TEST REPORT

Report No. : MAN:HL:1548001377 **ISSUE DATE: 21-Mar-2024**

GARWARE HI-TECH FILMS LIMITED
WALUJ MIDC AREA, AURANGABAD PUNE
ROAD CHHATRAPATI SAMBHJINAGAR- 431133
INDIA
CONTACT PERSON: P K NAIKNAWARE

THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED AND IDENTIFIED BY/ON BEHALF OF THE CUSTOMER AS :

SAMPLE DESCRIPTION	SAFETY FILM– 4 MIL CLEAR SAFETY FILM
MATERIAL DISCRIPTION	110MSF 4.0M SRA SD PSA LA W APS
LABEL ON ROLL	SAFETY 4 MIL
COLOUR	CLEAR
STYLE NO.	SAFETY FILM 4 MIL
ORDER NO.	2300014202 / WSC
SKU NO.	05
END USE	APPLICATION ON GLASS WINDOWS
COUNTRY OF DESTINATION	INDIA
COUNTRY OF ORIGIN	INDIA

LAB PROVIDED DETAILS:
CONDITION OF SAMPLE COMPLETE AND OK
THE LOCATION OF PERFORMANCE OF THE LABORATORY ACTIVITIES: SGS CHINA LABORATORY
SAMPLE RECD ON 17-Feb-2024 **TESTING PERIOD :** 17-Feb-2024 - 21-Mar-2024

SUMMARY OF TEST RESULTS:

TESTS	PASS	FAIL	REMARKS
ASTM E84-23C STANDARD TEST METHOD FOR- SURFACE BURNING CHARACTERISTICS-BUILDING MATERIALS			**SEE RESULT**

Remarks: **P=Pass**

F=Fail

TEST(S) RESULT & METHOD: PLEASE REFER TO NEXT PAGE(S). RESULTS APPLY TO THE SAMPLE AS RECEIVED

Per Pro SGS India Pvt. Ltd.

SANDIP BHUSHAN
TECHNICAL MANAGER
Authorized Signatory-Mechanical
Email your Test Report Related Enquiries at Feedback.HLT@sgs.com

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TEST RESULT:

SURFACE BURNING CHARACTERISTICS-BUILDING MATERIALS:-

I. Test Conducted

This test was conducted in accordance with ASTM E84-23c Standard Test Method for Surface BurningCharacteristics of Building Materials.

II. Introduction

The method, designated as ASTM E84-23c, "Standard Method of Test for Surface Burning Characteristics of Building Materials", is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results are expressed in terms of flamespread index (FSI) and smoke developed index (SDI).

The purpose of this test method is to determine the relative burning behavior of the material by observingthe flame spread along the specimen. Flame spread and smoke developed index are reported. However,there is not necessarily a relationship between these two measurements.

III. Test Procedure

The tunnel is preheated to 65.6℃(150°F), as measured by the floor-embedded thermocouple located 7.09m (23.25 ft) downstream of the burner ports, and allowed to cool to 40.6℃(105°F), as measured bythe floor-embedded thermocouple located 3.96m (13 ft) from the burners. At this time the tunnel lid is raised and the test sample is placed along the ledges of the tunnel so as to form a continuous ceiling 7.32m (24 ft) long, 304.8mm (12 in) above the floor. The lid is then lowered into place.

Upon ignition of the gas burners, the flame spread distance is observed and recorded every 30 seconds.Flame spread distance versus time is plotted ignoring any flame front recessions. If the area under the curve (A) is less than or equal to 97.5 ft*min, FSI = 0.515·A; if greater, FSI = 4900/(195-A).

The test results for smoke shall be plotted and the area under the curve shall be divided by the area under the curve for heptane, multiplied by 100, and rounded to the nearest multiple of five to establish anumerical smoke-developed index (SDI).

IV. Conditioning

Prior to testing, the sample was conditioned to a constant weight at a temperature of (23±2.8)°C(73.4±5)°F and at a relative humidity of (50±5)%.

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Sample Details

Sample description	Film
Sample size	2400mmx510mm
Thickness	0.12mm

Exposed face: Smooth surface

Mounting methods:

The test specimen was pasted on the fiber-cement board by adhesive (RUBSTIK TROPIC 2335) and fiber- cement board with a density is 1440kg/m^3. The test specimen consisted of a total 3 sections of material. Thesections were butted together during testing to form the required specimen length.

Test results:

Flame Spread Index，FSI	Smoke-developed Index，SDI
15	40

Rating:

The National Fire Protection Association Life Safety Code 101, Chapter 10, Section 10.2.3 “Interior Wall and Ceiling Finish Classification”, has a means of classifying materials with respect to Flame Spread and Smoke Developed when tested in accordance with ASTME84, UL 723 “Method of Test of Surface Burning Characteristics of Building Materials”.

International Building Code, Chapter 8, Interior Finishes, Section 803 “Wall and Ceiling Finishes”, was classified in accordance with ASTM E84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

The classifications are as follows:

Classification	Flame Spread Index，FSI	Smoke-developed Index，SDI
Class A	0-25	0-450
Class B	26-75	0-450
Class C	76-200	0-450

Since the tested sample received a Flame Spread Index 15 and a Smoke-developed Index 40, it **would meet** the requirements of **Class A** interior Wall & Ceiling Finish Category.

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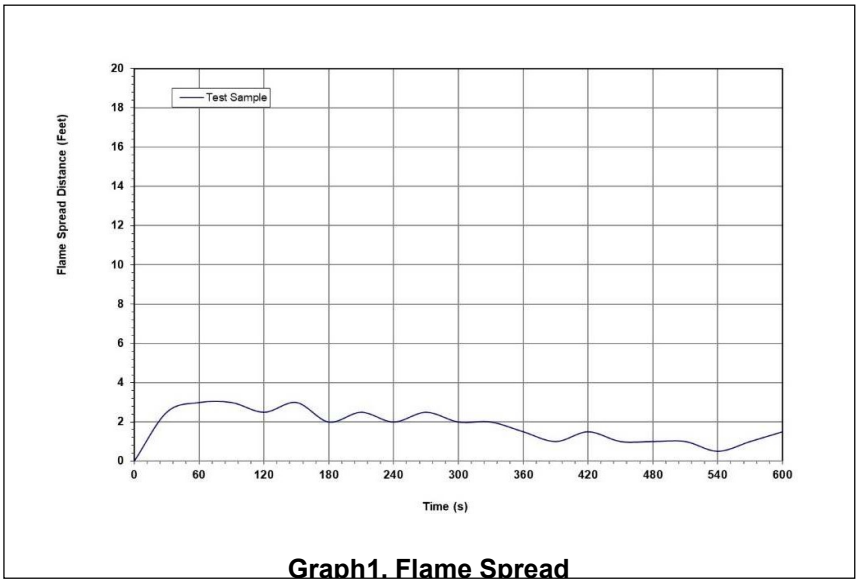
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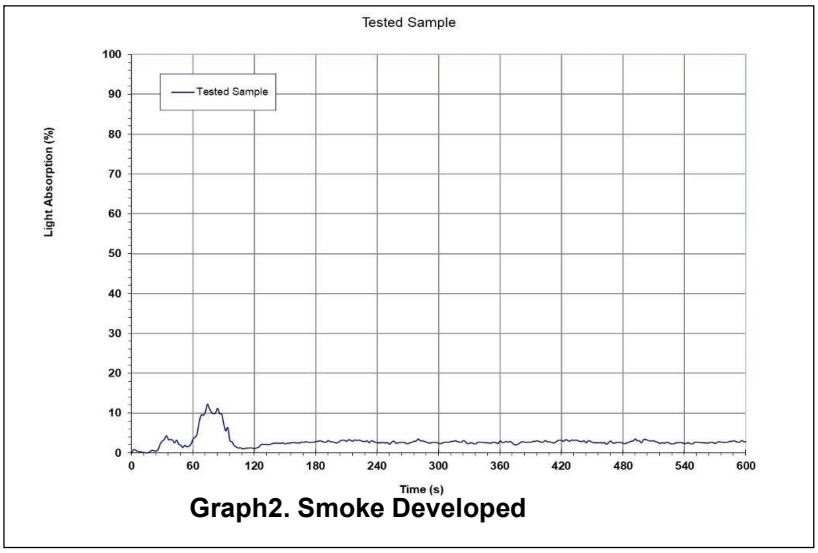
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NON ACCREDITED TEST(S)

Graphical Results:



Graph1. Flame Spread



Graph2. Smoke Developed

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Observations

Time to ignition (sec)	9
Time to Max. FS (sec)	55
Maximum FS (feet)	3.0
Observations	Non-flaming Debris

Warning:

The use of supporting materials on the underside of the test specimen has the ability to lower the flame spread index from those which might be obtained if the specimen could be tested without such support. These test results do not necessarily relate to indices obtained by testing materials without such support.Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front isdestroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.

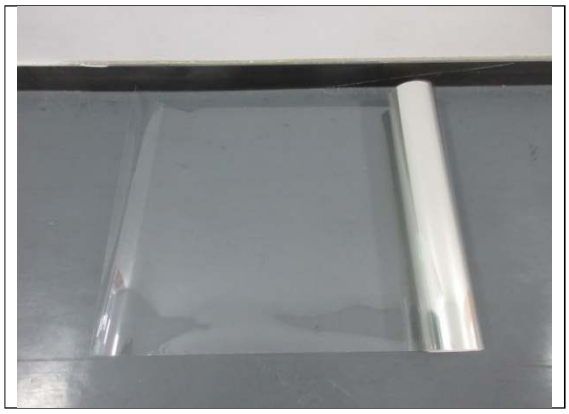
The test results relate only to the specimens of the product in the form in which were tested. Small differences in the composition or thickness of the product may significantly affect the performance during thetest and may therefore invalidate the test results. Care should be taken to ensure that any product, which is supplied or used, is fully represented by the specimens, which were tested.

Statement:

This declaration of conformity is only based on the result of this laboratory activity, the impact of theuncertainty of the results was not included.

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Photo Appendix:



SGS authenticate the photo on original report only

*****END OF REPORT*****

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