Code Compliance Research Report
CCRR-1076

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

DIVISON; 07 00 00 – Thermal and Moisture Protection
Section: 07 21 00 – Thermal Insulation

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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 210	ER-0381	8	12	20	13	1.3	NFPA 286
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 Premium Spray Products	Foamsulate 50 N-IB	ER-0394	7.5	11.5	18	12	1.1	NFPA 286
Accella Polyurethane Systems dba Premium Spray Products	NatureSeal OCX	ER-0285	7.5	11.5	18	12	1.1	NFPA 286
Accella Polyurethane Systems dba Quadrant Urethane Technologies	QuadFoam 2.0	ESR-3459; ER-0272	7.5	11.5	18	13	1.1	NFPA 286
Accella Polyurethane Systems dba Quadrant Urethane Technologies	QuadFoam 500	ESR-3458; ER-0271	8	12	4 (Primer[1]) + 16 (Finish)	3 (Primer[1]) + 11 (Finish)	0.25 (Primer[1]) + 1.0 (Finish)	NFPA 286
Barnhardt Manufacturing Company dba NCFI Polyurethanes	InsulBloc	ESR-1615	7.25	7.25	18	12	1.1	NFPA 286
Barnhardt Manufacturing Company dba NCFI Polyurethanes	InsulStar	ESR-1615	7.25	7.25	18	12	1.1	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

[1] Primer coat of DC315 / DC315 Primer

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 178	CCRR-1031; ESR-2642	7.5	11.5	4 (Primer[2]) + 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[2]) + 16 (Finish)	3 (Primer) + 11 (Finish)	0.25 (Primer) + 1.0 (Finish)	NFPA 286
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[2]) + 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[2]) + 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[2]) + 16 (Finish)	3 (Primer) + 11 (Finish)	0.25 (Primer) + 1.0 (Finish)	NFPA 286
CertainTeed Corporation	CertaSpray CC	ESR-3758	5.5	9.5	22	14	1.3	NFPA 286
Covestro, LLC	Bayseal CC	ESR-3999	7.25	7.25	18	12	1.1	NFPA 286
Covestro, LLC	Bayseal CC Polar	ESR-3999	7.25	7.25	18	12	1.1	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
DAP Foam, Inc.	Touch 'n Seal Class I FR	ESR-3052	3.5	3.5	20	13	1.3	NFPA 286

[2] Primer coat of DC315

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	
DAP Foam, Inc.	Touch 'n Foam Professional Class I FR	ESR-3052	3.5	3.5	20	13	1.3	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
The DOW Chemical Company	Styrofoam CM 2045	ESR-2670	9.25	9.25	4 (Primer[3]) + 18 (Finish)	3 (Primer) + 12 (Finish)	0.25 (Primer) + 1.1 (Finish)	NFPA 286
Elastochem Specialty Chemicals, Inc.	Insulthane Extreme	ESR-3809	7.25	7.25	18	12	1.1	NFPA 286
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

[3] Primer coat of DC315

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	
General Coatings Manufacturing Corp.	Ultra-Thane 230 Wall	ESR-3033	5.5	7.5	4 (Primer[4]) + 18 (Finish)	1.7 (Primer) + 12 (Finish)	0.25 (Primer) + 1.1 (Finish)	NFPA 286
Henry Company	Permax 1.8 (RT-2045-1.8)	ESR-3024	11.25	11.25	21	14	1.3	NFPA 286
Henry Company	Permax 2.0 (RT-2045-2.0)	ESR-3024	11.25	11.25	21	14	1.3	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 Select	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
Icynene, Inc.	ProSeal ECO	ESR-3493	8	10	22	15	1.4	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

[4] DTM Bonding Primer manufactured by Sherwin Williams

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; ESR-3136	8	10	20	14	1.3	NFPA 286
Natural Polymers, LLC	NaturalTherm 2.0W	ER-0336; ESR-3136	11.25	11.25	21	14	1.3	NFPA 286
NuWoll Company Incorporated	Nu-Seal 0.5	ESR-3136	8	10	20	14	1.3	NFPA 286
NuWoll Company Incorporated	Nu-Seal 2.0W	ESR-3136	8	10	20	14	1.3	NFPA 286
Patriot Spray Foam, Inc.	Patriot 200	ESR-4065	8	14	24	16	1.5	NFPA 286
Patriot Spray Foam, Inc.	Patriot 200 ECO	ESR-4063	8	10	22	15	1.4	NFPA 286
Patriot Spray Foam, Inc.	Patriot 500	ESR-4064	6	14	20	13	1.3	NFPA 286
Patriot Spray Foam, Inc.	Patriot 500 HY	ESR-4064	6	14	20	13	1.3	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	
Rhino Linings USA, Inc.	ThermalGuard CC2	ESR-2100	8	10	18	13	1.1	NFPA 286
Rhino Linings USA, Inc.	ThermalGuard OC.5	ESR-2100	7.5	11.5	18	13	1.1	NFPA 286
SES Foam LLC	Nexseal 2.0	ER-0374	8.25	10.25	18	12	1.1	NFPA 286
SES Foam LLC	Nexseal 2.0 LE	ER-0374	8.25	10.25	18	12	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	SES 2.0 LE	ER-0374	8.25	10.25	18	12	1.1	NFPA 286
SES Foam LLC	SES Foam 0.5	ER-0492	9.5	11.5	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
SWD Urethane	QuickShield QS112	CCRR-1011	11.25	11.25	4 (Primer[5]) + 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

[5] Primer coat of DC315