DuPont™ ArmorWall™ Plus Fire-Rated Structural Insulated Sheathing

5-in-1 Composite Panel for Commercial Wall Systems

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, high quality air and water-resistive barrier. Once seams 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 five traditional building enclosure elements into a single panel product: structural sheathing, fire-resistance, air barrier, water-resistive barrier, and a high-performance continuous insulation layer. The five-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) requirements, 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[1]	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

[1] 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/ft² (0.1 L/s/m²)
Air Infiltration at 300 Pa	ASTM E283	0.04 cfm/ft² (0.2L/s/m²)
Water Penetration at 6.27 psf (300 Pa)	ASTM 331[1]	Pass
Mold and Mildew	ASTM C1338	Pass
Fastener Sealability[2]	ASTM D1970	Pass
Fire Resistance	NFPA 285[3]	Pass
Vapor Permeance (of 2" panel)	ASTM E96 (Procedure A)	0.5 Perms (grains/hr in Hg ft²)
Flame Spread/Smoke Developed Index (facer)	ASTM E84	0 / 0
Flame Spread/Smoke Developed Index (insulation)	ASTM E84	10 / 250
Thermal Resistance	ASTM C518	6.5 per inch
Foam Compression Range	ASTM D1621	30 psi
Cladding Attachment Figures		
Fastener Withdrawal Capacity	ASTM D1761[4 5]	284 lbs
Fastener Pull Through	ASTM D1761[4 5]	505.2 lbs
Fastener Shear in Sheathing Only	ASTM D1761[4 5]	519 lbs

[1] Total test duration two continuous hours.
[2] ArmorWall™ Plus FR SIS is self-sealing around cladding attachment fasteners.
[3] 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.
[4] Average ultimate value after thermal cycling (10 cycles) provided.
[5] Fastener data reflects attachment to the panel not attachment to structure.

SHEAR PROPERTIES[1 2]

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)
Shear (lbs/ft) w/ Framing of Douglas - Fir - Larch or Southern Pine w/ blocked perimeters					
		12"	6"	4"	6"
#14-13	1"	301 lbf (RNV) 150 lbf (ASD) 240 lbf (LFRD)	437.5 lbf (RNV) 218.75 lbf (ASD) 350 lbf (LRFD)	537.5 lbf (RNV) 268.75 lbf (ASD) 430 lbf (LRFD)	570 lbf (RNV) 285 lbf (ASD) 456 lbf (LRFD)

[1] Per ASTM E72 and comparable to table 2306.2 (1) of the 2015 IBC.
[2] Data presented is RNV (Reference Nominal Value), ASD (Allowable Stress Design), and LRFD (Load and Resistance Factor Design) as tested.

DEFLECTION PROPERTIES

	Test Method[1]	Stud Thickness[3]	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[2]	18 ga		+113/-95 psf (+5400/-4560 Pa)
	TAS203-94[2]	20 ga		+60/-40 psf (+2880/-1920 Pa)

[1] Impact and Non-impact Resistance Building Envelope Components Using Uniform Static Air Pressure per Florida Building Code 6 Edition (2017) Section 1604.
[2] Criteria for Testing Products Subject to Cyclic Wind Pressure Loading per Florida Building Code 6 Edition (2017) Section 1604.
[3] 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 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 Building Partitions and Elements
- **ASTM E96** - Standard Test Methods for Water Vapor Transmission of Materials

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
- **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, ICC-ES ESL-1442, ICC-ES ESL-1302
- **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** or contact your DuPont representative for details.

- **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.
- 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".

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For more information visit us at armorwall.dupont.com or call 1-833-338-7668

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