DEMILEC USA Master Spec 2010 format

THERMAL INSULATION
SECTION 07 21 19
Foamed-in-Place Insulation

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Spray-in-place semi-rigid and/or rigid polyurethane foam insulation in various assemblies, to provide an air barrier and improved thermal resistance.

1.2 RELATED SECTIONS

A. Section 03300 - Cast in Place Concrete.

B. Section 03400 - Structural Pre-cast Concrete.

C. Section 04200 - Unit Masonry.

D. Section 05300 - Metal Decking.

E. Section 05400 - Cold Formed Metal Framing.

F. Section 06100 - Rough Carpentry.

G. Section 07100 - Waterproofing.

H. Section 07260 - Vapor Barrier.

I. Section 07400 - Preformed Roofing and Cladding/Siding.

J. Section 07800 - Fireproofing.

K. Section 07840 - Thermal Barrier.

L. Section 07650 - Flexible Flashing.

M. Section 09110 - Metal Support Systems.

N. Section 09250 - Gypsum Board.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM C 423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

2. ASTM C 518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

3. ASTM D 1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics.

4. ASTM D 1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics.

5. ASTM D 1623 - Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.

6. ASTM D 2856 - Standard Test Method for Open-Cell Content of Rigid Cellular Plastics by the Air Pycnometer.

7. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

8. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.

9. ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

10. ASTM E 413 - Classification for Rating Sound Insulation.

B. Canadian General Standards Board (CGSB) 51.23 - Spray Applied Rigid Polyurethane Cellular Plastic Thermal Insulation.

C. International Code Council – International Residential Code:

1. Section 103.7 - Alternate Materials and Methods.

2. 2006 IRC Section R314 - Foam Plastic Insulation.

3. 2009 IRC Section R316 - Foam Plastic Insulation.

4. Section 806.4 – Unvented Attic Assemblies.

D. International Code Council – International Building Code:

1. Section 104.11 Alternative materials, design and methods of construction and equipment.

2. Section 2603 Foam Plastic Insulation.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Before commencing work, submit in accordance with local code.

1. Submit technical data sheets and samples as required by local code officials.

2. Submit the technical data sheet from the manufacturer showing the test results from the ASTM E84 (Surface Burning Characteristics).

C. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.

2. Storage and handling requirements and recommendations.

3. Installation methods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications:

1. Contractor performing work under this section shall be trained by DEMILEC USA® in the art of applying spray polyurethane foam insulation.

2. Provide current DEMILEC USA® Authorized Contractor Certificate.

3. Contact DEMILEC USA's Territory Manager to schedule inspection during application of *SEAL*ECTION® 500, *SEAL*ECTION Agribalance®, DEMILEC APX™ or HEATLOK SOY® 200 PLUS.

B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Finish areas designated by Architect.

2. Do not proceed with remaining work until installation is approved by Architect.

3. Rework mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Materials shall be delivered in manufacturer's original containers clearly labelled with manufacturer's name, product identification, safety information, net weight of contents and expiration date.

B. Material shall be stored in a safe manner and where the temperatures are in the limits specified by the material manufacturer.

C. Empty containers shall be removed from site on a daily basis.

D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Ventilate area to receive insulation to maintain safe working conditions.

C. Protect workers as recommended by standards and manufacturer's recommendations.

D. Protect adjacent surfaces, windows, equipment and site areas from damage of overspray.

1.8 WARRANTY

A. Manufacturer's Warranty: DEMILEC USA® warrants spray-in-place urethane foam insulation, when installed by certified contractors using factory-trained applicators and applied in accordance to the Product Specification, will perform as stated in the Product Technical Data Sheet.

1. This warranty is in effect throughout the life of the building provided the original purchaser registers with the Warranty Department of the Manufacturer within thirty days of occupancy.

2. Manufacturer's sole responsibility under this Limited Lifetime Warranty shall be to repair or replace any defective Product at the cost of the material only.

3. Manufacturer shall not be responsible for labor cost or any other costs whatsoever related to, or in connection with the removal or installation of either the original or replacement product.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: DEMILEC USA®; 2925 Galleria Dr, Arlington, TX 76011. Toll Free Tel: (877) DEMILEC. Tel: (817) 640-4900. Fax: (817) 633-2000. Email: specs@demilecusa.com. Web: http://www.demilecusa.com

B. Substitutions: Not permitted.

C. Substitutions: Equivalent as judged by Architect

1. Contact DEMILEC USA's Engineering Department for product comparison data

a. 817-640-4900

b. specs@demilecusa.com

D. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 SPRAY FOAM INSULATION

HEATLOK SOY® 200 PLUS, a closed cell Spray Polyurethane Foam Insulation, has a unique ecological benefit that recycles plastic waste into a Rigid Spray Polyurethane Foam. This helps to more efficiently utilize the world's non renewable resources. HEATLOK SOY® 200 PLUS can reduce excess waste and energy consumption in buildings by up to 50%. This closed-cell spray foam insulation offers both an air-barrier and vapor barrier in a single application and can be used in exterior or below grade applications. This material is approved by California Department of Consumer Affairs and is certified by *GREENGUARD* and *GREENGUARD Children and Schools*. Readily contributes to LEED certification.Spray Applied Semi Rigid Polyurethane Foam Insulation System:

1. Product: *SEAL*ECTION® 500 Manufactured by DEMILEC USA®, Arlington, TX.

2. Product Approval:

a. International Code Council Evaluation Services Report #1172.

1) Approved for building types I, II, III, IV, & V

b. Passed NFPA 286 in accordance with IBC 803.2.

c. Warnock Hersey Evaluation # 193-7081.

d. CCMC Evaluation # 12697-R.

3. Installation:

a. Application with a prescriptive Thermal Barrier:

1) Up to 9-1/4 inches (235 mm) for wall cavities and 14 inches (356mm) in floors or ceilings with 1/2 inch gypsum wall board or equivalent 15 minute thermal barrier in accordance with IBC 2603.4 or IRC R316.4.

b. Application without a Thermal or Ignition Barrier (exposed foam)

1) Up to 5-1/2 inches (140mm) in walls and 10 inches (254mm) in floors and ceilings with all foam surfaces covered with 14 dry mils (0.36mm) [25 wet mils (0.64mm)] of Blazelok TB™.

c. Application without a Thermal or Ignition Barrier (exposed foam)

1) Up to 7-1/2 Inches (191 mm) in walls and 11-1/2 inches (292 mm) in floors and ceilings with all foam surfaces covered with 11 dry mils (.28 mm) [17 wet mils (.43 mm)] of BLAZELOK™ TBX.

d. Attics and Crawlspaces: Passed AC 377 Appendix X compliant NFPA 286.

1) Application with Blazelok™ IB4 Intumescent Coating:

(a) Up to 9-1/2 inches (241mm) on vertical surfaces and 11-1/2 inches (292mm) on the underside of the top of the space with all foam surfaces covered with a minimum nominal thickness of 3 dry mils (0.08mm) [5 wet mils (0.13mm)] of Blazelok™ IB4.

2) Application with Andek Fireguard Intumescent Coating:

(a) Up to 9-1/2 inches (241mm) on vertical surfaces and 11-1/2 inches (292mm) on the underside of the top of the space with all foam surfaces covered with a minimum nominal thickness of 10 dry mils (0.25mm) [20 wet mils (0.51mm)] of Andek Fireguard.

3) Application with No-Burn® Plus XD Intumescent Coating

(a) Up to 9-1/2 inches (241mm) on vertical surfaces and 11-1/2 inches (292mm) on the underside of the top of the space with all foam surfaces covered with a minimum nominal thickness of 4 dry mils (0.10mm) [6 wet mils (0.15mm)] of No-Burn® Plus XD.

e. Use on Attic Floors:

1) Applied between and over the joists in an attic floor.

(a) Up to 14 inches (356mm)

(b) *SEAL*ECTION® 500 may be left exposed without an intumescent coating in accordance with ASTM E 970.

f. One-Hour Fire-Resistance-Rated Wall Assemblies: Non load-bearing

1) Refer to ESR 1172 Section 4.5

g. Exterior Walls of Type I, II, III, and IV

1) Up to 3-5/8 inches (92mm)

h. Non load-bearing NFPA 285-tested Wall Assembly

1) Refer to ESR 1172 Section 4.6.1

4. Physical Properties:

a. Density (ASTM D 1622): 0.45 – 0.5 lb/cf (0.007 to 0.008 gm/cu. cm).

b. Thermal Resistance (ASTM C 518):

1) **R-3.81** (sf.h degree F/BTU) @ 1 inch at 90 days at 76 degree F (24.4 degree C).

2) See ESR 1172 for R-value table.

c. Air Leakage (ASTM E 283-04):

1) 3.5 inches (89 mm) At 75 Pa (25 mph wind): **0.001 L/s•m².**

2) 5.5 inches (140 mm) At 75 Pa (25 mph wind): **0.001 L/s•m².**

3) 10 inches (254 mm) At 75 Pa (25 mph wind): **0.002 L/s•m².**

4) Sustained Wind Load for 60 minutes At 1000 Pa (90 miles/hr. wind**): No Damage**.

5) Gust Wind Load Test at 3000 Pa (160 miles/hr.): **No Damage**.

d. Compressive Strength (ASTM D 1621): **0.7 psi** (4.83 kPa).

e. Tensile Strength (ASTM D 1623): **5.6 lbf/sq. inch** (38.6 kPa).

f. Sound Transmission Class (STC) (ASTM E 413-87 1999): **49-51**. Based on Specific wall design.

g. Noise Reduction Coefficient (NRC) (ASTM C 423): **.75**.

h. Water Vapor Transmission (ASTM E 96):

1) 3.5 inches (89 mm): **6.6 Perms.**

2) 5.5 inches (140 mm): **4.2 Perms.**

3) 7 inches (178 mm): **3.3 Perms.**

4) 10 inches (254 mm): **2.3 Perms.**

i. Off Gassing Tests (VOC Emissions) CGSB 51.23-92: **Pass** (No toxic vapors).

j. Surface Burning Characteristics (ASTM E 84) 6 inches (152 mm): Class I. Flame Spread Index **21**, Smoke Developed Index **216**.

5. Equipment used to apply the foam insulation shall have fixed ratio positive displacement pumps and approved by foam manufacturer.

B. Spray Applied Semi Rigid Polyurethane Foam Insulation System:

1. Product: *SEAL*ECTION Agribalance® Manufactured by DEMILEC USA®, Arlington, TX.

2. Product Approval:

a. International Code Council Evaluation Services Report #2600.

1) Approved for Building Type V-B construction under IBC and Dwellings Under IRC.

2) VAR 1006

(a) 10% Biobased Content per ASTM D 6886

b. Passed AC 377 Appendix X compliant NFPA 286.

3. Installation:

a. Application with a prescriptive Thermal Barrier:

1) Up to 9-1/4 for wall cavities (235 mm) and 14 inches (356mm) in floors or ceilings with 1/2 inch gypsum wall board or equivalent 15 minute thermal barrier in accordance with IBC 2603.4 or IRC R316.4.

Application without a Thermal or Ignition Barrier (exposed foam)

2) Up to 5-1/2 Inches (191 mm) in walls and 11-1/2 inches (292 mm) in floors and ceilings with all foam surfaces covered with 15 dry mils, 23 wet mils of BLAZELOK™ TBX.

b. Attics and Crawl Spaces:

1) Application with Blazelok™ IB4 Intumescent Coating:

(a) Up to 9-1/4 inches (235mm) on vertical surfaces and 11-1/4 inches (286mm) on the underside of the top of the space with all foam surfaces covered with a minimum nominal thickness of 5 dry mils (0.13mm) [9 wet mils (0.23mm)] of Blazelok™ IB4.

2) Application with No-Burn® Plus XD Intumescent Coating

(a) Up to 9-1/2 inches (241mm) on vertical surfaces and 11-1/2 inches (292mm) on the underside of the top of the space with all foam surfaces covered with a minimum nominal thickness of 6 dry mils (0.15mm) [10 wet mils (0.25mm)] of No-Burn® Plus XD.

3) Application with HEATLOK SOY® 200 Coating

(a) Up to 5-1/2 inches (140mm) on vertical surfaces and 9-1/2 inches (241mm) on the underside of the top of the space with all foam surfaces covered with 2 inches (51mm) of HEATLOK SOY® 200 spray polyurethane foam coating.

c. Use on Attic Floors

1) Applied between and over the joists in an attic floor.

(a) Up to 14 inches (356 mm)

(b) *SEAL*ECTION Agribalance® may be left exposed without an intumescent coating in accordance with ASTM E 970.

4. Physical Properties:

a. Density (ASTM D 1622): 0.60 – 0.80 lb/cf (0.0096 to 0.013 gm/cu. cm).

b. Thermal Resistance (ASTM C 518):

1) **R-4.45** (sf.h degree F/BTU) @ 1 inch.

2) Refer to ESR 1600 for R-value table.

c. Air Permeance (ASTM E 283): 3.5 inches (89 mm) thick.

1) At 500 Pa: **0.003 L/s•m².**

2) At 1000 Pa: **0.006 L/s•m².**

3) At 1500 Pa: **0.011 L/s•m².**

4) At 2000 Pa: **0.018 L/s•m².**

d. Compressive Strength (ASTM D 1621): **1.86 psi** (12.9 kPa).

e. Tensile Strength (ASTM D 1623): **3.87 psi** (26.7 kPa).

f. Vapor Permeance (ASTM E 96):

1) 5 inches (127 mm): **4.95 Perms**.

g. Surface Burning Characteristics (ASTM E 84) 6 inches (152 mm): Class I. Flame Spread Index **15 to 20**, Smoke Developed Index **400**.

h. Bio-based Solid Content (ASTM D 6866): **10%**

5. Equipment used to apply the foam insulation shall have fixed ratio positive displacement pumps and approved by foam manufacturer.

C. Spray Applied Semi Rigid Polyurethane Foam Insulation System:

1. Product: DEMILEC APX™ Manufactured by DEMILEC USA®, Arlington, TX.

2. Product Approval:

a. International Code Council Evaluation Services Report #3470.

b. Passed NFPA 286 in accordance with IBC 803.2. as an interior finish. Refer to section 3.b.1. of this specification for assembly details.

3. Installation:

a. Application with a prescriptive Thermal Barrier:

1) DEMILEC APX™ spray foam insulation must be separated from the interior of the building by an approved thermal barrier of 1/2” inch-thick (12.7mm)

gypsum wallboard or an equivalent 15-minute thermal barrier complying with, and installed in accordance with, IBC 2603.4 of IRC 316.4, as applicable, except where insulation is in an attic or crawl space as described in section 4.4 of ESR #3470, DEMILEC APX™ foam thickness is not limited when the insulation is separated from the interior of the building by an approved thermal barrier, based on fire testing in accordance with NFPA 286 and AC377.

b. Application without a Thermal or Ignition Barrier (exposed foam)

1) The prescriptive 15-minute thermal barrier or ignition barrier may be omitted when installation is in accordance with this section. DEMILEC APX Spray foam insulation and BLAZELOK™ TBX intumescent coating may be spray-applied to the interior facing of the walls and the underside of roof sheathing or roof rafters, and in crawl spaces, and may be left exposed as an interior finish without a prescribed 15-minute thermal barrier or ignition barrier. The foam plastic insulation thickness must not exceed 7 ½ inches (191 mm) in walls and 11 ½ inches (292 mm) in floors and ceilings. All foam surfaces must be covered with an 11-mil dry thickness (0.28 mm) [17 mils wet thickness (0.43 mm) of Blazelok TBX intumescent coating. The intumescent coating must be sprayed applied over the insulation in accordance with the coating manufacturer's instructions at a rate of 85 square feet per gallon (2.09m2/L).

c. Attics and Crawlspaces: Passed AC 377 Appendix X compliant NFPA 286.

1) The insulation may be spray-applied to the underside of the roof sheathing and/or rafters, to the underside of wood floors and to vertical surfaces as described in this section. The thickness of the foam plastic applied to the underside of the top of the space must not exceed 11 ¾" inches (298 mm), and the thickness when applied to vertical surfaces must not exceed 7 ¾" inches (197 mm). The insulation does not require an ignition barrier or coating.

d. Use on Attic Floors:

1) Up to 11 ¾" inches (298 mm) between and over the joists in an attic floor without an ignition barrier, coating or covering.

4. Physical Properties:

a. Density (ASTM D 1622): 0.45 – 0.5 lb/cf (0.007 to 0.008 gm/cu. cm).

b. Thermal Resistance (ASTM C 518):

1) **R-3.7** (sf.h degree F/BTU) @ 1 inch at 90 days at 76 degree F (24.4 degree C).

2) See ESR 3470 for R-value table.

c. Air Leakage (ASTM E 283-04):

1) 3.5 inches (89 mm) At 75 Pa (25 mph wind): **0.003 L/s•m².**

d. Compressive Strength (ASTM D 1621): **1.1 psi**.

e. Tensile Strength (ASTM D 1623): **3.7 lbf/sq. inch**.

f. Water Vapor Transmission (ASTM E 96):

1) 1.008 inches (25 mm): 16.0 perms

g. Off Gassing Tests (VOC Emissions) Berkeley Analytical Certificate 130104-01: **Pass or Compliant** (No toxic vapors).

h. Surface Burning Characteristics (ASTM E 84) 4" inches (117 mm): Class I. Flame Spread Index **15**, Smoke Developed Index **350**.

5. Equipment used to apply the foam insulation shall have fixed ratio positive displacement pumps and approved by foam manufacturer.

D. Spray Applied Rigid Polyurethane Foam Insulation System:

1. Product: HEATLOK SOY® 200 PLUS Manufactured by DEMILEC USA®, Arlington, TX

2. Product Approval:

a. International Code Council Evaluation Services Report #3210

b. Approved for non-structural walls in building types I, II, III, IV, and V construction under IBC and dwellings for IRC.

c. Approved for exterior walls in building types I, II, III, and IV construction.

d. Passed AC 377 Appendix X compliant NFPA 286.

3. Installation:

a. Application with a prescriptive Thermal Barrier:

1) Up to 9-1/4 inches (235 mm) for wall cavities and 11-1/4 inches (286mm) in floors or ceilings with 1/2 inch gypsum wall board or equivalent 15 minute thermal barrier in accordance with IBC 2603.4 or IRC R316.4.

b. Application without a Thermal or Ignition Barrier (exposed foam)

1) Up to 9-1/4 inches (235mm) in walls and 11-1/4 inches (286mm) in floors and ceilings with all foam surfaces covered with 4 dry mils (0.10mm) [7 wet mils (0.18mm)] of Blazelok TB™ 200 primer then covered with 8 dry mils (0.20mm) [14 wet mils (0.36mm)] of Blazelok TB™ 200 intumescent coating.

c. Application without a Thermal or Ignition Barrier (exposed foam)

1) Up to 5-1/2 inches (171 mm) in walls and 7-1/2 inches (292) mm) in floors and ceilings with all foam surfaces covered with 12 dry mils of BLAZELOK™ TBX intumescent coating.

d. Attics and Crawlspaces: Passed AC 377 Appendix X compliant NFPA 286.

1) Up to 7-1/2 inches (190mm) on vertical surfaces and 11-1/2 (292mm) inches on the underside of the space with no intumescent coating

e. Use on Attic Floors

1) Up to 11 ¼ inches (286mm) between and over the joists in attic floors

f. Use as Water-resistive Barrier:

1) Minimum 1-1/2 inches (38mm) continuous layer applied to suitable exterior substrate. Refer to ESR # 3210 Section 4.5

g. One-hour Fire-resistance-rated Wall Assembly: Nonload-bearing:

1) Refer to ESR #3210 Section 4.6

4. Physical Properties:

a. Density (ASTM D 1622): **2.1 lb/ft^3** (34 Kg/m^3).

b. Thermal Resistance (ASTM C 518):

1) **R-7.4** (sf.h degree F/BTU) Aged R value at 1 inch 180 days at 76 degrees F (23 degrees C)

2) Refer to ESR 3210 for R-value table.

c. Water Vapor Permeance @ 1.2”(ASTM E 96-05): < 1 Perm (is a vapor barrier per IBC Section 202 definitions at 1.2”)

d. Air Permeance @ 75 Pa @ 1” (ASTM E 2178-03): **0.02 L/sm^2**

e. Air Leakage of Air Barrier Assembly (static loading to 600 Pa and gust loading to 1,200 PA) Complies with ABAA requirements (ASTM E 2357-05): **<0.02L/sm^2**

f. Compressive Strength (ASTM D 1621): **28.7 psi** (142 kPa).

g. Tensile Strength (ASTM D 1623): **46.2 psi** (313 kPa)

h. Off Gassing Test (VOC Emissions) (CGSB 51.23-92): **Pass** (no toxic vapor).

i. Surface Burning Characteristics (ASTM E 84) 4 inches: Class I. Flame Spread Index **20**, Smoke Developed Index **400**.

j. Closed Cell Content (ASTM D 2856) : **>90%**.

5. Equipment used to apply the foam insulation shall have fixed ratio positive displacement pumps and approved by foam manufacturer.

6. Equipment used to apply the Water Based intumescing coating shall be an airless sprayer approved by the manufacturer.

2.3 ACCESORY PRODUCTS

A. Water Based intumescing coating:

1. Product: BLAZELOK™ IB4, Distributed by DEMILEC USA®, Manufactured by TPR^2.

2. Approval: Complies with 2006 IRC 314.6, 2009 IRC 316.6, IBC 2603.9 and AC 377 over all surfaces of *SEAL*ECTION® 500 and *SEAL*ECTION Agribalance® for use without a prescriptive ignition barrier in attics and crawlspaces.

3. Application: Follow manufacturer’s application recommendations.

4. Physical Properties:

a. Surface Burning Characteristics (ASTM E 84): Class I. Flame Spread Index 0, Smoke Developed Index 20.

b. Expands up to 2000 percent.

c. Flash Point: None

d. Volatility/VOC: 2.7g/l

e. Flexible, ductile, elastomeric.

f. Non-toxic, drain safe, water based, non-fuming.

g. Can be latex or oil base top coated.

5. Color: Dull Flat White.

B. Water Based Intumescing coating:

1. Product: BLAZELOK™ TB, Distributed by DEMILEC USA®, Manufactured by TPR^2.

2. Approval: Complies with 2006 IRC 314.6, 2009 IRC 316.6, IBC 2603.9 and IBC 803.2 over *SEAL*ECTION 500® for use without a prescriptive thermal barrier.

3. Application: Follow manufacturer's application recommendations.

4. Physical Properties:

a. Surface Burning Characteristics (ASTM E 84): Class I. Flame Spread Index 5, Smoke Developed Index 20.

b. Expands up to 2000 percent.

c. Flash Point: None

d. Volatility/VOC: < 50 g/L

e. Non-toxic, drain safe, water based, non-fuming.

f. Can be latex or oil base top coated.

5. Color: Dull Flat White.

C. Water Based intumescing coating:

1) Product: BLAZELOK™ TBX, Distributed by DEMILEC USA®, Manufactured by TPR^2.

2) Approval: Complies with 2006 IRC 314.6, 2009 IRC 316.6, IBC 2603.9 and IBC 803.2 over DEMILEC APX® for use as an interior finish without a prescriptive thermal barrier.

3) Application: Follow manufacturer's application recommendations.

4) Physical Properties:

5) Surface Burning Characteristics (ASTM E 84): Class I. Flame Spread Index <25, Smoke Developed Index <50.

6) Expands up to 2000 percent.

7) Flash Point: None

8) Volatility/VOC: < 50 g/L

9) Non-toxic, drain safe, water based, non-fuming.

10) Can be latex or oil base top coated.

11) Dull Flat White / Grey.

D. Water Based Intumescing coating:

1. Product: BLAZELOK TB™ 200 with BLAZELOK™ TB 200 Primer, Distributed by DEMILEC USA®, Manufactured by TPR^2.

2. Application: Install primer first, then intumescent coating. Follow manufacturer's application recommendations.

3. Physical Properties:

1) BLAZELOK™ TB 200 Primer

(a) Approval: Complies with the 2009 IBC® 2603.9 and 803.2; 2009 IRC® 302.9.4 and 316.6; 2006 IRC® 314.6 and 315.4 and the NFPA 101 paragraph 10.2.3.7.2 for use without a prescriptive thermal barrier.

(b) Surface Burning Characteristics (ASTM E 84): Class I. Flame Spread Index 0, Smoke Developed Index 20.

(c) Expands up to 2000 percent.

(d) Flash Point: None

(e) Volatility/VOC: 0

(f) Non-toxic, drain safe, water based, non-fuming.

(g) Color: Gray

2) BLAZELOK™ TB 200

(a) Approval: Complies with the 2009 IBC® 2603.9 and 803.2; 2009 IRC® 302.9.4 and 316.6; 2006 IRC® 314.6 and 315.4 and the NFPA 101 paragraph 10.2.3.7.2 for use without a prescriptive thermal barrier.

(b) Surface Burning Characteristics (ASTM E 84): Class I. Flame Spread Index 5, Smoke Developed Index 20.

(c) Expands up to 2000 percent.

(d) Flash Point: None

(e) Volatility/VOC: < 50 g/L

(f) Non-toxic, drain safe, water based, non-fuming.

(g) Color: Dull Flat white

(1) Do not add tint

(2) Wait minimum 24 hours prior to top coating with quality latex paint. Verify dryness with moisture meter.

E. Water Based Fire Protection

1. Product: No-Burn® Plus XD, Manufactured by No-Burn Inc.

2. Approval: Complies with 2006 IRC 314.6, 2009 IRC 316.6, IBC 2603.9 and AC 377 over all surfaces of *SEAL*ECTION® 500 and *SEAL*ECTION Agribalance®.

3. Application: Follow manufacturer's application recommendations.

4. Physical Properties:

a. Flash Point: None

b. Volatility/VOC: 18 g/L

c. Clean-up with soap and water.

5. Color:

    a. Opaque/White or as specified.

F. Water Based Fire Protection:

1. Product: Andek Fireguard, manufactured by Andek Corporation.

2. Application: Follow manufacturer's application recommendations.

3. Approval: Complies with 2006 IRC 314.6, 2009 IRC 316.6, IBC 2603.9 and AC 377 over all surfaces of *SEAL*ECTION® 500.

4. Physical Properties:

    a. Surface Burning Characteristics (ASTM E 84): Class I. Flame Spread Index 5, Smoke Developed Index 30.

    b. Flash Point: None

    c. Volatility/VOC: 0

    d. Non-toxic, drain safe, water based, non-fuming.

5. Color:

    a. 26 standard colors including black, white and custom tints.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Commencement of work outlined in this section shall be deemed as acceptance of existing work and conditions.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Apply only when surfaces and environmental conditions are within limits prescribed by the material manufacturer.

C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions. Apply as recommended by manufacturer to thickness as indicated on drawings.

B. Protection: Except as provided in Section 314.5 and Section 314.6 of the 2006 International Residential Code, Section 316.5 and Section 316.6 of the 2009 International Residential Code and Section 2603.4.1 and Section 2603.9 of the International Building Code, all plastic insulation shall be

separated from the interior of the building by an approved thermal barrier of 1/2 inch (13 mm) gypsum wallboard or equivalent thermal barrier material. Code compliant approvals in lieu of an Ignition or Thermal barrier may be achieved with the use of BLAZELOK™ IB, BLAZELOK™ TB, BLAZELOK™ TBX, BLAZELOK™ TB 200 with BLAZELOK™ TB 200 Primer, Andek Fire Guard, and/or NO-Burn Plus XD depending on the details of the application. For more information or contact DEMILEC USA®'s Engineering Department for assistance, 817-640-4900.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION