

## Building Insulations - Walls and Ceilings (FM Approval Class Numbers 4411, 4651, 4880, 4881, 4882)

Insulating materials may occur in building construction to reduce heat or sound transmission through a wall, roof or floor-ceiling assembly. See Roofing Products and Assemblies Category for roof insulations.

The insulation listed below may be a surface treatment exposed to the building occupancy or as core material faced with metal, gypsum wallboard, concrete or masonry.

The listed assemblies are not intended as long-term fire walls or barriers since fire endurance was not evaluated. See SPECIFICATION TESTED PRODUCTS, ASTM E119 Standard, for hourly rated systems.

### Exterior Wall Constructions (Class Number 4881)

FM Approved exterior wall systems are Class 1 fire rated in accordance with Approval Standard 4880. Class 1 exterior wall systems may be rated for use to unlimited height, a maximum height of 50 ft (15.2 m) or a maximum height of 30 ft (9.1 m).

FM Approved Class 1 exterior wall assemblies have a wind load rating expressed as a pair of inward and outward acting pressures ( $P_{inward}$  and  $P_{outward}$  or +P/-P) determined using a combination of static and cyclic pressure tests. The rating is the lowest pair of pressures (inward and outward) attained in the static pressure test or the cyclic pressure test. The ratings are in increments of 5 psf (0.24 kPa) based on the inward (positive) pressure. The minimum rating for Approval is 30 psf (1.44 kPa) for the inward (positive) pressure. The magnitude of the pressure on the leeward side of a building is equal or higher than the pressure on the windward side so the outward pressure is based on pressure coefficients of either (-1.4P) or (-2.0P) based on an applied pressure (+P) on the windward side. FM Global Property Loss Prevention Data Sheet 1-28 is used to determine the minimum wind load rating(s) required based on the building's geometry and geographic location.

FM Global recognizes three (3) different wind zones referred to as Zone HM, Zone H and Zone NH. The FM Global Property Loss Prevention Data Sheets are used to determine which zone applies for a particular location. Zone HM is used to denote those exterior wall assemblies that have been qualified for locations that are subject to both hurricane force winds and missile impact from windborne debris. Assemblies may meet the requirements of either the large missile (-LM) or the small missile (-SM) impact test. Assemblies meeting the missile requirements of the Florida Building Code are further designated as (FL) after the -LM or -SM designation. Zone H is used to denote those exterior wall assemblies that have been qualified for locations that are subject to hurricane force winds but not subject to missile impacts from windborne debris. Zone NH is used to denote those exterior wall assemblies in non-hurricane zones that are not subjected to either hurricane force winds or missile impacts from windborne debris.

FM Approved Class 1 exterior wall assemblies have a Hail Resistance Rating determined using tests that simulate the expected impact of hail. The ratings available are Severe and Moderate. The ratings are consistent with corresponding ratings and impact energies used in Approval Standard 4470, Class 1 Roof Covers. FM Global Loss Prevention Data Sheet 1-29 is used to determine the impact (hail) rating needed for a particular geographic location.

The entries in the table should be interpreted as follows:

Thickness indicates the minimum Approved panel thickness (usually wind test related) and the maximum Approved panel thickness (usually fire test related).

Width indicates the minimum Approved panel coverage width (usually fire test related) and the maximum Approved panel width (usually wind test related).

Maximum Height indicates the maximum continuous height of panels that may be installed (fire test related).

Hail Resistance Ratings, Wind Load Ratings and Zones are described above.

Maximum Support Steel Spacing is the maximum spacing between steel supports, Minimum Support Steel Thickness is the minimum steel support thickness and Minimum Support Steel Yield Stress is the minimum steel support strength required to achieve the indicated Wind Load Ratings.

See the listings in the FM Approvals Standard 4880 (2005) Wall-Ceiling/Roof Constructions section earlier in the Exterior Wall Construction Category for a description of each panel listed below.

Products identified with the **GREEN** symbol have attributes that are considered to be "sustainable" by certain outside organizations. FM Approvals verifies the presence of these attributes. Specific attributes for specific products are listed in the individual listings. To facilitate a search for these products in the Approval Guide, first search by the product type you desire and then refine your search to products with the **GREEN** symbol.

### Norex-H, Norex-L

Product	Primary Class of Work	Listing Country	Height Restriction	Certification Type
Norex-H, Norex-L	4881-Exterior Wall Systems	Canada	No Height Restriction	FM Approved

Wall Panel	Thickness/ Securement	Width	Max Height	Hail Resistance Rating	Wind Load Rating & Zone	Max Support Steel Spacing	Min Support Steel Thickness	Min Support Steel Yield Stress
Norex-H, Norex-L	3 - 6 in. (76 - 152 mm)/ Fastening System FP1 Listed Below	36 – 42.5 in. (914 - 1080 mm)	No Limit	Class S (Severe)	Class +30/-42 Zone H	2134 mm (84 in)	14 ga. (0.0747 in. [1.9 mm])	50 ksi
Norex-H, Norex-L	3 - 6 in. (76 - 152 mm)/ Fastening System FP1 Listed Below	36 – 42.5 in. (914 - 1080 mm)	No Limit	Class S (Severe)	Class +40/-56 Zone H	1829 mm (72 in)	14 ga. (0.0747 in. [1.9 mm])	50 ksi (345 Mpa)
Norex-H, Norex-L	3 - 6 in. (76 - 152 mm)/ Fastening System FP1 Listed Below	36 – 42.5 in. (914 - 1080 mm)	No Limit	Class S (Severe)	Class +45/-63 Zone H	1524 mm (60 in)	14 ga. (0.0747 in. [1.9 mm])	50 ksi (345 Mpa)
Norex-H, Norex-L	3 - 6 in. (76 - 152 mm)/ Fastening System FP1 Listed Below	36 – 42.5 in. (914 - 1080 mm)	No Limit	Class S (Severe)	Class +60/-84 Zone H	1219 mm (48 in)	14 ga. (0.0747 in. [1.9 mm])	50 ksi (345 Mpa)
Norex-H, Norex-L	3 - 6 in. (76 - 152 mm)/ Fastening System FP4 Listed Below	36 – 42.5 in. (914 - 1080 mm)	No Limit	Class S (Severe)	Class +30/-42 Zone H	3048 mm (120 in)	14 ga. (0.0747 in. [1.9 mm])	50 ksi
Norex-H, Norex-L	3 - 6 in. (76 - 152 mm)/ Fastening System FP4 Listed Below	36 – 42.5 in. (914 - 1080 mm)	No Limit	Class S (Severe)	Class +40/-56 Zone H	2743 mm (108 in)	14 ga. (0.0747 in. [1.9 mm])	50 ksi
Norex-H, Norex-L	3 - 6 in. (76 - 152 mm)/ Fastening System FP4 Listed Below	36 – 42.5 in. (914 - 1080 mm)	No Limit	Class S (Severe)	Class +45/-63 Zone H	2438 mm (96 in)	14 ga. (0.0747 in. [1.9 mm])	50 ksi
Norex-H, Norex-L	3 - 6 in. (76 - 152 mm)/ Fastening System FP4 Listed Below	36 – 42.5 in. (914 - 1080 mm)	No Limit	Class S (Severe)	Class +50/-70 Zone H	2134 mm (84 in)	14 ga. (0.0747 in. [1.9 mm])	50 ksi

Norex-H, Norex-L	3 - 6 in. (76 - 152 mm)/ Fastening System FP4 Listed Below	36 – 42.5 in. (914 - 1080 mm)	No Limit	Class S (Severe)	Class +60/-84 Zone H	1829 mm (72 in)	14 ga. (0.0747 in. [1.9 mm])	50 ksi
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**Table Notes:** Panels rated for Zone H may be used in Zones H and NH. See below for installation details for specific exterior wall panels.

Norex-H, Norex-L - installed vertically or horizontally over steel structural members as indicated in the table above.

Fastening System FP1 - Clip Attachment Screws, Two ITW ¼ -14 HWH #3 self drilling fasteners through a J-Clip at each bearing in each panel side joint.

Fastening System FP4 – Two clip attachment screws, ITW ¼ -14 HWH #3 self drilling fasteners, through a J-Clip at each bearing in each panel side joint and three Fab-Lok fasteners (10-4, 10-8 or 10-12 suitable for the thickness of the structural member) per bearing through the structural member into the interior panel facer spaced 9 ± 1.5 in. (225 ± 38 mm) from the center of each J-Clip and 12 ± 1.5 in. (300 ± 38 mm) between Fab-Loks through holes predrilled with a 5/16in. (7.9 mm) diameter drill bit.

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<b>Company Website:</b>	<a href="http://www.norbec.com">http://www.norbec.com</a>
<b>New/Updated Product Listing:</b>	No
<b>Green Product:</b>	No
<b>Primary Class of Work:</b>	4881-Exterior Wall Systems
<b>Listing Country:</b>	Canada
<b>Certification Type:</b>	FM Approved