DuPont™ ArmorWall™ Plus Fire-Rated Structural Insulated Sheathing

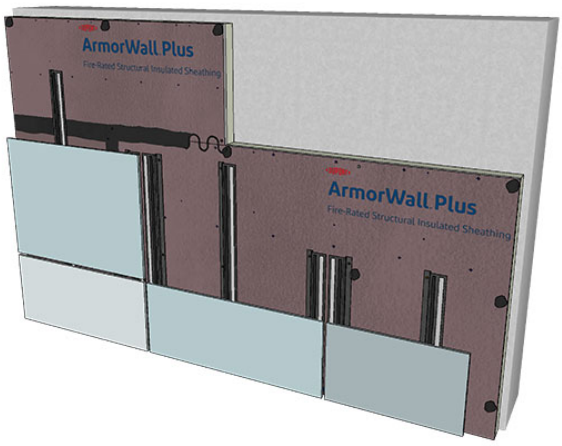
5-in-1 Composite Panel for DuPont™ ArmorWall™ System

OVERVIEW

Description

DuPont™ ArmorWall™ Plus Fire-Rated (FR) Structural Insulated Sheathing (SIS) is an ICC listed (ESL-1302, ESL-1306, ESL-1442, ESL-1536, and ESL-1543), high strength, fire-resistant exterior wall sheathing product, with up to a two-hour fire rated assembly achievable. **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, making it a cost-saving and labor-reducing option compared to traditional, individual components.



Features and Benefits

- Ideal fire-resistance, durability, and strength.
- Meets continuous insulation (ci) requirements, building codes, and construction schedules faster and more cost effectively.
- Industry-leading adhesion performance and compatibility with tapes, sealants, and other materials.
- Cladding attachment freedom by eliminating need to fasten directly to framing.

Complete System

DuPont offers a wide variety of accessories engineered to complete the **ArmorWall™ System:**

- **DuPont™ DuraGard™ WD:** Primerless window & door rough opening flashing tape. Keeps air & water out; helps improve durability & energy efficiency.
- **DuPont™ LiquidArmor™ FJ Flashing and Joint Compound:** Used at panel joints, penetrations, and fastener heads to complete the air-and water-resistive barrier continuity of the **ArmorWall™ System**. Requires just one application.
- **DuPont™ DuraGard™ CM:** Primerless, multipurpose, self-adhered flashing suitable for numerous applications.

In addition, DuPont recommends and offers a variety of fasteners*, including brick ties for the **ArmorWall™ System** based on panel thickness, structural substrate and cladding.

Applications

DuPont™ ArmorWall™ Plus Fire-Rated Structural Insulated Sheathing 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

Warranty

- Ten-year limited warranty may be applicable when used as a component in the **DuPont™ ArmorWall™ System**. Contact your DuPont representative for details.

Standard Sizes

U.S. Sizes, R-Values and Edge Treatments for ArmorWall™ Plus Fire-Rated Structural Insulated Sheathing

Thickness	Sheathing Thickness	Insulation Thickness	Width	Length	R-Value	NetWeight
2 in.	1/2 in.	1 1/2 in.	4 ft.	8 ft.	10	103 lbs
2 3/4 in.	1/2 in.	2 1/4 in.	4 ft.	8 ft.	15	110 lbs
3 3/4 in.	1/2 in.	3 1/4 in.	4 ft.	8 ft.	21	115 lbs

TESTING AND CODE COMPLIANCE

DuPont™ ArmorWall™ Plus Fire-Rated Structural Insulated Sheathing, when used as an approved DuPont commercial wall system, meets various Testing Standards. Applicable standards include:

TEST METHOD	TEST TITLE	PROPERTY	RESULTS
FIRE			
NFPA 285[1]	Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components	Fire Resistance	PASS
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials	Flame Spread/Smoke Developed Index (MgO Board)	0 / 0
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials	Flame Spread/Smoke Developed Index (insulation)	20 / 200
ASTM E119	Standard Test Methods for Fire Tests of Building Construction and Materials	Hourly Rating	2 hrs assembly dependent
THERMAL			
ASTM C518	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	Thermal Resistance	6.5 per inch of insulation
STRENGTH			
ASTM D1621	Standard Test Method for Compressive Properties of Rigid Cellular Plastics	Foam Compression Range	30 psi
TAS 202-94	Criteria for Testing Impact & Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure	Deflection Properties	PASS
TAS 203-94	Criteria for Testing Products Subject to Cyclic Wind Pressure Loading	Cyclic Deflection Properties	PASS
STRUCTURAL			
ASTM E72	Standard Test Methods of Conducting Strength Tests of Panels for Building Construction	Racking Resistance	PASS
ASTM E330	Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference	Deflection Properties	Similar to TAS 202 /203 - Data is in ESL-1306
AIR			
ASTM E283	Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen	Air Infiltration at 75 Pa	0.01 cfm/ft^2 (0.1L/s /m^2)
ASTM E283	Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen	Air Infiltration at 300 Pa	0.04 cfm/ft^2 (0.2L/s /m^2)
ASTM E2357	Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies	Air Leakage Resistance	PASS
WATER			
ASTM E96	Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials	Procedure A Vapor Permeance (of 2" panel)	0.2 Perms (grains /hr in Hg ft^2)
ASTM E331[2]	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference	Water Penetration at 6.27 psf (300 Pa)	PASS
GENERAL			

ASTM D1970	Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection	Fastener Sealability[3]	PASS
ASTM C1338	Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings	Mold and Mildew	PASS
ASTM D1761[4]	Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials	Fastener Shear in Sheathing Only	519 lbs
ASTM D1761[4]	Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials	Fastener Pull Through	505.2 lbs
ASTM D1761[4]	Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials	Fastener Withdrawal Capacity	284 lbs

[1]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

[2]Total test duration two continuous hours.

[3]ArmorWall™ Plus FR SIS is self-sealing around cladding attachment fasteners.

[4]Fastener data reflects attachment to the panel not attachment to structure.

Shear Properties

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 with blocked perimeters					
		12"	6"	4"	6"
#14-13	1"	301 lbf (RNV)	437.5 lbf (RNV)	537.5 lbf (RNV)	570 lbf (RNV)
#14-13	1"	150 lbf (ASD)	218.75 lbf (ASD)	268.75 lbf (ASD)	285 lbf (ASD)
#14-13	1"	240 lbf (LFRD)	350 lbf (LRFD)	430 lbf (LRFD)	456 lbf (LRFD)

Deflection Properties

Property	Test Method	Stud Thickness	Span	Results
L/240	TAS 202-94[1]	18 ga	86"	+113/-95 psf (+5400/-4560 Pa)
L/240	TAS 202-94[1]	20 ga	86"	+60/-40 psf (+2880/-1920 Pa)
L/360	TAS 202-94[1]	18 ga	86"	+113/-75 psf (+5400/-3600 Pa)
L/360	TAS 202-94[1]	20 ga	86"	+60/-25 psf (+2880/-1200 Pa)
	TAS 203-94[2]	18 ga		+113/-95 psf (+5400/-4560 Pa)
	TAS 203-94[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.

CODE COMPLIANCE

DuPont™ ArmorWall™ Plus Fire-Rated Structural Insulated Sheathing complies with the following codes:

CODE	DESCRIPTION

US Product Listings & Verifications	ESL-1302 - Hourly Rated Walls ESL-1306 - Deflection Properties - ASTM E330 ESL-1442 - Exterior Wall Fire Properties - NFPA 285 ESL-1536 - Racking Resistance - ASTM E72 ESL-1543 - Cladding Fastener Spacing Tables

HANDLING

Warning

- **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, it is recommended to wear safety gloves, glasses, and a mask to avoid breathing dust and minimize contact with eyes.
- In areas with limited ventilation or for increased exposure (extensive and repeated cutting), additional PPE and respiratory protection may be warranted.
- **ArmorWall™ Plus FR SIS** should be stored off the ground in original shipment condition and protected from weather 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.
- Application of stucco or exterior cement plaster over **ArmorWall™** requires a 3/16" minimum, non-permeable, drainage and drying material layer.
- Do NOT use an impact drill to fasten cladding or attachments to the panel.
- 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
or call us at 1-833-338-7668

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