Code Compliance Research Report
CCRR-1076

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DIVISION: 09 00 00 – Finishes
Section: 09 96 43 – Fire-Retardant Coatings

REPORT HOLDERS:
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REPORT SUBJECT:
DC315 Intumescent Coating

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:
- 2015 and 2012 *International Building Code*® (IBC)
- 2015 and 2012 *International Residential Code*® (IRC)

NOTE: This report references 2015 Code sections with earlier Code sections shown in [brackets] where they differ.

1.2 DC315 has been evaluated for the following properties (see Table 1):
- Physical properties
- Surface burning characteristics

1.3 DC315 has been evaluated for the following uses (see Table 1):
- Application to the surface of spray-applied foam plastic insulation within building interiors
- Coated foam plastic left exposed without Code-prescribed thermal barriers
- Coated foam plastic left exposed as interior finish

2.0 STATEMENT OF COMPLIANCE

DC315 complies with the Codes listed in Section 1.1, for the properties stated in Section 1.2, and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.0.

3.0 DESCRIPTION

DC315 is a single-component, water-based, liquid-applied intumescent fire-protective coating. The coating is supplied in 5-gallon pails and 55-gallon drums with a shelf-life of 1 year when stored in factory-sealed packages between 50°F and 80°F. The coating must be protected from freezing.

4.0 PERFORMANCE CHARACTERISTICS

4.1 When DC315 is applied to spray-applied foam plastic insulation installed in assemblies conforming to one of the configurations described in Table 2, the 15 minute thermal barrier prescribed in IBC Section 2603.4 and IRC Section R316.4 may be omitted.

4.2 When DC315 is applied to spray-applied foam plastic insulation installed in assemblies conforming to one of the configurations described in Table 2, the coated foam plastic assembly meets the requirements for interior finish in IBC Section 803.1 and IRC Section R302.9, and may be left exposed to the interior of the building.

5.0 INSTALLATION

5.1 General:

DC315 must be installed in accordance with IFTI's published installation instructions, the applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

5.2 Application:

DC315 must be thoroughly mixed prior to application. Foam plastic surfaces to receive the coating must be inspected in accordance with IFTI's installation guidelines.

The coating may be applied using high-pressure spray equipment, rollers, or brushes up to a maximum thickness of 24 mils wet film thickness (WFT) per coat. IFTI's installation instructions must be followed if either a primer coat of DC315 or multiple coats of DC315 are required to conform with assemblies, as described in Table 2. Substrates must be free of debris or substances that may compromise adhesion of the coating.

The application window of the coating is between 50°F and 90°F with a Relative Humidity below 85%. Consult the manufacturer for ambient conditions outside of the recommended application window or if the temperature is within 5°F of the dew point.

6.0 CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 The application of any additional interior finish over the DC315 coating is outside the scope of this Research Report.

6.3 Recognitions provided in this Research Report are limited to the specific assemblies and spray-applied foam plastic insulation products described in Table 2.

6.4 The spray-applied foam plastic insulations identified in Table 2 must be installed in accordance with the requirements described in the identified Code Evaluation Research Report.

6.5 The DC315 coating is manufactured in Irvine, CA (USA) and Taoyuan, Taiwan (R.O.C).

6.6 The DC315 coating is manufactured under a quality control program with inspections by Intertek Testing Services NA, Inc. (AA-647).

7.0 SUPPORTING EVIDENCE

7.1 Reports of tests in accordance with ASTM E84, ASTM D2697, ASTM D1475, ASTM D2196, and NFPA 286.

7.2 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.

7.3 Published Code Evaluation Research Reports recognizing compliance of specific spray-applied foam plastic insulations with the requirements of ICC-ES Acceptance Criteria for Spray-Applied Foam Plastic Insulation (AC377), dated April 2016.

7.4 Intertek Listing Reports "IFTI - DC315 Water-based Fireproof Paint" and "INCA - International Carbide Technology DC315", on the Intertek Directory of Listed Products.

8.0 IDENTIFICATION

Containers of the DC315 coating are identified with the manufacturer's name [International Fireproof Technology, Inc. (IFTI) or International Carbide Technology Co., Ltd. (INCA)], address and telephone number, the product name (DC315), the Intertek Mark, and the Code Compliance Research Report number (CCRR-1076).

9.0 OTHER CODES

This section is not applicable.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the Intertek website address: https://bpdirectory.intertek.com is recommended to ascertain the current version and status of this report.

TABLE 1 – PROPERTIES EVALUATED

PROPERTY	IBC SECTION[1]	IRC SECTION[1]
Physical properties	Not required	Not required
Alternative to thermal barriers	803.1; 2603.4; 2603.9 [2012 - 2603.10]	R302.9; R316.4 [2006 - R314.4]; R316.6 [2006 - R314.6]

[1] Section numbers in parentheses refer to the 2012 and earlier Code editions

TABLE 2 – COATING AND FOAM ASSEMBLIES WITHOUT A CODE-PRESCRIBED THERMAL BARRIER

Insulation Supplier	Insulation Product	Insulation Code Evaluation Research Report	Assembly Details					Test Method
			Insulation Details		DC315 Coating Details			
			Maximum Thickness, in.		Minimum Thickness, mils		Theoretical Application Rate	
			Vertical (e.g. Wall)	Overhead (e.g. Ceiling)	Wet Film (WFT)	Dry Film (DFT)	gal/100 ft^2	
Accella Polyurethane Systems dba Premium Spray Products	Foamsulate 220	ER-0352	7.5	11.5	18	12	1.1	NFPA 286
Accella Polyurethane Systems dba Premium Spray Products	Foamsulate 50	ESR-3081; ER-0351	8	12	20	13	1.3	NFPA 286
Accella Polyurethane Systems dba Quadrant Urethane Technologies	QuadFoam 2.0	ER-0272	7.5	11.5	18	13	1.1	NFPA 286
Accella Polyurethane Systems dba Quadrant Urethane Technologies	QuadFoam 500	ER-0271	8	12	4 (Primer) + 16 (Finish)	3 (Primer) + 11 (Finish)	0.25 (Primer) + 1.0 (Finish)	NFPA 286
Barnhardt Manufacturing Company dba NCFI Polyurethanes	InsulBloc	ESR-1615	5.5	5.5	21	14	1.3	NFPA 286
Barnhardt Manufacturing Company dba NCFI Polyurethanes	InsulStar	ESR-1615	5.5	5.5	21	14	1.3	NFPA 286
Barnhardt Manufacturing Company dba NCFI Polyurethanes	Sealite OCX	ESR-3826	10	14	18	12	1.1	NFPA 286
BASF Corporation	ENERTITE NM	CCRR-1032; ESR-3102	7.5	14.5	18	12	1.1	NFPA 286
BASF Corporation	Spraytite 158	CCRR-1031; ESR-2642	5.5	7.5	20	13	1.3	NFPA 286
BASF Corporation	Spraytite 178	CCRR-1031; ESR-2642	7.5	11.5	4 (Primer) + 16 (Finish)	3 (Primer) + 11 (Finish)	0.25 (Primer) + 1.0 (Finish)	NFPA 286
BASF Corporation	Spraytite 81205	CCRR-1031; ESR-2642	5.5	7.5	20	13	1.3	NFPA 286
BASF Corporation	Spraytite 81206	CCRR-1031; ESR-2642	7.5	11.5	4 (Primer) + 16 (Finish)	3 (Primer) + 11 (Finish)	0.25 (Primer) + 1.0 (Finish)	NFPA 286

Insulation Supplier	Insulation Product	Insulation Code Evaluation Research Report	Assembly Details					Test Method
			Insulation Details		DC315 Coating Details			
			Maximum Thickness, in.		Minimum Thickness, mils		Theoretical Application Rate	
			Vertical (e.g. Wall)	Overhead (e.g. Ceiling)	Wet Film (WFT)	Dry Film (DFT)	gal/100 ft^2	
BASF Corporation	Spraytite SP	CCRR-1031; ESR-2642	5.5	7.5	20	13	1.3	NFPA 286
BASF Corporation	Walltite HP+	CCRR-1031; ESR-2642	7.5	11.5	4 (Primer) + 16 (Finish)	3 (Primer) + 11 (Finish)	0.25 (Primer) + 1.0 (Finish)	NFPA 286
BASF Corporation	Walltite US	CCRR-1031; ESR-2642	7.5	11.5	4 (Primer) + 16 (Finish)	3 (Primer) + 11 (Finish)	0.25 (Primer) + 1.0 (Finish)	NFPA 286
BASF Corporation	Walltite US-N	CCRR-1031; ESR-2642	7.5	11.5	4 (Primer) + 16 (Finish)	3 (Primer) + 11 (Finish)	0.25 (Primer) + 1.0 (Finish)	NFPA 286
Convenience Products, Division of Clayton Corp.	Touch 'n Seal Class 1	ESR-3052	3.5	3.5	20	13	1.3	NFPA 286
Covestro, LLC	Bayseal OC	ESR-1655	10	11.5	22	14	1.3	NFPA 286
Covestro, LLC	EcoBay CC	ESR-3076	7.25	7.25	18	12	1.1	NFPA 286
Demilec (USA), Inc.	Agribalance	ESR-2600	7.5	11.5	18	12	1.1	NFPA 286
Demilec (USA), Inc.	APX	ESR-3470	8	10	20	13	1.3	NFPA 286
Demilec (USA), Inc.	Heatlok Soy 200 Plus	ESR-3210	7.5	11.5	18	12	1.1	NFPA 286
Demilec (USA), Inc.	Heatlok XT-s	ESR-3824	7.5	11.5	18	12	1.1	NFPA 286
Demilec (USA), Inc.	Heatlok XT-w	ESR-3883	7.5	11.5	18	12	1.1	NFPA 286
Demilec (USA), Inc.	Sealection 500	CCRR-1063; ESR-1172	7.5	11.5	18	12	1.1	NFPA 286

Insulation Supplier	Insulation Product	Insulation Code Evaluation Research Report	Assembly Details					Test Method
			Insulation Details		DC315 Coating Details			
			Maximum Thickness, in.		Minimum Thickness, mils		Theoretical Application Rate	
			Vertical (e.g. Wall)	Overhead (e.g. Ceiling)	Wet Film (WFT)	Dry Film (DFT)	gal/100 ft^2	
Gaco Western, LLC	F1850	CCRR-1043	7.5	9.5	18	12	1.1	NFPA 286
Gaco Western, LLC	183M	CCRR-1002	5.25	7.25	20	13	1.3	NFPA 286
Gaco Western, LLC	GacoGreen 052N	CCRR-1075	11.25	11.25	20	13	1.3	NFPA 286
Gaco Western, LLC	GacoFireStop2 F5001	CCRR-1009	18	18	18	12	1.1	NFPA 286
Henry Company	Permax 0.5LV	ESR-3646	11.5	11.5	18	12	1.3	NFPA 286
ICP Adhesives & Sealants, Inc.	Handi-Foam E84 Class 1	ESR-2717	3.5	3.5	20	13	1.3	NFPA 286
Icynene, Inc.	Classic Plus	ESR-1826	6.5	11.5	20	13	1.3	NFPA 286
Icynene, Inc.	Classic	ESR-1826	6	14	20	13	1.3	NFPA 286
Icynene, Inc.	Classic Max	ESR-1826	6	14	20	13	1.3	NFPA 286
Icynene, Inc.	MD-C-200	ESR-3199	6	10	22	14	1.4	NFPA 286
Icynene, Inc.	ProSeal	ESR-3500	8	14	24	16	1.5	NFPA 286
Johns Manville	Corbond III	ER-0146	7.5	11.5	18	12	1.1	NFPA 286
Johns Manville	Corbond MCS	ESR-3159	7.25	9.25	22	14	1.4	NFPA 286

Insulation Supplier	Insulation Product	Insulation Code Evaluation Research Report	Assembly Details					Test Method
			Insulation Details		DC315 Coating Details			
			Maximum Thickness, in.		Minimum Thickness, mils		Theoretical Application Rate	
			Vertical (e.g. Wall)	Overhead (e.g. Ceiling)	Wet Film (WFT)	Dry Film (DFT)	gal/100 ft^2	
Johns Manville	Corbond OC	ESR-3776	7.5	11.5	18	12	1.1	NFPA 286
Johns Manville	Corbond OCX	ESR-3777	7.5	11.5	18	12	1.1	NFPA 286
Lapolla Industries, Inc.	FoamLok FL2000	ESR-2629	7.5	7.5	18	12	1.1	NFPA 286
Lapolla Industries, Inc.	FoamLok FL2000-4G	CCRR-1025	8	12	18	12	1.1	NFPA 286
Lapolla Industries, Inc.	FoamLok FL500	ESR-2847	5.25	11.25	20	13	1.3	NFPA 286
Natural Polymers, LLC	NaturalTherm 0.5	ER-0336	8	10	20	14	1.3	NFPA 286
Natural Polymers, LLC	NaturalTherm 2.0W	ER-0336	11.25	11.25	21	14	1.3	NFPA 286
Rhino Linings USA, Inc.	ThermalGuard OC.5	ESR-2100	7.5	11.5	18	13	1.1	NFPA 286
SES Foam LLC	SES 2.0	ER-0374	8.25	10.25	18	12	1.1	NFPA 286
SES Foam LLC	SucraSeal 0.5	ESR-3375	11.5	11.5	18	12	1.1	NFPA 286
SWD Urethane	QuickShield QS100X	CCRR-1050	7	11	18	12	1.1	NFPA 286
SWD Urethane	QuickShield QS106	CCRR-1011	11.25	11.25	24	15	1.5	NFPA 286
SWD Urethane	QuickShield QS108	CCRR-1051	8	14	18	12	1.1	NFPA 286

Insulation Supplier	Insulation Product	Insulation Code Evaluation Research Report	Assembly Details					Test Method
			Insulation Details		DC315 Coating Details			
			Maximum Thickness, in.		Minimum Thickness, mils		Theoretical Application Rate	
			Vertical (e.g. Wall)	Overhead (e.g. Ceiling)	Wet Film (WFT)	Dry Film (DFT)	gal/100 ft^2	
SWD Urethane	QuickShield QS112	CCRR-1011	11.25	11.25	4 (Primer) + 22 (Finish)	3 (Primer) + 15 (Finish)	0.25 (Primer) + 1.4 (Finish)	NFPA 286
SWD Urethane	QuickShield QS112XC	CCRR-1011	11.25	11.25	20	13	1.3	NFPA 286
The DOW Chemical Company	Styrofoam CM 2045	ESR-2670	9.25	9.25	4 (Primer) + 18 (Finish)	3 (Primer) + 12 (Finish)	0.25 (Primer) + 1.1 (Finish)	NFPA 286

Alternative Ignition Barrier Assemblies are not included in CCRR-1076. The reason is that AC377 does not require fire-protective coatings used as a component in Alternative Ignition Barrier Assemblies to be compliant with AC456. To verify that Alternative Ignition Barrier Assemblies using DC315 as a component are valid and recognized, refer to the individual SPF manufacturer's evaluation reports. Those SPF evaluation reports provide specific information regarding limitations as to SPF thickness, DC315 thickness and DC315 application rates. All Alternative Thermal Barrier Assemblies and Alternative Ignition Barrier Assemblies recognized in evaluation reports employing DC315 as a component have been tested via building-code compliant full-scale test protocols.

Approved (SPF) Spray Foam Manufacture and Type	Wet Film	Dry Film	Coverage Rate Per Gallon	DC 315 Test Reports	Evaluation Report
BASF 158 Spraytite® 2 lb. CC	4	3	400 sq.ft.	BASF 158 Spraytite® 2 lb. CC Ignition Barrier	ESR-2642
BASF Enertite® NM 0.5 lb. OC	4	3	400 sq.ft.	BASF Enertite® NM 0.5 lb. OC Ignition Barrier	ESR-3102
BASF Spraytite 178 2 lb. CC	4	3	400 sq.ft.	BASF Spraytite 178 2 lb. CC Ignition Barrier	ESR-2642
Certainteed CertaSpray 2 lb. CC	4	3	400 sq.ft.		ESR-3758
CertainTeed, CertaSpray X 0.5 lb. OC	4	3	400 sq.ft.	CertainTeed, CertaSpray X 0.5 lb. OC Ignition Barrier	ESR-3759
Covestro ™ 0.5 lb. OC	4	3	400 sq.ft.	Covestro ™ 0.5 lb. OC Ignition Barrier	ESR-1655
Demilec Agribalance 0.6 - 0.8 lb. OC	4	3	400 sq.ft.	Demilec Agribalance 0.6 - 0.8 lb. OC Ignition Barrier	
Demilec Heatlok Arctic XT-w 2 lb. CC	4	3	400 sq.ft.	Demilec Heatlok Arctic XT-w 2 lb. CC Ignition Barrier	ESR-3883
Demilec Sealection 500 0.5 lb. OC	4	3	400 sq.ft.	Demilec Sealection 500 0.5 lb. OC Ignition Barrier	ESR-1172
Gaco 052N 0.5 lb. OC	4	3	400 sq.ft.	Gaco 052N 0.5 lb. OC Ignition Barrier	ESR-2478
General Coatings Ultra-Thane 050 0.5 OC	4	3	400 sq.ft.	General Coatings Ultra-Thane 050 0.5 OC ignition Barrier	
General Coatings Ultra-Thane 230 2 lb. CC	4	3	400 sq.ft.	General Coatings Ultra-Thane 230 2 lb. CC Ignition Barrier	
Guardian Guardfoam 55 0.5 lb. OC	4	3	400 sq.ft.	Guardian Guardfoam 55 0.5 lb. OC Ignition Barrier	ESR-2847
Henry Permax LV 0.5 lb. OC	4	3	400 sq.ft.	Henry Permax LV 0.5 lb. OC Ignition Barrier	ESR-3646
Icynene Classic 0.5 lb. OC	4	3	400 sq.ft.	Icynene Classic 0.5 lb OC Ignition Barrier	ESR-1826
Icynene Classic Max® 0.5 lb. OC	4	3	400 sq.ft.	Icynene Classic Max® 0.5 lb. OC Ignition Barrier	ESR-1826
Icynene Classic Plus 0.7 lb. OC	4	3	400 sq.ft.		ESR-1826
Icynene ProSeal 2 lb. CC	4	3	400 sq.ft.	Icynene ProSeal 2 lb. CC Ignition Barrier	ESR-3500
JM Corbond III 2 lb. CC	4	3	400 sq.ft.	JM Corbond III 2 lb. CC Ignition Barrier	UES-0146
Lapolla FL 500 0.5 lb. OC	4	3	400 sq.ft.	Lapolla FL 500 0.5 lb. OC Ignition Barrier	ESR-2847
Natural Polymers,Natural-Therm® HFO 2 lb. CC	4	3	400 sq.ft.	Natural Polymers,Natural-Therm® HFO 2 lb. CC Ignition Barrier	
Natural Polymers,Natural-Therm® Zero 1.8 OC	4	3	400 sq.ft.	Natural Polymers,Natural-Therm® Zero 1.8 OC Ignition Barrier	
NCFI Sealite™ 0.5 lb. OC	4	3	400 sq.ft.	NCFI Sealite™ 0.5 lb. OC Ignition Barrier	ESR-1154
NCFI Sealite™ 0.5 lb. OCX	5	3	320 sq.ft.		ESR-3826
Premium Foamsulate™ 220 2 lb. CC	4	3	400 sq.ft.		UES-0352
Premium Foamsulate™ 50 0.5 lb. OC	4	3	400 sq.ft.	Premium Foamsulate™ 50 0.5 lb. OC Ignition Barrier	UES-0351
QuadFoam Natureseal® 500 0.5 lb. OC	4	3	400 sq.ft.	QuadFoam Natureseal® 500 0.5 lb. OC Ignition Barrier	UES-0271
Quadrant NatureSeal® 700 OCX 0.75 lb. OC	4	3	400 sq.ft.		
Rhino Linings ThermalGuard 0.5 lb. OC	4	3	400 sq.ft.	Rhino Linings ThermalGuard 0.5 lb. OC Ignition Barrier	
Rhino Linings ThermalGuard 1lb. OC	4	3	400 sq.ft.	Rhino Linings ThermalGuard 1lb. OC Ignition Barrier	
SWD QS108 0.5 lb. OC	4	3	400 sq.ft.		
UTC 7041 0.5 lb. OC	4	3	400 sq.ft.		ESR-3244
UTC 70410 0.5 lb. OC	4	3	400 sq.ft.		ESR-3244

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Date: January 23, 2017

Subject: Alternative Ignition Barrier Assemblies
DC315 Fireproof Paint, International Fireproof Technology, Inc.

TO WHOM IT MAY CONCERN:

The purpose of this letter is to clarify the use of DC315 Fireproof Paint as a coating over SPF (spray polyurethane foam) to qualify and recognize that assembly as an **Alternative Ignition Barrier Assembly**.

1. IFTI (International Fireproof Technology, Inc.) currently has a CCRR (Code Compliance Research Report) issued by Intertek and designated as CCRR-1076.

2. CCRR-1076 recognizes the use of DC315 as a component in ***Alternate Thermal Barrier Assemblies*** as required under AC377 (April 2016) and under AC456 (October 2015). Assemblies recognized under these two criteria may be found in CCRR-1076 or the SPF manufacturer's individual evaluation report. Recognition in either location is valid and fully compliant.

3. **Alternative Ignition Barrier Assemblies** are **not** included in CCRR-1076. The reason is that AC377 does not require fire-protective coatings used as a component in Alternative Ignition Barrier Assemblies to be compliant with AC456.

4. To verify that Alternative Ignition Barrier Assemblies using DC315 as a component are valid and recognized, refer to the individual SPF manufacturer's evaluation reports. Those SPF evaluation reports provide specific information regarding limitations as to SPF thickness, DC315 thickness and DC315 application rates.

5. All Alternative Thermal Barrier Assemblies and Alternative Ignition Barrier Assemblies recognized in evaluation reports employing DC315 as a component have been tested via building-code compliant full-scale test protocols.

6. For additional information regarding ignition barriers and thermal barriers, refer to SPFA-126 *Thermal Barriers and Ignition Barriers for the Spray Polyurethane Foam Industry* available at www.sprayfoam.org.

Respectfully submitted,

Deer Ridge Consulting, Inc.

Roger V. Morrison, PE, RRC
President