

# DuPont™ ArmorWall Plus Fire-Rated Structural Insulated Sheathing™

Cuts Like Wood. Burns Like Concrete.™

## FEATURES/BENEFITS

### Description

DuPont™ ArmorWall Plus Fire-Rated (FR) Structural Insulated Sheathing™ (SIS) is an ICC listed, high strength, fire-resistant exterior wall sheathing product. ArmorWall Plus FR SIS™ offers a factory-applied, proprietary air and water-resistive barrier, the first coating designed to be applied to Magnesium Oxide (MgO) board. Once seam and fasteners have been sealed the enclosure may be considered “dried-in”, allowing interior construction to commence regardless of final exterior finish status.

ArmorWall Plus FR SIS™ incorporates no less than four traditional building enclosure systems into a single panel product: structural sheathing, fire-resistance, an air and water-resistive barrier, and a high-performance continuous insulation layer. The four-in-one system of ArmorWall Plus FR SIS™ can replace several traditional individual components that, on their own, add cost, labor and complexity to a project.

### Applications

ArmorWall Plus FR SIS™ is an ideal solution for the following building types:

- Institutional Buildings
- Medical Buildings
- High Rise Buildings
- Public Municipal Buildings
- Mixed-Use and Retail Buildings
- Multifamily Buildings



### Product Benefits:

- Top of the line fire-resistance, durability, and strength
- Industry-leading exterior adhesion performance and compatibility with tapes, sealants, and other materials
- Cladding no longer requires attachment back to the stud frame assembly or other substrates
- Meets continuous insulation (ci), building codes, and construction schedules faster and cost effectively.

## Panel Sizing and Insulation Factors

Panel Coverage	Total Panel Thickness	Sheathing Thickness	Insulation Thickness	R-Value	Weight <sup>1</sup>	SKU#
48" x 96" (32 sqft/ sheet)	2"	1/2"	1 1/2"	R10	103 lbs	APL200096
48" x 96" (32 sqft/ sheet)	2 3/4"	1/2"	2 1/4"	R15	110 lbs	APL234096
48" x 96" (32 sqft/ sheet)	3 3/4"	1/2"	3 1/4"	R21	115 lbs	APL334096

<sup>1</sup> Average panel weight may vary based upon environmental conditions.

## PROPERTIES

### Typical Physical Properties for DuPont™ ArmorWall Plus FR SIS™

Property	Test Method	Value
Air Leakage Resistance	ASTM E2357	Pass
Air Infiltration at 75 Pa	ASTM E283	0.01 cfm/ft <sup>2</sup> (0.1 L/s/m <sup>2</sup> )
Air Infiltration at 300 Pa	ASTM E283	0.04 cfm/ft <sup>2</sup> (0.2L/s/m <sup>2</sup> )
Water Penetration at 6.27 psf (300 Pa)	ASTM 331 <sup>1</sup>	Pass
Mold and Mildew	ASTM C1338	No observed growth
Fastener Sealability <sup>2</sup>	ASTM D1970	Pass
Fire Resistance	NFPA 285 <sup>3</sup>	Pass
Vapor Permeance	ASTM E96 (Procedure A)	0.5 Perms (grains/hr in Hg ft <sup>2</sup> )
Flame Spread/Smoke Developed Index (facer)	ASTM E84	0 / 0
Flame Spread/Smoke Developed Index (insulation)	ASTM E84	20 / 200
Thermal Resistance	ASTM C518	6.5 per inch
Foam Compression Range	ASTM D1621	38-42 psi
<b>Cladding Attachment Figures</b>		
Fastener Withdrawal Capacity	ASTM D1761 <sup>4,5</sup>	284 lbs
Fastener Pull Through	ASTM D1761 <sup>4,5</sup>	505.2 lbs
Fastener Shear in Sheathing Only	ASTM D1761 <sup>4,5</sup>	519 lbs

<sup>1</sup> Total test duration full two continuous hours.

<sup>4</sup> Average ultimate value after thermal cycling (10 cycles) provided.

<sup>2</sup> ArmorWall Plus FR SIS™ is self-healing around cladding attachment fasteners.

<sup>5</sup> Fastener data reflects attachment to the panel not attachment to structure.

<sup>3</sup> ArmorWall Plus FR SIS™ passes NFPA 285 attached directly to the stud framing allowing most cladding installed to its exterior as inclusive to the NFPA 285 approved assembly.

## SHEAR PROPERTIES<sup>1,2</sup>

Fastener Type	Min. Fastener Penetration into Framing	Panel Applied Direct to Framing (Fastener Spacing at Panel Edges in Inches)			Panel Applied Direct to Framing w/ 1/2" Gypsum on Opposite Face (Fastener Spacing at Panel Edges in Inches)
		12"	6"	4"	6"
Shear (lbs/ft) w/ Framing of Douglas - Fir - Larch or Southern Pine w/ blocked perimeters					
#14-13	1"	301 lbf (RNV)	437.5 lbf (RNV)	537.5 lbf (RNV)	570 lbf (RNV)
		150 lbf (ASD)	218.75 lbf (ASD)	268.75 lbf (ASD)	285 lbf (ASD)
		240 lbf (LFRD)	350 lbf (LFRD)	430 lbf (LFRD)	456 lbf (LFRD)

<sup>1</sup> Per ASTM E72 and comparable to table 2306.2 (1) of the 2015 IBC.

<sup>2</sup> Data presented is RNV (Reference Nominal Value), ASD (Allowable Stress Design), and LFRD (Load and Resistance Factor Design) as tested.

## DEFLECTION PROPERTIES

	Test Method <sup>1</sup>	Stud Thickness <sup>3</sup>	Span	Results
L/240	TAS 202-94	18 ga	86"	+113/-95 psf (+5400/-4560 Pa)
L/360	TAS 202-94	18 ga	86"	+113/-75 psf (+5400/-3600 Pa)
L/240	TAS 202-94	20 ga	86"	+60/-40 psf (+2880/-1920 Pa)
L/360	TAS 202-94	20 ga	86"	+60/-25 psf (+2880/-1200 Pa)
	TAS203-94 <sup>2</sup>	18 ga		+113/-95 psf (+5400/-4560 Pa)
	TAS203-94 <sup>2</sup>	20 ga		+60/-40 psf (+2880/-1920 Pa)

<sup>1</sup> Impact and Non-impact Resistance Building Envelope Components Using Uniform Static Air Pressure per Florida Building Code 6 Edition (2017) Section 1604.

<sup>2</sup> Criteria for Testing Products Subject to Cyclic Wind Pressure Loading per Florida Building Code 6 Edition (2017) Section 1604.

<sup>3</sup> Studs Tested at 16" O.C.

---

## TESTING

### Applicable Standards

DuPont™ ArmorWall Plus FR SIS™, when used as an approved DuPont commercial wall system, meets various ASTM Testing Standards. Applicable standards include:

- **ASTM C518** - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- **ASTM C1338** - Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings
- **ASTM D1037** - Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials
- **ASTM D1970** - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
- **ASTM E72** - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
- **ASTM E84** - Standard Test Method for Surface Burning Characteristics of Building Materials
- **ASTM E90** - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of

### Notice

DuPont™ ArmorWall Plus FR SIS™ complies with the following codes:

- **NFPA 285** - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components
- **UL Classified** - Class A UL 723 (ASTM E84) Surface Burning Characteristics of Building Materials
- **1 and 2-Hour Fire-Rated Assemblies** are located within the ArmorWall Structural Insulated Sheathing Rated Assemblies Handbook, with additional sound-rated assemblies
- **ICC Listed** - ICC-ES ESL-1306
- **ASHRAE 90.1-2013** - Energy Standard for Buildings Except Low-Rise Residential Buildings
- **Testing Application Standard (TAS) 202-94** - Impact & Nonimpact Resistance Building Envelope Components using Uniform Static Air Pressure”.
- **Testing Application Standard (TAS) 203-94** - Criteria for Testing Products Subject to Cyclic Wind Pressure Loading

### Warranty

Ten-year limited warranty may be applicable when used as a component in the **DuPont ArmorWall System**. Visit [www.ArmorWall.DuPont.com](http://www.ArmorWall.DuPont.com) or contact your DuPont representative for details.

Building Partitions and Elements

- **ASTM E96** - Standard Test Methods for Water Vapor Transmission of Materials
- **ASTM E119 / UL 263** - Standard Test Methods for Fire Tests of Building Construction and Materials
- **ASTM E283** - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
- **ASTM E330** - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
- **ASTM E331** - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- **ASTM E2357** - Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies

Contact your DuPont sales representative or local authorities for state and local building code requirements and related acceptances.

---

## HANDLING

**WARNING: For Professional Use Only** – Read and follow the entire Handling section and the Safety Data Sheets carefully before use. The information below is designed to protect the user and allow for safe use and handling of DuPont ArmorWall Brand products. Follow all applicable federal, state, local and employer regulations.

### Handling and Use

- **ArmorWall Plus FR SIS™** can be cut and installed using standard jobsite hand tools.
- When being cut to size, avoid breathing dust and minimize contact with eyes.
- **ArmorWall Plus FR SIS™** should be stored off the ground in original shipment condition until ready for installation.
- Avoid ground contact or continuous exposure to moisture and direct sunlight.
- Some skinning and direct coloration of the insulation edges is normal if exposed to UV light prior to installation; however, it does not affect the performance of the panel.
- Some cupping of the panel is expected during shipment and can be rectified during installation by beginning installation from the center of the panel and working outward per the fastener standard of the designed application.

### Product Limitations

- Do not install **ArmorWall Plus FR SIS™** below grade. For these applications see **DuPont™ ArmorWall Below Grade FR SIS™**.
- For required NFPA 285 ratings, **DuPont™ ArmorBoard Returns** must be utilized at rough openings. Contact Customer Services for further details. Direct applied mortar/base/bond coat stucco applications require utilization of a slip sheet or drainage plane for capillary break.
- Do **NOT** use an impact drill to fasten cladding or attachments to the panel. Maximum stud spacing is 24" O.C. Fasteners shall be placed 12" O.C. in the field. Parallel seams to studs must fall on studs and blocking is not required.
- **ArmorWall Plus FR SIS™** can remain uncovered once installed on the wall assembly for a period not to exceed 180 days. When implemented behind open joint rainscreen systems, **ArmorWall Plus FR SIS™** has a maximum gap allowance of 3/8". Contact Customer Services for exposure longer than 180 days or for gaps greater than 3/8".



**For more information visit us at  
[armorwall.dupont.com](http://armorwall.dupont.com)  
or call 1-844-629-4968**

NOTICE: No freedom from any patent owned by DuPont or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where DuPont is represented. The claims made may not have been approved for use in all countries or regions. DuPont assumes no obligation or liability for the information in this document. References to "DuPont" or the "Company" mean the DuPont legal entity selling the products to Customer unless otherwise expressly noted. NO EXPRESS WARRANTIES ARE GIVEN EXCEPT FOR ANY APPLICABLE WRITTEN WARRANTIES SPECIFICALLY PROVIDED BY DUPONT. ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED. The buyer assumes all risks as to the use of the material. Failure to strictly adhere to any recommended procedures shall release DuPont Specialty Products USA, LLC or its affiliates, of all liability with respect to the materials or the use thereof. The information herein is not intended for use by non-professional designers, applicators or other persons who do not purchase or utilize this product in the normal course of their business.