0</td> <td>50mm</td> </tr> <tr> <td>Double-faced</td> <td>2.0 ≤ t < 5.0</td> <td>10mm</td> </tr> <tr> <td>Laminate</td> <td>5.0 ≤ t</td> <td>5mm</td> </tr> </tbody> </table>	Composition	Thickness, t	Maximum Warp	Single-Faced	1 < 2.0	120mm	Laminate	2.0 ≤ t < 5.0	50mm	Double-faced	2.0 ≤ t < 5.0	10mm	Laminate	5.0 ≤ t	5mm	mm	0.40
Composition	Thickness, t	Maximum Warp																			
Single-Faced	1 < 2.0	120mm																			
Laminate	2.0 ≤ t < 5.0	50mm																			
Double-faced	2.0 ≤ t < 5.0	10mm																			
Laminate	5.0 ≤ t	5mm																			
1.12	Length	5.4.6	IS:2046	(+) 10, (-) 0 mm	mm	2443															
1.13	Width	5.4.6	IS:2046	(+) 10, (-) 0 mm	mm	1224															
1.14	Straightness of Edgegerprt	23r123	IS:2046	1.5 mm per metre.	mm	0.45															
1.15	Squareness of Laminates	5.4.8	IS:2046	1.5 mm per metre.	mm	0.50															

• Bank A/C No.: 35 19 02 00 00 06 87 • Bank : Bank of Baroda (Kathwada Br.) • IFSC Code : BARBOKATHWA (0=Zero)

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Sr.	Test	Cl.No.	Test Method	Required Value	Unit	Result
OTHER PROPERTIES:		5.5				
2	Surfawear resistance	Table.7 Sr.No. (i)	IS:2046 Anex:C	See Table No. 1 & 2	Index	3
3	Immersion in boiling water- resistance:	Table.7 Sr.No. (ii)	IS:2046 Anex:D	A) Mass Increase (%) Max : (See Curve 1 Annex.A) B) Thickness increase(%)Max : (See Curve 2 Annex A) C) Appearance : Grade 4 for HDS,HDF,HGS&CGS,VGS,VGF,CGF,&CGS. (moderate change in gloss & / colour) Grade 3 for HGP,VGP & VLS. (slight change of gloss & /colour, only visible at certain viewing angles)	% Degree	3.0 4.0 4
4	Dry heat resistance at 180° C.	Table.7 Sr.No.(iii)	IS:2046 Anex:E	Grade 3 for Glass / Grade 4 for others Grade/Degree 4 (slight change of gloss & /colour, any visible at certain viewing angle) Grade/Degree 3 (moderate change of gloss & /colour, (Not applicable for VGS,VGP,VGF&VLS)	Degree	4
5	Dimensional stability at deviated temperature	Table.7 Sr.No. (iv)	IS:2046 Anex:F	a) Machine direction (L) % b) Cross Machine direction (T) % See Curve 3 Annex 'A'	%	0.13 0.14
6	Impact by small diameter ball resistance	Table.7 Sr.No.(vi)a	IS:2046 Anex:H	See Table 1 & 3 Applies only to materials less than 2mm thick. (a=Not applicable for CGS & CGF)	Index	3
7	Resistance to impact by large diameter ball.	Table.7 Sr.No (vii)	IS:2046 Anex: J	Diameter of indentation 10 mm-max.(For CGS & CGF) NB.: Applicable for CGS& CGF - thickness should be above 5.0 mm	mm	
8	Cracking resistance	Table.7 Sr.No. (viii)	IS:2046 Anex:K	Grade 4 (Grade 4 means hair line cracks only visible under 6 x magnification, irregularly distributed across the surface. (1) Not applicable for CGS & CGF. (2)Applies only to materials less than 2mm thick.	Degree	4
9	Scratching resistance	Table.7 Sr.No. (ix)	IS:2046 Anex:L	See Table 1 & 4	Index	3
10	Staining resistance	Table.7 Sr.No. (x)	IS:2046 Anex:M	1) Grade 5 for group 1 2) Grade 5 for group 2 3) Grade 4 for group 3 4) Grade 4 for group 4 5) Grade 3 for group 3 & 4 (HGP & VGP)	Rating	5 5 5 5 ---
11	Color change in xenon arc light resistance	Table.7 Sr.No. (xi)	IS:2046 Anex:N	Wool std. 6 min.	Wool Std.	>Blue wool Std. 6
12	Cigarette burn resistance	Table.7 Sr.No (xii)	IS:2046 Anex:P	Grade 3(Grade 3 means moderate change of gloss & / moderate brown stain. (Not applicable for VGS,VGP,VGF&VLS)	Rating	3
13	Steam resistance	Table.7 Sr.No. (xv)	IS:2046 Anex:T	Grade 4 mean slight change of gloss&/colour (Applicable for HDS,HDF,HGS,VGS,VGF,CGS,&CGF) Grade 3 mean moderate change of gloss & colour (Applicable for HGP,VGP & VLS)	Rating	4
14	Formability	Table.7 Sr.No. (xiii)	IS:2046 Anex:R	Radius 15 mm(max)for HGP Radius 10 mm(max)for VGP	mm	N-A.
15	Blistering resistance	Table.7 Sr.No. (xiv)	IS:2046 Anex:S	15 S, min. for HGP 10 S, min. for VGP	S	N-A.
16	Cracking resistance (Thick laminate)	Table.7 Sr.No (xvi)	IS:2046 Anex:W	Grade 4 (Applicable for CGS & CGF) Grade 4 means hair and crack irregularly distributed across the surface & / edges on the surface only visible gloss by magnifying	Grade	N-A.
17	Moisture resistance (Double faced compact laminate)	Table.7 Sr.No.(xvii)	IS:2046 Anex:Y	Grade 4 for CGS / Grade 3 for CGF Grade 4(slight change of gloss & /colour & slight edge swell / hairline edge crack Grade 3 means moderate change & / moderate edge swell or slight edge crack	Grade	N-A.
18	Flexural modulus	Table.7 SrNo (xviii)	IS:13411 Anex:F	CGS = 10,000 Mpa -Min. / CGF = 9,000 Mpa -Min.	Mpa	N-A.
19	Flexural strength	Table.7 SrNo(xviii)	IS:13411 Anex:F	CGS = 100 Mpa -Min. CGF = 80 Mpa -Min.	Mpa	N-A.
20	Tensile strength	Table.7 SrNo.(xx)	IS:13360 Pf-5 Sec.2 & 3 / ISO:527:2&3	CGS = 70 Mpa -Min. CGF = 60 Mpa-Min.	Mpa	N-A.

PART D : REMARK : N.B. : (1).This test report,except in full,shall not be published,advertised,used for any legal action,unless prior permission has been secured. (2)This test report is ONLY FOR THE SAMPLE TESTED.

Note: N-A =Not Applicable to this Grade.

** Standard shade card required for the test(s) of colour & pattern and surface finish

Grade	Test(s)	Remark
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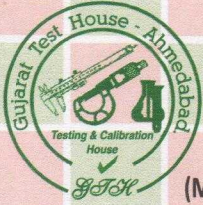


SEAL:

Authorised Signatory
(A.N. Bhatt, CEO)

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SUPPLEMENTRY INFORMATIONS : Tables & Graph/Curves:

TABLE-1 : Classification system & Typical application:

Grade	Index Number		
	Wear	Impact	Scratch
CGS & CGF	3	2	3
HDS & HDF	4	3	4
GS & HGF, HGP	3	3	3
VGS & VGF	2	3	2
VGP	2	2	2
VLS	1	2	1

TABLE-2 : Resistance to Surface wear

Index No	No. of Revolution	
	Initial Wear Point (IP)	Initial Wear Point (IP) (+) Final wear Point (FP)
1	0	≥ 50
2	≥ 50	≥ 150
3	≥ 150	≥ 350
4	≥ 350	≥ 1000

TABLE-3# : Resis.to Impact

Index No.	Spring force(N)
1	≥ 12
2	≥ 15
3	≥ 20
4	≥ 25

Applies less - than 2mm thick

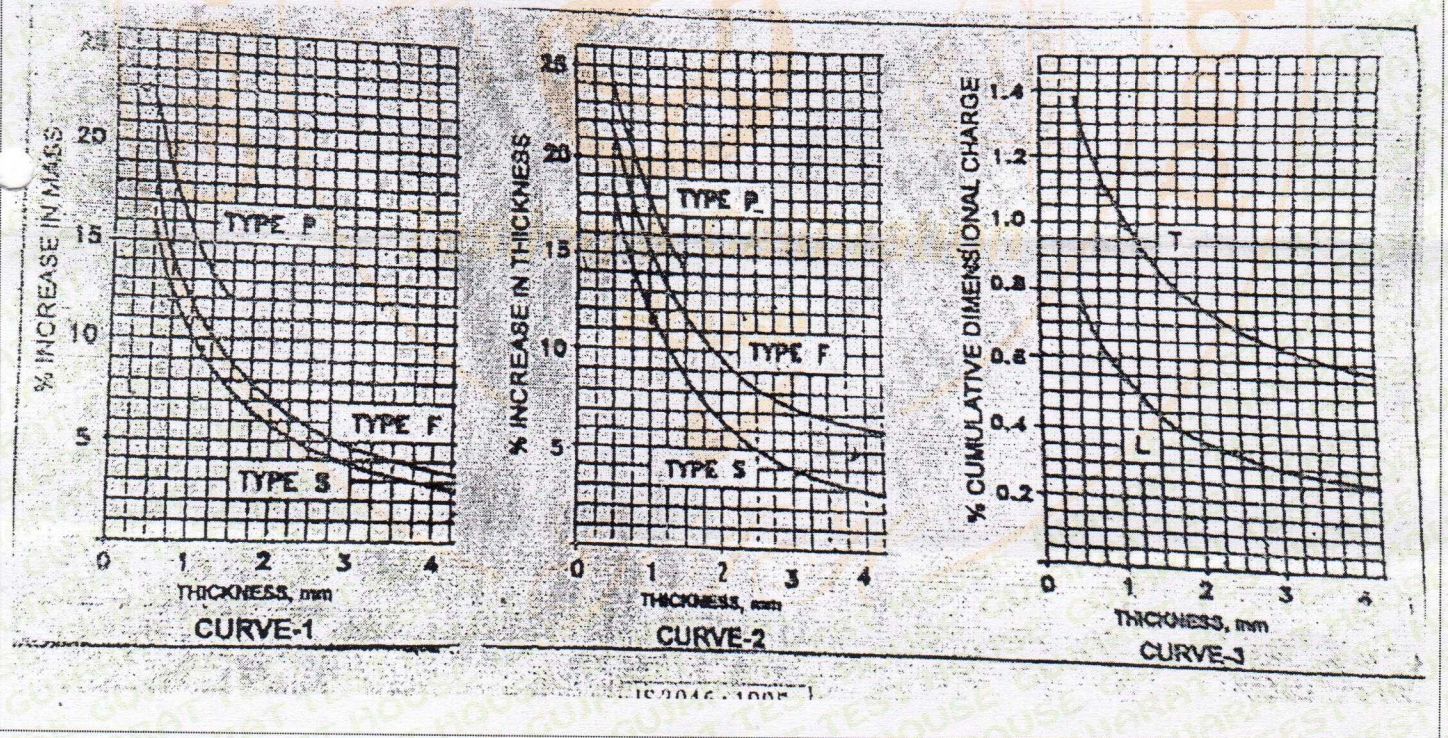
TABLE-4 : Index for Resis.to Scratching:

Index No.	Load (N)
1	≥ 1.50
2	≥ 1.75
3	≥ 2.00
4	≥ 3.00

TABLE-5 Permitted Variations of Thickness (in mm):

Sl.No	Nominal thickness, t	Maximum Variation
01	0.5 ≤ t ≤ 1.0	+ 0.10
02	1.0 < t ≤ 2.0	+ 0.15
03	2.0 < t ≤ 2.5	+ 0.18
04	2.5 < t ≤ 3.0	+ 0.20
05	3.0 < t ≤ 4.0	+ 0.25
06	4.0 < t ≤ 5.0	+ 0.30
07	5.0 < t	As agreed.

Curve :



-End of test report-