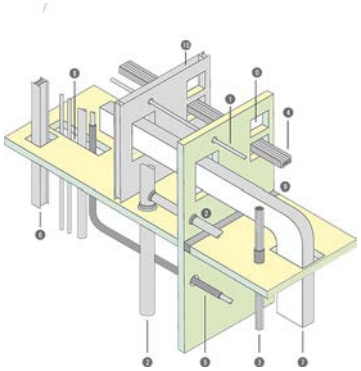


International Fireproof Technology Inc
$#σρυ)ÎôÕ Í ÅÓÃÅÎô 4ÈÅÒ Í ÁÌ "ÁÒÒÉÅÒ
Submittal

Technical Service 1-949 975 8588 * Fax 1 949 724 8898

International Fireproof Technology Inc.

The Ultimate in Firestop Solutions and Fire Protective Coatings

www.painttoprotect.com

949-975-8588

Application Guide

DC315 is the most tested and approved product for use as an Alternative Thermal Barrier or Ignition Barrier Coating for Spray Polyurethane Foam (SPF). DC315 is fully evaluated by accredited organizations such as ICC-ES, IAPMO, UL, ULC and CCMC to assure Code Officials and end users of DC315 compliance with current IBC/IRC, NBCC and many International Codes.

DC315 tested solutions for Spray Polyurethane Foam

- Code Compliance Evaluated by IAPMO ER-499 and ICC-ESR 3702 for the USA market
- Code Compliance Evaluated by CCMC #14036-R and ULC ER39793 for the Canadian market
- UL Listed as a component of exterior wall systems in accordance with NFPA 285 UL File R40016 with various architectural cladding
- More certified full scale Thermal and Ignition Barrier tests than any other product in the world
- DC315 manufacturing facilities are 3rd party Listed and Inspected
- Tested useful life, fire resistant property is not compromised after 50 years.
- Topcoat for color, weather, and moisture protection, tested via NFPA 286 full scale testing
- ANSI 51 testing for incidental food contact
- Passed CA-1350 - qualifies DC315 as a low-emitting material required by LEEDS and Green Building standards
- Passed strict EPA – VOC and AQMD air emission requirements
- "Single Coat Coverage" up to 24 Mils WFT on ceilings and walls
- Meets Life Safety Code NFPA 101
- LEEDS compliant
- No formaldehyde

USA Building Code Fire Performance Requirements for SPF:

If a coating does not carry a valid Code Evaluation Report confirming the Coating complies to AC377/AC456 the testing is not valid and cannot be used!

Building Codes mandate that SPF be separated from the interior of the building by a 15-minute thermal barrier, or other approved covering. DC315 passed certified NFPA 286 testing over open and closed cell spray applied polyurethane foams. All testing complies with the requirements of 2012 IBC Section 803.1.2, 2603.10 IRC Section 316.6 & 2015 IBC Section 803.1.2.1, 803.11, 2603.9 and IRC Section 316.6. DC315 has been tested as a component of exterior wall systems in accordance with the NFPA 285 and meets 2015 IBC Section 2603.5 with various architectural cladding options.

*For USA only - Visit our website at http://www.painttoprotect.com/matrix/ to obtain a current list of all foams that DC315 has been tested and approved over as a Thermal or Ignition barrier.

National Building Code of Canada Alternative Thermal Barrier Assemblies: DC315 has been tested in accordance with CAN/ULC S-145 and exceeds the performance of CAN/ULC S-124 thermal barriers by delaying the contribution to fire for at least 20 minutes. This testing meets the intent of Section 9.10.17.10 and 3.1.5.12 of the NBCC as published by CCMC and ULC.

End Use Applications: DC315 is for interior use as a thermal or ignition barrier coating to protect SPF. Contact IFTI for instruction for using DC315 in other applications such as, but not limited to, exterior wall systems, cold storage, parking garages, high humidity, or any unconditioned spaces.

Testing	
ASTM E 84	Flame Spread 0 Smoke Development 10
CAN/ULC S102 - (tested as a system over SPF)	Flame Spread 23 Smoke Development 145
NFPA 286	15-minutes meets IBC Section 2603, 803.1.2 and 803.11. Permitted to be used where Class A finish is required.
NFPA 285	UL Listed as a component of exterior wall systems in accordance with NFPA 285 with various architectural cladding
CAN/ULC S-101, ASTM E-119	Up to 1 hr depending on assembly
CAN/ULC S-145	20 minutes, Meets NBCC 9.10.17.10 and 3.1.5.12.(2)

Specifications	
Finish	Flat
Color	Ice Grey, White, Dark Grey and Charcoal Black available.
VOC EPA method 24	TVOC 10.3 g/L, VOC less water 18.6 g/L
Solids by Volume	67%
Specific Gravity	1.30+/-0.05 g/cc
Drying Time	@77°F & 50% R.H. – To touch 1 – 2 hours, to recoat if required 2 to 4 hours
Flashpoint	None
Reducing or Cleaning	Water
Shelf Life	1 year from date of manufacture in unopened containers and stored at 10°C to 27°C (50°F to 80°F). Do not allow to Freeze
Packaging	5 Gal. Pail -Weight 58 lbs. 55 Gal. Drum – Weight 640 lbs.

To confirm the installation complies with IFTI's best practices and is compliant with Code Evaluation reports, installer must have copies of all application documents on site. Installation documents can be downloaded at www.painttoprotect.com or Call IFTI at 949.975.8588 for current copies or with questions.

Job Work Records are an excellent way to track your installations and confirm compliance to your Building Official or Authority Having Jurisdiction. In the event of a concern on a job the installer can provide documented proof of the installation, use these forms for all thermal or ignition barrier projects.

Prior to Applying DC315 to Ensure Proper Adhesion: Adhesion of a coating to SPF requires the foam surface to have a slight profile or texture similar to an orange peel. Smooth, glossy foam surfaces should be flash coated with a light 3 - 4 mils Wet Film Thickness (WFT) of DC315 before applying the full application. Flash coating is a quick burst of DC315 or a primer* via airless sprayer over an area needing treatment. ***Note primer is required for all applications in Canada.**

Allow foam to cure and cool to ambient conditions prior to applying DC315, Minimum 1 hour.

Surface Preparation: All surfaces to be coated must be clean, cured, firm, dry and free of dust, dirt, oil, wax, grease, mildew, and efflorescence. The quality of any application is only as good as the surface preparation that precedes the application. DC315 has excellent bonding characteristics and will adhere to most sound, clean, foam surfaces. Verify that the surface of the foam is free of gouges, holes, and exposed cells. Also, verify the surface is stable, and not crumbling or deteriorated. If any such defects are found, make sure to repair them prior to proceeding.

Material Preparation: DC315 must be thoroughly mixed before application. Failure to do so will seriously compromise the coating's ability to perform. It is required to perform mechanical stirring with a medium speed drill and a paddle appropriate for the size container you are working from. Contents should be stirred from the bottom up making sure to scrape the bottom and sides with a paint stick as you go. Contents should be stirred to a creamy consistency with no lumps. Continue mixing for 4-5 minutes per 5-gallon pail, 15-20 minutes per 55-gallon drum. Thinning is usually not needed. If DC315 has been exposed to high heat, water may evaporate from the plastic 5-gallon container. If the paint level is below 3 inches from the top of the container, continue to mix and SLOWLY add just enough water to restore a sprayable consistency. Use Caution not to add to much water or product will run and drip during application.

DC315 Viscosity: DC315 is a 9,000-10,000-viscosity coating at 75°F. When you open a container of DC315 it may appear thick before it is mixed, ensure proper temperature and remix for 4-5 minutes to return it to the 9000-10,000 viscosity.

Temperature: PROTECT FROM FREEZING DURING SHIPMENT, STORAGE, AND USE. DC315 is water-based coating which will freeze and become unusable at temperatures below 32°F. Do Not store material at temperatures below 50°F. Do Not apply DC315 when ambient air and substrate temperatures fall below 50°F. Store DC315 at 50°F to 80°F at all times. Do Not store DC315 on concrete floors during winter months. IFTI recommends an ideal installation temperature range of 62°F to 90°F. Contact IFTI for applications outside these temperature ranges.

Humidity: Relative humidity plays an equally important role in how well DC315 cures. Ideal conditions are 50-65% relative humidity. Curing times are significantly affected when humidity levels exceed 70%. Low relative humidity can also be a problem, because DC315 may dry too quickly and lead to blistering on the surface. It is imperative that humidity is monitored throughout the application and curing process. 65% humidity at the beginning of the job will quickly rise as the coating is installed. Continue monitoring humidity as the coating cures until equilibrium is achieved. For additional information on using DC315 in high or low humidity contact IFTI at 949.975.8588 or email us at ptp@painttoprotect.com.

Ventilation: Fans may be required to circulate the air during application, especially in high or low humidity. Air flow must be across the area DC315 was applied, but not directly on it. If the relative humidity is greater than 85% at the end of spraying and cross ventilation is not drastically reducing it, then a mechanical industrial dehumidifier is required.

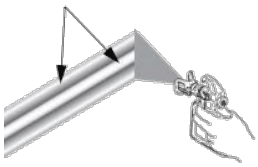
IMPORTANT- when spraying in enclosed or unconditioned spaces, such as attics, it is mandatory to use an "exhaust" blower at one end of the enclosed space and run a hose to the exterior of the building for removing stale air. Use a "supply" blower at the opposite end of the enclosed space and a hose from the exterior to maintain a negative pressure compared to the surrounding area, maintaining at least 0.3 air changes per hour for 48-72 hours following application.

Improper installation practices that do not address temperature, humidity and ventilation will void the warranty. Contact IFTI at 949.975.8588 or email ptp@painttoprotect.com

Application Equipment: DC315 is best applied with an airless sprayer to achieve a more consistent mil thickness. In challenging areas where an airless sprayer is not practical, DC315 can be applied by brush or roller (See table for a list of recommended sprayers).

Recommended Sprayers	
Pump:	Graco UltraMax795 or equivalent
PSI:	3000
GPM:	1.00
Tip:	517 - 521 or equivalent.
Filter:	Removal of filter from machine and gun (if present) is required
Hose:	3/8" diameter airless spray line for the length of hose from pump and ¼" x 6' whip at gun
Pump:	Graco TexSpray Mark 5 or equivalent
PSI:	3300
GPM:	1.35
Tip:	517 - 523 or equivalent.
Filter:	Removal of filter from machine and gun (if present) is required
Hose:	3/8" diameter air less spray line for the length of hose from pump and ¼"x 6' whip at gun
Pump:	Graco GH 833 or equivalent
PSI:	4000
GPM:	4.0
Tip:	517 - 529 or equivalent.
Filter:	Removal of filter from machine and gun (if present) is required
Hose:	1/2" diameter airless spray line for the first 100'-250' from pump. 3/8" for last 50' and ¼" x 6' whip at gun

Proper equipment and settings are imperative for correct application. Remove all filters from machine and gun. DC315 requires high pressure to atomize the coating at the spray tip, correct atomization will yield a more consistent spread rate and easier coverage of uneven surfaces. Using the table, ensure you match your tip size to your machine - this is critical to ensure correct pressure at the spray tip. If the spray pattern has fingers or tails, then the pressure should be increased. If the maximum pressure of the sprayer is not enough to achieve a good spray pattern, a spray tip with a smaller orifice should be used.



A good spray pattern indicates that the paint or coating is completely atomized and distributed evenly on the surface. Hose length should be appropriate for your machine and always ensure your feed hose is larger than your whip. Having a smaller whip will serve to re-pressurize the coating at the spray gun and assist in correct atomization of the coating.

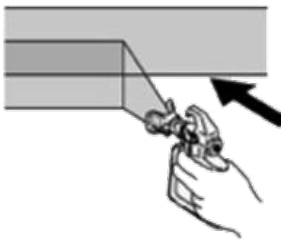
Spraying DC315 for Maximum Yield: If this is the first time using DC315 we suggest testing a pre-measured area to get a feel for spraying and yield. Example, if the job requires 20 wet mils or 80 ft² per gallon, then a 5-gallon pail would cover 400 ft². Measure out one or two 400 ft² sections using pieces of tape, thumbtacks, or canned spray paint. Use just enough to outline the area you intend to apply DC315. We suggest spraying inside the outlined area and taking wet film thickness measurements, with a wet film gauge across the area, to get a feel for maximum yield. DC315 is a single coat application up to 24 mils WFT. If multiple coats are required wait at least 2 hours between coats.

Coverage:
Check appropriate test or Evaluation report for required wet film thickness (WFT) and gallon per square coverage. Theoretical coverage is listed below

WET	Sq.Ft. Per Gallon	Sq.Ft. Per 5 Gallon
4 WFT	400 Sq.Ft. Per Gallon	2000 Sq.Ft. Per 5 Gallon
14 WFT	115 Sq.Ft. Per Gallon	575 Sq.Ft. Per 5 Gallon
16 WFT	100 Sq.Ft. Per Gallon	500 Sq.Ft. Per 5 Gallon
18 WFT	89 Sq.Ft. Per Gallon	445 Sq.Ft. Per 5 Gallon
20 WFT	80 Sq.Ft. Per Gallon	400 Sq.Ft. Per 5 Gallon
22 WFT	73 Sq.Ft. Per Gallon	365 Sq.Ft. Per 5 Gallon
24 WFT	67 Sq.Ft. Per Gallon	335 Sq.Ft. Per 5 Gallon

Actual coverage rate will vary based on surface texture, over-spray, and miscellaneous losses. Allow a minimum of 5-10% for over-spray and losses.

Overlapping Technique: The overlapping technique ensures that an even amount of coating was sprayed onto the surface. The spray gun should be aimed so that the tip points at the edge of the previous stroke, therefore overlapping each stroke by 50%. To maximize efficiency when spraying on broad or open surfaces (e.g. ceilings and bare walls), the outside edges of walls should be sprayed first. The middle can then be sprayed quickly requiring less precise strokes. Given the contour of SPF we suggest spraying side to side followed by an up and down stroke.



Measuring Wet Film Thickness (WFT)

Figure 1

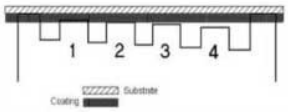


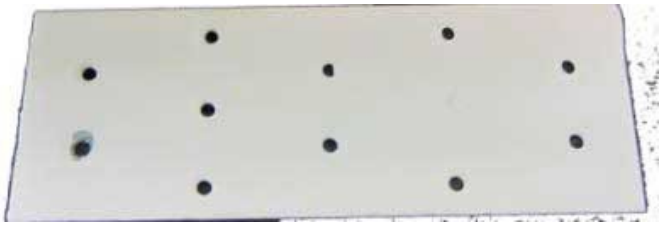
Figure 2

How to Use a Wet Film Thickness Gauge: A WFT gauge is designed to give the spray applicator immediate mil measurement of the film build just been sprayed.

Technique: When placing the gauge on a freshly painted area, the gauge must be placed at a 90-degree angle to the substrate and pressed firmly to ensure correct depth. The applicator also needs to be aware of variations in the surface that may influence the reading. For example, if the surface is not perfectly flat, one direction may give a more accurate reading than the other.

To use the WFT gauge, place the gauge directly on the wet area just sprayed as described above. See figure 2, the notches will indicate the measured film thickness. For example, if the 18-mil notch is wet and the 20-mil notch is dry, then the wet measured thickness is 18 mils.

Medallions (Optional): For Wet Film Thickness verification and ease of measuring the applied coating, IFTI suggests placing metal plates (aka Medallions) to the surface of the foam, on average one per 400 sq. ft. These plates are available at most hardware stores. IFTI recommends writing the job date and applicator name on the back of each plate. Measuring WFT on the front side of the plate will give the most accurate reading. Collect these plates at the end of the job, touch up, and keep them on file or at the job site. They are a great tool to present your code official or Fire Marshal and verify the applied thickness of coating.



Limitations:

DC315 is for interior use. Contact IFTI for detailed application instructions when applying in unconditioned space such as, but not limited to, exterior wall systems, cold storage, parking garages or high humidity environments.

Limited Warranty:

To validate warranty, Job Work Records must be filled out for all applications of DC315. Completed Work Records can be submitted to workrecords@painttoprotect.com within 10 Days of Job Completion.

This product will perform as tested if applied and maintained according to our directions, instructions and techniques. If this product is found to be defective upon inspection by its representative, the seller will, at its option, either furnish an equivalent amount of new product or refund the purchase price to the original purchaser of this product. Seller will not be liable for any representations made by any retail seller or applicator of the product. THIS WARRANTY EXCLUDES (1) LABOR OR COST OF LABOR FOR THE APPLICATION OR REMOVAL OF THIS PRODUCT OR ANY OTHER PRODUCT, THE REPAIR OR REPLACEMENT OF ANY SUBSTRATE TO WHICH THE PRODUCT IS APPLIED OR THE APPLICATION OF REPLACEMENT PRODUCT, (2) ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. OTHER LIMITATIONS APPLY.

For the complete terms of the limited warranty, go to www.painttoprotect.com. Some states/provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. To make a warranty claim, write to **Technical Service:**

International Fireproof Technology, Inc.
17528 Von Karman Avenue
Irvine, CA 92614

Or email Customer Service at ptp@painttoprotect.com

General Safety, Toxicity, Health Data

Safety Data Sheets (SDS) are available on this coating material. Any individual who may come in contact with these products should read and understand the SDS. In case of emergency contact CHEMTREC EMERGENCY NUMBER at 800-424-9300.
WARNING: Avoid eye contact with the liquid or spray mist. Applicators should wear protective clothes, gloves and use protective cream on face, hands, and other exposed areas.
EYE PROTECTION: Safety glasses, goggles, or a face shield are recommended.
SKIN PROTECTION: Chemical resistant gloves are recommended, cover as much exposed skin area as possible with appropriate clothing.
RESPIRATORY PROTECTION is MANDATORY!
Respiratory protective equipment, impervious footwear and protective clothing are required at all times during spray application.
INGESTION: Do not take internally.
Consider the application and environmental concentrations in deciding if additional protection is necessary.

International Fireproof Technology, Inc.
17528 Von Karman Ave. Irvine, CA 92614
Office: 949-975-8588

IFTI SPEC NOTE: This master specification is written to include SPEC NOTES noted as "IFTI Spec Note" in order to assist designers in their decision-making process. SPEC NOTES precede the text to which they apply. This section should serve as a guideline only and should be edited by a knowledgeable person to meet the requirements of each specific project.

Text indicated in bold and by square brackets is optional. Make appropriate decisions and delete the optional text as well as the brackets in the final copy of the specification. Delete or hide the SPEC NOTES in the final version of the document.

This specification section is written to follow the recommendations of the Construction Specifications Institute/Construction Specifications Canada (CSI/CSC) such as MasterFormatTM, SectionFormatTM, and PageFormatTM. It is also written with metric and imperial units of measurement.

PART 1 - GENERAL

1.1 GENERAL INSTRUCTIONS

IFTI Spec Note: Retain or delete this article in all Sections of Project Manual.

A. Read and conform to: The general provisions of the **[Contract Type]**, including General and Supplementary Conditions; and the requirements of Division 01 Specifications and any additional documents referred to in this Section.

1.2 SUMMARY

A. Provide labor, materials, products, equipment and services to complete the thermal barrier coating work specified herein. This includes, but is not necessarily limited, to:

1. Surface preparation and application of fire-protective intumescent thermal barrier coating to spray-applied polyurethane foams.

B. Related Requirements: Specifications throughout all Divisions of the Project shall be read and may be directly applicable to this Section.

1. Related requirements provided below are for convenience purposes only.

a. Section 07 21 19, Foamed In-Place Insulation: For provision of foamed-in-place polyurethane insulation.

1.3 REFERENCES

IFTI Spec Note: Retain only references that apply to this Project.

A. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.

B. All reference amendments adopted prior to the Bid Closing date of this Project shall be applicable to this Project.

C. All materials, installation and workmanship shall comply with all applicable requirements and standards.

D. American Society of Testing and Materials (ASTM):

1. ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials
2. ASTM E119: Standard Test Methods for Fire Tests of Building Construction and Materials
3. ASTM E2768: Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)
4. ASTM E96: Standard Test Methods for Water Vapor Transmission of Materials
5. ASTM E661: Standard Test Method for Performance Under Concentrated Static and Impact Loads

E. California Department of Public Health

1. CDPH/EHLB/Standard Method v1.2 (sect. 01350): Standard Method For The Testing And Evaluation Of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers

F. IAPMO ES: Uniform Evaluation Service, a subsidiary of the International Association of Plumbing and Mechanical Officials (IAPMO)

G. ICC-ES: International Code Council Evaluation Service

H. International Organization for Standardization (ISO)

1. ISO 9001: Quality management systems – Requirements
2. ISO 9705: Reaction to fire tests -- Room corner test for wall and ceiling lining products

I. LEED: Leadership in Energy and Environmental Design

J. National Fire Protection Association:

1. NFPA 286: Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth
2. NFPA 285: Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components

1.4 DEFINITIONS

A. Fogging: Procedure in which sprayed polyurethane foam applicator thinly mists surface with sprayed polyurethane foam to dull glossy sheens and provide fine texture to ensure adhesion of coatings.

B. WFT: Wet Film Thickness.

C. DFT: Dry Film Thickness.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meetings: Schedule and conduct pre-installation meeting at Project Site, to coordinate work of this Section, with work of related Subcontractors.

1. Ensure attendance of Subcontractor performing work of this Section and representatives of manufacturers and fabricators involved in, or affected by, installation and coordination with other materials and installations that have preceded or will follow. Advise Architect and Owner in advance of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the activity under consideration.
3. Record significant discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.

1.6 ACTION SUBMITTALS

A. Submit all submittals in accordance with Section **[01 33 00 - Submittal Procedures]**.

B. Product List: Provide product data complete with cross-reference to coating system and locations of application areas.

C. Samples: Submit samples for each type of coating system and each color of intumescent thermal barrier coating indicated. Submit Samples on rigid backing, not less than 200 mm (8 inches) square. Provide step coats on samples to show each coat required for system.

1.7 INFORMATIONAL SUBMITTALS

IFTI Spec Note: Always verify applicability and validity of test reports. Do not specify out-of-date reports.

A. Evaluation reports: Submit Evaluation reports in accordance with **[ICC-ESR 3702] [IAPMO ER 499] [UL R40016]** showing compliance with applicable building codes.

1. Submit Evaluation report from accredited independent evaluation agency, indicating compliance of intumescent thermal barrier with specifications for specified performance characteristics and physical properties.

B. Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

1. Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, and cleaning procedures.

C. Applicator’s Field Reports: Submit applicator’s job work written reports that includes information about ambient conditions, application thicknesses and results of on-site testing to verify compliance of Work, as described in this Section.

IFTI Spec Note: Include the information below only if the Project is attempting to meet some very specific LEED criteria. Verify with the rest of the Project team to see if the products specified in this Section have any significant LEED credit impact.

D. Sustainable Design Submittals (LEED): Submit following information for products used in this Section.

1. Recycled Content: Submit listing of recycled content products used, including details of required percentages of recycled content materials and products, showing their costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.
2. Local/Regional Materials: Indicate location of manufacturing facility; indicate distance between manufacturing facility and the project site and cost.
3. VOC data (Adhesives – Field Applied): Submit manufacturer’s product data for adhesives. Indicate VOC limits of the product. Submit MSDS highlighting VOC limits in accordance with CDPH/EHLB/Standard Method v1.2.

1.8 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit operation and maintenance data for intumescent coatings work for inclusion in operation and maintenance manuals specified in Division 01.

1.9 QUALITY ASSURANCE

A. Qualifications:

1. **[Installer: company specializing in intumescent thermal barrier installations with 5 years documented experience and approved by manufacturer.]**

B. Manufacturers:

1. Provide products by a firm specializing in the fabrication of firestopping who has successfully produced work similar in design and extent to that required for the project, in not less than three (3) projects of similar size and scope and whose work has resulted in construction with a record of successful in-service performance for a minimum period of ten (10) years.
2. Manufacturer shall have a program of continuous quality management implemented conforming to the requirements of ISO 9001. Submit proof of certification upon request.

C. Mock-ups:

1. Construct mock-ups in accordance with requirements of Division 01 to verify selections made under sample submittals, and to demonstrate aesthetic effects and set quality standards for materials and execution.
2. Apply mock-up of intumescent coating work, illustrating assembly including substrate preparation and quality of workmanship in presence of Architect and Owner.
3. Mock-ups shall be used as a benchmark for judging the texture and thickness of the finished work. Mock-ups may form part of the completed Work if undisturbed at the time of substantial completion.

D. Source Limitations: Obtain each coating system from single source from single manufacturer or provide a system approved in writing by intumescent thermal barrier coating manufacturer.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the project in manufacturer's unopened packages, fully identified as to trade name, type and other identifying data.

B. Packaged materials shall bear the appropriate labels, seals and WHI and/or UL label (mark) for fire resistive ratings and shall be stored at temperatures in compliance with manufacturer instructions in a dry interior location away from direct sunlight.

C. Ensure materials are not subjected to freezing temperatures.

D. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained in accordance with manufacturer’s recommendations, but not less than 50 deg F.

1.11 PROJECT CONDITIONS

A. Ensure minimum substrate temperature and ambient temperature of 50 deg F is maintained prior to, during, and a minimum of 72 hours after application.

B. Provide temporary enclosures and heat to maintain environmental conditions in application areas. Responsibility for provision of such temporary enclosures and heat shall be General Contractor’s unless noted otherwise.

C. Ensure ventilation of not less than 0.3 complete air exchanges per hour is maintained until materials are cured.

D. Ensure relative humidity does not exceed 85% throughout application and curing period of materials. Provide compatible bonding primer and protective topcoats when Products are installed in areas of high humidity

E. Do not apply products in snow, rain, fog, or mist, or to damp or wet surfaces.

F. Allow wet surfaces to dry thoroughly and to attain temperature and conditions specified before starting or continuing coating operation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Materials specified in this Section are based on products by International Fireproof Technology Inc; 6208, 17528 Von Karman Ave, Irvine, CA 92614, United States Tel: (949) 975-8588 Web: www.painttoprotect.com; as listed in this Specification.

B. Substitution Limitations: **[No further substitutions are acceptable.] [Conforming to requirements of Section 01 25 00 - Substitution Procedures]**

2.2 REGULATORY REQUIREMENTS

A. Products shall meet requirements of municipal, state, or federal authorities having jurisdiction.

B. Fire protective coating systems shall comply with the following requirements:

1. Provide rated systems complying with the following requirements based on tests performed by a qualified testing agency acceptable to authorities having jurisdiction:
2. All systems and products shall bear the classification rating and listing of a qualified testing agency based on designations listed by one of the following:

IFTI Spec Note: Retain only subparagraph(s) below that reference the directories of testing agency or agencies approved by authorities having jurisdiction.

a. ASTM E84 FSR 0 SDC 10
b. ASTM E2768
c. ASTM E119
d. ISO 9705
e. NFPA 286
f. NFPA 285
g. IAPMO ER499
h. ICC-ESR 3702
i. UL R-40016

2.3 DESIGN AND PERFORMANCE REQUIREMENTS

A. Material Compatibility:

1. Provide materials for use within each coating system that are compatible with one another and substrates indicated.
2. Apply all products according to spreading rates recommended in writing by intumescent thermal barrier coating manufacturer.
3. Comply with requirements for fire-protective coating classification and surface-burning characteristics indicated.

B. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.

2.4 INTUMESCENT THERMAL BARRIER COATING SYSTEM

A. Bonding Primer (where required): Interior unconditioned spaces subject to freeze thaw cycling, temperature and humidity variations or as required per tested and listed system. Waterborne, acrylic emulsion, adhesion-promoting bonding primer recommended in writing by manufacturer, if required, compatible with substrate and other materials indicated.

1. Application thickness (WFT): not less than 3 mils, and not more than 5 mils.
2. Acceptable product: “DTM Bonding Primer” by Sherwin Williams; “Bondz” Zinseer, “Ultra Bond 16” by General Coatings MFG Corp. or approved equivalent recommended in writing by intumescent thermal barrier manufacturer.

B. Fire-protective Intumescent Thermal Barrier Coating:

1. Protective coating with following characteristics, specifically formulated for application over polyurethane foam plastics and compatible with insulation:

   a. Finish: Flat
   b. Color: **[Ice Grey] [White] [Dark Grey] [Charcoal Black]**
   c. VOC Content: 19 g/L less water as per EPA 24
   d. Shore D Hardness (before topcoat and finish coat are applied): 40.
   e. Solids by Volume: 67%
   f. Specific Gravity: 1.30 +/- 0.05 g/cc
   g. Drying Time @ 25 deg C (77 deg F) and 50% R.H:
      1. To touch: 1-2 hours
      2. To recoat (if required): 2-4 hours

   h. Flashpoint: None
   i. Reducing or Cleaning: Water

2. Acceptable Product: “DC315” by International Fireproof Technology Inc.

C. Decorative Topcoat (where desired)

1. Interior conditioned spaces: Water based latex-based paint recommended in writing by manufacturer compatible with substrate and other materials indicated.

   a. Application thickness (WFT): not less than 8 mils, and not more than 12 mils.
   b. Acceptable product: “Promar 200”, “Promar 400”, “Dryfall”, “A-100 Latex” by Sherwin Williams or approved equivalent recommended in writing by intumescent thermal barrier manufacturer.

D. Protective Topcoat: (where required)*

1. Interior unconditioned spaces subject to constant high humidity, condensation or at risk of direct contact with moisture: heavy duty, exterior/interior, VOC compliant, protective topcoat.

   a. Application thickness (WFT): not less than 8 mils, and not more than 12 mils.
   b. Acceptable Product: “Sher-Cryl”, “Steel Master9500”, “A-100”, “Moisture Vapor Barrier Primer/Finish” by Sherwin Williams or approved equivalent recommended in writing by intumescent thermal barrier manufacturer.*

2. Exterior Continuous Insulation systems as a component of exterior wall systems as shown in UL File FWFO.EWS0054 when installed behind approved claddings.

    a. Application thickness (WFT): not less than 8 mils, and not more than 12 mils.
    b. Acceptable Product: “Sher-Cryl” by Sherwin Williams

    *Topcoats have been investigated as to not reduce the fire resistance rating of the specific intumescent coating listed. Authorities Having Jurisdiction, Architects, Engineers or Specifiers should be consulted as to the particular requirements covering the installation and use of any coatings listed.

2.5 ACCESSORIES

A. Provide accessories to comply with manufacturer’s recommendations and to meet fire resistance design and code requirements. Such accessories include, but are not limited to, any required or optional items such as bonding agents, mechanical attachments; and application aids.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

A. Comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 EXAMINATION

A. Verify suitability of substrates, including surface conditions, and compatibility with existing finishes and primers.

B. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.

3.3 PREPARATION

A. Comply with manufacturer's written instructions applicable to substrates and coating systems indicated. Refer to test report for applicable brand and type of sprayed polyurethane foam to verify compatibility, and if a primer is required. Provide compatible primer approved by intumescent thermal barrier manufacturer to required surfaces where required by applicable test reports.

B. Provide masking, drop cloths or other suitable coverings to prevent overspray onto surfaces not intended to be coated with intumescent coating.

C. Ensure substrates are clean, and free of substances, including dirt, oil, grease, loose materials and incompatible that could impair bond of coatings.

D. Do not coat surfaces if surface moisture content or alkalinity exceeds that permitted in manufacturer's written instructions.

E. Remove incompatible primers, and reprime substrate with compatible primers as required to produce coating systems indicated.

F. Prime or “fog” glossy foam surfaces prior to applying intumescent thermal barriers.

3.4 APPLICATION

A. Apply intumescent thermal barrier coatings according to manufacturer's written instructions and to comply with requirements for fire-protective coating classification and applicable test reports for spay urethane foam insulation.

B. Do not paint unless substrates are acceptable and/or until all environmental conditions (heating, ventilation, lighting and completion of other subtrade work) are acceptable for applications of products.

C. Use airless spray equipment and techniques best suited for substrate, and in accordance with requirements indicated in manufacturer’s instruction guidelines.

D. Apply each coat separately according to manufacturer's written instructions.

E. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections.

F. When applying as a component of an exterior wall system do not paint unless substrates are acceptable and/or until all environmental conditions are acceptable for applications of products.

G. Do not apply topcoats on surfaces that are not sufficiently dry. Unless manufacturer’s directions state otherwise, each coat shall be sufficiently dry and hard before a following coat is applied.

3.5 CLEANING AND PROTECTION

A. Upon completion of installation, clean excess material, overspray, and debris. Remove and clear such materials from Project site.

B. Ensure patching of, and repair to, intumescent thermal barriers due to damage by other trades, is performed under this section, and paid for by trade responsible for damage.

C. Ensure patching is performed by an applicator with expertise in the installation of intumescent thermal barrier coatings.

D. Thermal barrier must be protected from weather until the protective topcoats is applied.

3.6 FIELD QUALITY CONTROL

A. Continuously monitor WFT by performing checks to ensure correct thicknesses are applied.

IFTI Spec Note: Choose one of the following methods to measure thickness. Medallions, if used, can be maintained to verify Dry Film Thicknesses conform to requirements of Contract Documents.

B. Measuring Thickness:

1. Install medallions prior to applying the intumescent thermal barrier coating as a means of measuring wet film thickness and dry film thickness.

IFTI Spec Note: As an alternative to medallions, one can measure dry film on site by taking a representative sample of the installed coating and measuring it using calipers, optical comparators or another similar tool.

2. Perform thickness measurements by measuring representative sample of installed intumescent coating material by means of calipers, optical comparators or similar devices.

C. Review results of installed thickness tests with General Contractor and ensure sign-off prior to application of topcoat (if required).

3.7 IDENTIFICATION

A. Upon completion, provide job site label or similar method of identifying product used. Affix job site label in a prominent location, clearly indicating applicator's name, contact information, company information, products used, and measured thickness.

END OF SECTION

ICC-ES Evaluation Report

ESR-3702

Reissued February 2019
Revised June 2019
This report is subject to renewal February 2021.

www.icc-es.org | (800) 423-6587 | (562) 699-0543 *A Subsidiary of the International Code Council®*

DIVISION: 09 00 00—FINISHES
Section: 09 96 43—Fire-Retardant Coatings

REPORT HOLDER:

INTERNATIONAL FIREPROOF TECHNOLOGY INC.

EVALUATION SUBJECT:

DC315 INTUMESCENT COATING

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018, 2015, 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2018, 2015, 2012, 2009 and 2006 *International Residential Code®* (IRC)

Properties evaluated:

- Application without a prescriptive thermal barrier
- Application without a prescriptive ignition barrier
- Physical properties
- Surface burning characteristics
- Water vapor transmission

2.0 USES

DC315 is a liquid-applied coating intended for application over the surface of spray-applied foam plastic insulation complying with ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377). The coated assembly may be left exposed to the interior of the building without the application of a code-prescribed thermal barrier when installed as described in Sectoin 4.2 of this report. The DC315 coating may be used in attic and crawl spaces as described in Section 4.3 of this report.

3.0 DESCRIPTION

3.1 General:

DC315 is a single-component, water-based, liquid-applied intumescent coating and are available in white, ice gray, dark gray and charcoal black. The coating is supplied in 5-gallon (19 L) pails and 55-gallon (208 L) drums, and has a shelf life of one (1) year when stored in factory-sealed containers at temperatures between 50° and 80°F (10 and 27°C).

DC315 Primer is a liquid-applied primer, manufactured by International Fireproof Technology, Inc., and is supplied in 1- and 5-gallon (3.8 and 18.9 L) pails, and has a shelf life of 2 years when stored in factory-sealed containers at temperatures between 50° and 80°F (10 and 27°C).

DTM Bonding Primer is a waterborne, acrylic emulsion, bonding primer manufactured by Sherwin-Williams. The primer is supplied in 1- and 5-gallon (3.8 and 18.9 L) containers, and has a shelf life of three (3) years when stored in factory-sealed containers at temperatures between 50° and 100°F (10 and 38°C).

3.2 Vapor Retarder:

When a minimum thickness of 18 mils WFT [0.018 inch (0.46 mm)] of DC315 is apllied to a minimum thickness of 2 inches (50.8 mm) of open-cell spray-applied foam plastic insulation, the assembly has a vapor permeance greater than 1 and less than 10 perms (5.7x10 kg/Pa-s-m2) when tested in accordance with ASTM E96 procedure A (dessicant method), and qualifies as a Class III vapor retarder,

3.3 Surface Burning Characteristics:

When tested in accordance with ASTM E84/UL 723, at a thickness of 13 mils WFT [0.013 inch (0.33 mm)], DC315 has a flame spread index of 25 or less and a smoke-developed index of 450 or less. The DC315 coated foam assemblies listed in Table 1 were tested in accordance with NFPA 286 and comply with the acceptance criteria of 2018 IBC Section 803.1.1.1 (2015, 2012 and 2009 IBC Section 803.1.2.1 and 2006 IBC Section 803.2.1) and 2018, 2015, 2012 and 2009 IRC R302.9.4 (2006 IRC Section R315.4) and is permitted to be used where a Class A classification in accordance with ASTM E 84 or UL 723 is required by 2018 IBC Section 803.13 (2015 IBC Section 803.11, 2012 and 2009 IBC Section 803.9 and 2006 IBC Section 803.5).

4.0 DESIGN AND INSTALLATION

4.1 Installation – General:

DC315 must be applied in accordance with the manufacturer's published application instructions and this report. A copy of the instructions must be available on the job site at all times.

DC315 must be mechanically mixed prior to application. The coating is applied to the required thickness using spray equipment, a brush or a roller having a medium nap. Surfaces to be coated must be inspected in accordance with the manufacturer's published installation instructions and must be dry, clean, and free of dirt, loose debris and other substances that could interfere with the adhesion of the coating. The coating must not be applied when the ambient or surface temperature is below 50°F (10°C) or above 90°F (32° C) and relative humidity of more than

85%. The manufacturer must be consulted for specific application conditions.

4.2 Application without a Prescriptive Thermal Barrier:

The DC315 coating may be applied over spray-applied foam plastic insulations listed in Table 1 without covering the coated assembly with the thermal barrier prescribed in IBC Section 2603.4 and IRC Section R316.4 (2006 IRC Section R314.4).

The DTM Bonding Primer, when used as part of the assemblies listed in Table 1, must be installed in accordance with the manufacturer's published installation instructions.

4.3 Application without a Prescriptive Ignition Barrier:

4.3.1 General: Where spray-applied foam plastic insulations listed in Tabe 2 are installed in attics and crawl spaces without the ignition barrier prescribed in IBC Section 2603.4.1.6 and 2018, 2015, 2012 and 2009 IRC Sections R316.5.3 and R316.5.4 (2006 IRC Sections R314.5.3 and R314.5.4) the installation must be in accordance with Sections 4.3.2 and 4.3.3, and the following conditions apply:

a. Entry to the attic or crawl space is only to service utilities, and no storage is permitted.

b. There are no interconnected attic or crawl space areas.

c. Air in the attic or crawl space is not circulated to other parts of the building.

d. Attic ventilation is provided when required by 2018 IBC Section 1202.2 (2015, 2012, 2009 and 2006 IBC Section 1203.2) or IRC Section R806, except when air-impermeable insulation is permitted in unvented attics in accordance with the 2018 IBC Section 1202.3 (2015 IBC Section 1203.3) or 2018, 2015 and 2012 IRC Section R806.5 (2009 IRC Section R806.4).

e. Under-floor (crawl space) ventilation is provided when required by 2018 IBC Section 1202.4 [2015 IBC Section 1203.4 (2012, 2009 and 2006 IBC Section 1203.3) or IRC Section R408.1, as applicable.

f. Combustion air is provided in accordance with IMC (*International Mechnical Code*®) Section 701.

4.3.2 In attics and crawl spaces: In attics, the insulation may be spray-applied to the underside of roof sheathing or roof rafters, and/or vertical surfaces; and in crawl spaces, the insulation may be spray-applied to the underside of floors and/or vertical surfaces provided the assembly conforms to one of the assemblies described in Table 2.

4.3.3 Use on Attic Floors: The insulation may be installed between and over the joists in attic floor at the maximum thickness set forth in Table 2. The insulation must be separated from the interior of the building by an approved thermal barrier. An ignition barrier prescribed in IBC Section 2603.4.1.6 and 2018, 2015, 2012 and 2009 IRC Sections R316.5.3 and R316.5.4 (2006 IRC Sections R314.5.3 and R314.5.4) may be omitted.

5.0 CONDITIONS OF USE

The DC315 coating described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Application must comply with this report, the manufacturer's published installation instructions, and the applicable code. A copy of the installation instructions must be on the job site during application of the coating. In the event of a conflict, this report and the code govern.

5.2 The application of additional interior finishes over the DC315 coating is limited to interior/exterior satin latex paint applied at an average wet film thickness of 8.0 mils (0.20 mm) or interior/exterior coating consisting of 30% silicon alkyd having a VOC (less exempt solvents) of no more than 340 g/L (2.8 lb/gal) and a volume solids content of 62% applied at a maximum average wet film thickness of 8 mils (0.20 mm). The use of either of the two interior finishes in conjunction with a vapor retardant coating is outside the scope of this report.

5.3 Recognition in this report is for the specific assemblies and spray-applied foam plastic insulations described in Tables 1 and 2. The spray-applied foam plastic insulation must be installed in accordance with the requirements set forth in the specific ICC-ES evaluation report noted. For spray-applied foam plastic insulation that is not covered in an ICC-ES evaluation report, the evaluation is limited as noted in Tables 1 and 2, Footnote 3.

5.4 The coating is manufactured in Taoyuan, Taiwan and Irvine, California, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Fire-Protective Coatings Applied to Spray-applied Foam Plastic Insulation Installed without a Code-prescribed Thermal Barrier (AC456), dated October 2015 (Editorially revised July 2018), including room corner fire testing in accordance with NFPA 286.

6.2 Report of testing in accordance with ASTM E84 (UL 723).

6.3 Report of vapor permeance test in accordance with ASTM E96 (Dessicant method).

6.4 Report of testing in accordance with Appendix X of AC377.

7.0 IDENTIFICATION

7.1 All containers of DC315 coating must be labeled with the manufacturer's name (International Fireproof Technology Inc.) and address; the product name; the date of manufacture, the shelf life or expiration date; the manufacturer's instructions for application, and the evaluation report number (ESR-3702).

The spray-applied foam plastic insulations must be labeled in accordance with the applicable evaluation report (see Table 1).

7.2 The report holder's contact information is the following:

INTERNATIONAL FIREPROOF TECHNOLOGY INC.
17528 VON KARMAN AVENUE
IRVINE, CALIFORNIA 92614
(949) 975-8588
www.painttoprotect.com
ptp@painttoprotect.com

TABLE 1—USE OF INSULATION WITHOUT A PRESCRIPTIVE THERMAL BARRIER (TESTED IN ACCORDANCE WITH NFPA 286)

INSULATION COMPANY NAME	INSULATION PRODUCT NAME	MAXIMUM THICKNESS (in.) (Vertical Surfaces)	MAXIMUM THICKNESS (in.) (Overhead Surfaces)	DC315 COATING MINIMUM THICKNESS[1] (Applied to all Foam Surfaces)	MINIMUM THEORETICAL APPLICATION RATE OF COATING[2]
Accella Polyurethane Systems	Bayseal CC X (ESR-2072)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	Bayseal CC XP (ESR-2072)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	Bayseal OC (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	Bayseal OC HY (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	Bayseal OCX (See Note 3)	9	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	EcoBay CC (See Note 3)	7 1/4	7 1/4	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Accella Polyurethane Systems	Foamsulate 210 (See Note 3)	8	12	13 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Accella Polyurethane Systems	Foamsulate 220 (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	Foamsulate 50 (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	Foamsulate 50 N-IB (See Note 3)	9	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	NatureSeal OCX (See Note 3)	9	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	NeXGeN 2.0 (See Note 3)	8	10	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Accella Polyurethane Systems	QuadFoam® 2.0 (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	QuadFoam® 500 (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	QuadFoam® 500 OC (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	Sealtite CC+ (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Accella Polyurethane Systems	Sealtite OC+ (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Acme Urethanes	WC-50 (See Note 3)	8	14	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Barnhardt Manufacturing Company dba NCFI Polyurethanes	12-008 (See Note 3)	8	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Barnhardt Manufacturing Company dba NCFI Polyurethanes	InsulBloc® (ESR-1615)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Barnhardt Manufacturing Company dba NCFI Polyurethanes	InsulStar® (ESR-1615)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Barnhardt Manufacturing Company dba NCFI Polyurethanes	Sealite OCX (See Note 3)	10	14	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
BASF Corporation	ENERTITE® G (ESR-3102)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
BASF Corporation	ENERTITE® NM (ESR-3102)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
BASF Corporation	SPRAYTITE 158 (ESR-2642)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
BASF Corporation	SPRAYTITE 178 (ESR-2642)	5 1/2	11 1/2	14 mils DFT 20 mils WFT	1.25 gal/100 ft^2
BASF Corporation	SPRAYTITE 81205 (ESR-2642)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
BASF Corporation	SPRAYTITE 81206 (ESR-2642)	5 1/2	11 1/2	14 mils DFT 20 mils WFT	1.25 gal/100 ft^2
BASF Corporation	SPRAYTITE SP (ESR-2642)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
BASF Corporation	WALLTITE 200 (ESR-2642)	5 1/2	11 1/2	14 mils DFT 20 mils WFT	1.25 gal/100 ft^2
BASF Corporation	WALLTITE HP+ (ESR-2642)	5 1/2	11 1/2	14 mils DFT 20 mils WFT	1.25 gal/100 ft^2
BASF Corporation	WALLTITE US (ESR-2642)	5 1/2	11 1/2	14 mils DFT 20 mils WFT	1.25 gal/100 ft^2

INSULATION COMPANY NAME	INSULATION PRODUCT NAME	MAXIMUM THICKNESS (in.) (Vertical Surfaces)	MAXIMUM THICKNESS (in.) (Overhead Surfaces)	DC315 COATING MINIMUM THICKNESS[1] (Applied to all Foam Surfaces)	MINIMUM THEORETICAL APPLICATION RATE OF COATING[2]
BASF Corporation	WALLTITE US-N (ESR-2642)	5 1/2	11 1/2	14 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Carlisle Spray Foam Insulation	Foamsulate 50 (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	Foamsulate 50 HY (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	Foamsulate 70 (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	Foamsulate Closed Cell (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	Foamsulate HFO (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	Foamsulate OCX (See Note 3)	9	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite D7 Closed Cell (See Note 3)	7 1/4	7 1/4	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite D7 One Zero Closed Cell (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite D7 Open Cell (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite PRO Closed Cell (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite PRO High Yield (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite PRO No Mix (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite PRO No Trim 21 (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite PRO OCX (See Note 3)	9	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite PRO One Zero Closed Cell (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite PRO Open Cell (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
CertainTeed	Certaspray X OC (See Note 3)	5 1/4	14	13 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Commercial Thermal Solutions, Inc.	Tiger Foam® E-84 Fire-Rated SPF Class 1 Spray Foam System (ESR-3183)	3 1/2	3 1/2	13 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Creative Polymer Solutions	Air Lok 170 (See Note 3)	5 1/2	9 1/2	13 mils DFT 19 mils WFT	1.19 gal/100 ft^2
Creative Polymer Solutions	Airl Lok 45 (See Note 3)	8	14	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
DAP Foam, Inc.	Touch N' Foam Professional Class I FR Spray Foam System (ESR-3758)	3 1/2	3 1/2	13 mils DFT 20 mils WFT	1.25 gal/100 ft^2
DAP Foam, Inc.	Touch N' Seal Class I FR Spray Foam System (ESR-3758)	3 1/2	3 1/2	13 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Demilec (USA) Inc.	Agribalance® (ESR-2600)	7 1/2	11 1/2	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Demilec (USA) Inc.	Demilec APX® 2.0 (ESR-3703)	5 1/4	14	13 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Demilec (USA) Inc.	Demilec APX™ (ESR-3470)	8	10	13 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Demilec (USA) Inc.	Demilec Heatlok® HFO (ESR-4073)	7 1/2	11 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Demilec (USA) Inc.	Demilec Heatlok® XT-s (ESR-3824)	7 1/2	11 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Demilec (USA) Inc.	Demilec Heatlok® XT-w (ESR-3883)	7 1/2	11 1/2	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Demilec (USA) Inc.	Demilec *SEAL*ECTION® 500 (ESR-1172)	7 1/2	11 1/2	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Demilec (USA) Inc.	HEATLOK SOY® 200 PLUS (ESR-3210)	7 1/2	11 1/2	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2

INSULATION COMPANY NAME	INSULATION PRODUCT NAME	MAXIMUM THICKNESS (in.) (Vertical Surfaces)	MAXIMUM THICKNESS (in.) (Overhead Surfaces)	DC315 COATING MINIMUM THICKNESS[1] (Applied to all Foam Surfaces)	MINIMUM THEORETICAL APPLICATION RATE OF COATING[2]
Demilec (USA) Inc.	Heatlok® Eco (ESR-3198)	5 1/2	9 1/2	14 mils DFT 22 mils WFT	1.38 gal/100 ft^2
Demilec (USA) Inc.	Sealection NM (ESR-2668)	7 1/2	11 1/2	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Elastochem Specialty Chemicals, Inc.	Elastochem® Insulthane® Extreme (ESR-3809)	7 1/4	7 1/4	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Elastochem Specialty Chemicals, Inc.	Insulthane (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
EnergyOne America	EOA 2000 (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
EnergyOne America	EOA 500 (ESR-3686)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Gaco Western	F1850 (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Gaco Western	Gaco 183M (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Gaco Western	GACO F1880 (See Note 3)	9	12	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Gaco Western	Gaco Firestop2 F5001 (See Note 3)	18	18	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Gaco Western	Gaco Green 052N (See Note 3)	11 1/4	11 1/4	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Gaco Western	GacoEZSpray F4500 (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
General Coatings Manufacturing Corp.	Ultrathane 050 (See Note 3)	8	10	13 mils DFT 20mils WFT	1.25 gal/100 ft^2
General Coatings Manufacturing Corp.	Ultra-Thane 230 (ESR-3033)	5 1/2	7 1/2	DTM Bonding Primer 3 mils DFT/ 4 mils WFT & DC315 12 mils DFT/ 18 mils WFT	0.25 gal/100 ft^2 & 1.13 gal/100 ft^2
Guardian Energy Technologies	Foam It Green (See Note 3)	3 1/2	3 1/2	13 mils DFT 20mils WFT	1.25 gal/100 ft^2
Henry Company	Permax 1.8 (See Note 3)	11 1/4	11 1/4	14 mils DFT 21 mils WFT	1.31 gal/100 ft^2
Henry Company	Permax 2.0X (ESR-3647)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Henry Company	Permax 2.0X Fast (ESR-3647)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Huntsman International, LLC	CertaSpray CC (ESR-3758)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
ICP Adhesives & Sealants, Inc.	Handi-Foam E-84 Class 1(A) Spray Foam System (ESR-2717)	3 1/2	3 1/2	13 mils DFT 20mils WFT	1.25 gal/100 ft^2
Icynene, Inc.	Classic (ESR-1826)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Icynene, Inc.	Classic Plus (ESR-1826)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Icynene, Inc.	Classic Ultra (ESR-1826)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Icynene, Inc.	Classic Ultra Select (ESR-1826)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Icynene, Inc.	Icynene MD-C-200 (ESR-3199)	6	10	14 mils DFT 22 mils WFT	1.38 gal/100 ft^2
Icynene, Inc.	Icynene ProSeal (ESR-3500)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Icynene, Inc.	Icynene ProSeal LE (ESR-3500)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Icynene, Inc.	ProSeal HFO (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Icynene, Inc.	ProSeal Max HFC (See Note 3)	6	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Icynene-LaPolla, Inc.	Foam-Lok FL 450 (ESR-4242)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Icynene-Lapolla, Inc.	Prime Gold (ESR-4323)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Johns Manville	JM Corbond III (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2

INSULATION COMPANY NAME	INSULATION PRODUCT NAME	MAXIMUM THICKNESS (in.) (Vertical Surfaces)	MAXIMUM THICKNESS (in.) (Overhead Surfaces)	DC315 COATING MINIMUM THICKNESS[1] (Applied to all Foam Surfaces)	MINIMUM THEORETICAL APPLICATION RATE OF COATING[2]
Johns Manville	JM Corbond MCS™ (ESR-3159)	7 1/4	9 1/4	14 mils DFT 22 mils WFT	1.38 gal/100 ft^2
Johns Manville	JM Corbond oc (See Note 3)	7 1/2	11 1/2	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Johns Manville	JM Corbond ocx SPF (See Note 3)	9	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Johns Manville	JM MCS+ (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
LaPolla Industries, Inc.	Foam-Lok FL2000 (ESR-2629)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
LaPolla Industries, Inc.	Foam-Lok FL500 (ESR-2847)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
LaPolla Industries, Inc.	Lapolla FL 2000 4G (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
LaPolla Industries, Inc.	Lapolla Foam-Lok FL 750 (ESR-4322)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Natural Polymers, LLC	Natural-Therm™ 0.5 IB (See Note 3)	9 1/2	14 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Natural Polymers, LLC	Natural-Therm™ 0.50 PCF (See Note 3)	9 1/2	14 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Natural Polymers, LLC	Natural-Therm™ 2.0 IBS (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Natural Polymers, LLC	Natural-Therm™ 2.0 IBW (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Natural Polymers, LLC	Natural-Therm™ Light (See Note 3)	9 1/2	14 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Natural Polymers, LLC	Natural-Therm™ ZERO (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Nu-Wool Company Incorporated	Nu-Seal 0.5 (See Note 3)	9 1/2	14 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Nu-Wool Company Incorporated	Nu-Seal 2.0 W (See Note 3)	5 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Polygreen Solutions	GreenSeal 44 (See Note 3)	8	14	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Preferred Solutions, Inc.	Staycell® 302 (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Profoam	ProSeal (ESR-3835)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Purinova Sp. z.o.o.	Purinova PURIOS 500 (ESR-4165)	8	14	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
RHH Foam Systems	Versi-Foam Class I (See Note 3)	3 1/2	3 1/2	13 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Rhino Linings Corporation	ThermalGuard CC2 (ESR-2100)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Rhino Linings Corporation	ThermalGuard OC.5 (ESR-2100)	7 1/2	11 1/2	13 mils DFT 18 mils WFT	1.13 gal/100 ft^2
SES Foam	Nexseal 2.0 (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
SES Foam	Nexseal 2.0 LE (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
SES Foam	SES 2.0 (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
SES Foam	SES 2.0 LE (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
SES Foam	SES Foam 0.5 lb (ESR-3375)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
SES Foam	Sucraseal™ 0.5 (ESR-3375)	9	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Specialty Prodcuts, Inc. (S.P.I)	Envelo-Seal™ 0.5 OC (See Note 3)	9 1/2	14 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Specialty Prodcuts, Inc. (S.P.I)	Envelo-Seal™ 2.0 IBW (See Note 3)	5 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Sustainable Polymer Products	0.5 OC (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Sustainable Polymer Products	0.5 OCX (See Note 3)	9	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Sustainable Polymer Products	2.0 CC (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
SWD Urethane	Quik-Shield 100X (See Note 3)	7	11	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2

INSULATION COMPANY NAME	INSULATION PRODUCT NAME	MAXIMUM THICKNESS (in.) (Vertical Surfaces)	MAXIMUM THICKNESS (in.) (Overhead Surfaces)	DC315 COATING MINIMUM THICKNESS[1] (Applied to all Foam Surfaces)	MINIMUM THEORETICAL APPLICATION RATE OF COATING[2]
SWD Urethane	Quik-Shield 104 (See Note 3)	8	14	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
SWD Urethane	Quik-Shield 106 (See Note 3)	11 1/4	11 1/4	15 mils DFT 24 mils WFT	1.50 gal/100 ft^2
SWD Urethane	Quik-Shield 108 (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
SWD Urethane	Quik-Shield 112 (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
The Dow Chemical Company	FROTH-PAK™ (ESR-3228)	3 1/2	3 1/2	14 mils DFT 20 mils WFT	1.25 gal/100 ft^2
The Dow Chemical Company	STYROFOAM™ Spray Polyurethane Foam CM2045 (ESR-2670)	9 1/2	9 1/2	15 mils DFT 22 mils WFT	1.38 gal/100 ft^2
The Spray Market	SPM-200 (ESR-4195)	7 1/2	11 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Thermoseal	2000 (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Thermoseal	Thermoseal CCX (ESR-4137)	7 1/2	11 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Thermoseal	TS 5G (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Thermoseal	TS One (See Note 3)	5 1/2	9 1/2	13 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Thermoseal	TS360 (See Note 3)	8 1/2	14	13 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Thermoseal	TS500 (See Note 3)	8	14	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Thermoseal	TS800 (See Note 3)	8	14	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Universal Polymers Corporation	UPC 500 (ESR-3803)	8 1/2	14	12 mils DFT 18 mils WFT	1.13 gal/100 ft^2
Urethane Technology Company, Inc.	UTC 7040-0.5 (ESR-3244)	5 1/2	14 3/4	14 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Urethane Technology Company, Inc.	UTC 7041-0.5 (ESR-3244)	5 1/2	14 3/4	14 mils DFT 20 mils WFT	1.25 gal/100 ft^2
Volatile Free, Inc.	VFI-714 (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
Volatile Free, Inc.	VFI-716 (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
XtremeSeal, LLC	XtremeSeal 0.4 LX (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
XtremeSeal, LLC	XtremeSeal 0.5 LX (See Note 3)	8 1/2	14	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2
XtremeSeal, LLC	XtremeSeal 2.0 LE (See Note 3)	5 1/2	9 1/2	9 mils DFT 14 mils WFT	0.88 gal/100 ft^2

For **SI:** 1 inch = 25.4 mm; 1 mil = 0.0254 mm; 1 gallon = 3.38 L; 1 ft^2 = 0.93 m^2.

Notes:

[1]DFT = Dry Film Thickness; WFT = Wet Film Thickness

[2]As reported in the manufacturer's application instructions. Actual application rate, based upon specific project conditions, must be in accordance with the manufacturer's application instructions.

[3]Recognition is limited to the NFPA 286 test data for the coated assembly described. Evaluation for compliance of the spray foam insulation with other applicable requirements of AC377 and the IBC and IRC are outside the scope of the report.

TABLE 2—USE OF INSULATION WITHOUT A PRESCRIPTIVE IGNITION BARRIER (TESTED IN ACCORDANCE WITH APPENDIX X OF AC377)

INSULATION COMPANY NAME	INSULATION PRODUCT NAME	MAXIMUM THICKNESS (in.) (Vertical Surfaces and Attic Floors)	MAXIMUM THICKNESS (in.) (Underside of Roof Sheathing and/or Rafters, Underside of Floors)	DC315 COATING MINIMUM THICKNESS[1] (Applied to all Foam Surfaces)	MINIMUM THEORETICAL APPLICATION RATE OF COATING[2]
Accella Polyurethane Systems	Bayseal OC (See Note 3)	9 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Accella Polyurethane Systems	Foamsulate 50 (See Note 3)	12	12	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Accella Polyurethane Systems	Foamsulate 50 HY (See Note 3)	9 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Accella Polyurethane Systems	QuadFoam® 500 (See Note 3)	9 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Accella Polyurethane Systems	Sealtite OC+ (See Note 3)	14	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Acme Urethanes	WC-50 (See Note 3)	8	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
BASF Corporation	ENERTITE® G (ESR-3102)	11 1/2	15 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
BASF Corporation	ENERTITE® NM (ESR-3102)	11 1/2	15 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
BASF Corporation	SPRAYTITE 158 (ESR-2642)	5 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
BASF Corporation	SPRAYTITE 178 (ESR-2642)	5 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
BASF Corporation	SPRAYTITE 81205 (ESR-2642)	5 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
BASF Corporation	SPRAYTITE 81206 (ESR-2642)	5 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
BASF Corporation	SPRAYTITE SP (ESR-2642)	5 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
BASF Corporation	WALLTITE HP+ (ESR-2642)	5 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
BASF Corporation	WALLTITE US (ESR-2642)	5 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
BASF Corporation	WALLTITE US-N (ESR-2642)	5 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Carlisle Spray Foam Insulation	Foamsulate 50 (See Note 3)	12	12	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Carlisle Spray Foam Insulation	Foamsulate 70 (See Note 3)	14	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite PRO No Mix (See Note 3)	12	12	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Carlisle Spray Foam Insulation	SealTite PRO No Trim 21 (See Note 3)	14	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Creative Polymer Solutions	Air Lok 170 (See Note 3)	5 1/2	9 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Creative Polymer Solutions	Airl Lok 45 (See Note 3)	8	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Demilec (USA) Inc.	Agribalance® (ESR-2600)	7 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Demilec (USA) Inc.	Demilec *SEAL*ECTION® 500 (ESR-1172)	7 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Demilec (USA) Inc.	Heatlok® Eco (ESR-3198)	11 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Gaco Western	Gaco Green 052N (See Note 3)	11 1/4	11 1/4	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Gaco Western	GacoEZSpray F4500 (See Note 3)	12	16	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
General Coatings Manufacturing Corp.	Ultrathane 050 (See Note 3)	6	8	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
General Coatings Manufacturing Corp.	Ultra-Thane 230 (ESR-3033)	7 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Icynene, Inc.	Classic (ESR-1826)	5 1/2	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Icynene, Inc.	Classic Plus (ESR-1826)	8	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Icynene, Inc.	Classic Ultra (ESR-1826)	5 1/2	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Icynene, Inc.	Classic Ultra Select	5 1/2	14	3 mils DFT	0.25 gal/100 ft^2

INSULATION COMPANY NAME	INSULATION PRODUCT NAME	MAXIMUM THICKNESS (in.) (Vertical Surfaces and Attic Floors)	MAXIMUM THICKNESS (in.) (Underside of Roof Sheathing and/or Rafters, Underside of Floors)	DC315 COATING MINIMUM THICKNESS[1] (Applied to all Foam Surfaces)	MINIMUM THEORETICAL APPLICATION RATE OF COATING[2]
	(ESR-1826)			4 mils WFT	
Icynene, Inc.	Icynene MD-C-200 (ESR-3199)	8	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Icynene, Inc.	Icynene ProSeal (ESR-3500)	8	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Icynene, Inc.	Icynene ProSeal LE (ESR-3500)	8	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Icynene-LaPolla, Inc.	Foam-Lok FL 450 (ESR-4242)	5 1/2	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Icynene-LaPolla, Inc.	Prime Gold (ESR-4323)	5 1/2	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Johns Manville	JM Corbond III (See Note 3)	7 1/2	9 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Johns Manville	JM MCS+ (See Note 3)	7 1/2	9 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
LaPolla Industries, Inc.	Foam-Lok FL500 (ESR-2847)	5 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Natural Polymers, LLC	Natural-Therm™ HFO (See Note 3)	7 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Natural Polymers, LLC	Natural-Therm™ ZERO (See Note 3)	7 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Polygreen Solutions	GreenSeal 44 (See Note 3)	8	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Purinova Sp. z.o.o.	Purinova PURIOS 500 (ESR-4165)	8	14	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Rhino Linings Corporation	ThermalGuard OC .5 (ESR-2100)	8	12	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Rhino Linings Corporation	ThermalGuard 1.0 (See Note 3)	8	12	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
SES Foam	SES Foam 0.5 lb (ESR-3375)	9 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Sustainable Polymer Products	0.5 OC HY (See Note 3)	9 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
SWD Urethane	Quik-Shield 108 (See Note 3)	8	12	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Universal Polymers Corporation	UPC 500 (ESR-3803)	8 1/2	14	4 mils DFT 6 mils WFT	0.38 gal/100 ft^2
Urethane Technology Company, Inc.	UTC 7040-0.5 (ESR-3244)	5 1/2	14 3/4	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
Urethane Technology Company, Inc.	UTC 7041-0.5 (ESR-3244)	5 1/2	14 3/4	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
XtremeSeal, LLC	XtremeSeal 0.4 LX (See Note 3)	8	12	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2
XtremeSeal, LLC	XtremeSeal 0.5 LX (See Note 3)	9 1/2	11 1/2	3 mils DFT 4 mils WFT	0.25 gal/100 ft^2

For **SI:** 1 inch = 25.4 mm; 1 mil = 0.0254 mm; 1 gallon = 3.38 L; 1 ft^2 = 0.93 m^2.

Notes:

[1]DFT = Dry Film Thickness; WFT = Wet Film Thickness

[2]As reported in the manufacturer's application instructions. Actual application rate, based upon specific project conditions, must be in accordance with the manufacturer's application instructions.

[3]Recognition is limited to the NFPA 286 test data for the coated assembly described. Evaluation for compliance of the spray foam insulation with other applicable requirements of AC377 and the IBC and IRC are outside the scope of the report.

Certificate of Compliance

This certificate is issued for the following:

DC315

Prepared for:

International Carbide Technology Co Ltd
No 1-17 Tao-Chan 12 Ling, Kern-Ko Village
Lu-Chu Hsiang, Taoyuan 338
Taiwan

FM Approvals Class: 4975

Approval Identification: PR450764 Approval Granted: 3/12/19

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

Phillip J. Smith
VP - Manager of Materials
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062

Member of the FM Global Group

VANCOUVER, BC: 877.461.8378 ph. | 604.527.8368 fx.
LOS ANGELES, CA:: 909.483.0250 ph. | 909.483.0336 fx
TULSA, OK: 918.437.8333 ph. | 918.437.8487 fx.
TORONTO, ON 416.550.9280
WEBSITE: WWW.QAI.ORG

BUILDING PRODUCTS LISTING PROGRAM

Customer: **International Fireproof Technology Inc (IFTI)**
Class: Applied Fireproofing
Location: Irvine, CA
Website: www.painttoprotect.com

Listing No. B1117-2
Project No. B1117-2, Edition 2
Effective Date: Aug 23, 2018
Last Revised Date: May 8, 2019
Expires: <N/A>

Standards: ASTM E84 “Standard Test Method for Surface Burning Characteristics of Building Materials”.

ASTM E84 “Standard Test Method for Surface Burning Characteristics of Building Materials”, Extended 20 minutes.

ASTM E2768 “Extended Duration Surface Burning Characteristics of Building Materials (30 Min Tunnel Test) “.

ASTM E119 “Standard Test Method for Fire Tests of Building Construction and Materials”.

CAN/ULC S101 “Standard Methods of Fire Endurance Tests of Building Construction and Materials.”

NFPA 286 “Standard Methods of Fire Tests Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth”.

CAN/ULC-S145 “Standard Method of Test for the Evaluation of Protective Coverings for Foamed Plastic Insulation - Full-Scale Room Test.”

Product: DC315 Intumescent Coating.

Description: DC315 is an intumescent coating used as an interior ignition or thermal barrier coating (Per IBC) for application over spray polyurethane foam (SPF) Insulation. DC315 may be produced in the following colors: White, Ice Gray, Dark Gray and Charcoal Black.

Uses: DC315 is an ignition and thermal barrier coating (Per IBC) for application to spray polyurethane foam (SPF) insulation. DC315 is a water based latex product. DC315 is typically applied with a paint sprayer, brush or roller.

See manufacturers published installation instructions for application details.

VANCOUVER, BC: 877.461.8378 ph. | 604.527.8368 fx.
LOS ANGELES, CA:: 909.483.0250 ph. | 909.483.0336 fx
TULSA, OK: 918.437.8333 ph. | 918.437.8487 fx.
TORONTO, ON 416.550.9280
WEBSITE: WWW.QAI.ORG

Markings: Product is marked with labels or stamp supplied by IFTI to each container. The markings include:

- Manufacturer's name, trademark, or other recognized symbol of identification,
- Product name,
- QAI File Number: B1117,
- Date of manufacture or date code on the label or stamp,
- ASTM E84 (ASTM E2768) Flame Spread Index / Smoke Developed Index
- QAI logo shown here:

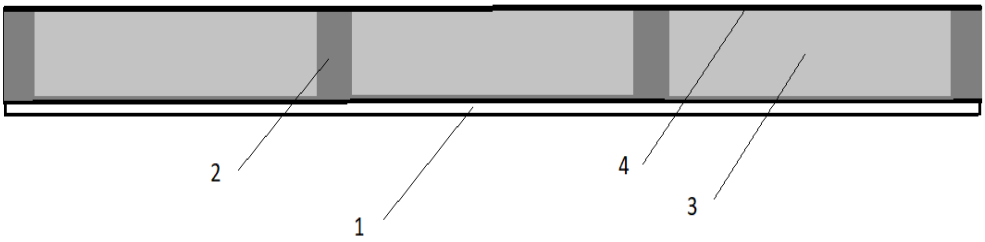
Models / Ratings: The following outlines DC315 intumescent coating ratings.

Standard	Ratings	Limitations
ASTM E84	FSI ≤ 25 SDI ≤ 450	DC315 applied at (min. 20 wmils)
ASTM E84 Extended 20 minutes (ASTM E2768)	FSI ≤ 25 SDI ≤ 450	DC315 applied at (min. 20 wmils)
ASTM E119 / CAN/ULC S101	DC315 achieved a 25 min rating for asymmetrical design as with DC315 exposed to the Fire side.	DC315 applied at (min. 18 wmils) see Figure 1
NFPA 286	Complies with section 2603.9 Special approval of IBC 2015 for installation without code prescribed thermal barrier.	See current IFTI Code Evaluation report for required installation details and approved foam plastic types.
CAN/ULC S145	20 Minute Classification.	DC315 when applied with a 3 wmil primer and a 25 wmils thickness - 20 minute classifications of ULC S145 when applied over 3 1/2 in thick SPF meeting CAN/ULC S705.1

Figure 1: B1117-2-1 Asymmetric fire assembly design, non-load bearing wall assembly – 25 minutes

VANCOUVER, BC: 877.461.8378 ph. | 604.527.8368 fx.
LOS ANGELES, CA:: 909.483.0250 ph. | 909.483.0336 fx
TULSA, OK: 918.437.8333 ph. | 918.437.8487 fx.
TORONTO, ON 416.550.9280
WEBSITE: WWW.QAI.ORG

Side exposed to Fire



1) ½ in. thick approved Type C gypsum wallboard fastened to one side of the framing using 1-1/4in drywall screws spaced 8 in. on center.
2) Nominal 2 in. by 4 in. Studs, located 16 in on center.
3) LaPolla Industries Foam-Lok spray foam insulation or equivalent inside the cavity to an average thickness of 3-1/2 in
4) DC315 intumescent paint applied to a WFT of 18 mils in total

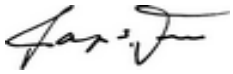
***

COMPLIANCE TESTED by berkeley analytical

VOC Emission Test Certificate

Product Name: DC315 Intumescent Coating

Product Sample Information	
Company:	International Fireproof Technology Inc.
Company Website:	www.painttoprotect.com
Product Type:	Paints & Coatings
Date Produced:	11/22/2017

Certificate Information	
Certificate No:	180221-03
Certified By:	 Raja S. Tannous, Laboratory Director
Date:	February 21, 2018

Reference Standard: California Department of Public Health CDPH/EHLB/Standard Method Version 1.2, 2017 (Emission testing method for CA Specification 01350)

Acceptance Criteria and Results Demonstrating Compliance of Product Sample to Referenced Standard:

Exposure Scenario[1]	Individual VOCs of Concern[2]		Formaldehyde[3]		TVOC[4]
	Criterion	Compliant?	Criterion	Compliant?	Range
School Classroom	≤½ Chronic REL	YES	≤9.0 µg/m^3	YES	≤ 0.5 mg/m^3
Private Office	≤½ Chronic REL	YES	≤9.0 µg/m^3	YES	≤ 0.5 mg/m^3

Product Coverage[5]: 517 g/m^2 (20 wet mills)

1. Exposure scenarios & product quantities for classroom & office are defined in Tables 4-2 – 4-5 (CDPH Std. Mtd. V1.2-2017)
2. Maximum allowable concentrations of individual target VOCs are specified in Table 4-1 (*ibid*.)
3. Maximum allowable formaldehyde concentration is ≤9 µg/m^3, effective Jan 1, 2012; previous limit was ≤16.5 µg/m^3 (ibid.)
4. Informative only; predicted TVOC Range in three categories, i.e., ≤0.5 mg/m^3, >0.5 – 4.9 mg/m^3, and ≥5.0 mg/m^3
5. Informative and applicable only to tests of wet-applied products; grams of sample applied per square meter of substrate

Standards & Codes Recognizing CDPH Standard Method V1.2 (partial list)

- USGBC LEED Version 4, BD&C, ID&C
- The WELL Building Standard
- ANSI/GBI 01, Green Building Assessment Protocol
- ANSI/ASHRAE/USGBC/IES Standard 189.1

Narrative: International Fireproof Technology Inc. selected a sample representative of its DC315 - Intumescent Coating product and submitted it on 2/1/2018 for testing. Berkeley Analytical measured and evaluated the emissions of VOCs from this sample following CDPH/EHLB/Standard Method V1.2-2017. The results of the test are presented in Berkeley Analytical report, 469-003-01A-Feb2118.

Berkeley Analytical is an independent, third-party laboratory specializing in the analysis of organic chemicals emitted by and contained in building products, finishes, furniture, and consumer products. We are an ISO/IEC 17025 accredited laboratory (IAS, TL-383); all standards used in performing this test are in Berkeley Analytical's scope of accreditation.

Water based intumescent paint for foam plastic

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 8 December 2017 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Trade name : Water based intumescent paint for foam plastic

Product code : DC315

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Fireproof coating for foam plastic

1.3. Supplier

International Fireproof Technology, Inc.
17528 Von Karman Ave.
Irvine, CA 92614
T 949-975-8588
tom@painttoprotect.com (Tom Hsiang)

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Serious eye damage/eye irritation, Category 2B	H320	Causes eye irritation

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labelling

Hazard pictograms (GHS-US) : None

Signal word (GHS-US) : None

Hazard statements (GHS-US) : The mixture does not meet the criteria for classification.

Precautionary statements (GHS-US) : P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P301+P312 - If swallowed: Call a POISON CENTER, a doctor if you feel unwell
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P330 - Rinse mouth.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P501 - Dispose of contents/container to comply with applicable local, national and international regulation.

2.3. Other hazards which do not result in classification

other hazards which do not result in classification : Titanium dioxide is in a form that is not available for respiration.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

The manufacturer lists no ingredients as hazardous to health according to OSHA 29 CFR 1910.1200.

Full text of hazard classes and H-statements: see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Get medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact : May cause mild irritation in sensitive individuals.

Symptoms/effects after eye contact : Causes eye irritation.

Symptoms/effects after ingestion : Harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : None known.

5.2. Specific hazards arising from the chemical

Fire hazard : Not classified as flammable but will burn. On combustion forms: Carbon oxides (CO, CO2). Nitrogen oxides. Metal oxides.

Explosion hazard : Heating will cause pressure rise with risk of bursting and subsequent explosion.

Reactivity : Stable under normal conditions of use.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent firefighting water from entering the environment.

Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection. refer to section 8.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with eyes. Avoid breathing mist or vapor. Spilled material may present a slipping hazard.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel. Wear personal protective equipment as required.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Wear approved self-contained breathing apparatus (set on positive pressure mode). Refer to section 8.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Small spills: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spills: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see

Section 1 for emergency contact information and Section 13 for waste disposal.

6.4. Reference to other sections

Refer to sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide good ventilation in process area to prevent formation of vapor. Avoid contact with eyes. Avoid breathing mist or vapor. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from incompatible materials. Keep container closed when not in use.

Incompatible materials : Organic solvent. Strong acids. Alkalis. Oxidizing agent.

Storage temperature : ≈ 5 - 35 °C (Use up as soon as possible after opening the lid)

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ammonium polyphosphate (68333-79-9)
Not applicable

Titanium dioxide (13463-67-7)		
ACGIH	Local name	Titanium dioxide
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
ACGIH	Remark (ACGIH)	LRT irr; A4
ACGIH	Regulatory reference	ACGIH 2017
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³
OSHA	Regulatory reference (US-OSHA)	OSHA

8.2. Appropriate engineering controls

Appropriate engineering controls : Provide adequate ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Impervious gloves e.g. PVC, nitrile rubber, butyl rubber

Eye protection:

Chemical goggles or safety glasses

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. NIOSH/MSHA approved air purifying respirator should be used if operating conditions produce airborne concentrations that exceed exposure limits for any individual components. If conditions immediately dangerous to life or health exist, use NIOSH/MSHA self-contained breathing apparatus (SCBA).

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	White, grey
Odour	:	Mild emulsion odor
Odour threshold	:	No data available
pH	:	6 - 8
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	> 100 °C
Flash point	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	Not applicable
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Density	:	1.35±0.1 (Specific gravity)
Solubility	:	Miscible with water.
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	8000 - 20000 cP
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available

9.2. Other information

Volatile components % : 30 – 45 %

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong acids. Organic solvents. Alkalis. Oxidizing agent.

10.6. Hazardous decomposition products

On combustion forms: Nitrogen oxides. Carbon oxides (CO, CO2). Metal oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

Water based intumescent paint for foam plastic	
ATE (oral)	1666 mg/kg bodyweight

Skin corrosion/irritation : Not classified
pH: 6 - 8

Serious eye damage/irritation : Causes eye irritation.
pH: 6 - 8

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Titanium dioxide (13463-67-7)	
IARC group	2B - Possibly carcinogenic to humans
In OSHA Hazard Communication Carcinogen list	Yes

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Likely routes of exposure : Ingestion. Inhalation. Skin and Eye contact.

Symptoms/effects after skin contact : May cause mild irritation in sensitive individuals.

Symptoms/effects after eye contact : Causes eye irritation.

Symptoms/effects after ingestion : Inhalation of titanium dioxide dustmay cause cancer, however due to the physical form of the product, inhalation of dust is not likely. Expected to be a low ingestion hazard.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product components are not classified as environmentally hazardous.

Ammonium polyphosphate (68333-79-9)	
LC50 fish 1	> 500 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
LC50 fish 2	123 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])

12.2. Persistence and degradability

Water based intumescent paint for foam plastic	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Water based intumescent paint for foam plastic	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container to comply with applicable local, national and international regulation, a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

Ammonium polyphosphate (68333-79-9)
Listed on the Canadian DSL (Domestic Substances List)

Titanium dioxide (13463-67-7)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Ammonium polyphosphate (68333-79-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Titanium dioxide (13463-67-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Ammonium polyphosphate (68333-79-9)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on Turkish inventory of chemical Listed on the TCSI (Taiwan Chemical Substance Inventory)

Titanium dioxide (13463-67-7)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on Turkish inventory of chemical Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently lis ductive toxins. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

Date of Issue : 8 December 2017

Other information : None.

Abbreviations and acronyms:

PVC	Polyvinyl chloride

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product