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Sto Corp. NFPA 285 Wall System Compliance Directory

Table of Contents

	Page
Introduction	3
Figure 1: Flow Chart	4
Sto System Pages	
StoTherm [®] ci Lotusan	5
StoTherm [®] ci Classic	6
StoTherm [®] ci Essence	7
StoTherm [®] ci XPS Lotusan	8
StoTherm [®] ci XPS Classic	9
StoTherm [®] ci XPS Essence	10
StoPowerwall [®] ci	11
StoPowerwall [®] DrainScreen™	12
StoQuik [®] Silver DrainScreen™	13
NFPA 285 Frequently Asked Questions	14

Introduction

NFPA 285 for Testing of Wall Assemblies with Combustible Components

The use of NFPA 285¹ as a means to gain acceptance of wall assemblies with combustible components in noncombustible Type construction (Types I - IV) has become more prevalent in recent years based on requirements for testing of WRB's (Water-Resistive Barriers) in Chapter 14 of the 2012 IBC (International Building Code). The flow chart on the following page (Figure 1) is intended to facilitate determination of when testing is necessary. It is current to the 2015 IBC and is also applicable where the 2009 or 2012 IBC are in effect.

Determining the necessity for NFPA 285 testing prior to 2012 was relatively straightforward. Testing was for the most part needed only for foam-plastic based wall assemblies, while certain single story structures and buildings of Combustible (Type V) construction were exempt (and still are). However, in 2012 the IBC added requirements for combustible WRB's in Section 1403.5:

1403.5 Vertical and Lateral Flame Propagation. Exterior walls on buildings of Type I, II, III, or IV construction that are greater than 40 feet (12 192 mm) in height above grade plane and contain a combustible water-resistive barrier shall be tested in accordance with and comply with the acceptance criteria of NFPA 285.

This requirement carries over into the 2015 IBC, however, the 2015 code permits several exceptions, use of a "..... wall covering of brick, concrete, stone, terra cotta, stucco, or steel with minimum thickness in accordance with Table 1405.2," or, use of a WRB with a specified maximum combustibility (ASTM E 1354²), flame propagation and smoke development (ASTM E 84³).

Analysis of fire test results by a qualified fire protection engineer may be used to extend NFPA 285 test results to other assemblies where changes to the tested NFPA 285 assembly would be judged to perform equal to or better than the tested assembly. This allows a manufacturer to gain acceptance of several wall assemblies. Such analysis is reflected in ICC ESR 1233⁴, Tables 1 and 2, where the results from a single test were extended to other wall coverings and back-up wall construction.



Photo 1. NFPA 285 testing of brick veneer cavity wall with foam plastic and a combustible WRB over steel frame construction

1. National Fire Protection Association Standard 285, *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of*

Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components

2. American Society of Testing and Materials Standard E 1354, *Standard Test Method for Heat and Visible Smoke Release Rates for*

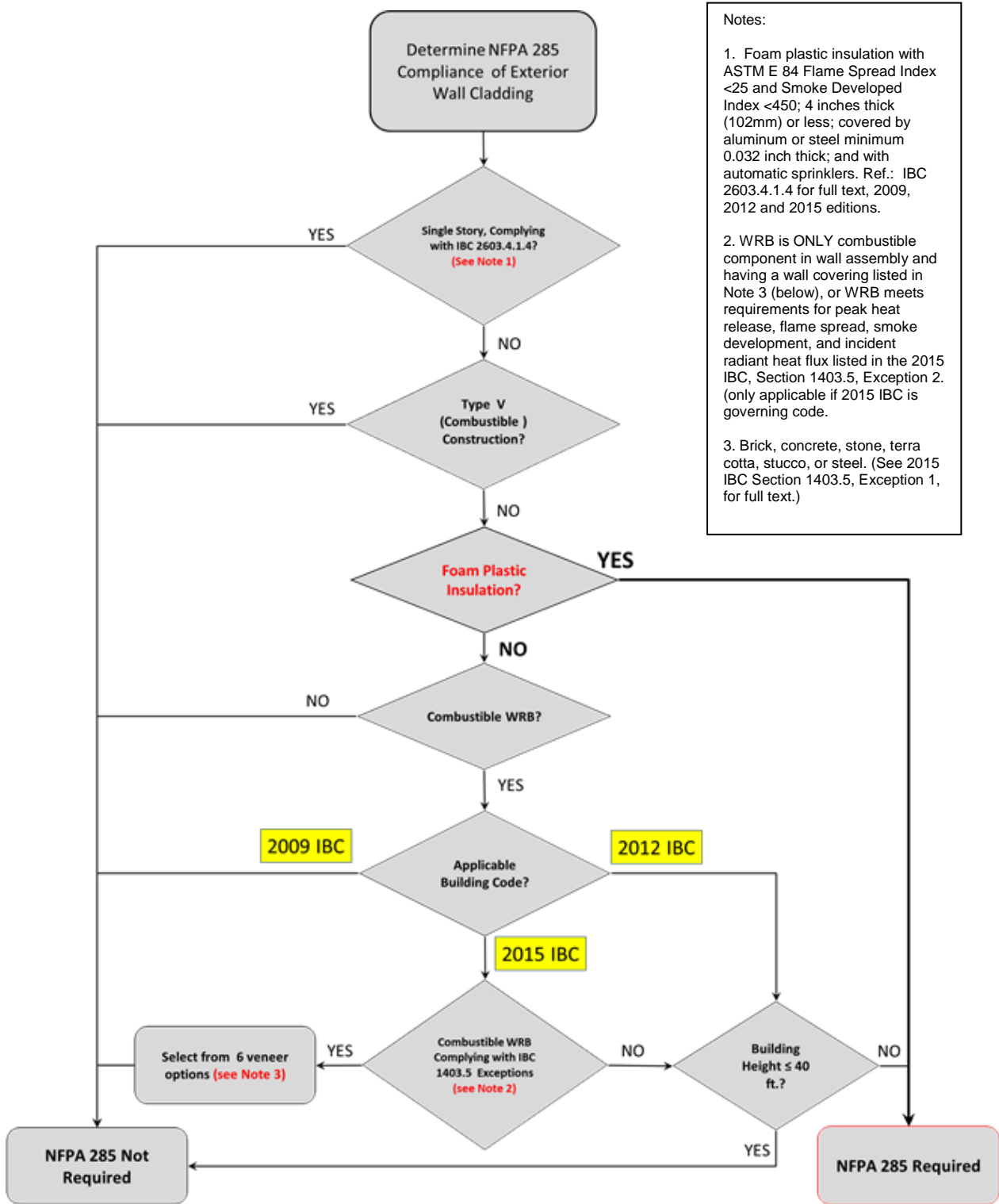
Materials and Products Using an Oxygen Consumption Calorimeter

3. American Society of Testing and Materials Standard E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*

4. International Code Council Evaluation Service Report 1233, *StoGuard with Gold Coat, StoGuard with EmeraldCoat, and StoGuard*

VaporSeal Water-Resistive Barriers and StoEnergy Guard (StoGuard with Continuous Insulation)

Figure 1: Flow chart for to determine if NFPA 285 is required:



StoTherm® ci Lotusan®

Decorative cladding with continuous air/moisture barrier and continuous insulation for heat, air and moisture control



- | | |
|----|---|
| 1) | Substrate: Glass Mat Gypsum sheathing in compliance with ASTM C 1177, concrete or concrete masonry. |
| 2) | StoGuard® Air and Moisture Barrier |
| 3) | Three adhesive options: Sto TurboStick™, Sto BTS® Plus, or Sto BTS Xtra |
| 4) | Sto EPS Insulation Board |
| 5) | Sto Mesh (embedded in Sto base coat) |
| 6) | Three base coat options: Sto BTS Plus, Sto BTS Xtra, or Sto RFP |
| 7) | Sto Primer (optional) |
| 8) | Sto Textured Finish: Stolit® Lotusan® |

System Description

StoTherm ci Lotusan is a decorative and protective exterior wall cladding that combines superior air and weather tightness with excellent thermal performance and durability. It incorporates continuous exterior insulation and a continuous air/moisture barrier with Stolit® Lotusan® finish with the Lotus Effect® for pronounced self-cleaning properties.

Uses

StoTherm ci Lotusan can be used in residential or commercial wall construction where energy efficiency, superior aesthetics, and air and moisture control are essential in the climate extremes of North America

NFPA 285 Compliance Documents

Test Report:
Southwest Research Institute SwRI
Project No. 01.11811.01.106 Report Dated August 3, 2006.

ICC-ES Recognition for Types I-IV Construction:
ESR 1748

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TB-NFPA-ciL
Revision: 001
Date: 6/2017

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StoTherm® ci Classic ®

Decorative cladding with continuous air/moisture barrier and continuous insulation for heat, air and moisture control



- | | |
|----|---|
| 1) | Substrate: Glass Mat Gypsum sheathing in compliance with ASTM C 1177, concrete or concrete masonry. |
| 2) | StoGuard® Air and Moisture Barrier |
| 3) | Three adhesive options: Sto TurboStick™, Sto BTS® Plus, or Sto BTS Xtra |
| 4) | Sto EPS Insulation Board |
| 5) | Sto Mesh (embedded in Sto base coat) |
| 6) | Three base coat options: Sto BTS Plus, Sto BTS Xtra, or Sto RFP |
| 7) | Sto Primer (optional) |
| 8) | Sto Textured Finish: Stolit® |

System Description

StoTherm ci Classic is a decorative and protective exterior wall cladding that combines superior air and weather tightness with excellent thermal performance and durability. It incorporates continuous exterior insulation and a continuous air/moisture barrier with Sto's high performance finishes in a fully tested wall cladding assembly.

Uses

StoTherm ci Classic can be used in residential or commercial wall construction where energy efficiency, superior aesthetics, and air and moisture control are essential in the climate extremes of North America

NFPA 285 Compliance Documents

Test Report:

Southwest Research Institute SwRI
Project No. 01.11811.01.106 Report Dated August 3, 2006.

ICC-ES Recognition for Types I-IV

Construction:
ESR 1748

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StoTherm® ci Essence ®

Decorative cladding with continuous air/moisture barrier and continuous insulation for heat, air and moisture control



- | | |
|----|---|
| 1) | Substrate: Glass Mat Gypsum sheathing in compliance with ASTM C 1177, concrete or concrete masonry. |
| 2) | StoGuard® Air and Moisture Barrier |
| 3) | Three adhesive options: Sto TurboStick™, Sto Primer/Adhesive, Sto Primer/Adhesive-B |
| 4) | Sto EPS Insulation Board |
| 5) | Sto Mesh (embedded in Sto base coat) |
| 6) | Two base coat options: Sto Primer/Adhesive, or Sto Primer/Adhesive-B |
| 7) | Sto Primer (optional) |
| 8) | Sto Textured Finish: Sto Essence DPR |

System Description

StoTherm ci Essence is a decorative and protective exterior wall cladding that combines superior air and weather tightness with excellent thermal performance and durability. It incorporates continuous exterior insulation and a continuous air/moisture barrier with Sto's high performance finishes in a fully tested wall cladding assembly.

Uses

StoTherm ci Essence can be used in residential or commercial wall construction where energy efficiency, superior aesthetics, and air and moisture control are essential in the climate extremes of North America

NFPA 285 Compliance Documents

Test Report:

Southwest Research Institute SwRI
Project No. 01.05490.01.001a Report
Dated, October 2002.

ICC-ES Recognition for Types I-IV

Construction:
ESR 1748

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StoTherm® ci XPS Lotusan®

Decorative cladding with continuous air/moisture barrier and continuous insulation for heat, air and moisture control



- | | |
|----|---|
| 1) | Substrate: Glass Mat Gypsum sheathing in compliance with ASTM C 1177, concrete or concrete masonry. |
| 2) | StoGuard® Air and Moisture Barrier |
| 3) | Sto TurboStick™ Spray Foam Adhesive |
| 4) | Foamular® C1 – C or Dow STYROFOAM™ Panel Core 20 Insulation Board |
| 5) | Sto Mesh (embedded in Sto Base Coat) |
| 6) | Sto BTS® Xtra Base Coat |
| 7) | Sto Primer Sand (optional) |
| 8) | Sto Textured Finish: Stolit® Lotusan® |

System Description

StoTherm ci XPS Lotusan is a decorative and protective exterior wall cladding that provides superior air and weather tightness with excellent thermal performance and durability. It incorporates continuous insulation and a continuous air/moisture barrier with Sto’s high performance finishes in a fully tested wall cladding assembly.

Uses

StoTherm ci XPS Lotusan can be used in residential or commercial wall construction where energy efficiency, superior aesthetics, air and moisture control are essential. The superior compressive strength and low water absorption of Dow Panel Core 20 insulation make it appropriate for institutional or other projects where increased durability is desired.

NFPA 285 Compliance Documents

Test Report:
Southwest Research Institute SwRI
Project No. 01.19275.01.001, Dated
September 30, 2013.

<p>Sto Corp. 3800 Camp Creek Parkway Building 1400, Suite 120 Atlanta, GA 30331</p> <p>Tel: 404-346-3666 Toll Free: 1-800-221-2397 Fax: 404 346-3119</p> <p>www.stocorp.com</p>	<p>TB-NFPA-ciXL Revision: 001 Date: 6/2017</p>	<p style="text-align: center;">Attention</p> <p>Sto products are intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. They should be installed in accordance with those specifications and Sto’s instructions. Sto Corp. disclaims all, and assumes no, liability for on-site inspections, for its products applied improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Sto’s control. Improper use of Sto products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to this product, and to the structure of the building or its components. STO CORP. DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH STO’S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME. For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Sto Corp. website, www.stocorp.com.</p>
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StoTherm® ci XPS Classic®

Decorative cladding with continuous air/moisture barrier and continuous insulation for heat, air and moisture control



- | | |
|----|---|
| 1) | Substrate: Glass Mat Gypsum sheathing in compliance with ASTM C 1177, concrete or concrete masonry. |
| 2) | StoGuard® Air and Moisture Barrier |
| 3) | Sto TurboStick™ Spray Foam Adhesive |
| 4) | Foamular® Ci-C or Dow STYROFOAM™ Panel Core 20 Insulation Board |
| 5) | Sto Mesh (embedded in Sto Base Coat) |
| 6) | Sto BTS® Xtra Base Coat |
| 7) | Sto Primer Sand (optional) |
| 8) | Sto Textured Finish: Stolit® |

System Description

StoTherm ci XPS Classic is a decorative and protective exterior wall cladding that provides superior air and weather tightness with excellent thermal performance and durability. It incorporates continuous insulation and a continuous air/moisture barrier with Sto's high performance finishes in a fully tested wall cladding assembly.

Uses

StoTherm ci XPS Classic can be used in residential or commercial wall construction where energy efficiency, superior aesthetics, air and moisture control are essential. The superior compressive strength and low water absorption of Dow Panel Core 20 insulation make it appropriate for institutional, or other projects where increased durability is desired.

NFPA 285 Compliance Documents

Test Report:

Southwest Research Institute SwRI
Project No. 01.19275.01.001 Dated
September 30, 2013.

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StoTherm® ci XPS Essence®

Decorative cladding with continuous air/moisture barrier and continuous insulation for heat, air and moisture control



- | | |
|----|---|
| 1) | Substrate: Glass Mat Gypsum sheathing in compliance with ASTM C 1177, concrete or concrete masonry. |
| 2) | StoGuard® Air and Moisture Barrier |
| 3) | Sto TurboStick™ Spray Foam Adhesive |
| 4) | Foamular® Ci-C or Dow STYROFOAM™ Panel Core 20 Insulation Board |
| 5) | Sto Mesh (embedded in Sto Base Coat) |
| 6) | Sto BTS® Xtra Base Coat |
| 7) | Sto Primer Sand (optional) |
| 8) | Sto Textured Finish: Essence |

System Description

StoTherm ci XPS Essence is a decorative and protective exterior wall cladding that provides superior air and weather tightness with excellent thermal performance and durability. It incorporates continuous insulation and a continuous air/moisture barrier with Sto's high performance finishes in a fully tested wall cladding assembly.

Uses

StoTherm ci XPS Essence can be used in residential or commercial wall construction where energy efficiency, superior aesthetics, air and moisture control are essential. The superior compressive strength and low water absorption of Dow Panel Core 20 insulation make it appropriate for institutional or other projects where increased durability is desired.

NFPA 285 Compliance Documents

Test Report:

Southwest Research Institute SwRI
Project No. 01.19275.01.001 Dated
September 30, 2013.

Engineering Analysis:

Hughes Associates Dated July 11, 2014
HAI Project # IJJB05184.001

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StoPowerwall® ci

Portland cement stucco with continuous air and moisture barrier, continuous insulation, cavity wall design, and high performance finish



1)	Dow Type IV XPS Insulation Board
2)	Substrate: Glass mat gypsum sheathing in compliance with ASTM C 1177.
3)	StoGuard® Air and Moisture Barrier
4)	Code compliant paper or felt WRB
5)	Sto DrainScreen drainage mat
6)	Code compliant minimum 2.5 lb/yd ² (1.4 kg/m ²) self-furred galvanized steel diamond mesh metal lath
7)	ASTM C 926 compliant stucco (as manufactured or listed by Sto Corp.)
8)	Sto primer (optional)
9)	Sto Textured Finish

System Description

StoPowerwall ci is an energy efficient stucco wall assembly with a continuous air and moisture barrier and continuous insulation. It combines the strength and durability of traditional stucco with an advanced cavity wall design and Sto high performance finishes.

Uses

StoPowerwall ci can be used in residential or commercial wall construction where energy efficiency, superior aesthetics, and air and moisture control are essential in the climate extremes of North America

NFPA 285 Compliance Documents

Test Report:

Southwest Research Institute SwRI
Project No. 01.16941.01.001b dated
January 26, 2012.

IBC Recognition for Types I-IV

Construction:

ESR 2323, ESR 1233

Engineering Analysis:

Hughes Associates Dated May, 6 2014
HAI Project # IJJB05184.001

<p>Sto Corp. 3800 Camp Creek Parkway Building 1400, Suite 120 Atlanta, GA 30331</p> <p>Tel: 404-346-3666 Toll Free: 1-800-221-2397 Fax: 404 346-3119</p> <p>www.stocorp.com</p>	<p>TB-NFPA-ciP10 Date: 6/2017</p>	<p style="text-align: center;">Attention</p> <p>Sto products are intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. They should be installed in accordance with those specifications and Sto's instructions. Sto Corp. disclaims all, and assumes no, liability for on-site inspections, for its products applied improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Sto's control. Improper use of Sto products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to this product, and to the structure of the building or its components. STO CORP. DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH STO'S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME. For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Sto Corp. website, www.stocorp.com.</p>
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StoPowerwall® Drainscreen™

Portland cement stucco with continuous air and moisture barrier, cavity wall design, and high performance finish



1)	Substrate: Glass mat gypsum sheathing in compliance with ASTM C 1177.
2)	StoGuard Air and Moisture Barrier
3)	Code compliant paper or felt WRB
4)	Sto DrainScreen drainage mat
5)	Code compliant minimum 2.5 lb/yd ² (1.4 kg/m ²) self-furred galvanized steel diamond mesh metal lath
6)	ASTM C 926 compliant stucco (as manufactured or listed by Sto Corp.)
7)	Sto primer (optional)
8)	Sto Textured Finish

System Description

StoPowerwall DrainScreen is a stucco wall assembly with continuous air and moisture barrier and advanced cavity wall design. It combines the strength and durability of traditional stucco with StoGuard moisture protection and Sto high performance finishes.

Uses

StoPowerwall DrainScreen can be used in residential or commercial wall construction where superior aesthetics, and air and moisture control are essential in the climate extremes of North America

NFPA 285 Compliance Documents

Test Reports:

Southwest Research Institute
01.16941.01.001a and 01.16941.01.001b

Engineering Analysis:

Hughes Associates Dated July, 11 2014
HAI Project IJJB05184.001

ICC-ES Recognition for Types I-IV Construction:

ESR 2323 and ESR 1233

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StoQuik® Silver DrainScreen™

Impact resistant decorative and protective cladding with advanced cavity wall design, and fluid applied air and moisture barrier



- | | |
|----|--|
| 1) | Substrate: Glass mat gypsum sheathing in compliance with ASTM C 1177. |
| 2) | StoGuard® Air and Moisture Barrier |
| 3) | Sto DrainScreen™ Drainage Mat |
| 4) | PermaBase® Brand Cement Board |
| 5) | StoGuard Mesh Joint Reinforcement (skim coated with Sto base coat) |
| 6) | Sto Mesh (embedded in Sto Base Coat) |
| 7) | Two base coat options: Sto Primer/Adhesive-B or Sto BTS® Xtra |
| 8) | Sto Primer Sand (optional) |
| 9) | Three textured finish options: Stolit® Lotusan®, Stolit®, or Sto Essence DPR |

System Description

StoQuik Silver DrainScreen is a decorative and protective wall cladding assembly with advanced cavity wall design and fluid applied air and moisture barrier for superior moisture protection. Sto's high performance finishes applied over cement board provide handsome aesthetics and a durable exterior skin.

Uses

StoQuik Silver DrainScreen can be used in residential or commercial wall construction where energy efficiency, superior aesthetics, and air and moisture control are essential in the climatic extremes of North America.

NFPA 285 Compliance Documents

Test Report:

Southwest Research Institute SwRI
Project No. 01.12694.01.113 Report Date
June 14, 2007.

ICC-ES Recognition for use in Types I-IV Construction:
ESR 2536

<p>Sto Corp. 3800 Camp Creek Parkway Building 1400, Suite 120 Atlanta, GA 30331</p> <p>Tel: 404-346-3666 Toll Free: 1-800-221-2397 Fax: 404 346-3119</p> <p>www.stocorp.com</p>	<p>TB-NFPA-QSD Revision: 001 Date: 6/2017</p>	<p style="text-align: center;">Attention</p> <p>Sto products are intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. They should be installed in accordance with those specifications and Sto's instructions. Sto Corp. disclaims all, and assumes no, liability for on-site inspections, for its products applied improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Sto's control. Improper use of Sto products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to this product, and to the structure of the building or its components. STO CORP. DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH STO'S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME. For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Sto Corp. website, www.stocorp.com.</p>
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Frequently Asked Questions

What is NFPA 285?

NFPA 285 is titled, *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components*.

NFPA 285 is a 2-story fire test to determine if an exterior wall assembly which contains **combustible** materials can be used in construction where the code requires exterior walls to be of **noncombustible** construction. The pass/fail criteria are based on the extent of fire spread (determined visually and by embedded sensors).

Details of the actual test method are available from the National Fire Protection Association (NFPA), www.nfpa.org.

Why is NFPA 285 important?

NFPA 285 is important for the safety of the building occupants during a fire and the safety of emergency personnel responding to a fire. It provides an indication that the spreading of a fire will not be made significantly worse by the presence of the tested combustible materials.

NFPA 285 is important because it has become one of the standard tests required to demonstrate that a product or system complies with the fire safety requirements of the International Building Code (IBC) for “noncombustible construction”.

What is “non-combustible construction”?

Noncombustible construction is, in its purest form, construction that uses only materials that do not burn, such as steel and concrete. Certain buildings are required to be noncombustible construction based on their usage and/or size (large commercial buildings, government buildings, hospitals, schools, etc.). The use of combustible materials in the construction of exterior walls of these buildings is often necessary to achieve required levels of moisture protection or continuous insulation, or both. NFPA 285 was developed to assess whether or not a particular type, amount or configuration of combustible material could be used and still maintain an acceptable level of safety in the event of a fire.

Is testing for use in noncombustible construction a new requirement?

No. Wall assemblies with combustible components such as foam plastic insulation have been required to perform some version of large-scale fire test for the same purpose as NFPA 285 since the 1980's. Originally the test run for EIFS was not “NFPA 285”, but previous versions of the same or similar tests with Uniform Building Code numbers UBC 17-6, UBC 26-4 and UBC 26-9. (A detailed history of the development of the test is presented in an appendix to the test method which can be purchased from NFPA).

A requirement for testing combustible water-resistive barriers in noncombustible construction wall assemblies was added to the IBC in 2012 (Section 1403.5). This addition brought attention to NFPA 285 because of its application to non-foam-plastic

materials and manufacturers. Design professionals became more aware of NFPA 285 and began to ask for information to verify that the materials being specified had been included in a tested assembly.

If the air/moisture barrier is the ONLY combustible component in the wall assembly, and the 2015 IBC is the applicable code, then wall assemblies may be qualified for use based on small scale tests of the air/moisture barrier. The results of the fire tests must all comply with the exceptions listed under Section 1403.5 in the 2015 IBC.

What is a “tested assembly”?

The tested assembly is exactly what was tested. The description of the test specimen in an NFPA 285 report states the product names, generic product types, and material thicknesses. The construction details at the head of a window opening and other pertinent details of the base wall panel are also reported.

Why is the detail of the assembly important?

The nature of fire is that one cannot necessarily predict the performance of one combination of materials based on another. If one material is exchanged for another, it may change the fire test performance in a way that is cannot be predicted. Similarly, if the order of application of materials is changed, the fire performance of the overall assembly can change – even if the materials are the same.

What if my back-up wall is not the same as the back-up wall used in the NFPA 285 test?

The back-up wall construction for all tests is the same. The test evaluates whether or not the presence of combustible components in the tested wall assembly applied over the noncombustible back-up wall construction causes excess flame spread over the face or within the core of the assembly, or within the interior space from one story to the next. Project specific framing details or the use of masonry components in the field constructed assembly does not negate the NFPA 285 test, provided the base construction is noncombustible.

How does Sto comply with NFPA 285?

Sto has performed the testing through nationally recognized and accredited independent testing labs. We have tested StoTherm ci (as StoTherm and StoTherm NEXt), Sto EnergyGuard, StoPowerwall, and StoQuik Silver systems. (Some of the older systems were tested to the older versions of the test method, but they are accepted by fire consultants and building code evaluation services as being acceptable substitutes for NFPA 285.) Specific, tested wall assemblies are listed in the code evaluation reports under the section titled, “Noncombustible Construction”. This section will not appear in an evaluation report if NFPA 285 requirements have not been satisfied.

Can you provide me with a copy of the NFPA 285 test report?

The ESRs are, in themselves, third-party reviews of independent test data that verify building code compliance. The ESRs account for fire tests that were run before NFPA 285 and additional fire tests that are required for certain systems or engineering analysis. The ESRs help avoid unnecessary confusion about tests run as UBC standards instead of NFPA 285, by stating recognition to be used in noncombustible construction. ICC ESRs are typically furnished in lieu of test reports since they establish compliance with building codes. If *required* a copy of the actual test report can be provided.

Where does the Evaluation Report demonstrate compliance with NFPA 285?

The ESR will indicate compliance in several places. Primarily, though, section **2.0 Uses** will clearly state to which construction types the subject product or system may be applied. Construction Types I, II, III, and IV are classified as noncombustible construction. For example from ESR-1748 for StoTherm NExT:

2.0 USES

StoTherm NExT systems are exterior insulation and finish systems (EIFS) complying with IBC Section 1408 and IRC Section R703.9. The systems comply with the requirements of IBC Section 1408.4.1 and IRC Section R703.9 as EIFS with drainage.

StoTherm NExT systems may be used in fire resistance-rated construction when installed in accordance with Section 4.6 of this report; and in any construction type (IBC Types I through V) when installed in accordance with Section 4.5.

The second paragraph states “any construction type”, which includes noncombustible construction. Reference is made to Section **4.5 Use in Types I through IV (Noncombustible) Construction**, which restates the recognition and directs the reader to a table of recognized systems.

Some reports, especially those for systems that are not EIFS, will specifically call out NFPA 285 in section **6.0 Evidence Submitted**. StoTherm reports do not currently call this out, partially because recognition is based on older versions of fire tests.

Does every different combination of materials need to be tested per NFPA 285?

Under the 2012 Edition of the IBC, every wall assembly that includes a combustible water-resistive barrier must be tested. In some cases qualified fire engineering consultants can perform rational analysis to “extend” the test results to some other wall assemblies that are judged to be more conservatively designed from a fire protection standpoint.

Under the 2015 Edition of the IBC, walls in which the only combustible element is the air/moisture barrier exceptions are provided based on successful completion of several specified small-scale tests.

What if I need a copy of an analysis?

Where a rational analysis has been performed, Sto Corp. has incorporated the results of the analysis into its ICC evaluation reports. In a few cases we have provided rational analysis on a job-by-job basis, based on level of importance of the project, fee structure associated with the analysis, likelihood of the analysis being favorable, and time frame, usually 30-60 days needed for the analysis.

What about combinations of materials that have not been tested or analyzed?

They should not be used on noncombustible construction without testing or an analysis. An analysis requires existing data and a rational means of applying that data to the proposed assembly. The fire engineering consultant must determine if analysis is an option based on his experience, his judgment and the availability of relevant data.

What about NFPA 285 and “combustible construction”?

Combustible construction is identified as Type V. It is construction where “the structural elements are any material permitted” by the code. This is typically wood-framed construction. Because the structural elements are permitted to be combustible there is no requirement to perform NFPA 285.

How does NFPA 285 relate to hourly fire ratings?

The two are not directly related. Both NFPA 285 and an hourly rating may be required for some buildings, but not necessarily. An hourly fire rating is determined by ASTM E 119, which is a fire endurance test. The wall assembly is subjected to a fire for a predetermined period of time. If the wall meets certain criteria after the duration of the fire exposure, then an hourly rating is assigned to that assembly. A wall that is exposed to a fire for one hour and passes the test is a “one-hour rated wall”. (Certain Type V (combustible) wall assemblies have hourly ratings.)