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Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) Format, including *MasterFormat* (1995 Edition), *SectionFormat,* and *PageFormat,* contained in the CSI *Manual of Practice.*

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

SECTION 07260

REINFORCED VAPOR RETARDERS FOR UNDER SLABS

Specifier Notes: This section covers Reef Industries, Inc. “Griffolyn” reinforced vapor retarders for under concrete slab applications.

To prepare a “Short Form” version of this section, delete Articles 1.2 Related Sections, 1.3 References, and 1.5 Quality Assurance. Renumber remaining articles in Part 1.

Consult Reef Industries for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Reinforced vapor retarders for under concrete slab applications.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list as required for the project. List other sections with work directly related to the reinforced vapor retarders.

A. Section 02300 - Earthwork: Subgrade below reinforced vapor retarders.

B. Section 03300 - Cast-in-Place Concrete.

C. Section 09620 - Specialty Flooring.

D. Section 09640 - Wood Flooring.

E. Section 09650 - Resilient Flooring.

F. Section 09660 - Static Control Flooring.

G. Section 09670 - Fluid-Applied Flooring.

H. Section 09680 - Carpet.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

A. ASTM D 882 - Tensile Properties of Thin Plastic Sheeting.

B. ASTM D 1709 - Impact Resistance of Plastic Film by the Free-Falling Dart Method.

C. ASTM D 2582 - Puncture-Propagation Tear Resistance of Plastic Film and Thin Sheeting.

D. ASTM D 3776 - Mass per Unit Area (Weight) of Woven Fabric.

E. ASTM D 4833 - Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.

F. ASTM E 96 - Water Vapor Transmission of Materials.

G. ASTM E 1643 - Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

H. ASTM E 1745 - Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.

1.4 SUBMITTALS

A. Comply with Section 01330 - Submittal Procedures.

B. Product Data: Submit manufacturer's product data, including installation instructions.

C. Samples: Submit manufacturer’s samples of reinforced vapor retarders.

1.5 QUALITY ASSURANCE

Specifier Notes: Describe requirements for a meeting to coordinate the installation of the reinforced vapor retarders and to sequence related work. Delete this paragraph if not required.

A. Preinstallation Meeting: Convene a preinstallation meeting [2] [_____] weeks before start of installation of reinforced vapor retarders. Require attendance of parties directly affecting

work of this section, including Contractor, Architect, and installer. Review installation, protection, and coordination with other work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage: Store materials in a clean, dry area in accordance with manufacturer's instructions.

C. Handling: Protect materials during handling and installation to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Reef Industries, Inc., 9209 Almeda Genoa Rd., Houston, Texas 77075.
Toll Free (800) 231-6074. Phone (713) 507-4251. Fax (713) 507-4295.
Web Site www.reefindustries.com. E-Mail ri@reefindustries.com.

2.2 REINFORCED VAPOR RETARDERS FOR UNDER CONCRETE SLABS

Specifier Notes: Consult Reef Industries for assistance in determining the required reinforced vapor retarder for the specific under slab application. Delete vapor retarders not required.

A. Reinforced Vapor Retarder: Griffolyn Type-65.
   1. Material: 3-ply laminate, combining 2 layers of high-density polyethylene and 1 high-strength non-woven cord grid.
   2. Weight, ASTM D 3776: 40 lb/1,000 ft^2 (19.5 kg/100 m^2).
   3. Puncture Propagation Tear, ASTM D 2582: 30 lb (133 N).
   4. Permeance (Perm), ASTM E 96: 0.038 grains/hr-ft^2-in Hg (2.18 ng/(Pa-s-m^2)).
   5. Drop Dart, ASTM D 1709 Method B: 500 g.
   6. Tensile Strength, 3 Inches, ASTM D 882: 100 lb/4,500 psi (445 N/31,470 kPa).
   7. Puncture Strength, ASTM D 4833: 33 lb (146 N).
   8. Classification, ASTM E 1745: Class C.
   9. Usable Temperature Range: -25 to 170 degrees F (-32 to 77 degrees C).

B. Reinforced Vapor Retarder: Griffolyn Type-85.
   1. Material: 5-ply laminate, combining 3 layers of high-density polyethylene and 2 high-strength non-woven cord grids.
   2. Weight, ASTM D 3776: 70 lb/1,000 ft^2 (34.2 kg/100 m^2).
   3. Puncture Propagation Tear, ASTM D 2582: 55 lb (245 N).
   4. Permeance (Perm), ASTM E 96: 0.027 grains/hr-ft^2-in Hg (1.551 ng/(Pa-s-m^2)).
   5. Drop Dart, ASTM D 1709: 2,270 g.
   6. Tensile Strength, 3 Inches, ASTM D 882: 240 lb/4100 psi (1070 N/28,200 kPa).
   7. Puncture Strength, ASTM D 4833: 50 lb (222 N).
   8. Classification, ASTM E 1745: Class A.
   9. Usable Temperature Range: -40 to 170 degrees F (-40 to 77 degrees C).

C. Reinforced Vapor Retarder: Griffolyn Type-105.
   1. Material: 7-ply laminate, combining 4 layers of high-density polyethylene and 3 high-

strength non-woven cord grids.
2. Weight, ASTM D 3776: 92 lb/1,000 ft^2 (44.9 kg/100 m^2).
3. Puncture Propagation Tear, ASTM D 2582: 55 lb (245 N).
4. Permeance (Perm), ASTM E 96: 0.021 grains/hr-ft^2-in Hg (1.207 ng/(Pa-s-m^2)).
5. Drop Dart, ASTM D 1709: 2,300 g.
6. Tensile Strength, 3 Inches, ASTM D 882: 275 lb/5,464 psi (1,223 N/37,674 kPa).
7. Puncture Strength, ASTM D 4833: 80 lb (356 N).
8. Classification, ASTM E 1745: Class A.
9. Usable Temperature Range: -45 to 170 degrees F (-42 to 77 degrees C).

D. Reinforced Vapor Retarder: Griffolyn Vaporguard.
1. Material: 3-ply laminate, with an aluminum core surrounded by 2 layers of multi-axially oriented, high-density polyethylene sheets.
2. Weight, ASTM D 3776: 70 lb/1,000 ft^2 (34.2 kg/100 m^2).
3. Puncture Propagation Tear, ASTM D 2582: 16 lb (71 N).
4. Permeance (Perm), ASTM E 96: 0.000 grains/hr-ft^2-in Hg (0.000 ng/(Pa-s-m^2)).
5. Drop Dart, ASTM D 1709: 1800 g.
6. Tensile Strength, 3 Inches, ASTM D 882: 105 lb/2,200 psi (467 N/15,160 kPa).
7. Puncture Strength, ASTM D 4833: 50 lb (222 N).
8. Classification, ASTM E 1745: Class C.
9. Usable Temperature Range: -40 to 170 degrees F (-40 to 77 degrees C).

E. Reinforced Vapor Retarder: Griffolyn Type-65 G.
1. Material: 4-ply laminate, combining 2 layers of high-density polyethylene and a high-strength non-woven cord grid with a layer of non-woven geotextile fiber.
2. Weight, ASTM D 3776: 78 lb/1,000 ft^2 (38 kg/100 m^2).
3. Puncture Propagation Tear, ASTM D 2582: 58 lb (258 N).
4. Permeance (Perm), ASTM E 96: 0.038 grains/hr-ft^2-in Hg (2.18 ng/(Pa-s-m^2)).
5. Drop Dart, ASTM D 1709: 2200 g.
6. Tensile Strength, 3 Inches, ASTM D 882: 210 lb/1,790psi (930 N/12,370 kPa).
7. Puncture Strength, ASTM D 4833: 110 lb (489 N).
8. Classification, ASTM E 1745: Class A.
9. Usable Temperature Range: -25 to 170 degrees F (-32 to 77 degrees C).

2.3 ACCESSORIES

A. General: Ensure accessories are from same manufacturer as reinforced vapor retarders.

B. Mastic Tape: Griffolyn Fab Tape.
1. Description: Black, double-sided, asphaltic, pressure-sensitive, mastic tape.
2. Weight: 3.75 pounds per 100 feet.
3. Thickness: 35 mils.
4. 3 Inch Seam Shear: 35 pounds.

C. Self-Adhesive Repair Tape: Griffolyn Griff-Tape.

D. Pipe Boots: Griffolyn pipe boots, factory-fabricated.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive reinforced vapor retarders. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION

A. Install reinforced vapor retarders in accordance with ASTM E 1643 and manufacturer's instructions.

B. Install vapor retarders continuously at locations under slab as indicated on the drawings. Ensure there are no discontinuities in vapor retarder at seams and penetrations.

C. Install vapor retarders in largest practical widths.

D. Ensure subgrade beneath vapor retarder is smooth, level, and compacted with no sharp projections.

E. Join sections of vapor retarder and seal penetrations in vapor retarder with mastic tape. Ensure vapor retarder surfaces to receive mastic tape are clean and dry.

F. Ensure there is no moisture entrapment by vapor retarder due to rainfall or ground water intrusion.

G. Immediately repair holes in vapor retarder with self-adhesive repair tape.

H. Seal around pipes and other penetrations in vapor retarder with pipe boots in accordance with manufacturer's instructions.

3.3 PROTECTION

A. Protect reinforced vapor retarders from damage during installation of reinforcing steel and utilities and during placement of concrete slab or granular materials.

B. Immediately repair damaged vapor retarder in accordance with manufacturer's instructions.

END OF SECTION

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Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) Format, including *MasterFormat* (1995 Edition), *SectionFormat,* and *PageFormat,* contained in the CSI *Manual of Practice.*

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Delete all "Specifier Notes" when editing this section.

SECTION 07260

REINFORCED VAPOR RETARDERS FOR ROOF DECKS

Specifier Notes: This section covers Reef Industries, Inc. “Griffolyn” reinforced vapor retarders for roof deck applications.

To prepare a “Short Form” version of this section, delete Articles 1.2 Related Sections, 1.3 References, and 1.5 Quality Assurance. Renumber remaining articles in Part 1.

Consult Reef Industries for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Reinforced vapor retarders for roof deck applications.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list as required for the project. List other sections with work directly related to the reinforced vapor retarders.

A. Section 07220 - Roof and Deck Insulation.

B. Section 07410 - Metal Roof and Wall Panels.

C. Section 07420 - Plastic Roof and Wall Panels.

D. Section 07500 - Membrane Roofing.

E. Section 07610 - Sheet Metal Roofing.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

A. ASTM D 882 - Tensile Properties of Thin Plastic Sheeting.

B. ASTM D 1709 - Impact Resistance of Plastic Film by the Free-Falling Dart Method.

C. ASTM D 2582 - Puncture-Propagation Tear Resistance of Plastic Film and Thin Sheeting.

D. ASTM D 3776 - Mass per Unit Area (Weight) of Woven Fabric.

E. ASTM D 4833 - Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.

F. ASTM E 84 - Surface Burning Characteristics of Building Materials.

G. ASTM E 96 - Water Vapor Transmission of Materials.

H. NFPA 701 - Fire Tests for Flame-Resistant Textiles and Films.

1.4 SUBMITTALS

A. Comply with Section 01330 - Submittal Procedures.

B. Product Data: Submit manufacturer's product data, including installation instructions.

C. Samples: Submit manufacturer’s samples of reinforced vapor retarders.

1.5 QUALITY ASSURANCE

Specifier Notes: Describe requirements for a meeting to coordinate the installation of the reinforced vapor retarders and to sequence related work. Delete this paragraph if not required.

A. Preinstallation Meeting: Convene a preinstallation meeting [2] [_____] weeks before start of installation of reinforced vapor retarders. Require attendance of parties directly affecting work of this section, including Contractor, Architect, and installer. Review installation, protection, and coordination with other work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage: Store materials in a clean, dry area in accordance with manufacturer's instructions.

C. Handling: Protect materials during handling and installation to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Reef Industries, Inc., 9209 Almeda Genoa Rd., Houston, Texas 77075.
Toll Free (800) 231-6074. Phone (713) 507-4251. Fax (713) 507-4295.
Web Site www.reefindustries.com. E-Mail ri@reefindustries.com.

2.2 REINFORCED VAPOR RETARDERS FOR ROOF DECKS

Specifier Notes: Consult Reef Industries for assistance in determining the required reinforced vapor retarder for the specific roof deck application. Delete vapor retarders not required.

A. Reinforced Vapor Retarder: Griffolyn Type-65.
   1. Material: 3-ply laminate, combining 2 layers of high-density polyethylene and 1 high-strength non-woven cord grid.
   2. Weight, ASTM D 3776: 40 lb/1,000 ft^2 (19.5 kg/100 m^2).
   3. Puncture Propagation Tear, ASTM D 2582: 30 lb (133 N).
   4. Permeance (Perm), ASTM E 96: 0.038 grains/hr-ft^2-in Hg (2.18 ng/(Pa-s-m^2)).
   5. Drop Dart, ASTM D 1709: 500 g.
   6. Tensile Strength, 3 Inches, ASTM D 882: 100 lb/4,500 psi (445 N/31,470 kPa).
   7. Puncture Strength, ASTM D 4833: 33 lb (146 N).
   8. Usable Temperature Range: -25 to 170 degrees F (-32 to 77 degrees C).

B. Reinforced Vapor Retarder: Griffolyn Type-85.
   1. Material: 5-ply laminate, combining 3 layers of high-density polyethylene and 2 high-strength non-woven cord grids.
   2. Weight, ASTM D 3776: 70 lb/1,000 ft^2 (34.2 kg/100 m^2).
   3. Puncture Propagation Tear, ASTM D 2582: 55 lb (245 N).
   4. Permeance (Perm), ASTM E 96: 0.027 grains/hr-ft^2-in Hg (1.551 ng/(Pa-s-m^2)).
   5. Drop Dart, ASTM D 1709: 2270 g.
   6. Tensile Strength, 3 Inches, ASTM D 882: 240 lb/4,100 psi (1070 N/28,200 kPa).
   7. Puncture Strength, ASTM D 4833: 50 lb (222 N).
   8. Usable Temperature Range: -40 to 170 degrees F (-40 to 77 degrees C).

C. Reinforced Vapor Retarder: Griffolyn Type-105.
   1. Material: 7-ply laminate, combining 4 layers of high-density polyethylene and 3 high-strength non-woven cord grids.
   2. Weight, ASTM D 3776: 92 lb/1,000 ft^2 (44.9 kg/100 m^2).
   3. Puncture Propagation Tear, ASTM D 2582: 55 lb (245 N).
   4. Permeance (Perm), ASTM E 96: 0.021 grains/hr-ft^2-in Hg (1.207 ng/(Pa-s-m^2)).
   5. Drop Dart, ASTM D 1709: 2,300 g.
   6. Tensile Strength, 3 Inches, ASTM D 882: 275 lb/5,464 psi (1,223 N/37,674 kPa).
   7. Puncture Strength, ASTM D 4833: 80 lb (356 N).
   8. Usable Temperature Range: -45 to 170 degrees F (-42 to 77 degrees C).

D. Reinforced Vapor Retarder: Griffolyn Vaporguard.
   1. Material: 3-ply laminate, with an aluminum core surrounded by 2 layers of multi-axially oriented, high-density polyethylene.

2. Weight, ASTM D 3776: 70 lb/1,000 ft^2 (34.2 kg/100 m^2).
3. Puncture Propagation Tear, ASTM D 2582: 16 lb (71 N).
4. Permeance (Perm), ASTM E 96: 0.000 grains/hr-ft^2-in Hg (0.000 ng/(Pa-s-m^2)).
5. Drop Dart, ASTM D 1709: 1800 g.
6. Tensile Strength, 3 Inches, ASTM D 882: 105 lb/2,200 psi (467 N/15,160 kPa).
7. Puncture Strength, ASTM D 4833: 50 lb (222 N).
8. Usable Temperature Range: -40 to 170 degrees F (-40 to 77 degrees C).

E. Fire Retardant Reinforced Vapor Retarder: Griffolyn Type-55 FR.
1. Material: Fire retardant 3-ply laminate, combining 2 layers of linear low-density polyethylene and 1 high-strength non-woven cord grid.
2. Weight, ASTM D 3776: 30 lb/1,000 ft^2 (14.6 kg/100 m^2).
3. Puncture Propagation Tear, ASTM D 2582: 21 lb (93 N).
4. Permeance (Perm), ASTM E 96: 0.062 grains/hr-ft^2-in Hg (3.556 ng/(Pa-s-m^2)).
5. Drop Dart, ASTM D 1709: 330 g.
6. Tensile Strength, 3 Inches, ASTM D 882: 85 lb/5,059 psi (378 N/34,885 kPa).
7. Puncture Strength, ASTM D 4833: 23 lb (102 N).
8. Surface Burning Characteristics:
    a. NFPA 701, Large Scale: Pass.
    b. UBC 42 and ASTM E 84: Class I, Class A flame spread rating. Flame spread 5, smoke developed 45.
9. Usable Temperature Range: -5 to 150 degrees F (-20 to 66 degrees C).

F. Fire Retardant Reinforced Vapor Retarder: Griffolyn TX-1200 FR.
1. Material: Fire retardant 3-ply laminate, combining 2 layers of linear low-density polyethylene and 1 high-strength non-woven cord grid.
2. Weight, ASTM D 3776: 45 lb/1,000 ft^2 (22 kg/100 m^2).
3. Puncture Propagation Tear, ASTM D 2582: 33 lb (147 N).
4. Permeance (Perm), ASTM E 96: 0.036 grains/hr-ft^2-in Hg (2.06 ng/(Pa-s-m^2)).
5. Drop Dart, ASTM D 1709 Method B: 730 g.
6. Tensile Strength, 3 Inches, ASTM D 882: 135 lb/5,500 psi (600 N/38,300 kPa).
7. Puncture Strength, ASTM D 4833: 26 lb (116 N).
8. Surface Burning Characteristics:
    a. NFPA 701, Large Scale: Pass.
    b. UBC 42 and ASTM E 84: Class I, Class A flame spread rating. Flame spread 5, smoke developed 70.
9. Usable Temperature Range: -10 to 170 degrees F (-23 to 77 degrees C).

G Fire Retardant Reinforced Vapor Retarder: Griffolyn Type-90 FR.
1. Material: 5-ply laminate, combining 3 layers of linear low-density polyethylene and 2 high-strength non-woven cord grids.
2. Weight, ASTM D 3776: 85 lb/1,000 ft^2 (41.5 kg/100 m^2).
3. Puncture Propagation Tear, ASTM D 2582: 47 lb (209 N).
4. Permeance (Perm), ASTM E 96: 0.028 grains/hr-ft^2-in Hg (1.61 ng/(Pa-s-m^2)).
5. Drop Dart, ASTM D 1709 Method B: 1,200 g.
6. Tensile Strength, 3 Inches, ASTM D 882: 170 lb/3,650 psi (750 N/25,200 kPa).
7. Puncture Strength, ASTM D 4833: 47 lb (209 N).
9. Surface Burning Characteristics:
    a. NFPA 701, Large Scale: Pass.
    b. UBC 42 and ASTM E 84: Class I, Class B flame spread rating. Flame spread 5, smoke developed 135.

Usable Temperature Range: -40 to 170 degrees F (-40 to 77 degrees C).

2.3 ACCESSORIES

A. General: Ensure accessories are from same manufacturer as reinforced vapor retarders.

B. Mastic Tape: Griffolyn Fab Tape.
   1. Description: Black, double-sided, asphaltic, pressure-sensitive, mastic tape.
   2. Weight: 3.75 pounds per 100 feet.
   3. Thickness: 35 mils.
   4. 3 Inch Seam Shear: 35 pounds.

C. Self-Adhesive Repair Tape: Griffolyn Griff-Tape.

D. Pipe Boots: Griffolyn pipe boots, factory-fabricated.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive reinforced vapor retarders. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION

A. Install reinforced vapor retarders in accordance with manufacturer's instructions.

B. Install vapor retarders continuously at locations on roof deck as indicated on the drawings. Ensure there are no discontinuities in vapor retarder at seams and penetrations.

C. Install vapor retarders in largest practical widths.

D. Ensure surface beneath vapor retarder is smooth with no sharp projections.

E. Join sections of vapor retarder and seal penetrations in vapor retarder with mastic tape. Ensure vapor retarder surfaces to receive mastic tape are clean and dry.

F. Immediately repair holes in vapor retarder with self-adhesive repair tape.

G. Seal around pipes and other penetrations in vapor retarder with pipe boots in accordance with manufacturer's instructions.

3.3 PROTECTION

A. Protect reinforced vapor retarders from damage until covered by roof insulation.

B. Immediately repair damaged vapor retarder in accordance with manufacturer's instructions.

END OF SECTION

Reef Industries, Inc.
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Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) Format, including *MasterFormat* (1995 Edition), *SectionFormat,* and *PageFormat,* contained in the CSI *Manual of Practice.*

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

SECTION 07260

REINFORCED VAPOR RETARDERS FOR WALLS

Specifier Notes: This section covers Reef Industries, Inc. “Griffolyn” reinforced vapor retarders for wall applications.

To prepare a “Short Form” version of this section, delete Articles 1.2 Related Sections, 1.3 References, and 1.5 Quality Assurance. Renumber remaining articles in Part 1.

Consult Reef Industries for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Reinforced vapor retarders for wall applications.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list as required for the project. List other sections with work directly related to the reinforced vapor retarders.

A. Section 07410 - Metal Roof and Wall Panels.

B. Section 07420 - Plastic Roof and Wall Panels.

C. Section 07460 - Siding.

D. Section 09250 - Gypsum Board.

E. Section 09500 - Ceilings.

F. Section 09720 - Wall Covering.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

A. ASTM D 882 - Tensile Properties of Thin Plastic Sheeting.

B. ASTM D 1709 - Impact Resistance of Plastic Film by the Free-Falling Dart Method.

C. ASTM D 2582 - Puncture-Propagation Tear Resistance of Plastic Film and Thin Sheeting.

D. ASTM D 3776 - Mass per Unit Area (Weight) of Woven Fabric.

E. ASTM D 4833 - Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.

F. ASTM E 84 - Surface Burning Characteristics of Building Materials.

G. ASTM E 96 - Water Vapor Transmission of Materials.

H. NFPA 701 - Fire Tests for Flame-Resistant Textiles and Films.

1.4 SUBMITTALS

A. Comply with Section 01330 - Submittal Procedures.

B. Product Data: Submit manufacturer's product data, including installation instructions.

C. Samples: Submit manufacturer’s samples of reinforced vapor retarders.

1.5 QUALITY ASSURANCE

Specifier Notes: Describe requirements for a meeting to coordinate the installation of the reinforced vapor retarders and to sequence related work. Delete this paragraph if not required.

A. Preinstallation Meeting: Convene a preinstallation meeting [2] [_____] weeks before start of installation of reinforced vapor retarders. Require attendance of parties directly affecting work of this section, including Contractor, Architect, and installer. Review installation, protection, and coordination with other work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and

packaging, with labels clearly identifying product name and manufacturer.

B. Storage: Store materials in a clean, dry area in accordance with manufacturer's instructions.

C. Handling: Protect materials during handling and installation to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Reef Industries, Inc., 9209 Almeda Genoa Rd., Houston, Texas 77075.
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Web Site www.reefindustries.com. E-Mail ri@reefindustries.com.

2.2 REINFORCED VAPOR RETARDERS FOR WALLS

Specifier Notes: Consult Reef Industries for assistance in determining the required reinforced vapor retarder for the specific wall application. Delete vapor retarders not required.

A. Reinforced Vapor Retarder: Griffolyn Type-65.
1. Material: 3-ply laminate, combining 2 layers of high-density polyethylene and 1 high-strength non-woven cord grid.
2. Weight, ASTM D 3776: 40 lb/1,000 ft^2 (19.5 kg/100 m^2).
3. Puncture Propagation Tear, ASTM D 2582: 30 lb (133 N).
4. Permeance (Perm), ASTM E 96: 0.038 grains/hr-ft^2-in Hg (2.18 ng/(Pa-s-m^2)).
5. Drop Dart, ASTM D 1709: 500 g.
6. Tensile Strength, 3 Inches, ASTM D 882: 100 lb/4,500 psi (445 N/31,470 kPa).
7. Puncture Strength, ASTM D 4833: 33 lb (146 N).
8. Usable Temperature Range: -25 to 170 degrees F (-32 to 77 degrees C).

B. Reinforced Vapor Retarder: Griffolyn Type-85.
1. Material: 5-ply laminate, combining 3 layers of high-density polyethylene and 2 high-strength non-woven cord grids.
2. Weight, ASTM D 3776: 70 lb/1,000 ft^2 (34.2 kg/100 m^2).
3. Puncture Propagation Tear, ASTM D 2582: 55 lb (245 N).
4. Permeance (Perm), ASTM E 96: 0.027 grains/hr-ft^2-in Hg (1.551 ng/(Pa-s-m^2)).
5. Drop Dart, ASTM D 1709: 2270 g.
6. Tensile Strength, 3 Inches, ASTM D 882: 240 lb/4,100 psi (1070 N/28,200 kPa).
7. Puncture Strength, ASTM D 4833: 50 lb (222 N).
8. Usable Temperature Range: -40 to 170 degrees F (-40 to 77 degrees C).

C. Reinforced Vapor Retarder: Griffolyn Type-105.
1. Material: 7-ply laminate, combining 4 layers of high-density polyethylene and 3 high-strength non-woven cord grids.
2. Weight, ASTM D 3776: 92lb/1,000 ft^2 (44.9 kg/100 m^2).
3. Puncture Propagation Tear, ASTM D 2582: 55 lb (245 N).
4. Permeance (Perm), ASTM E 96: 0.021 grains/hr-ft^2-in Hg (1.207 ng/(Pa-s-m^2)).
5. Drop Dart, ASTM D 1709: 2,300 g.
6. Tensile Strength, 3 Inches, ASTM D 882: 275 lb/5,464 psi (1,223 N/37,674 kPa).
7. Puncture Strength, ASTM D 4833: 80 lb (356 N).
8. Usable Temperature Range: -45 to 170 degrees F (-42 to 77 degrees C).

D. Reinforced Vapor Retarder: Griffolyn Vaporguard.
   1. Material: 3-ply laminate, with an aluminum core surrounded by 2 layers of multi-axially oriented, high-density polyethylene.
   2. Weight, ASTM D 3776: 70 lb/1,000 ft^2 (34.2 kg/100 m^2).
   3. Puncture Propagation Tear, ASTM D 2582: 16 lb (71 N).
   4. Permeance (Perm), ASTM E 96: 0.000 grains/hr-ft^2-in Hg (0.000 ng/(Pa-s-m^2)).
   5. Drop Dart, ASTM D 1709: 1800 g.
   6. Tensile Strength, 3 Inches, ASTM D 882: 105 lb/2,200 psi (467 N/15,160 kPa).
   7. Puncture Strength, ASTM D 4833: 50 lb (222 N).
   8. Usable Temperature Range: -40 to 170 degrees F (-40 to 77 degrees C).

E. Fire Retardant Reinforced Vapor Retarder: Griffolyn Type-55 FR.
   1. Material: Fire retardant 3-ply laminate, combining 2 layers of linear low-density polyethylene and 1 high-strength non-woven cord grid.
   2. Weight, ASTM D 3776: 32 lb/1,000 ft^2 (14.6 kg/100 m^2).
   3. Puncture Propagation Tear, ASTM D 2582: 21 lb (93 N).
   4. Permeance (Perm), ASTM E 96: 0.062 grains/hr-ft^2-in Hg (3.556 ng/(Pa-s-m^2)).
   5. Drop Dart, ASTM D 1709: 330 g.
   6. Tensile Strength, 3 Inches, ASTM D 882: 85 lb/5,059 psi (378 N/34,885 kPa).
   7. Puncture Strength, ASTM D 4833: 23 lb (102 N).
   8. Surface Burning Characteristics:
      a. NFPA 701, Large Scale: Pass.
      b. UBC 42 and ASTM E 84: Class I, Class A flame spread rating. Flame spread 5, smoke developed 45.
   9. Usable Temperature Range: -5 to 150 degrees F (-20 to 66 degrees C).

F. Fire Retardant Reinforced Vapor Retarder: Griffolyn TX-1200 FR.
   1. Material: Fire retardant 3-ply laminate, combining 2 layers of linear low-density polyethylene and 1 high-strength non-woven cord grid.
   2. Weight, ASTM D 3776: 45 lb/1,000 ft^2 (22 kg/100 m^2).
   3. Puncture Propagation Tear, ASTM D 2582: 33 lb (147 N).
   4. Permeance (Perm), ASTM E 96: 0.036 grains/hr-ft^2-in Hg (2.06 ng/(Pa-s-m^2)).
   5. Drop Dart, ASTM D 1709 Method B: 730 g.
   6. Tensile Strength, 3 Inches, ASTM D 882: 135 lb/5,500 psi (600 N/38,300 kPa).
   7. Puncture Strength, ASTM D 4833: 26 lb (116 N).
   8. Surface Burning Characteristics:
      a. NFPA 701, Large Scale: Pass.
      b. UBC 42 and ASTM E 84: Class I, Class A flame spread rating. Flame spread 5 smoke developed 70.
   9. Usable Temperature Range: -10 to 170 degrees F (-23 to 77 degrees C).

G. Fire Retardant Reinforced Vapor Retarder: Griffolyn Type-90 FR.
   1. Material: Fire retardant 5-ply laminate, combining 3 layers of linear low-density polyethylene and 2 high-strength non-woven cord grids.
   2. Weight, ASTM D 3776: 85 lb/1,000 ft^2 (41.5 kg/100 m^2).
   3. Puncture Propagation Tear, ASTM D 2582: 47 lb (209 N).
   4. Permeance (Perm), ASTM E 96: 0.028 grains/hr-ft^2-in Hg (1.61 ng/(Pa-s-m^2)).
   5. Drop Dart, ASTM D 1709: 1,200 g.
   6. Tensile Strength, 3 Inches, ASTM D 882: 170 lb/3,650 psi (750N/25,200 kPa).
   7. Puncture Strength, ASTM D 4833: 47 lb (209 N).
   8. Surface Burning Characteristics:

a. NFPA 701, Large Scale: Pass.
b. UBC 42 and ASTM E 84: Class 1, Class B flame spread rating. Flame spread 5, smoke developed 135.

9. Usable Temperature Range: -40 to 170 degrees F (-40 to 77 degrees C).

2.3 ACCESSORIES

A. General: Ensure accessories are from same manufacturer as reinforced vapor retarders.

B. Mastic Tape: Griffolyn Fab Tape.
1. Description: Black, double-sided, asphaltic, pressure-sensitive, mastic tape.
2. Weight: 3.75 pounds per 100 feet.
3. Thickness: 35 mils.
4. 3 Inch Seam Shear: 35 pounds.

C. Self-Adhesive Repair Tape: Griffolyn Griff-Tape.

D. Pipe Boots: Griffolyn pipe boots, factory-fabricated.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive reinforced vapor retarders. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION

A. Install reinforced vapor retarders in accordance with manufacturer's instructions.

B. Install vapor retarders continuously at locations on walls as indicated on the drawings. Ensure there are no discontinuities in vapor retarder at seams and penetrations.

C. Install vapor retarders in largest practical widths.

D. Ensure surface behind vapor retarder is smooth with no sharp projections.

E. Join sections of vapor retarder and seal penetrations in vapor retarder with mastic tape. Ensure vapor retarder surfaces to receive mastic tape are clean and dry.

F. Immediately repair holes in vapor retarder with self-adhesive repair tape.

G. Seal around pipes and other penetrations in vapor retarder with pipe boots in accordance with manufacturer's instructions.

3.3 PROTECTION

A. Protect reinforced vapor retarders from damage until covered by finish wall.

B. Immediately repair damaged vapor retarder in accordance with manufacturer's instructions.

END OF SECTION