

# SOUTHWEST RESEARCH INSTITUTE®

6220 CULEBRA ROAD 78238-5166 • P.O. DRAWER 28510 78228-0510 • SAN ANTONIO, TEXAS, USA • (210) 684-5111 • WWW.SWRI.ORG

CHEMISTRY AND CHEMICAL ENGINEERING DIVISION

FIRE TECHNOLOGY DEPARTMENT  
WWW.FIRE.SWRI.ORG  
FAX (210) 522-3377



## EVALUATION OF THE EXTERNAL FIRE RESISTANCE CHARACTERISTICS OF ROOF COVERING SYSTEMS IN ACCORDANCE WITH ASTM E108-17, STANDARD TEST METHODS FOR FIRE TESTS OF ROOF COVERINGS, CLASS A SPREAD OF FLAME TESTING

**MATERIAL ID: SR200**  
**TRADE NAME: SYNRYE 200**

**FINAL REPORT**  
**Consisting of 8 Pages**

**SwRI® Project No.: 01.24104.01.120e**  
**Test Date: June 4, 2019**  
**Report Date: July 2, 2019**

**Prepared for:**

**Synlawn**  
**2680 Abutment Road SE**  
**Dalton, GA 30721**

Prepared By:

Natasha Albracht  
Research Engineer  
Material Flammability Section

Approved By:

Matthew S. Blais, Ph.D.  
Director  
Fire Technology Department

This report is for the information of the client. It may be used in its entirety for the purpose of securing product acceptance from duly constituted approval authorities. This report shall not be reproduced except in full, without the written approval of SwRI. Neither this report nor the name of the Institute shall be used in publicity or advertising.



Benefiting government, industry and the public through innovative science and technology

## 1.0 INTRODUCTION

This report describes a fire performance evaluation conducted for Synlawn in accordance with ASTM E108-17, *Standard Test Methods for Fire Tests of Roof Coverings*, Class A Spread of Flame (SOF) test requirements. Testing was conducted at the Fire Technology Department of Southwest Research Institute (SwRI), located in San Antonio, Texas.

This test method should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all the factors that are pertinent to an assessment of the fire hazard of a particular end use.

This report describes the testing of the assembly tested and the results obtained. The results presented in this report apply specifically to the material 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.

## 2.0 SAMPLE DESCRIPTION

SwRI received samples on April 24, 2019, and the test deck build and installation happened at a later date by SwRI personnel. The sample is described below in Table 1.

**Table 1. Sample Description.**

Material ID	Description	Color
SR200	Tufted synthetic turf with 15/18 PP 2-part/20 oz EnviroLoc backing installed on top of AirDrain underlayment system.	Field green/lime

## 3.0 TEST SETUP AND CRITERIA

Class A tests are applicable to roof coverings that are effective against severe test exposure, afford a high degree of fire protection to the roof deck, do not slip from position, and do not present a flying brand hazard. When a roof covering is restricted for use on noncombustible decks (steel, concrete or gypsum) only the spread of flame test is required. To be regarded as Class A, a roofing system shall meet the requirements of two spread of flame tests. Each of the 3 ft-4 in. × 8 ft test decks were inclined at a slope of 1/2":12 and were exposed to a 1400°F ± 50°F flame for 10 min. All tests were performed in the presence of a 1056 ± 44-ft/min air velocity.

In order to meet acceptance criteria in accordance with ASTM E108-17, a roof covering material shall meet the following conditions when subjected to the particular class of fire tests:

1. At no time, during or after, the Class A spread of flame test:

- Any portion of the roof covering material be blown or fall off the test deck in the form of flaming or glowing brands that continue to glow after reaching the floor,
  - The roof deck be exposed (except for roof coverings restricted to use over noncombustible deck), or
  - Portions of the roof deck fall away in the form of particles that continue to glow after reaching the floor.
2. During the Class A spread of flame tests, the flaming shall not spread beyond 6 ft (1.8 m) and there shall be no significant lateral spread of flame from the path directly exposed to the test flame.

#### **4.0 RESULTS**

The material identified as *SR200* **passed** the Class A SoF tests according to the requirements of ASTM E108-17. Visual observations are presented in Appendix A and photographic documentation is in Appendix B.

**APPENDIX A**  
**VISUAL OBSERVATIONS**  
**(CONSISTING OF 1 PAGE)**

Test ID: #1  
 Material ID: SR200  
 Ambient air temperature: 75°F                      Relative humidity: 60%

<b>Time (min:s)</b>	<b>Observations</b>
00:00	Start of test; burner on.
10:00	Burner off. Turf melted in the flame path. PASS

**Flame-Spread Distance and Time**

<b>Distance</b>	1 ft	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft
<b>Time (min:s)</b>	—	—	—	—	—	—	—	—

Test ID: #2  
 Material ID: SR200  
 Ambient air temperature: 75°F                      Relative humidity: 61%

<b>Time (min:s)</b>	<b>Observations</b>
00:00	Start of test; burner on.
10:00	Burner off. Turf melted in application flame path. PASS

**Flame-Spread Distance and Time.**

<b>Distance</b>	1 ft	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft
<b>Time (min:s)</b>	—	—	—	—	—	—	—	—

**APPENDIX B**  
**PHOTOGRAPHIC DOCUMENTATION**  
**(CONSISTING OF 2 PAGES)**



**Figure B-1. SoF Test #1. Test setup.**



**Figure B-2. SoF Test #1. Sample at the end of the test.**





**Figure B-3. SoF Test #2. Sample at the beginning of the test.**



**Figure B-4. SoF Test #2. Sample at the end of the test.**