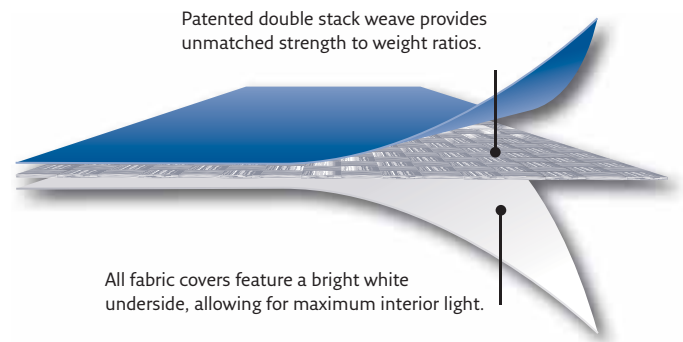


HIGH PERFORMANCE FABRIC COVERS

STANDARD, FIRE RETARDANT (FR) & PVC

Norseman Structures' high performance fabric uses unique technology giving it tremendous strength and durability.

Covers are manufactured from 12 oz/yd², 23 mil (0.59mm) thick polyethylene fabric which is created using a layer of woven tapes (scrim). It is then coated with a specialized 4 mil thick protective layer front and back, that helps avoid scuffing and UV damage. This combination provides a cover with increased protection against abrasion during fabrication, installation and everyday use for years to come. In addition, covers have tremendous rip, tear and puncture resistance.



BRIGHT INTERIOR ATMOSPHERE

- Fabric covers provide a building with a bright atmosphere.
- The high light transmission (20.9%) allows sunlight to filter through the fabric reducing or often eliminating the need for artificial lighting during the day resulting in energy savings.
- If natural light is not desired, blackout fabric is also available.
- The unique composition ensures fabric remains pliable and resistant to ultraviolet damage.
- The fabric's properties ensure buildings are warmer in the winter and cooler in the summer.

OPTIONAL COVER MATERIALS

Fire Retardant (FR) Fabric

We recognize that some building projects may require Fire Retardant fabric and have made this option available. Laboratory testing confirms Norseman Structures' high performance fabric is "self extinguishing" which often eliminates a flame instead of adding fuel as many building materials would.

- Allows replacement of fabric covers only following a fire incident - conventional buildings may be a total loss.
- Adheres to stringent building codes required for many projects.
- Reduces flame spread to other buildings.
- Increases building escape time in case of fire.
- Increases opportunity for fire and protective services to extinguish the fire.

PVC Fabric

Depending on your specific requirements, Norseman Structures can also provide a large selection of PVC fabrics. They are available in a variety of weights, colors, translucencies and topcoats.

Your building consultant will help you determine which cover fabric is right for your application.

SAFE & ENVIRONMENTALLY FRIENDLY

- No toxic chemicals are used in the production of Norseman Structures' high performance fabric.

BACKED BY WARRANTY

- Standard and FR (fire retardant) covers carry up to 15 and 10 year pro rata warranties respectively. Warranty details can be found in each Norseman Structures Building Owner's Warranty and Maintenance Package shipped with the cover or building.

WIDE COLOR SELECTION



STANDARD & FIRE RETARDANT (FR) PROPERTIES

The following data are nominal values based on ASTM standard tests. This data should not be considered specification.

Common Tests and Specifications: Standard and Fire Retardant (FR) Fabric		
Coating Thickness		4mil (94-95g/m ²) average each side
Total Fabric Weight		12 oz/yd ² (407 g/m ²) +/- 5%
Thickness	ASTM D-1777	Standard: 23mil (0.59mm) Fire Retardant: 23mil (0.59mm)
Grab Tensile	ASTM D-5034	Standard: Warp: 370 lb. (1664 N), Weft: 345 lb. (1532N) Fire Retardant: Warp: 360 lb. (1598N), Weft: 350 lb. (1555N)
Tongue Tear	ASTM D-2261	Standard: Warp: 110 lb. (488N), Weft: 100 lb. (444N) Fire Retardant: Warp: 120 lb. (533N), Weft: 110 lb. (489N)
Strip Tensile	ASTM D-5035	Standard: Warp: 275 lb/in. (2444N/5cm), Weft: 245 lb/in. (2178N/5cm)
	CSA-S367	Fire Retardant: Warp: 275 lb/in. (2444N/5cm), Weft: 250 lb/in. (2222N/5cm)
Mullen Burst	ASTM D-3786	Standard: 655 psi (4512 kPa) Fire Retardant: 675 psi (4657 kPa)
Low Temp. Bend	ASTM D-2136	Pass: -60° C (-76° F)
Light Transmission %	ASTM E-903	White/White: Standard: 20.9%, Fire Retardant: 11.4%
Water Vapor Transmission	ASTM E-96	0.038 grains/h/ft ² /inHg (perms) 2.16 ng/Pa/s/m ²
UV & Weathering	ASTM G-151	>90% strength retention after 2000hrs @ 0.77 W/m ² /nm
UV & Weathering	ASTM G-154	>90% strength retention after 1200hrs @ 1.35 W/m ² /nm
UV & Weathering	CSA-S367	>75% strength retention after 5000hrs @ 0.77 W/m ² /nm
Trapezoidal Tear	ASTM D-4533	Standard: Warp: 95 lb. (422N), Weft: 90 lb. (400N) Fire Retardant: Warp: 100 lb. (444N), Weft: 90 lb. (401N)

Fire Test Results: Fire Retardant Fabric (FR)			
Base Fabric	HDPE Scrim using FR inhibitors and UV protection		
Surface Type	Modified LDPE coating using FR inhibitors and UV protection		
California Fire Marshal	FA-51405		
NFPA 701-1989 (Large Scale Test)	04-02-725(A)	Char: 1.4in. Av.	Drip: No
NFPA 701-1989 (Small Scale Test)	04-02-725(A)	Char: 3.5in. Av.	Drip: No
ASTM E-84-08	08-002-695	FSI: 10	SD: 110
NFPA 701-2010 Test Method 1	11-002-50637	Mass Loss: 1.6 Av.	Drip: 0.8
NFPA 701-2010 Test Method 2	11-002-637(B)	Char: 268mm (10.6in.) Av.	
CAN/ULC S109-03 (Small Flame)	06-02-866	Char: 98mm Av.	
CAN/ULC S109-03 (Large Flame)	06-02-866	Char: 104mm Av.	Drip: No
CAN/ULC S102-03	05-02-609	FSCI: 5	SD: 95
UBC 31-1	16421-108891	Char: 8.69in. Av.	Drip: No
UL	Listed-R15076		
ULC	Listed-R20040		
EN 13501-1	Fire Behavior: B	Smoke: s1	Droplets: d0

Fire Test Results: Standard Fabric			
Base Fabric	HDPE Scrim with UV protection		
Surface Type	Modified LDPE coating with UV protection		
ASTM E84-01	03-02-586 (A)	FSI: 10	SD: 65
CAN/ULC-S102-07	08-002-394	FSCI: 15	SD: 100

FIRE TESTING NOTE: Results of the fire tests demonstrate the fabrics will not support combustion nor contribute fuel to a fire. If the source of the fire is removed, the fabrics self extinguish and combustion ceases.

