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UL 94 VTM (2013), STANDARD FOR THIN MATERIAL VERTICAL BURNING TEST

MATERIAL ID.: *T10/Clear*
TRADE NAME: *Newmat USA*


FINAL REPORT
Consisting of 3 Pages

SwRI® Project No.: 01.17791.04.038c
Test Date: October 15, 2013
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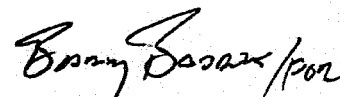
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INTRODUCTION

This report presents the results of a specimen submitted by Newmat USA Ltd., located in West Babylon, NY, and, tested at Southwest Research Institute's (SwRI's) Fire Technology Department, located in San Antonio, Texas. The test was conducted in accordance with the procedures outlined in UL 94 VTM (2013), *Standard for Thin Material Vertical Burning Test*.

This test is intended to be performed on materials that due to their thinness, distort, shrink, and/or are consumed up to the holding clamp when tested using the test described in the 20-mm Vertical Burning Test; V-0, V-1, or V-2, Section 8. This test shall only be performed after it has been determined that the samples cannot meet the requirements of the 20-mm Vertical Burning Test. A test specimen with a thickness less than 0.025 mm shall not be subjected to the 20-mm Vertical Burning Test.

Ten specimens are to be conditioned in accordance with ASTM D 618 (ISO 291) at $23 \pm 2^\circ\text{C}$ and 50 ± 5 percent relative humidity for a minimum of 48 h. Another set of ten specimens are to be conditioned in an air-circulating oven for 168 ± 2 h at $70 \pm 2^\circ\text{C}$ and then cooled in the desiccator for at least 4 h at room temperature, prior to testing.

CLASSIFICATION CRITERIA

Criteria Conditions	VTM-0	VTM-1	VTM-2
Afterflame time for each individual specimen t_1 or t_2	$\leq 10\text{s}$	$\leq 30\text{s}$	$\leq 30\text{s}$
Total afterflame time for any condition set (t_1 plus t_2 for the 5 specimens)	$\leq 50\text{s}$	$\leq 250\text{s}$	$\leq 250\text{s}$
Afterflame plus afterglow time for each individual specimen after the second flame application ($t_2 + t_3$)	$\leq 30\text{s}$	$\leq 60\text{s}$	$\leq 60\text{s}$
Did the afterflame or afterglow of any specimen progress up to the 125 mm mark?	No	No	No
Was the cotton indicator ignited by flaming particles or drops?	No	No	Yes

If only one specimen from a set of 5 specimens fails to comply with the requirements of 11.1.3 or the total number of seconds of flaming is in the range of 51 – 55 s for VTM-0 or 251 – 255 s for VTM-1 or VTM-2, an additional set of 5 specimens shall be tested. All specimens from this second set shall comply with the appropriate requirements in order for the material in that thickness to be classified VTM-0, VTM-1, or VTM-2.

The results apply specifically to the specimens tested, in the manner tested, and not to the entire production of these or similar materials, nor to the performance when used in combination with other materials.

UL 94 VTM (2013) TEST REPORT

MATERIAL DESCRIPTION

Date Received: September 24, 2013
Material ID.: *T10/Clear*
Trade Name: *Newmat USA*
Description: Thin, clear PVC membrane
Color: Clear
Thickness: 0.18 mm (*0.16 mm) nominal
Received Weight:* 1.65 g (nominal)

* Measured by SwRI personnel

PREPARATION AND CONDITIONING

Preparation: Twenty-one specimens were prepared according to standard UL 94 VTM requirements.

Conditioning Time: The specimens were conditioned at least 48 h at 23 ± 3 °C at $50 \pm 5\%$ relative humidity and then conditioned in an air-circulating oven for 168 ± 2 h at 70 ± 2 °C and then cooled in the desiccator for at least 4 h at room temperature, prior to testing.

TEST RESULTS

Number of Runs: 3

Run No.	After Flame (s)	After Glow (s)	Cotton Ignition	Elapsed Time between 25 mm and 100 mm Marks (sec) (t)	Burn Distance (mm)	Burning Rate (mm/min) $60 \times (L/t)$
1	None	No	No	NA	0	0
2	None	No	No	NA	0	0
3	None	No	No	NA	0	0

CONCLUSIONS

Based on the test results, the specimen identified as *T10/Clear* meets the specified criteria for UL 94 Thin Material Vertical Burning Test and can be classified as VTM-0.