



Member of the FM Global Group



American National Standard for Vegetative Roof Systems

ANSI FM 4477-2021

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Foreword

NOTE: This foreword is introductory only and is not part of American National Standard FM 4477.

This standard is intended to verify that the product as described will meet minimum specific stated conditions of performance, safety and quality, useful in determining the potential suitability for end-use conditions of these products. It describes minimum performance requirements for materials that are intended for use in roof assemblies by evaluating the ability of the materials and, in turn, the system components to withstand simulated wind uplift resistance.

This American National Standard has been developed according to the essential requirements of due process for standards development of the American National Standards Institute (ANSI). FM Approvals is an ANSI-accredited standards developer (ASD).

Approval of an American National Standard requires verification by ANSI that the principles of openness and due process have been followed and that a consensus of those directly and materially affected by the standard has been achieved. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution. Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached.

The American National Standards Institute does not develop standards nor will it in any circumstances give an interpretation of any American National Standard. Requests for interpretations of this test standard should be addressed to FM Approvals.

ANSI regulations require that this American National Standard shall be revised, reaffirmed or withdrawn within five years of the date of publication.

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TABLE OF CONTENTS

1 INTRODUCTION.....	1
1.1 Purpose.....	1
1.2 Scope.....	1
1.3 Basis for Requirements	1
1.4 System of Units	1
1.5 Applicable Documents	1
1.6 Definitions.....	2
2 GENERAL INFORMATION	3
2.1 Product Information	3
3 GENERAL REQUIREMENTS	3
3.1 Review of Documentation.....	3
3.2 Calibration.....	3
3.3 Markings.....	4
3.4 Manufacturer's Installation Instructions.....	4
3.5 Test Sample Production.....	4
4 PERFORMANCE REQUIREMENTS.....	4
4.1 Combustibility From Above the Roof Deck.....	5
4.2 Combustibility From Below the Roof Deck.....	5
4.3 Foot Traffic Resistance Test.....	6
4.4 Root Barrier Resistance Tests	6
APPENDIX A: UNITS OF MEASUREMENT	7
APPENDIX B: TEST PROCEDURE	8

1 INTRODUCTION

1.1 Purpose

This standard states the test requirements for vegetative roof systems that are used with a roof assembly.

1.2 Scope

1.2.1 This standard applies to all vegetative roof systems that are intended to be installed over a single-ply, polymer-modified bitumen sheet, built-up roof, or liquid applied roof cover assembly.

1.2.2 The standard is intended to evaluate only those hazards investigated, and is not intended to determine suitability for the end use of a product.

1.2.3 This standard evaluates vegetative roof systems for their performance in regard to fire from above and below the structural deck, foot traffic and root barrier resistance.

1.3 Basis for Requirements

The requirements of this standard are based on experience, research and testing, and/or the standards of other organizations. The advice of manufacturers, users, trade associations, jurisdictions and/or loss control specialists was also considered.

1.4 System of Units

Units of measurement used in this standard are United States (U.S.) customary units. These are followed by their arithmetic equivalents in International System (SI) units, enclosed in parentheses. The first value stated shall be regarded as the requirement. The converted equivalent value may be approximate. Appendix A lists the selected units and conversions to SI units for measures appearing in this Standard. Conversion of U.S. customary units is in accordance with the *Standard for Use of the International System of Units (SI): The Modern Metric System*, BSR/IEEE/ASTM SI 10.

1.5 Applicable Documents

The following standards, test methods, and practices are referenced in this standard:

ANSI (American National Standards Institute)

- *Procedure for Investigating Resistance to Root or Rhizome Penetration on Vegetative Roofs*, ANSI/SPRI VR-1 2018

ASTM International (American Society for Testing and Materials)

- *Standard Test Method for Determining Water Migration Resistance Through Roof Membranes*, ASTM D7281
- *Standard Test Methods for Fire Tests of Roof Coverings*, ASTM E108

NFPA (National Fire Protection Association)

- *Standard Method of Fire Tests for Determining the Heat Release Rate of Roofing Assemblies with Combustible Above-Deck Roofing Components*, NFPA 276