



Firestopping Submittal Package

metacaulk®

Project: Commercial Electrical & Data Communication Contractors
Architect:
General Contractor:
Installation Contractor:
Distributor (and Contact):

Manufacturer's Representative:

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APPROVALS FOR METACAULK® PRODUCTS

Below is a list of Model Building Codes requiring the use of firestop products in various types of constructions and occupancies. Most local codes are derived from one or more of these model codes. Metacaulk® products and systems meet the through-penetration firestopping requirements of all of these codes.

ICC	International Code Council; International Building Code
ICBO	International Code of Building Officials; Uniform Building Code
SBCCI	Southern Building Code Congress International; Standard Building Code
BOCA	Building Official and Code Administrators International; National Building Code
CABO	Council of American Building Officials (coordinating agency between ICBO, SBCCI and BOCA)
NBCC	National Building Code of Canada
NFPA 101 . . .	National Fire Protection Association Life Safety Code
IRC	International Residence Code

Certain cities, counties and states have written their own code requirements which may supersede or supplement model building codes, check with these authorities for approvals.

Metacaulk® Products are UL Classified and conform to the codes and test requirements shown below.

UL 1479	Fire Tests of Through-Penetration Firestops
UL 2079	Tests for Fire Resistance of Building Joint Systems
ASTM E 1966	Standard Test Method for Fire Resistive Joint Systems
ASTM E 814	Methods for Fire Tests of Through-Penetration Fire Stops
NFPA 101	National Fire Protection Association Life Safety Code
ASTM E 84 (UL 723) . .	Test Method for Surface Burning Characteristics of Building Materials
ASTM E 119 (UL 263) . .	Method for Fire Tests of Building Construction and Materials
ULC CAN4-S115M	Standard Method of Fire Tests of Firestop Systems
B.S. 476/ pr EN 1366.3 .	European/ British Standards
AS 1530.4	Part 4: Fire Resistance Tests of Elements of Building Construction
AS 4072.1	Part 1: Service Penetration and Control Joint

For Questions or Additional Information call Technical Service 1-800-231-3345 • 1-713-263-8001
Fax 1-800-441-0051 • 1-713-263-7577



A CSW Industrials Company

GENERAL CERTIFICATE OF COMPLIANCE

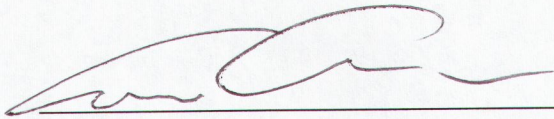
DESCRIPTION: METACAULK® FIRESTOPPING PRODUCTS

METACAULK® MC 150+ FIRESTOP SEALANT
METACAULK® 350i FIRESTOP SEALANT
METACAULK® 835+ SILICONE SEALANT
METACAULK® 950 FIRESTOP SEALANT
METACAULK® 1000 FIRESTOP SEALANT
METACAULK® 1200
METACAULK® BLAZESEAL™
METACAULK® BOX GUARD™
METACAULK® COMPOSITE SHEET
METACAULK® COVER GUARD™
METACAULK® FIRE-RATED MORTAR
METACAULK® FIRESTOP PILLOW
METACAULK® INDUSTRIAL CABLE COATING
METACAULK® INTUMESCENT SLEEVE
METACAULK® JOINT STRIP
METACAULK® PASS-THRU DEVICE
METACAULK® PIPE COLLAR
METACAULK® PUTTY STICK & PUTTY PAD
METACAULK® WRAP STRIP
FLAMESAFE® BAGS
FLAMESAFE® FS 900+ SEALANT
RECTORSEAL® SMOKE AND ACOUSTIC SEALANT
RECTORSEAL® TRACK-SAFE™

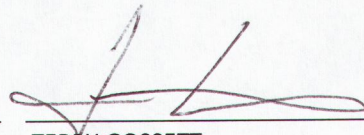
THESE PRODUCTS ARE TESTED ACCORDING TO ONE OR MORE OF THE FOLLOWING STANDARDS:

U.L. 263 - FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS
U.L. 1479 - FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS
U.L. 2079 - TESTS FOR FIRE RESISTANCE OF BUILDING JOINT SYSTEMS
ASTM E-84 (UL 723) - SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS
ASTM E-814 - FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS
ASTM E-2307 - METHOD FOR DETERMINING FIRE RESISTANCE OF PERIMETER FIRE BARRIERS
IEEE 1202 - FLAME-PROPAGATION TESTING OF WIRE & CABLE

ALL PRODUCTS CONTAIN NO ASBESTOS OR PCB'S AND ARE CONSIDERED V.O.C. COMPLIANT.

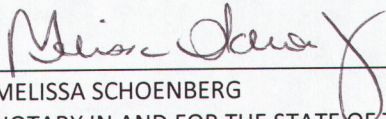


EVA ACKERMAN PH.D
VICE PRESIDENT OF RESEARCH & TECHNOLOGY



TERRY GOSSETT
TECHNICAL SERVICES

SUBSCRIBED AND SWORN TO BEFORE ME THIS 1ST DAY OF OCTOBER 2015.



MELISSA SCHOENBERG
NOTARY IN AND FOR THE STATE OF TEXAS
COUNTY OF HARRIS
MY COMMISSION EXPIRES: OCTOBER 25, 2019





A CSW Industrials Company

December 18, 2017

To whom it may concern:

RectorSeal's Warranty statement for firestop is contingent upon actual storage conditions and proper installation.

If RectorSeal® firestop products are correctly installed in accordance with our stated Manufacturers instructions and according to the UL tested systems, our products comply with UL 1479 "Fire Tests of Through-Penetration Firestops" standard requirements for Environmental Exposure Tests. This test relates to the performance of firestop products as originally installed, and compares to the performance testing after exposure to extreme temperatures and high humidity for an extended period of time.

If properly stored, our products have a minimum shelf life of three years, subject to inspection with the exception of our fire rated mortar and silicone products which have a two year shelf life.

The Rectorseal Corporation, manufacturer of Metacaulk® Fire Stop products, has always been concerned about the long-term performance of our products. We implemented a testing program prior to the UL 1479 requirement for "Fire Tests of Through-Penetration Firestops". We burned materials in our UL sanctioned fire test facility to measure the performance of RectorSeal® products after extended periods of time as in accordance with current standards. Some of the tested materials exceed 15 years in age. Assuming that the substrate area surrounding the actual penetration has not been damaged, we warrant that Metacaulk® products will perform satisfactorily for the sustainable life of the building.

Repectfully,

Terry L. Gossett

Terry L. Gossett
Technical Service



A CSW Industrials Company

March 3, 2016

To Whom It May Concern:

RectorSeal's Warranty Statement for our Smoke and Acoustical sealant is contingent upon actual storage conditions and proper installation.

If properly stored, our RectorSeal® Smoke and Acoustic Sealant has a minimum shelf life of two years, subject to inspection. Assuming that the substrate area surrounding the actual penetration/joint has not been damaged, we warrant that the RectorSeal® Smoke and Acoustic Sealant product, when fully cured will perform satisfactorily for the sustainable life of the building.

If there are any additional questions, do not hesitate to call our office at 800-231-3345.

Respectfully,
RECTORSEAL

Terry Gossett

Terry Gossett
Technical Services



2601 Spenwick Dr
Houston, TX 77055

ph: 713-263-8001
fax: 713-263-7577



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Building Council and is used by
permission

May 9, 2012

RE: Metacaulk® Firestopping Materials
LEED® Product Information

TO: Whom It May Concern

This letter will detail the contribution of Metacaulk® firestopping materials to the LEED Green Building Rating System in accordance with LEED-NC, CS, CI and School Rating Systems.

MR Credit 2.1: Construction Waste Management, Divert 50% from Disposal

MR Credit 2.2: Construction Waste Management, Divert 75% from Disposal

In areas where facilities exist, the following Metacaulk® materials are recyclable and can contribute to earning Materials and Resources Credit 2.1 or Credit 2.2.

•	Carton	Cardboard	2 lbs / carton
•	10.3 oz caulk tube	HDPE	40 g. / tube
•	20.2 oz foil pack	Mylar	5 g. / pack
•	30 oz caulk tube	HDPE	98 g. / tube
•	quart bottle	HDPE	57 g. / bottle
•	5 gallon pail	HDPE	934 g. / pail
•	Wooden pallet	wood	45 lbs. / pallet

MR Credit 5.1: Regional Materials, 10% Extracted, Processed & Manufactured Regionally

MR Credit 5.2: Regional Materials, 20% Extracted, Processed & Manufactured Regionally

Metacaulk® firestopping materials are manufactured in one location Houston, Texas. If these locations fall within a 500-mile radius of the project site and the location the raw materials used to make the finished product are extracted, recovered or harvested within a 500-mile radius of the project, then these materials or a portion of the materials can contribute to earning Materials and Resources Credit 5.1 and Credit 5.2.

The following are the locations of the Metacaulk® firestopping materials manufacturing plants:

<u>Metacaulk® Product</u>	<u>Location</u>
All Metacaulk® Products	Houston, Texas

Please contact your local Metacaulk® Representative to request a project specific letter pertaining to Credit 5.1 and Credit 5.2. The letter will provide the location where the raw materials are extracted, recovered or harvested in relation to the location of the project.

EQ Credit 4.1: Low Emitting Materials, Adhesives & Sealants

EQ Credit 4.2: Low Emitting Materials, Paints & Coatings

The volatile organic content (VOC) of Metacaulk® firestopping materials is listed below for those products that are lower than the minimum LEED requirements for low-emitting materials. These materials can help contribute to earning Indoor Environmental Quality EQ Credit 4.1 and 4.2.

<u>Metacaulk Product</u>	<u>EQ Credit</u>	<u>VOC Content (g/l)</u>
Metacaulk® 1000	4.1	10
Metacaulk® 950	4.1	10
Metacaulk® 835+	4.1	10
Metacaulk® MC 150+	4.1	10
Metacaulk® 350i	4.1	10
Metacaulk® Putty pads & Sticks	4.1	10
Metacaulk® 1100	4.2	10
Metacaulk® 1200	4.2	10
Metacaulk® Joint Strip	4.1	10
Metacaulk® Wrap Strip	4.1	10
Metacaulk® 1500	4.1	10
Metacaulk® Industrial Cable Coating	4.2	10
Metacaulk® Pipe Collar	4.1	10
Metacaulk® Intumescent Sleeve	4.1	10
Metacaulk® Fire Rated Mortar	4.1	10
Metacaulk® Firestop Pillows	4.1	10
Metacaulk® Cast-In-Place (CID)	4.1	10

Please feel free to contact me with any additional questions or information.

Sincerely,



Terry Gossett
Technical Service



A CSW Industrials Company

SAFETY DATA SHEET

METACAULK® 1000

Intumescent, water-based firestop sealant

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Metacaulk® 1000 Intumescent Firestop Sealant

Product Codes

66640, 66242, 66302, 66303, 66305, 66307, 66309, 66312

Chemical Family

Organic/Inorganic

Use

Firestopping sealant

Manufacturer's Name

RectorSeal LLC
2601 Spenwick Drive
Houston, Texas 77055 USA

Date of Validation

July 11, 2017

Date of Preparation

May 22, 2012

HMIS Codes

Health	1
Flammability	0
Reactivity	0
PPI	B

Emergency Telephone No.

Chemtrec 24 Hours
(800)-424-9300 USA
(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Physical Hazards:

None

Health Hazards

Acute Toxicity:

Oral: Not Classified
Dermal: Not Classified
Inhalation: Not Classified
Skin Corrosion/Irritation: Not Classified
Serious Eye Damage/Eye Irritation: Not Classified
Respiratory or Skin Sensitization: Not Classified
Germ Cell Mutagenicity: Not Classified
Carcinogenicity: Not Classified
Reproductive Toxicology: Not Classified

Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment: Not Classified
Acute aquatic toxicity: Not Classified
Chronic aquatic toxicity: Not Classified
Bioaccumulation potential: Not Classified
Rapid degradability: Not Classified

GHS Label elements, including precautionary statements

Pictogram: None

Signal Word: None

Hazard Statements:
None

Precautionary Statements:
P102 - Keep out of reach of children.
P264 - Wash hands thoroughly after handling.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

LABELING SYMBOLS: None

RISK R-PHRASES: None

SAFETY S-PHRASES:
S2: Keep out of the reach of children.

Summary Of Acute Hazards

May cause skin irritation.

Route Of Exposure, Signs And Symptoms

INHALATION

Not a respiratory irritant.

EYE CONTACT

Contact may cause eye irritation.

SKIN CONTACT

Contact may cause skin irritation.

INGESTION

Possible irritation to mucous membranes of the mouth, throat, and stomach.

SUMMARY OF CHRONIC HAZARDS

None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with pre-existing skin conditions or chemical allergies may be more susceptible to contact effects of the cured elastomer.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS
None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.			

SECTION 4 – FIRST AID MEASURES

If inhaled:	Not a respiratory irritant.
If on skin:	Wash with soap and water. If irritation occurs, seek medical attention.
If in eyes:	Immediately flush with large amounts of water. If irritation occurs, seek medical attention.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

Unusual Fire And Explosion Hazards: Heat may build up and rupture closed containers.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Keep container closed and upright when not in use. To prevent freezing and possible rupture of container, do not store below 35°F.

Other Precautions: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues and vapors; treat as if full and observe all product precautions. Do not reuse empty containers.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection (Specify Type): None required.

Ventilation – Local Exhaust: N/A

Special: N/A

Mechanical (General): N/A

Other: N/A

Protective Gloves: None required.

Eye Protection: None required.

Other Protective Clothing Or Equipment: None required.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	212°F (100°C) @ 760mm Hg
Specific gravity (H ₂ O = 1):	1.25
Vapor pressure (mmHg):	17 @ 68°F (20°C)
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	> 1
Appearance/Odor:	Red paste/Mild odor
Solubility in water:	Soluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	< 1% or (< 10 g/L)
Flash point:	None
Lower explosion limit:	None
Upper explosion limit:	None

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: None.

Incompatibility (Materials To Avoid): None known.

Hazardous Decomposition Products: CO, CO₂ and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA Lister carcinogen.

Toxicology Data

Ingredient Name

None

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name: **None**

Food Chain Concentration Potential: N/A

Waterfowl Toxicity: N/A

BOD: N/A

Aquatic Toxicity: N/A

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with federal, state, and local regulation regarding pollution.

SECTION 14 – TRANSPORTATION INFORMATION

DOT: Non-regulated

Ocean (IMDG): Non-regulated

Air (IATA): Non-regulated

WHMIS (Canada): Non-regulated

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	None
SARA 313	N/A
TSCA Inventory	All components listed
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200).
The information herein is given in good faith, but no warranty, expressed or implied is made.
Consult RectorSeal for further information: (713) 263-8001



A CSW Industrials Company

SAFETY DATA SHEET

METACaulk® MC 150+

General purpose firestop sealant

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Metacaulk® MC 150+

Product Codes

66382, 66383, 66385, 66389, 66648

Chemical Family

Organic/Inorganic

Use

Firestopping sealant

Manufacturer's Name

The RectorSeal Corporation

2601 Spenwick Drive

Houston, Texas 77055 USA

Date of Validation

January 23, 2015

Date of Preparation

March 21, 2011

HMIS Codes

Health 1

Flammability 0

Reactivity 0

PPI B

Emergency Telephone No.

Chemtrec 24 Hours

(800)-424-9300 USA

(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Physical Hazards:

None

Health Hazards

Acute Toxicity:

Oral: Not Classified

Dermal: Not Classified

Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/Eye Irritation: Not Classified

Respiratory or Skin Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Carcinogenicity: Not Classified

Reproductive Toxicology: Not Classified

Target Organ Systemic Toxicity - Single Exposure: Not Classified

Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment: Not Classified
 Acute aquatic toxicity: Not Classified
 Chronic aquatic toxicity: Not Classified
 Bioaccumulation potential: Not Classified
 Rapid degradability: Not Classified

GHS Label elements, including precautionary statements

Pictogram: None

Signal Word: None

Hazard Statements:
 None

Precautionary Statements:
 P102 - Keep out of reach of children.
 P264 - Wash hands thoroughly after handling.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Labeling Symbols: None

Risk R-Phrases: None

Safety S-Phrases:
 S2: Keep out of the reach of children.

Summary Of Acute Hazards

May cause skin irritation.

Route Of Exposure, Signs And Symptoms

INHALATION

Not a respiratory irritant.

EYE CONTACT

Contact may cause eye irritation.

SKIN CONTACT

Contact may cause skin irritation.

INGESTION

Possible irritation to mucous membranes of the mouth, throat, and stomach.

SUMMARY OF CHRONIC HAZARDS

None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with pre-existing skin conditions or chemical allergies may be more susceptible to contact effects of the cured elastomer.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

% by WT

CAS No.

INGREDIENT

UNITS

None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.

SECTION 4 – FIRST AID MEASURES

- | | |
|---------------|--|
| If inhaled: | Not a respiratory irritant. |
| If on skin: | Wash with soap and water. If irritation occurs, seek medical attention. |
| If in eyes: | Immediately flush with large amounts of water. If irritation occurs, seek medical attention. |
| If swallowed: | If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. |

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

Unusual Fire And Explosion Hazards: Heat may build up and rupture closed containers.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Keep container closed and upright when not in use. To prevent freezing and possible rupture of container, do not store below 35°F.

Other Precautions: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues and vapors; treat as if full and observe all product precautions. Do not reuse empty containers.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection (Specify Type): None required.

Ventilation – Local Exhaust: N/A

Special: N/A

Mechanical (General): N/A

Other: N/A

Protective Gloves: None required.

Eye Protection: None required.

Other Protective Clothing Or Equipment: None required.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	212°F (100°C) @ 760mm Hg
Specific gravity (H ₂ O = 1):	1.5
Vapor pressure (mmHg):	17 @ 68°F (20°C)
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	> 1
Appearance/Odor:	Red paste/Mild odor
Solubility in water:	Soluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	< 1% or (< 10 g/L)
Flash point:	None
Lower explosion limit:	None
Upper explosion limit:	None

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: None.

Incompatibility (Materials To Avoid): None known.

Hazardous Decomposition Products: CO, CO₂ and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA Lister carcinogen.

Toxicology Data

Ingredient Name

None

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name:	None
Food Chain Concentration Potential:	N/A
Waterfowl Toxicity:	N/A
BOD:	N/A
Aquatic Toxicity:	N/A

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with federal, state, and local regulation regarding pollution.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:	Non-regulated
Ocean (IMDG):	Non-regulated
Air (IATA):	Non-regulated
WHMIS (Canada):	Non-regulated

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	None
SARA 313	N/A
TSCA Inventory	All components listed
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200).
The information herein is given in good faith, but no warranty, expressed or implied is made.

Consult RectorSeal for further information: (713) 263-8001

The logo for RectorSeal, featuring the word "RECTORSEAL" in a bold, sans-serif font. The letters "RECTOR" are in black and "SEAL" is in white, both contained within a red-outlined hexagonal shape. The entire logo is set against a solid red rectangular background.

SAFETY DATA SHEET

METACaulk® PASS-THRU DEVICE

Engineered firestop sleeve

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Metacaulk® Pass-Thru Device

Product Codes

66770, 66773, 66776, 66779

Chemical Family

Organic/Inorganic

Use

Firestopping device

Manufacturer's Name

The RectorSeal Corporation

2601 Spenwick Drive

Houston, Texas 77055 USA

Date of Validation

January 23, 2015

Date of Preparation

March 15, 2011

HMIS Codes

Health 1

Flammability 0

Reactivity 0

PPI B

Emergency Telephone No.

Chemtrec 24 Hours

(800)-424-9300 USA

(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Physical Hazards:

None

Health Hazards

Acute Toxicity:

Oral: Not Classified

Dermal: Not Classified

Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/Eye Irritation: Not Classified

Respiratory or Skin Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Carcinogenicity: Not Classified

Reproductive Toxicology: Not Classified

METACAULK® PASS-THRU DEVICE

Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment: Not Classified
Acute aquatic toxicity: Not Classified
Chronic aquatic toxicity: Not Classified
Bioaccumulation potential: Not Classified
Rapid degradability: Not Classified

GHS Label elements, including precautionary statements

Pictogram: None

Signal Word: None

Hazard Statements:
None

Precautionary Statements:
P102 - Keep out of reach of children.
P264 - Wash hands thoroughly after handling.

Summary Of Acute Hazards

May cause skin irritation.

Route Of Exposure, Signs And Symptoms

INHALATION

Not a respiratory irritant.

EYE CONTACT

Contact may cause eye irritation.

SKIN CONTACT

Contact may cause skin irritation.

INGESTION

Possible irritation to mucous membranes of the mouth, throat, and stomach.

SUMMARY OF CHRONIC HAZARDS

None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with pre-existing skin conditions or chemical allergies may be more susceptible to contact effects of the cured elastomer.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

% by WT

CAS No.

INGREDIENT

UNITS

None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.

METACAULK® PASS-THRU DEVICE

SECTION 4 – FIRST AID MEASURES

If inhaled:	Not a respiratory irritant.
If on skin:	Wash with soap and water. If irritation occurs, seek medical attention.
If in eyes:	Immediately flush with large amounts of water. If irritation occurs, seek medical attention.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing.

Unusual Fire And Explosion Hazards: Fire conditions will activate product causing intumescence to occur.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Pick up debris to prevent footing hazard.

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Do not store near heat, sparks, or open flames.

Other Precautions: KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection (Specify Type): None required.

Ventilation – Local Exhaust: N/A

Special: N/A

Mechanical (General): N/A

Other: N/A

Protective Gloves: None required.

Eye Protection: None required.

Other Protective Clothing Or Equipment: None required.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

METACAULK® PASS-THRU DEVICE

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	N/A
Specific gravity (H ₂ O = 1):	1.63
Vapor pressure (mmHg):	N/A
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	N/A
Appearance/Odor:	Black/Mild odor
Solubility in water:	Insoluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	< 1% or < 10 g/L
Flash point:	None
Lower explosion limit:	None
Upper explosion limit:	None

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: None.

Incompatibility (Materials To Avoid): None known.

Hazardous Decomposition Products: CO, CO₂ and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Toxicology Data

Ingredient Name

None

METACALK® PASS-THRU DEVICE

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name:	None
Food Chain Concentration Potential:	N/A
Waterfowl Toxicity:	N/A
BOD:	N/A
Aquatic Toxicity:	N/A

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with federal, state, and local regulation regarding pollution.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:	Non-regulated
Ocean (IMDG):	Non-regulated
Air (IATA):	Non-regulated
WHMIS (Canada):	Non-regulated

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	None
SARA 313	N/A
TSCA Inventory	All components listed
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made.

Consult RectorSeal for further information: (713) 263-8001

The logo for RectorSeal, featuring the word "RECTORSEAL" in a bold, sans-serif font. The letters "RECTOR" are in black and "SEAL" is in white, both contained within a red-bordered hexagonal shape. The entire logo is set against a solid red rectangular background.

SAFETY DATA SHEET

METACCAULK® BOX GUARD™

Fire-rated insert for electrical boxes

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Metacaulk® Box Guard™

Product Codes

66366, 66367, 66369

Chemical Family

Organic/Inorganic

Use

Electrical box insert

Manufacturer's Name

The RectorSeal Corporation

2601 Spenwick Drive

Houston, Texas 77055 USA

Date of Validation

January 23, 2015

Date of Preparation

February 27, 2012

HMIS Codes

Health 1

Flammability 0

Reactivity 0

PPI B

Emergency Telephone No.

Chemtrec 24 Hours

(800)-424-9300 USA

(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Physical Hazards:

None

Health Hazards

Acute Toxicity:

Oral: Not Classified

Dermal: Not Classified

Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/Eye Irritation: Not Classified

Respiratory or Skin Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Carcinogenicity: Not Classified

Reproductive Toxicology: Not Classified

Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment: Not Classified
Acute aquatic toxicity: Not Classified
Chronic aquatic toxicity: Not Classified
Bioaccumulation potential: Not Classified
Rapid degradability: Not Classified

GHS Label elements, including precautionary statements

Pictogram: None

Signal Word: None

Hazard Statements:
None

Precautionary Statements:
P102 - Keep out of reach of children.
P264 - Wash hands thoroughly after handling.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Labeling Symbols: None

Risk R-Phrases: None

Safety S-Phrases:
S2: Keep out of the reach of children.

Summary Of Acute Hazards

May cause skin irritation.

Route Of Exposure, Signs And Symptoms

INHALATION

Not a respiratory irritant.

EYE CONTACT

Contact may cause eye irritation.

SKIN CONTACT

Contact may cause skin irritation.

INGESTION

Possible irritation to mucous membranes of the mouth, throat, and stomach.

SUMMARY OF CHRONIC HAZARDS

None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with pre-existing skin conditions or chemical allergies may be more susceptible to contact effects of the cured elastomer.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS
None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.			

SECTION 4 – FIRST AID MEASURES

If inhaled:	Not a respiratory irritant.
If on skin:	Wash with soap and water. If irritation occurs, seek medical attention.
If in eyes:	Immediately flush with large amounts of water. If irritation occurs, seek medical attention.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing.

Unusual Fire And Explosion Hazards: Fire conditions will activate product causing intumescence to occur.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Pick up debris to prevent footing hazard.

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Do not store near heat, sparks, or open flames.

Other Precautions: KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection (Specify Type): None required.

Ventilation – Local Exhaust: N/A

Special: N/A

Mechanical (General): N/A

Other: N/A

Protective Gloves: None required.

Eye Protection: None required.

Other Protective Clothing Or Equipment: None required.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	N/A
Specific gravity (H ₂ O = 1):	N/A
Vapor pressure (mmHg):	N/A
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	N/A
Appearance/Odor:	Black/Mild odor
Solubility in water:	Insoluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	< 1% or < 10 g/L
Flash point:	None
Lower explosion limit:	None
Upper explosion limit:	None

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: None.

Incompatibility (Materials To Avoid): None known.

Hazardous Decomposition Products: CO, CO₂ and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Toxicology Data

Ingredient Name

None

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name:	None
Food Chain Concentration Potential:	N/A
Waterfowl Toxicity:	N/A
BOD:	N/A
Aquatic Toxicity:	N/A

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with federal, state, and local regulation regarding pollution.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:	Non-regulated
Ocean (IMDG):	Non-regulated
Air (IATA):	Non-regulated
WHMIS (Canada):	Non-regulated

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	None
SARA 313	N/A
TSCA Inventory	All components listed
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

Labeling Symbols: None

Risk R-Phrases: None

Safety S-Phrases:

S2: Keep out of the reach of children.

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Consult RectorSeal for further information: (713) 263-8001

The logo for RectorSeal, featuring the word "RECTORSEAL" in a bold, sans-serif font. The letters "RECTOR" are in black and "SEAL" is in white, both contained within a red-outlined hexagonal shape. The entire logo is set against a solid red rectangular background.

SAFETY DATA SHEET

METACaulk® COVER GUARD™

Fire-rated gasket for electrical boxes

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Metacaulk® Cover Guard™

Product Codes

66265, 66266, 66270, 66272, 66274, 66276

Chemical Family

Organic/Inorganic

Use

Firestopping Material

Manufacturer's Name

The RectorSeal Corporation

2601 Spenwick Drive

Houston, Texas 77055 USA

Date of Validation

January 23, 2015

Date of Preparation

February 27, 2012

HMIS Codes

Health 1

Flammability 0

Reactivity 0

PPI B

Emergency Telephone No.

Chemtrec 24 Hours

(800)-424-9300 USA

(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Physical Hazards:

None

Health Hazards

Acute Toxicity:

Oral: Not Classified

Dermal: Not Classified

Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/Eye Irritation: Not Classified

Respiratory or Skin Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Carcinogenicity: Not Classified

Reproductive Toxicology: Not Classified

Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment: Not Classified
Acute aquatic toxicity: Not Classified
Chronic aquatic toxicity: Not Classified
Bioaccumulation potential: Not Classified
Rapid degradability: Not Classified

GHS Label elements, including precautionary statements

Pictogram: None

Signal Word: None

Hazard Statements:
None

Precautionary Statements:
P102 - Keep out of reach of children.
P264 - Wash hands thoroughly after handling.

Summary Of Acute Hazards

May cause skin irritation.

Route Of Exposure, Signs And Symptoms

INHALATION

Not a respiratory irritant.

EYE CONTACT

Contact may cause eye irritation.

SKIN CONTACT

Contact may cause skin irritation.

INGESTION

Possible irritation to mucous membranes of the mouth, throat, and stomach.

SUMMARY OF CHRONIC HAZARDS

None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with pre-existing skin conditions or chemical allergies may be more susceptible to contact effects of the cured elastomer.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS
None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.			

SECTION 4 – FIRST AID MEASURES

If inhaled:	Not a respiratory irritant.
If on skin:	Wash with soap and water. If irritation occurs, seek medical attention.
If in eyes:	Immediately flush with large amounts of water. If irritation occurs, seek medical attention.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing.

Unusual Fire And Explosion Hazards: Fire conditions will activate product causing intumescence to occur.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Pick up debris to prevent footing hazard.

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Do not store near heat, sparks, or open flames.

Other Precautions: KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection (Specify Type): None required.

Ventilation – Local Exhaust: N/A

Special: N/A

Mechanical (General): N/A

Other: N/A

Protective Gloves: None required.

Eye Protection: None required.

Other Protective Clothing Or Equipment: None required.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	N/A
Specific gravity (H ₂ O = 1):	N/A
Vapor pressure (mmHg):	N/A
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	N/A
Appearance/Odor:	Black/Mild odor
Solubility in water:	Insoluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	< 1% or < 10 g/L
Flash point:	None
Lower explosion limit:	None
Upper explosion limit:	None

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: None.

Incompatibility (Materials To Avoid): None known.

Hazardous Decomposition Products: CO, CO₂ and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Toxicology Data

Ingredient Name

None

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name:	None
Food Chain Concentration Potential:	N/A
Waterfowl Toxicity:	N/A
BOD:	N/A
Aquatic Toxicity:	N/A

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with federal, state, and local regulation regarding pollution.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:	Non-regulated
Ocean (IMDG):	Non-regulated
Air (IATA):	Non-regulated
WHMIS (Canada):	Non-regulated

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	None
SARA 313	N/A
TSCA Inventory	All components listed
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made.

Consult RectorSeal for further information: (713) 263-8001

The logo for RectorSeal, featuring the brand name in a bold, sans-serif font inside a stylized, elongated hexagonal border.

SAFETY DATA SHEET

**METACAULK® FIRE-RATED
PUTTY PADS**

Fire-rated pad for electrical outlet boxes

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Metacaulk® Fire-Rated Putty Pad

Product Codes

66335, 66340

Chemical Family

Organic/Inorganic

Use

Firestopping sealant

Manufacturer's Name

The RectorSeal Corporation

2601 Spenwick Drive

Houston, Texas 77055 USA

Date of Validation

January 23, 2015

Date of Preparation

March 20, 2011

HMIS Codes

Health 1

Flammability 0

Reactivity 0

PPI B

Emergency Telephone No.

Chemtrec 24 Hours

(800)-424-9300 USA

(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION**Physical Hazards:**

None

Health Hazards

Acute Toxicity:

Oral: Not Classified

Dermal: Not Classified

Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/Eye Irritation: Not Classified

Respiratory or Skin Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Carcinogenicity: Not Classified

Reproductive Toxicology: Not Classified

METACAULK® FIRE-RATED PUTTY PADS

Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment: Not Classified
Acute aquatic toxicity: Not Classified
Chronic aquatic toxicity: Not Classified
Bioaccumulation potential: Not Classified
Rapid degradability: Not Classified

GHS Label elements, including precautionary statements

Pictogram: None

Signal Word: None

Hazard Statements:
None

Precautionary Statements:
P102 - Keep out of reach of children.
P264 - Wash hands thoroughly after handling.

Summary Of Acute Hazards

May cause skin irritation.

Route Of Exposure, Signs And Symptoms

INHALATION

Not a respiratory irritant.

EYE CONTACT

Contact may cause eye irritation.

SKIN CONTACT

Contact may cause skin irritation.

INGESTION

Possible irritation to mucous membranes of the mouth, throat, and stomach.

SUMMARY OF CHRONIC HAZARDS

None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with pre-existing skin conditions or chemical allergies may be more susceptible to contact effects of the cured elastomer.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient:	Triazine Triamine Phosphate
Percentage by weight:	--
CAS Number:	41583-09-9
EC#:	255-449-7

METACAULK® FIRE-RATED PUTTY PADS

Ingredient:	Calcium Borate
Percentage by weight:	--
CAS Number:	12007-56-6
EC#:	237-559-7
Ingredient:	Polyphosphoric Acid
Percentage by weight:	--
CAS Number:	68333-79-9
EC#:	269-789-9
Ingredient:	Isodecyldiphenyl Ester
Percentage by weight:	--
CAS Number:	29761-21-5
EC#:	Not listed

SECTION 4 – FIRST AID MEASURES

If inhaled:	Not a respiratory irritant.
If on skin:	Wash with soap and water. If irritation occurs, seek medical attention.
If in eyes:	Immediately flush with large amounts of water. If irritation occurs, seek medical attention.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

Unusual Fire And Explosion Hazards: Heat may build up and rupture closed containers.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

METACAULK® FIRE-RATED PUTTY PADS

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Keep container closed and upright when not in use.

To prevent freezing and possible rupture of container, do not store below 35°F.

Other Precautions: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues and vapors; treat as if full and observe all product precautions. Do not reuse empty containers.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient	Units
------------	-------

Triazine Triamine Phosphate

ACGIH TLV	N/D ppm
-----------	---------

OSHA PEL	N/D ppm
----------	---------

Calcium Borate

ACGIH TLV	N/D ppm
-----------	---------

OSHA PEL	N/D ppm
----------	---------

Polyphosphoric Acid

ACGIH TLV	N/D ppm
-----------	---------

OSHA PEL	N/D ppm
----------	---------

Isodecyldiphenyl Ester

ACGIH TLV	N/D ppm
-----------	---------

OSHA PEL	N/D ppm
----------	---------

Respiratory Protection (Specify Type): None required.

Ventilation – Local Exhaust: Acceptable.

Special: N/A

Mechanical (General): Preferable.

Other: N/A

Protective Gloves: Wear rubber gloves.

Eye Protection: Safety glasses (ANSI Z-87.1 or equivalent)

Other Protective Clothing Or Equipment: Coveralls recommended.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

METACAULK® FIRE-RATED PUTTY PADS

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	N/A
Specific gravity (H2O = 1):	1.48
Vapor pressure (mmHg):	N/A
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	N/A
Appearance/Odor:	Pink/Slight odor
Solubility in water:	Insoluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	< 1% or < 10 g/L
Flash point:	None
Lower explosion limit:	None
Upper explosion limit:	None

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: None.

Incompatibility (Materials To Avoid): None known.

Hazardous Decomposition Products: CO, CO₂ and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Toxicology Data

Ingredient Name

Triazine Triamine Phosphate

Oral-Rat LD50: N/D

Inhalation-Rat: N/D

Calcium Borate

Oral-Rat LD50: 5600 mg/kg

Inhalation-Rat: N/D

METACAULK® FIRE-RATED PUTTY PADS

Polyphosphoric Acid

Oral-Rat LD50: N/D

Inhalation-Rat: N/D

Isodecyldiphenyl Ester

Oral-Rat LD50: N/D

Inhalation-Rat: N/D

SECTION 12 – ECOLOGICAL INFORMATION

Ecological DataIngredient Name: **Triazine Triamine Phosphate**

Food Chain Concentration Potential: N/D

Waterfowl Toxicity: N/D

BOD: N/D

Aquatic Toxicity: N/D

Ingredient Name: **Calcium Borate**

Food Chain Concentration Potential: N/D

Waterfowl Toxicity: N/D

BOD: N/D

Aquatic Toxicity: N/D

Ingredient Name: **Polyphosphoric Acid**

Food Chain Concentration Potential: N/D

Waterfowl Toxicity: N/D

BOD: N/D

Aquatic Toxicity: N/D

Ingredient Name: **Isodecyldiphenyl Ester**

Food Chain Concentration Potential: N/D

Waterfowl Toxicity: N/D

BOD: N/D

Aquatic Toxicity: N/D

METACAULK® FIRE-RATED PUTTY PADS

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with federal, state, and local regulation regarding pollution.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:	Non-regulated
Ocean (IMDG):	Non-regulated
Air (IATA):	Non-regulated
WHMIS (Canada):	Non-regulated

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	Triazine Triamine Phosphate
SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

Ingredient Name:	Calcium Borate
SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

Ingredient Name:	Polyphosphoric Acid
SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

METACAULK® FIRE-RATED PUTTY PADS

Regulatory Data (cont.)

Ingredient Name:	Isodecyldiphenyl Ester
SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

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Consult RectorSeal for further information: (713) 263-8001

The logo for RectorSeal, featuring the brand name in a bold, sans-serif font inside a stylized hexagonal border.

SAFETY DATA SHEET

METACAUWK® FIRE-RATED PUTTY STICKS

Fire-rated sticks for electrical outlet boxes

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Metacaulk® Fire-Rated Putty Sticks

Product Codes

66345

Chemical Family

Organic/Inorganic

Use

Firestopping sealant

Manufacturer's Name

The RectorSeal Corporation

2601 Spenwick Drive

Houston, Texas 77055 USA

Date of Validation

January 23, 2015

Date of Preparation

March 20, 2011

HMIS Codes

Health 1

Flammability 0

Reactivity 0

PPI B

Emergency Telephone No.

Chemtrec 24 Hours

(800)-424-9300 USA

(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Physical Hazards:

None

Health Hazards

Acute Toxicity:

Oral: Not Classified

Dermal: Not Classified

Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/Eye Irritation: Not Classified

Respiratory or Skin Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Carcinogenicity: Not Classified

Reproductive Toxicology: Not Classified

METACaulk® FIRE-RATED PUTTY STICKS

Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment: Not Classified
Acute aquatic toxicity: Not Classified
Chronic aquatic toxicity: Not Classified
Bioaccumulation potential: Not Classified
Rapid degradability: Not Classified

GHS Label elements, including precautionary statements

Pictogram: None

Signal Word: None

Hazard Statements:
None

Precautionary Statements:
P102 - Keep out of reach of children.
P264 - Wash hands thoroughly after handling.

Summary Of Acute Hazards

May cause skin irritation.

Route Of Exposure, Signs And Symptoms

INHALATION

Not a respiratory irritant.

EYE CONTACT

Contact may cause eye irritation.

SKIN CONTACT

Contact may cause skin irritation.

INGESTION

Possible irritation to mucous membranes of the mouth, throat, and stomach.

SUMMARY OF CHRONIC HAZARDS

None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with pre-existing skin conditions or chemical allergies may be more susceptible to contact effects of the cured elastomer.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient:	Triazine Triamine Phosphate
Percentage by weight:	--
CAS Number:	41583-09-9
EC#:	255-449-7

METACALK® FIRE-RATED PUTTY STICKS

Ingredient:	Calcium Borate
Percentage by weight:	--
CAS Number:	12007-56-6
EC#:	237-559-7
Ingredient:	Polyphosphoric Acid
Percentage by weight:	--
CAS Number:	68333-79-9
EC#:	269-789-9
Ingredient:	Isodecyldiphenyl Ester
Percentage by weight:	--
CAS Number:	29761-21-5
EC#:	Not listed

SECTION 4 – FIRST AID MEASURES

If inhaled:	Not a respiratory irritant.
If on skin:	Wash with soap and water. If irritation occurs, seek medical attention.
If in eyes:	Immediately flush with large amounts of water. If irritation occurs, seek medical attention.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

Unusual Fire And Explosion Hazards: Heat may build up and rupture closed containers.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

METACAULK® FIRE-RATED PUTTY STICKS

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Keep container closed and upright when not in use.

To prevent freezing and possible rupture of container, do not store below 35°F.

Other Precautions: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues and vapors; treat as if full and observe all product precautions. Do not reuse empty containers.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient	Units
------------	-------

Triazine Triamine Phosphate

ACGIH TLV	N/D ppm
-----------	---------

OSHA PEL	N/D ppm
----------	---------

Calcium Borate

ACGIH TLV	N/D ppm
-----------	---------

OSHA PEL	N/D ppm
----------	---------

Polyphosphoric Acid

ACGIH TLV	N/D ppm
-----------	---------

OSHA PEL	N/D ppm
----------	---------

Isodecyldiphenyl Ester

ACGIH TLV	N/D ppm
-----------	---------

OSHA PEL	N/D ppm
----------	---------

Respiratory Protection (Specify Type): None required.

Ventilation – Local Exhaust: Acceptable.

Special: N/A

Mechanical (General): Preferable.

Other: N/A

Protective Gloves: Wear rubber gloves.

Eye Protection: Safety glasses (ANSI Z-87.1 or equivalent)

Other Protective Clothing Or Equipment: Coveralls recommended.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

METACAULK® FIRE-RATED PUTTY STICKS

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	N/A
Specific gravity (H2O = 1):	1.48
Vapor pressure (mmHg):	N/A
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	N/A
Appearance/Odor:	Pink/Slight odor
Solubility in water:	Insoluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	< 1% or < 10 g/L
Flash point:	None
Lower explosion limit:	None
Upper explosion limit:	None

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: None.

Incompatibility (Materials To Avoid): None known.

Hazardous Decomposition Products: CO, CO₂ and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Toxicology Data

Ingredient Name

Triazine Triamine Phosphate

Oral-Rat LD50: N/D

Inhalation-Rat: N/D

Calcium Borate

Oral-Rat LD50: 5600 mg/kg

Inhalation-Rat: N/D

METACAULK® FIRE-RATED PUTTY STICKS

Polyphosphoric Acid

Oral-Rat LD50: N/D

Inhalation-Rat: N/D

Isodecyldiphenyl Ester

Oral-Rat LD50: N/D

Inhalation-Rat: N/D

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name: **Triazine Triamine Phosphate**

Food Chain Concentration Potential: N/D

Waterfowl Toxicity: N/D

BOD: N/D

Aquatic Toxicity: N/D

Ingredient Name: **Calcium Borate**

Food Chain Concentration Potential: N/D

Waterfowl Toxicity: N/D

BOD: N/D

Aquatic Toxicity: N/D

Ingredient Name: **Polyphosphoric Acid**

Food Chain Concentration Potential: N/D

Waterfowl Toxicity: N/D

BOD: N/D

Aquatic Toxicity: N/D

Ingredient Name: **Isodecyldiphenyl Ester**

Food Chain Concentration Potential: N/D

Waterfowl Toxicity: N/D

BOD: N/D

Aquatic Toxicity: N/D

METACALK® FIRE-RATED PUTTY STICKS

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with federal, state, and local regulation regarding pollution.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:	Non-regulated
Ocean (IMDG):	Non-regulated
Air (IATA):	Non-regulated
WHMIS (Canada):	Non-regulated

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	Triazine Triamine Phosphate
SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

Ingredient Name:	Calcium Borate
SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

Ingredient Name:	Polyphosphoric Acid
SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

METACAULK® FIRE-RATED PUTTY STICKS

Regulatory Data (cont.)

Ingredient Name:	Isodecyldiphenyl Ester
SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200).
The information herein is given in good faith, but no warranty, expressed or implied is made.

Consult RectorSeal for further information: (713) 263-8001

The logo for RectorSeal, featuring the word "RECTORSEAL" in a bold, sans-serif font. The letters "RECTOR" are in black and "SEAL" is in white, both contained within a red-outlined hexagonal shape. A small registered trademark symbol (®) is located to the right of the word "SEAL".

SAFETY DATA SHEET

METACAUULK® JOINT STRIP

Flexible material for up to 2" wide joints

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Metacaulk® Joint Strip

Product Codes

66700, 66701, 66702, 66703, 66704

Chemical Family

Organic/Inorganic

Use

Firestopping material

Manufacturer's Name

The RectorSeal Corporation

2601 Spenwick Drive

Houston, Texas 77055 USA

Date of Validation

January 23, 2015

Date of Preparation

March 20, 2012

HMIS Codes

Health 1

Flammability 0

Reactivity 0

PPI B

Emergency Telephone No.

Chemtrec 24 Hours

(800)-424-9300 USA

(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Physical Hazards:

None

Health Hazards

Acute Toxicity:

Oral: Not Classified

Dermal: Not Classified

Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/Eye Irritation: Not Classified

Respiratory or Skin Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Carcinogenicity: Not Classified

Reproductive Toxicology: Not Classified

Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment: Not Classified
Acute aquatic toxicity: Not Classified
Chronic aquatic toxicity: Not Classified
Bioaccumulation potential: Not Classified
Rapid degradability: Not Classified

GHS Label elements, including precautionary statements

Pictogram: None

Signal Word: None

Hazard Statements:
None

Precautionary Statements:
P102 - Keep out of reach of children.
P264 - Wash hands thoroughly after handling.

Summary Of Acute Hazards

May cause skin irritation.

Route Of Exposure, Signs And Symptoms

INHALATION

Not a respiratory irritant.

EYE CONTACT

Contact may cause eye irritation.

SKIN CONTACT

Contact may cause skin irritation.

INGESTION

Possible irritation to mucous membranes of the mouth, throat, and stomach.

SUMMARY OF CHRONIC HAZARDS

None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with pre-existing skin conditions or chemical allergies may be more susceptible to contact effects of the cured elastomer.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

% by WT

CAS No.

INGREDIENT

UNITS

None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.

SECTION 4 – FIRST AID MEASURES

If inhaled:	Not a respiratory irritant.
If on skin:	Wash with soap and water. If irritation occurs, seek medical attention.
If in eyes:	Immediately flush with large amounts of water. If irritation occurs, seek medical attention.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing.

Unusual Fire And Explosion Hazards: Fire conditions will activate product causing intumescence to occur.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Pick up debris to prevent footing hazard.

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Do not store near heat, sparks, or open flames.

Other Precautions: KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection (Specify Type): None required.

Ventilation – Local Exhaust: N/A

Special: N/A

Mechanical (General): N/A

Other: N/A

Protective Gloves: None required.

Eye Protection: None required.

Other Protective Clothing Or Equipment: None required.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	N/A
Specific gravity (H ₂ O = 1):	N/A
Vapor pressure (mmHg):	N/A
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	N/A
Appearance/Odor:	Black/Mild odor
Solubility in water:	Insoluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	< 1% or < 10 g/L
Flash point:	None
Lower explosion limit:	None
Upper explosion limit:	None

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: None.

Incompatibility (Materials To Avoid): None known.

Hazardous Decomposition Products: CO, CO₂ and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Toxicology Data

Ingredient Name

None

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name:	None
Food Chain Concentration Potential	N/A
Waterfowl Toxicity	N/A
BOD	N/A
Aquatic Toxicity	N/A

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:	Non-regulated
Ocean (IMDG):	Non-regulated
Air (IATA):	Non-regulated
WHMIS (Canada):	Non-regulated

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	None
SARA 313	N/A
TSCA Inventory	All components listed
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made.

Consult RectorSeal for further information: (713) 263-8001

METACAULK® 1000

Highly Intumescent Firestop Sealant

Description

Metacaulk 1000 is a single component, general purpose fire rated sealant and smoke seal for construction joints and through-penetrations. Metacaulk 1000 is a water based, extremely intumescent, non-sag caulking grade sealant that is easy to apply. It cures to an elastomeric seal that is suitable where dynamic movement is expected.

In the event of a fire, Metacaulk 1000 will prevent the spread of flames, smoke, hot gases and water through joint openings and through-penetrations. Metacaulk 1000 systems are rated for 1, 2, 3 and 4 hours in accordance with the ASTM E814 (UL1479), ASTM E1966 (UL 2079) and CAN/ULC-S115 test standards. Metacaulk 1000 is protected in a wet stage as well as in a dry stage against mold growth with a combination of biocides Tested to ASTM G21 standard testing for mold and mildew growth resistance.



Applications

Metacaulk 1000 can be used in interior applications as a general purpose fire rated sealant and smoke seal for construction joints, through penetrations and blank openings on both vertical and horizontal surfaces. Use Metacaulk 1000 to prevent the spread of fire and smoke through joints in fire rated gypsum wallboard partitions, concrete block or concrete walls and/or concrete or corrugated steel deck floor/ceiling assemblies. Metacaulk 1000 is also an excellent fire rated acoustical sealant and can be used in areas under constant vibration or movement to reduce the transfer of noise through assemblies. Metacaulk 1000 can also be used on various penetrations such as EMT, telephone & power cables, insulated pipes, etc. in concrete floors and walls, gypsum walls as well as wood floors.

Characteristics | Features

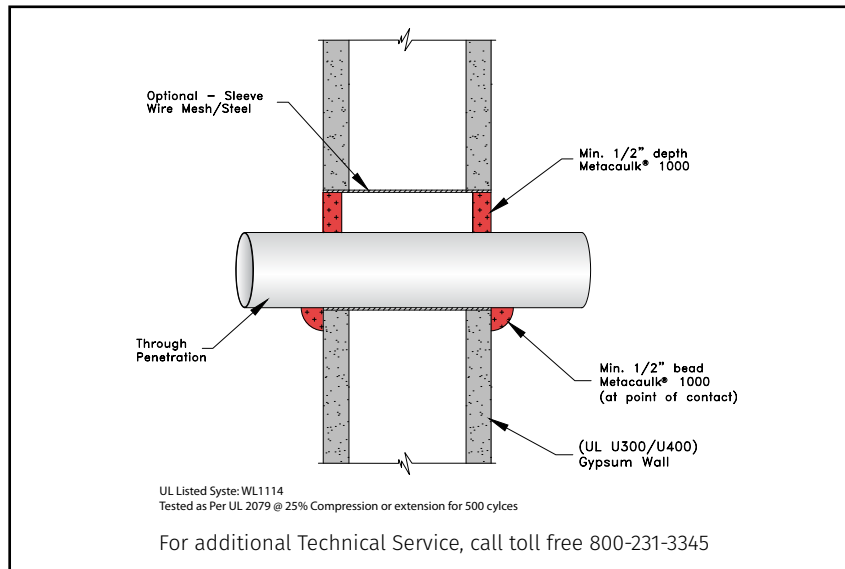
- Water based
- Excellent freeze-thaw
- Flexible set
- Highly intumescent
- Paintable
- VOC compliant
- Safe and easy to use
- 3 Year shelf life

Packaging

Code	Size	Qty. per Case	Dimensions (in)	Cubic Feet
66640	10.3 oz cartridge	12	8x6x12	.34
66312	20.2 oz foil pack	12	9x14x7	.51
66303	30 oz. cartridge	12	11x9x17	.97
66305	1 Gallon	4	17x17x9	1.51
66307	2 Gallon	1	14x13x10	1.05
66309	5 Gallon	1	13 dia x14	1.08

Installation Data

Install Metacaulk 1000 using standard caulking techniques or trowel from pails. Metacaulk 1000 may also be pumped from the pails. When damming materials are needed, use only materials approved for the specific application.



TYPICAL TOP OF WALL INSTALLATION

Step 1 Gun, trowel or pump the sealant as required to the specified depth. Properly tool sealant surface flush with the wall.

Consult UL Directory for complete instructions and system listings.

Testing Data

For specific test criteria, refer to the UL Product iQ and Intereq Directory of Building Products or call RectorSeal

Metacaulk 1000 was tested at positive pressure with a minimum 0.01 (2.5 Pa) inches water and in accordance with ASTM E814 (UL 1479), ASTM E1966 (UL 2079) and tested with a pressure differential of 50 Pa between the exposed and the unexposed surfaces with the higher pressure on the exposed side in accordance with CAN/ULC S115 testing standards. Tested by a third party independent laboratory to the ASTM G213 standard with Fungal Growth Rating results of zero.

Sound Transmission Class (STC) 62 - The test was performed in accordance with ASTM 90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

Complies to Required Environmental Exposure Testing of Accelerated Aging and High Humidity as per UL 1479 Fire Test of Through-Penetration Firestops.



FBC System Compatible indicates that this product has been tested, and is monitored on an ongoing basis, to assure its chemical compatibility with FlowGuard Gold®, BlazeMaster® and Corzan® pipe and fittings.

FBC, FlowGuard Gold®, BlazeMaster® and Corzan® are licensed trademarks of the Lubrizol Corporation.

Suggestions and recommendations covering the use of our products are based on our past experience and laboratory findings. However, as we have no control as to the methods and conditions of application, we only assume responsibility for the uniformity of our products within manufacturing tolerances.

Material Properties

Asbestos Fillers	None
Solvents	None
Hazardous Ingredients	None
Application	Caulking Gun or Trowel
Application Temperature between	40°F - 120°F 4°C - 49°C

Activation of Intumescence:

Expansion Begins	375°F (190°C)
Expansion Greatest	575°F - 1100°F 302°C - 593°C

Color	Red
Cure Time	3 to 4 weeks (at 77°F/25°C)
Density	~11 lbs/gal ~1.32 kg/L
Elastomeric	Yes
Freeze/Thaw	Excellent
Skin Over Time	30 min. (at 77°F/25°C)
pH Value	6.5 to 7

Volume Coverage:

for 10.3 oz. tube	18 cu. in. (304 ml)
for 20.2 oz. foil packs	36 cu. in. (597 ml)
for 30 oz. tube	54 cu. in. (887 ml)
for 5 gallon	1155 cu. in. (18.9 liter)

VOC	< 10 g/L
-----	----------

ASTM E 84, UL 723 Tunnel Test

Flame Spread	0
Smoke Index	0

Inspection & Repair

RectorSeal recommends firestop system inspection is conducted during installation of the material in accordance with ASTM E2174 and ASTM E2393. In the event post-installation inspection and destructive sampling is necessary, RectorSeal advises repairing the damaged firestop system by replacing any material that was removed or damaged with the same product originally installed, and ensuring the assembly matches the original firestop listing. RectorSeal advises, that due to the chemical nature of firestop products and sealants, material depth should be determined by measuring the points of adhesion at the substrate bond area as sealants may decrease in size during the curing process.

Storage & Handling

Metacaulk 1000 should be stored between 35°F (2°C) and 120° F (49° C) to obtain a 3 year shelf life.

NOTE: Do not dilute, no mixing is required. Best if protected from freezing. If freezing occurs, thaw completely before using. Keep products stored under protective cover in original containers.

Limitations

Metacaulk 1000 is not designed to be used in areas under continuous immersion or in areas which would be continuously wet. Metacaulk 1000 should not be used against hot uninsulated surfaces above 300° F (149° C).

Cautions

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC-DAY OR NIGHT 1-800-424-9300.

PRECAUTIONS: Do not take internally. May be harmful if swallowed. May cause eye and skin irritation if prolonged or repeated contact occurs. Wash after handling. **FIRST AID:** For any overexposure, get immediate medical attention after first aid is given. **EYES**-Flush 15 minutes with clean water. **SKIN**-Wash with soap and water. **INHALATION**-Remove to fresh air. **INGESTION**-Only if conscious, give large amounts of water and INDUCE VOMITING. **FIRE AND SPILLS:** Use water fog, CO₂, foam, or dry chemicals. Wipe up spills to prevent footing hazard. Clean up with scrapers and water. **STORAGE AND HANDLING:** Store away from heat sources. Keep container closed. Do not reuse empty container. **KEEP OUT OF REACH OF CHILDREN.**

For additional information, refer to Safety Data Sheet.

Limited Warranty

RectorSeal, LLC makes the Limited Express Warranty that when the instructions for storage and handling of our products are followed we warrant our products to be free from defects. THIS LIMITED EXPRESS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ANY OTHER OBLIGATION ON THE PART OF RectorSeal, LLC. The sole remedy for breach of the Limited Express Warranty shall be the refund of the purchase price. All other liability is negated and disclaimed, and RectorSeal, LLC shall not be liable for incidental or consequential damages.



Manufactured by **RectorSeal® LLC • 2601 Spenwick Drive, Houston, TX 77055, USA • 800-231-3345 • Fax 800-441-0051 • RectorSeal.com**

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RECTORSEAL

A CSW Industrials Company

PRODUCT DATA SHEET

METACAULK® 150+
General Purpose Firestop Sealant**Description**

Metacaulk 150+ is a one component, general purpose fire rated sealant, acoustic sealant and smoke seal for construction joints and through-penetrations. Metacaulk 150+ is a water based, non-sag caulking grade sealant that is easy to apply as well as retrofit. It cures to an elastomeric seal that is suitable where dynamic movement is expected. In the event of a fire, Metacaulk 150+ will prevent the spread of flames, smoke, hot gases and water through joint openings and through-penetrations. No dilution or mixing is required for use. No special skills are necessary for installation. Metacaulk 150+ is applied with a conventional caulking gun, bulk loading gun or can be troweled from the pail. For large applications, it can be pumped directly from the pail. Metacaulk 150+ systems are rated for up to 4 hours in accordance with ASTM E814 (UL 1479) and ASTM E1966 (UL 2079) test standards. Metacaulk 150+ is protected in a wet stage as well as in a dry stage against mold growth with a combination of biocides.

**Applications**

Metacaulk 150+ can be used in interior applications as a general purpose fire rated sealant, acoustic sealant and smoke seal for construction joints on both vertical and horizontal surfaces. Metacaulk 150+ is also an excellent fire rated acoustical sealant and can be used in areas under constant vibration or movement. Metacaulk 150+ can also be used on various penetrations such as EMT, telephone & power cables in concrete floors and walls, gypsum walls as well as wood floors. Use Metacaulk 150+ to prevent the spread of fire and smoke through joints in fire rated gypsum wallboard partitions, concrete block or concrete walls and/or concrete or corrugated steel deck floor/ceiling assemblies.

Characteristics | Features

- Water based
- Excellent freeze-thaw
- Flexible set
- Paintable
- VOC compliant
- Safe and easy to use
- 3 Year shelf life
- STC rating 65

Packaging

Code	Size	Qty. per Case	Dimensions (in)	Cubic Feet
66648	10.3 oz cartridge	12	8x6x12	.34
66385	20.2 oz foil pack	12	9x14x7	.51
66383	30 oz. cartridge	12	11x9x17	.97
66389	5 Gallon	1	13 dia x14	1.08

Installation Data

Install Metacaulk 150+ using standard caulking techniques or trowel from pails. Metacaulk MC 150+ may also be pumped from the pails. When damming materials are needed, use only materials approved for the specific application.

TYPICAL GYPSUM WALLBOARD INSTALLATION

- Step 1 Cut opening in wall.
 - Step 2 Clean penetration opening and surfaces from loose debris, dirt, oil and wax.
 - Step 3 If required, install sleeve or wire mesh and backing material.
 - Step 4 Gun the sealant as required to the specified depth. Trowel surface flush with wall.
- Consult UL Product iQ for complete instructions and system listings.

Testing Data

For specific test criteria, refer to UL's Fire Resistance Directory or call RectorSeal.

Metacaulk 150+ was tested at positive pressure with a minimum 0.01 inches of water (2.5 Pa) and in accordance with ASTM E814 (UL 1479), ASTM E1966 (UL 2079).

Sound Transmission Class (STC) 65 - The test was performed in accordance with ASTM E90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

Tested by a third party independent laboratory to the ASTM G21 standard with Fungal Growth Rating results of zero.



FBC™ System Compatible indicates that this product has been tested, and is monitored on an on-going basis, to assure its chemical compatibility with FlowGuard Gold®, BlazeMaster® and Corzan® pipe and fittings.

FBC, FlowGuard Gold®, BlazeMaster® and Corzan® are licensed trademarks of The Lubrizol Corporation.

Inspection & Repair

RectorSeal recommends that a firestop system inspection be conducted during installation of the material in accordance with ASTM E2174 and ASTM E2393. In the event post-installation inspection and destructive sampling is necessary, RectorSeal advises repairing the damaged firestop system by replacing any material that was removed or damaged with the same product originally installed, and ensuring the assembly matches the original firestop listing. RectorSeal advises, that due to the chemical nature of firestop products and sealants, material depth should be determined by measuring the points of adhesion at the substrate bond area as sealants may decrease in size during the curing process.

Storage & Handling

Metacaulk 150+ should be stored between 35°F (2°C) and 120°F (49° C) to obtain a 3 year shelf life.

NOTE: Do not dilute, no mixing is required. Best if protected from freezing. If freezing occurs, thaw completely before using. Keep products stored under protective cover in original containers.

Limitations

Metacaulk 150+ is not designed to be used in areas under continuous immersion or in areas which would be continuously wet. Metacaulk 150+ should not be used against hot uninsulated surfaces above 300°F (149°C).

Material Properties

Asbestos Fillers	None
Solvents	None
Hazardous Ingredients	None
Application	Caulking Gun or Trowel
Application Temperature between	40°F - 120°F 4°C - 49°C
Color	Red
Cure Time	3 to 4 weeks (at 77°F/25°C)
Density	12.5 lbs/gal
Elastomeric	Yes
Freeze/Thaw	Excellent
Skin Over Time	30 min. (at 77°F/25°C)
pH Value	7 to 8

Volume Coverage:	
for 10.3 oz. tube	(304 ml) 18 cu. in.
for 20.2 oz. foil packs	(597 ml) 36 cu. in (
for 30 oz. tube	(887 ml) 54 cu. in.
for 5 gallon	(18.9 liter) 1155 cu. in..

VOC	Negligible
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ASTM E84, UL 723 Tunnel Test	
Flame Spread	10
Smoke Index	0

Cautions

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC-DAY OR NIGHT 1-800-424-9300.

PRECAUTIONS: Do not take internally. May be harmful if swallowed. May cause eye and skin irritation if prolonged or repeated contact occurs. Wash after handling. **FIRST AID:** For any overexposure, get immediate medical attention after first aid is given. **EYES**-Flush 15 minutes with clean water. **SKIN**-Wash with soap and water. **INHALATION**-Remove to fresh air. **INGESTION**-Only if conscious, give large amounts of water and INDUCE VOMITING. **FIRE AND SPILLS:** Use water fog, CO₂, foam, or dry chemicals. Wipe up spills to prevent footing hazard. Clean up with scrapers and water. **STORAGE AND HANDLING:** Store away from heat sources. Keep container closed. Do not reuse empty container. **KEEP OUT OF REACH OF CHILDREN.**

For additional information, refer to Safety Data Sheet.

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RECTORSEAL



PRODUCT DATA SHEET

For list of systems see metacaulk.com.

METACAULK® PASS-THRU DEVICE

Engineered Firestop Sleeve

1. Product Description

Metacaulk® Pass-Thru Devices are pre-firestopped and are designed to allow electrical, data or communication cables and pipes to penetrate fire-rated floors and walls. They consist of a square or round section steel sleeve which contains intumescent material. When exposed to heat, intumescent materials expand to form a insulating char plug which restricts the spread of flame, toxic gases, smoke and water. Each device is supplied with 2 end plugs which are inserted after the cable or pipe has been installed to reduce smoke leakage. The devices have an excellent "L" air leakage rating. The devices can be opened for easy installation, retrofit or removal of cables. The devices are installed using specially designed mounting brackets which clamp onto the device and require no additional attachment to the wall or floor.

Metacaulk® Pass-Thru Device Features

- Easy to install and change cables
- Simplifies retrofit & multiple applications
- Ideal for future expansion
- For use in concrete floors & walls, drywall & wooden floors

2. Material Properties

Dimensions 2.5" x 2.5"
4" x 4"

Length 10"

Shell construction 22 gauge steel

Activation of Intumescence:

Expansion Begins 375°F (190° C)
Expansion Greatest 575° (302° C) to 1100°F (593° C)

3. Applications

Metacaulk® Pass-Thru Devices are used to seal cables or pipes that penetrate thru 1 and 2 hour fire-rated walls and floors. Suitable for most types of construction including concrete floors, concrete walls, concrete block walls and gypsum drywall, and rated wooden floors. Individual devices can be assembled together to form double, triples and sixplex units using mounting brackets (purchased separately). Ideal for use in data, communications and electrical supply cables.

4. Installation Data New Cabling Installations

1. Select the size of Pass-Thru Device required.
2. Cut or form a suitable size opening in the floor or wall, ensuring that any annular space between the Pass-Thru device and the opening is within the limits defined by the tested systems.
3. Slide the Pass-Thru device into the previously formed opening,

making sure that it is positioned centrally within the thickness of the floor or wall, ensuring that an equal length protrudes from either side of the opening.

4. Pass-Thru Devices are installed using friction fitted Mounting Brackets. Using the correct size Mounting Bracket, open bracket and fit over each end of the Pass-Thru device (i.e. 1 bracket on each side of wall). Slide each bracket until it is flush with the wall or floor.
5. Fit the supplied fasteners thru the pre-formed holes in the open corner of each bracket and tighten securely in position. Ensure that Mounting Brackets are correctly fitted on BOTH SIDES of wall or floors. Once the mounting brackets are secured in position on the Pass-Thru Devices, they DO NOT need to be separately fixed to the wall or floor.
6. Remove the supplied end plugs and pass the cables or pipes through the Pass-Thru device as required. Install end plugs and re-fit into both ends of Pass-Thru Device around the cables or piping.

Existing Cable Installations

1. Select the correct size of Pass-Thru Device to suit the existing opening. If necessary enlarge the opening to allow for installation, ensuring that any annular space between the Pass-Thru Device and the opening will be within the limits defined by the tested systems.
2. Remove the top of the Pass-Thru Device and the supplied end plugs. Fit the device around the existing cables or pipes and replace the top.



3. Slide the Pass-Thru Device along the pipe or cable into the opening, making sure that it is positioned centrally within the thickness of the floor or wall, ensuring that an equal length protrudes from either side.
4. Pass-Thru Devices are installed using friction fitted Mounting Brackets. Use the correct size Mounting Bracket. Open bracket and fit over each end of the Pass-Thru Device (i.e. 1 bracket on each side of wall). Slide each bracket until it is flush with the wall or floor.
5. Fit the supplied fasteners thru the pre-formed holes in the open corner of each bracket and tighten securely in position. Ensure that Mounting Brackets are correctly fitted on BOTH SIDES of wall or floors. Once the mounting brackets are secured in position on the Pass-Thru Devices, they DO NOT need to be separately fixed to the wall or floor.
6. Install end plugs and re-fit into both ends of Pass-Thru Device around the cables or piping.

Consult UL Directory for complete instructions and system listings. be used for the remaining area.

5. Testing Data

Metacaulk® Pass-Thru Devices are classified by Underwriters Laboratories, tested in accordance with ASTM E814 and UL 1479. For specific test criteria, see the UL Fire Resistance Directory or call RectorSeal.

6. Storage & Handling

Metacaulk® Pass-Thru Devices should

be stored in a dry place and stored in original container.

7. Availability

Metacaulk® Pass-Thru Devices are available in 2 1/2" & 4" square and 2" & 4" round sizes.

8. Limitations

Not for use in outdoor environments where long-term exposure to rainfall or saltwater spray may occur. No other limitations know if used as directed.

9. Cautions

PRECAUTIONS: Do not take internally.
May be harmful if swallowed.
KEEP OUT OF REACH OF CHILDREN.

**For additional technical service,
call: 713-263-8001 or 1-800-231-3345
fax: 713-263-7577 or 1-800-452-2824**

Manufactured in the USA

RECTORSEAL, LLC
2601 SPENWICK DRIVE, TEXAS 77055
WWW.RECTORSEAL.COM
WWW.METACAULK.COM

10. LIMITED WARRANTY

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Suggestions and recommendations covering the use of our products are based on our past experience and laboratory findings. However, as we have no control as to the methods and conditions of application, we only assume responsibility for the uniformity of our products within manufacturing tolerances.

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PRODUCT DATA SHEET

METACaulk® BOX GUARD™
Fire-rated Insert for Electrical Boxes**Description**

Metacaulk® Box Guard™ is a single component fire rated insert for use with electrical boxes. It is inserted on the inside back wall of an electrical box, and is a highly intumescent firestop material. When exposed to fire, Metacaulk® BOX GUARD™ will expand forming a char that will seal off the opening and prevent the spread of flames and limit the temperature rise on the un-exposed surfaces. Metacaulk® BOX GUARD™ is applied by hand, and must comply with NEC 314.16 (formerly 370.16) or other applicable codes. U.S. Patent No. 6,207,085 & 6,252,167.

**Applications**

Use Metacaulk® BOX GUARD™ on inside back panel of electrical boxes to maintain the integrity of fire rated wall assemblies restricting the passage of flames and limiting the temperature rise on the unexposed surfaces. When Metacaulk® BOX GUARD™ is used as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 inches.

Characteristics | Features

- Easy to install
- Cost effective
- Highly intumescent
- Adheres to back of electrical box
- Non-conductive
- Dielectric Breakdown Voltage 22V/mil (ASTM D149)
- STC Rating 53

Packaging

Code	Size	Qty. per Case	Dimensions (in)	Cubic Feet
66366	Single 13/16" x 2-13/16" x 1/4" (47 mm x 71 mm x 6 mm)	50	10x4x4	.09
66367	Double 3-3/4" x 3-11/16" x 1/4" (94 mm x 95 mm x 6 mm)	50	4x8x8	.19
66369	Double for 5.S box 4-3/8" x 4-3/8" x 1/4" (111 mm x 111 mm x 6 mm)	50	8x8x5	.19

Installation Data

Metacaulk® BOX GUARD™ is easy to install. Make sure rear surface is clean, dry and not contaminated. Remove protective paper from tape and stick pad to inside back wall of electrical box*. Center pad from top and bottom of box. Install switch, or outlet. Use the single pad for a single box (2" x 4"), and double pad for double box 4" x 4", and 4 3/8" x 4 3/8" pad for 4 11/16" x 4 11/16" box. **Make sure installation complies with NEC 314.16 (formerly 370.16) or other applicable codes.**

Consult UL Directory for complete instructions and system listings.

*If necessary, a maximum 3/8" hole may be created or the pad may be slit from one edge to allow easier access to the electrical box ground screw.

NOTE: Not to be used on plastic boxes. For additional information refer to UL Directory. Retain a copy of the Product Data Sheet for review by the inspector.

Testing Data

Metacaulk Box Guard is classified by Underwriters Laboratories, Inc. under Wall Opening Protective Material as found in the Fire Resistance Directory. For specific test criteria see UL Product iQ or call RectorSeal.

Metacaulk Box Guard was tested to UL 263/ ASTM E119 standard, "Fire Tests of Building Construction and Materials". It meets the requirements of all model building codes.

Complies to Required Environmental Exposure Testing of Accelerated Aging and High Humidity as per UL 1479 Fire Test of Through-Penetration Firestops.

Sound Transmission Class (STC) 53 - The test was performed in accordance with ASTM E90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions & Elements.



Material Properties

Asbestos Fillers	None
Solvents	None
Hazardous Ingredients	None
Color	Black

ASTM E84, UL 723 Tunnel Test	
Flame Spread	5
Smoke Index	5

Inspection & Repair

RectorSeal recommends that a firestop system inspection be conducted during installation of the material in accordance with ASTM E2174 and ASTM E2393. In the event post-installation inspection and destructive sampling is necessary, RectorSeal advises repairing the damaged firestop system by replacing any material that was removed or damaged with the same product originally installed, and ensuring the assembly matches the original firestop listing. RectorSeal advises, that due to the chemical nature of firestop products and sealants, material depth should be determined by measuring the points of adhesion at the substrate bond area as sealants may decrease in size during the curing process

Storage & Handling

Metacaulk Box Guard should be stored in a dry environment. A stock rotation program is recommended.

Limitations

To be used only in the tested configurations or as recommended by RectorSeal.

Cautions

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC-DAY OR NIGHT 1-800-424-9300.

PRECAUTIONS: Do not take internally. May be harmful if swallowed. May cause eye and skin irritation if prolonged or repeated contact occurs. Wash after handling. **FIRST AID:** For any overexposure, get immediate medical attention after first aid is given. **EYES**-Flush 15 minutes with clean water. **SKIN**-Wash with soap and water. **INHALATION**-Remove to fresh air. **INGESTION**-Only if conscious, give large amounts of water and INDUCE VOMITING. **FIRE AND SPILLS:** Use water fog, CO₂, foam, or dry chemicals. Wipe up spills to prevent footing hazard. Clean up with scrapers and water. **STORAGE AND HANDLING:** Store away from heat sources. Keep container closed. Do not reuse empty container. **KEEP OUT OF REACH OF CHILDREN.**

For additional information, refer to Safety Data Sheet.

Limited Warranty

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RECTORSEAL

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PRODUCT DATA SHEET

METACAULK® COVER GUARD™
Fire-rated Gasket for Electrical Boxes**Description**

Metacaulk® Cover Guard™ is a single component fire rated gasket for use with electrical boxes when addressing steel electrical box penetrations in fire rated assemblies (the "24 inch rule"). It is mounted on the inside of the cover plate and installed at the same time as the cover plate, covering the opening and providing the necessary fire protection. When exposed to heat, Metacaulk Cover Guard's highly intumescent nature causes it to expand forming a char that will seal off the opening and prevent the spread of flames and limit the temperature rise on the unexposed surfaces. Metacaulk Cover Guard is applied by hand, does not take up volume in the electrical box and is a labor saving replacement for putty pads in normal applications. U.S. Patent No. 6,207,085; 6,252,167 & 7,348,484.

**Applications**

Metacaulk Cover Guard is used when electrical boxes are installed in rated walls facing opposite directions and horizontally separated by less than 24". Metacaulk Cover Guard can also be used as a solution for standard electrical boxes when the 100 square inch rule is violated. Metacaulk Cover Guard is UL tested and can be used with both metal and plastic cover plates. Tested conditions for one and two hours.

Characteristics | Features

- Easy to install
- Cost effective
- Great for safe retrofit applications
- Reduces sound transmission

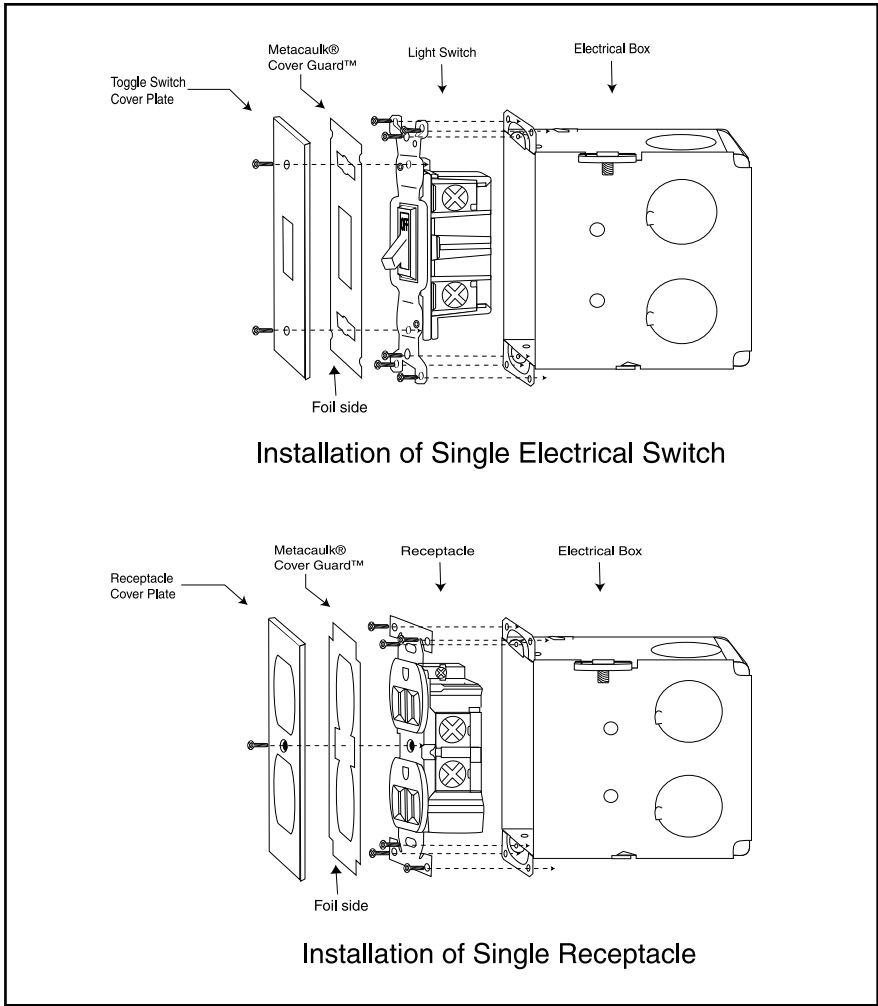
Packaging

Code	Size	Qty. per Case	Dimensions (in)	Cubic Feet
66270	Double Receptacle	50	5x5x5	.07
66272	Single Receptacle	50	5x5x5	.07
66274	Double Switch	50	5x5x5	.07
66276	Single Switch	50	5x5x5	.07
66265	Single Decor	50	5x5x5	.07
66266	Double Decor	50	5x5x5	.07

Installation Data

Material Properties

Asbestos Fillers	None
Solvents	None
Hazardous Ingredients	None
Color	Black
ASTM E84, UL 723 Tunnel Test	
Flame Spread	5
Smoke Index	5



- Step 1** Place aluminum foil side of Metacaulk Cover Guard against inside of electrical face plate.
- Step 2** Do not remove any material, film or foil from Metacaulk Cover Guard™.
- Step 3** Install face plate with Metacaulk Cover Guard over switch or receptacle and secure face plate with screws. Consult UL Online Certifications Directory for complete instructions and system listings.

Testing Data

Metacaulk Cover Guard is classified by Underwriters Laboratories, Inc. under Wall Opening Protective Material as found in the Fire Resistance Directory. For specific test criteria see UL Product iQ or call RectorSeal.

Metacaulk Cover Guard was tested to UL 263/ ASTM E119 standard, "Fire Tests of Building Construction and Materials". It meets the requirements of all model building codes. Tested to CAN/ULC - S115 (Fire Tests of Firestop Systems) test standards.

Complies to Required Environmental Exposure Testing of Accelerated Aging and High Humidity as per UL 1479 Fire Test of Through-Penetration Firestops.

Sound Transmission Class (STC) 54 - The test was performed in accordance with ASTM E90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions & Elements.



Inspection & Repair

RectorSeal recommends that a firestop system inspection be conducted during installation of the material in accordance with ASTM E2174 and ASTM E2393. In the event post-installation inspection and destructive sampling is necessary, RectorSeal advises repairing the damaged firestop system by replacing any material that was removed or damaged with the same product originally installed, and ensuring the assembly matches the original firestop listing. RectorSeal advises, that due to the chemical nature of firestop products and sealants, material depth should be determined by measuring the points of adhesion at the substrate bond area as sealants may decrease in size during the curing process

Storage & Handling

Metacaulk Cover Guard should be stored in a dry environment. A stock rotation program is recommended.

Limitations

To be used only in the tested configurations or as recommended by RectorSeal.

Cautions

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC-DAY OR NIGHT 1-800-424-9300.

PRECAUTIONS: Do not take internally. May be harmful if swallowed. May cause eye and skin irritation if prolonged or repeated contact occurs. Wash after handling. **FIRST AID:** For any overexposure, get immediate medical attention after first aid is given. **EYES**-Flush 15 minutes with clean water. **SKIN**-Wash with soap and water. **INHALATION**-Remove to fresh air. **INGESTION**-Only if conscious, give large amounts of water and INDUCE VOMITING. **FIRE AND SPILLS:** Use water fog, CO₂, foam, or dry chemicals. Wipe up spills to prevent footing hazard. Clean up with scrapers and water. **STORAGE AND HANDLING:** Store away from heat sources. Keep container closed. Do not reuse empty container. **KEEP OUT OF REACH OF CHILDREN.**

For additional information, refer to Safety Data Sheet.

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RECTORSEAL

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PRODUCT DATA SHEET

METACALK® PUTTY & PUTTY PADS

Fire-rated stick or pad

Description

Metacalk® Putty is a mold-able non-curing one component fire-rated material for through-penetration firestop systems. Metacalk® Putty will intumesce when heated, forming an insulating char. In the event of a fire, Metacalk® Putty will prevent the spread of flames, smoke, gas and water through penetration openings. Metacalk® Putty is applied by hand. Mixing is never required and no special skills are necessary for installation.

**Applications**

Use Metacalk® Fire Rated Putty for various penetrations: Small Openings, EMT Pipe, Steel, Conduit, and Cabling, (Telephone, Power, Communications) and metal or non-metallic Electrical Boxes.

Characteristics | Features

- Expands when exposed to fire
- No volatile solvents
- No asbestos fillers
- Single Component
- Applied by hand
- Adheres to all common building surfaces
- STC rating 60- Pads

Packaging

Code	Size	Qty. per Case	Dimensions (in)	Cubic Feet
66345	18 cubic in	12	5x11x8	.25
66340	6x7x1/8	20	8x7x4	.13
66335	7x7x1/8	20	8x8x4	.15

Installation Data

PUTTY: Penetrating items should be firmly anchored. Clean opening of dust, dirt and oil. Refer to RectorSeal® application guide or current UL directory for selection of proper system design detailing depths of putty and backing material.

PUTTY PADS: Remove liner from one side of pad (Step 1). Align with the side of the box partially over-lapping the stud and adhere. Work pad to the opposite side of the box and over the edges (Step 2). If wall membrane is in place, pack putty into gaps between box and gypsum board slightly overlapping inner wallboard surface. If membrane is to be installed after pad installation, overlap front edge of box so that putty will be compressed around edges of box as wallboard is installed. Cut slits in pad to fit around conduit or cables (Step 3). Press pad to surface of top, bottom, and sides of box (Step 4). Trim excess at corners and apply to conduit fittings connected to the box. Remove exposed liner. Optionally, putty may be packed into inside of conduit fittings to prevent passage of smoke. Only one putty pad thickness (1/8") is needed for a 1 or 2 hour rating.

Testing Data

Metacaulk Fire-rated putty are classified by Underwriters Laboratories as a Fill, Void or Cavity Material. Metacaulk Fire-rated Putty Pads are classified as a wall opening protective material. For specific test criteria see UL Product iQ or call RectorSeal. Metacaulk Firestop Pillows were tested to a positive pressure at a minimum .01 inches of water in accordance with UL 1479 and ASTM E814 test standards. Tested to CAN/ULC- S115 (Fire Tests of Firestop Systems) test standards.



Inspection & Repair

RectorSeal recommends that a firestop system inspection be conducted during installation of the material in accordance with ASTM E2174 and ASTM E2393. In the event post-installation inspection and destructive sampling is necessary, RectorSeal advises repairing the damaged firestop system by replacing any material that was removed or damaged with the same product originally installed, and ensuring the assembly matches the original firestop listing. RectorSeal advises, that due to the chemical nature of firestop products and sealants, material depth should be determined by measuring the points of adhesion at the substrate bond area as sealants may decrease in size during the curing process.

Storage & Handling

Metacaulk® Fire Rated Putty is not to be stored in areas where the temperatures exceed 120°F or drop below 0°F. Best if protected from freezing. If freezing occurs, thaw completely before using. Keep products dry and stored under protective cover in their original containers. Products have a minimum shelf life of 2 years subject to re-inspection thereafter. A stock rotation program is recommended.

Limitations

To be used only in the tested configurations or as recommended by RectorSeal. Do not expose to water.

Cautions

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC-DAY OR NIGHT 1-800-424-9300.

PRECAUTIONS: Do not take internally. May be harmful if swallowed.

KEEP OUT OF REACH OF CHILDREN.

For additional information, refer to Safety Data Sheet.

Material Properties

Asbestos Fillers	None
Solvents	None
Hazardous Ingredients	None

Activation of Intumescence:

Expansion Begins	220°F (104°C)
------------------	---------------

Color	Red
Cure Time	None

ASTM E 84, UL 723 Tunnel Test

Flame Spread	5
Smoke Index	5

Limited Warranty

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RECTORSEAL

A CSW Industrials Company

PRODUCT DATA SHEET

METACAULK® JOINT STRIP
Flexible Material for up to 2" Wide Joints**Description**

A flexible, highly intumescent firestop material used in concrete and masonry control floor and wall joints up to 2" (51 mm) wide. It forms a strong char that prevents the passage of flame, smoke, and hot gases between control joints. Can be used with plastic pipe penetrations. Metacaulk Joint Strips are ideal for stadium construction, tilt up panels, curtain wall panels and all concrete and masonry construction joint applications where a fire rated control joint is required. Can be used with any UL listed sealant.

**Applications**

Install Metacaulk Joint Strip along with any normal backer rod, cover it with approved architectural caulk or sealant, and you have a fire rated control joint. No longer do you need to use firestop caulks that are difficult to install and impossible to paint over. No need for mineral wool or expensive, difficult to install backing materials. Metacaulk Joint Strip has the capability for 1, 2, 3 and 4 hour assembly ratings, refer to the UL systems for specific installation instructions.

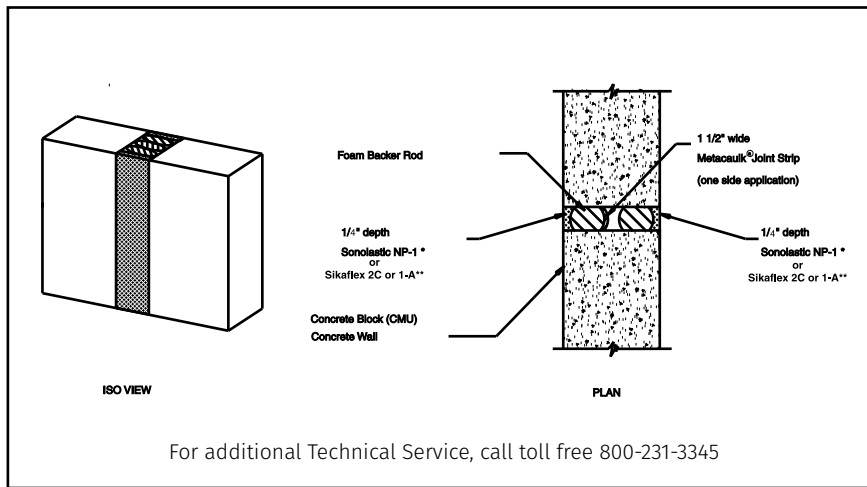
Characteristics | Features

- Easy to install
- Versatile, flexible
- Highly intumescent (multiple staged)
- Forms a strong char to prevent passage of flame, smoke and hot gases

Packaging

Code	Size	Qty. per Case	Dimensions (in)	Cubic Feet
66700	1"x82'	6	10x10x10	.58
66701	1.5"x82'	4	10x10x10	.58
66702	2.5"x82'	4	10x10x10	.58
66703	3"x82'	2	10x10x10	.58
66704	2"x82'	3	10x10x10	.58
66705	4"x82' w/ adhesive backing	2	10x10x10	.58

Installation Data



Step 1 Clean all surfaces in joint area to remove loose debris, dirt, oil, wax, grease, old caulking, etc.

Step 2 For floor applications, install a separate base section of backer rod recessed approximately 2" down from the top of the floor. Bend and friction fit Metacaulk® Joint Strip longitudinally into joint using the backer rod as the transport mechanism. Push into joint far enough to accommodate the required depth of caulk.

Step 3 Gun, trowel, or pump approved sealants to minimum 1/4" depth on both sides of wall or top of floor over the backer rod.

Step 4 Trowel sealant to the desired finish. See tested UL systems for complete installation instructions.

No longer do you need to use firestop caulks that are difficult to install and impossible to paint over. No need for mineral wool or expensive, difficult to install backing materials. Metacaulk® Joint Strip has the capability for 1, 2, 3 and 4 hour assembly ratings, refer to the UL systems for systems for specific installation instructions.

Testing Data

Metacaulk® Joint Strip is UL Classified and tested to UL 2079.

Degree of intumescence per DIN standard
≥18x with weight imposed
≥ 37x free intumescenting



Tested to CAN/ULC-S115 (Fire Tests of Firestop Systems) test standards. Complies to Required Environmental Exposure Testing of Accelerated Aging and High Humidity as per UL 1479 Fire Test of Through-Penetration Firestops.

Class II and III Movement 25% compression & extension

Inspection & Repair

RectorSeal recommends that a firestop system inspection be conducted during installation of the material in accordance with ASTM E2174 and ASTM E2393. In the event post-installation inspection and destructive sampling is necessary, RectorSeal advises repairing the damaged firestop system by replacing any material that was removed or damaged with the same product originally installed, and ensuring the assembly matches the original firestop listing. RectorSeal advises, that due to the chemical nature of firestop products and sealants, material depth should be determined by measuring the points of adhesion at the substrate bond area as sealants may decrease in size during the curing process.

Material Properties

Carcinogenic Fillers	None
Solvents	None
Color	Dark Gray
ASTM E 84, UL 723 Tunnel Test ASTM E 1966, UL 2076	
Flame Spread	5
Smoke Index	5

Storage & Handling

Metacaulk Joint Strip should be stored between 35°F (2°C) and 120°F (49°C). Keep products stored under protective cover, in their original containers. A stock rotation program is recommended. Shelf life of the product is indefinite.

Limitations

To be used only in the tested configurations or as recommended by RectorSeal.

Cautions

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC-DAY OR NIGHT 1-800-424-9300

PRECAUTIONS: Do not take internally. May be harmful if swallowed. May cause eye and skin irritation if prolonged or repeated contact occurs. Wash after handling. **FIRST AID:** For any overexposure, get immediate medical attention after first aid is given. **EYES**-Flush 15 minutes with clean water. **SKIN**-Wash with soap and water. **INHALATION**-Remove to fresh air. **INGESTION**-Only if conscious, give large amounts of water and INDUCE VOMITING. **FIRE AND SPILLS:** Use water fog, CO₂, foam, or dry chemicals. Wipe up spills to prevent footing hazard. Clean up with scrapers and water. **STORAGE AND HANDLING:** Store away from heat sources. Keep container closed. Do not reuse empty container. **KEEP OUT OF REACH OF CHILDREN.**

For additional information, refer to Safety Data Sheet.

Limited Warranty

RectorSeal, LLC makes the Limited Express Warranty that when the instructions for storage and handling of our products are followed we warrant our products to be free from defects. THIS LIMITED EXPRESS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ANY OTHER OBLIGATION ON THE PART OF RectorSeal, LLC. The sole remedy for breach of the Limited Express Warranty shall be the refund of the purchase price. All other liability is negated and disclaimed, and RectorSeal, LLC shall not be liable for incidental or consequential damages.



Manufactured by **RectorSeal® LLC • 2601 Spenwick Drive, Houston, TX 77055, USA • 800-231-3345 • Fax 800-441-0051 • RectorSeal.com**

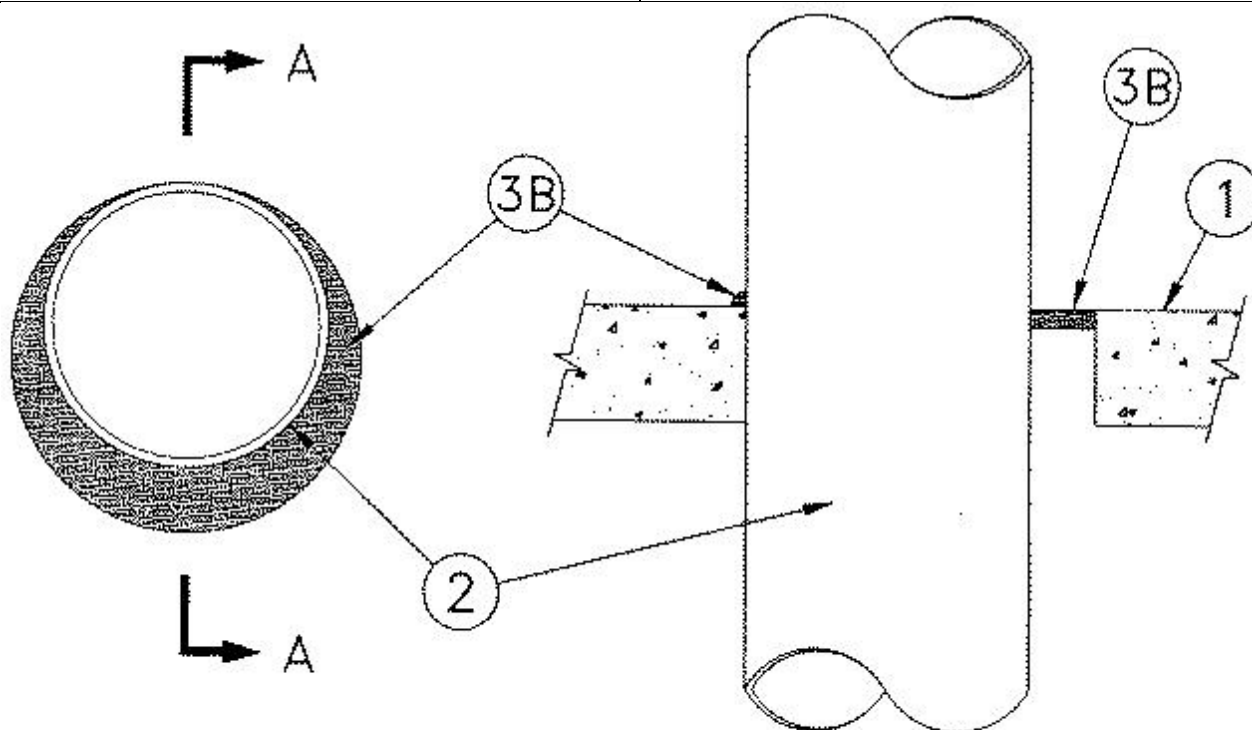
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System No. C-AJ-1235

July 15, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 and 3 Hr (See Item 3B)	F Rating — 2 and 3 Hr (See Item 3B)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft	FH Rating — 2 and 3 Hr (See Item 3B)
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — Less Than 1 CFM/sq ft



SECTION 'A-A'

1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced normal weight (140-150 pcf or 2200-2400 kg/m³) concrete. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units***. **Wall may also be constructed of any UL Classified Concrete Blocks***. Max diam of opening is 26 in. (660 mm). If the firestop system is installed within a hollow-core hollow-core precast concrete unit, max diam of opening shall be 7 in. (178 mm).

See **Concrete Block** (CAZT) and **Precast Concrete Units** (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

1A. Metallic Sleeve — (Not shown, Optional) — Nom 8 in. (203 mm) diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces. The use and the max diam of the steel sleeve is dependent upon the type and max diam of the through penetrant (Item 3) and type and min fill material thickness as tabulated in Item 3B.

2. Through Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe, conduit or tubing and the periphery of the opening shall be min 0 in. (point contact) to a max 1-7/8 in. (48 mm). Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe** — Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 24 in. (610 mm) diam (or smaller) cast or ductile iron pipe.

C. **Conduit** — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT) or nom 6 in. (152 mm) diam (or smaller) steel conduit.

D. **Copper Tubing** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. Firestop System — The firestop system shall consist of the following:

A. **Packing Material** — Min 4 pcf (64 m³) mineral wool batt insulation firmly packed into opening or min 1 in. (25 mm) diam backer rod friction fitted into the opening as a form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material. When the floor is constructed of hollow-core precast concrete units, packing material shall be recessed from both surfaces of floor to accommodate the required thickness of fill materials. In floors, the packing material may be removed after the fill material cures.

B. **Fill, Void or Cavity Material* — Sealant** — Fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall. At the point contact location between through penetrant and concrete, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the concrete/through penetrant interface on the top surface of floor and on both surfaces of wall. When the floor is constructed of hollow-core precast concrete units, fill material shall be installed symmetrically on both sides of floor, flush with both floor surfaces. The F Rating of the firestop system is dependent upon the use and the max diam of the steel sleeve, type and max diam of the through penetrant and type and min fill material thickness as tabulated below:

Use of Steel Sleeve	Max Diam of Steel Sleeve In.	Type of Through Penetrant	Max Diam of Through Penetrant In.	Type of Fill Mtl	Min Fill Mtl Thkns In.	F Rating Hr
Not permitted	-	Steel or Iron Pipe	24 (610)	FS1900, Metacaulk 1000, Metacaulk 350i, Biostop 350i or Biostop 500+	1 (25)	3
Permitted	8 (203)	Steel or Iron Pipe	6 (152)	FS1900, Metacaulk 1000, Metacaulk 350i, Biostop 350i or Biostop 500+	1 (25)	3
Permitted	8 (203)	Copper Pipe,	6 (152)	FS1900, Metacaulk 1000, Metacaulk 350i, Biostop 350i or Biostop 500+	1 (25)	3
		Copper Tube or				
		Steel Conduit				
Permitted	6 (152)	Steel EMT	4 (102)	FS1900, Metacaulk	1 (25)	3

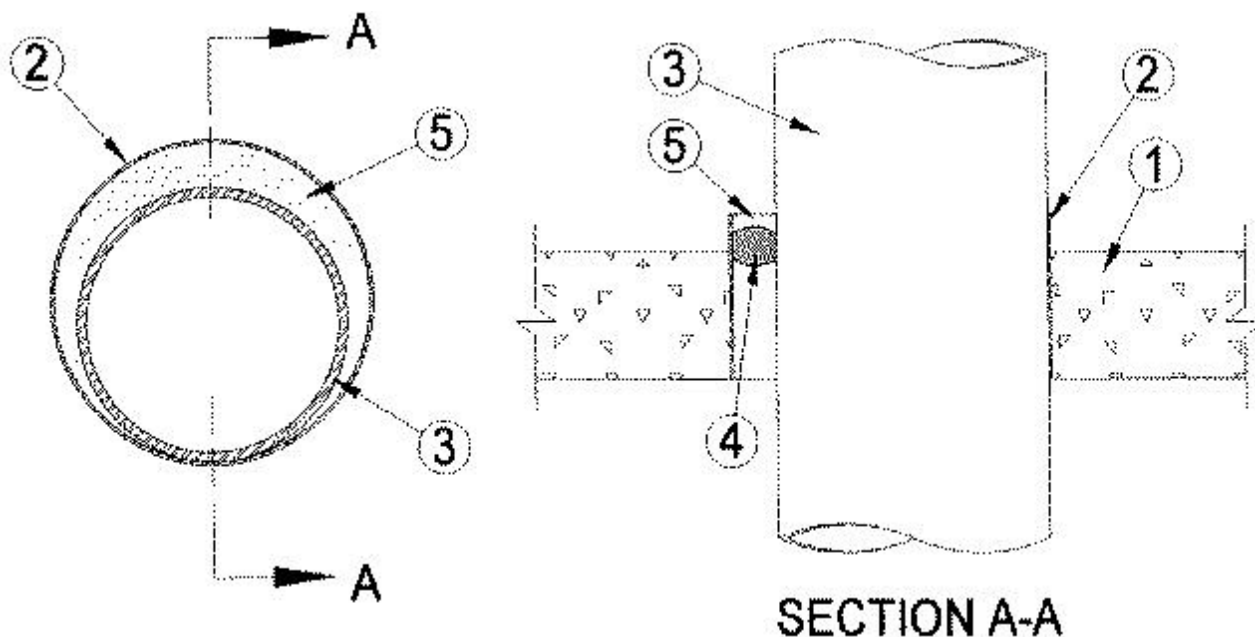
				1000, Metacaulk 350i, Biostop 350i or Biostop 500+		
Permitted	6 (152)	Steel or Iron Pipe	4 (102)	FS1900, Metacaulk 1000, Metacaulk 350i, Biostop 350i or Biostop 500+	1/2 (13)	2
Permitted	6 (152)	Copper Pipe,	4 (102)	FS1900, Metacaulk 1000, Metacaulk 350i, Biostop 350i or Biostop 500+	1/2 (13)	2
		Copper Tube or				
		Steel Conduit				
Permitted	6 (152)	Steel EMT	4 (102)	FS1900, Metacaulk 1000, Metacaulk 350i, Biostop 350i or Biostop 500+	1/2 (13)	2
Not permitted	-	Steel or Iron Pipe	24 (610)	FS900/FS900+, Biostop BF 150+, Metacaulk MC 150+	1/2 (13)	3
Permitted	8 (203)	Steel or Iron Pipe	6 (152)	FS900/FS900+, Biostop BF 150+, Metacaulk MC 150+	1/2 (13)	3
Permitted	8 (203)	Copper Pipe,	6 (152)	FS900/FS900+, Biostop BF 150+, Metacaulk MC 150+	1/2 (13)	3
		Copper Tube or				
		Steel Conduit				
Permitted	6 (152)	Steel EMT	4 (102)	FS900/FS900+, Biostop MC 150+, Metacaulk MC 150+	1/2 (13)	3

RECTORSEAL — FlameSafe® FS1900, Flamesafe® FS900, FlameSafe® FS900+, Metacaulk MC 150+, Metacaulk 1000, Metacaulk 350i, Biostop BF 150+, Biostop 350i or Biostop 500+..

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

**System No. C-AJ-1261**

October 17, 2007

F Rating — 3 Hr**T Rating — 0 Hr**

1. **Floor or Wall Assembly** — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf - 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Floor may also be constructed of any 6 in. (152 mm) thick UL Classified hollow-core Precast Concrete Units*.

See **Concrete Blocks** (CAZT) and **Precast Concrete Units** (CFTV) categories for names of manufacturers.

2. **Steel Sleeve** — (Optional for pipes 12 in. (305 mm) or smaller) - Nom 22 in. (559 mm) diam (or smaller) cylindrical sleeve formed from min 1/8 in. (3 mm) thick steel. Inside diam of steel sleeve to be min 1 in. (25 mm) greater than outside diam of through penetrant (Item 3). Length of steel sleeve to be 1-1/2 in. (38 mm) greater than thickness of floor or 3 in. (76 mm) greater than thickness of wall. Steel sleeve to project 1-1/2 in. (38 mm) beyond top surface of floor or both sides of wall. When precast concrete units are used, the sleeve shall not exceed nom 6 in. (152 mm) diam.

3. **Through Penetrant** — One metallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between the through penetrant and the periphery of the steel sleeve shall be min 0 in. (point contact) to a max of 1-3/4 in. (44 mm). Through penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipe or conduit may be used:

A. **Steel Pipe** — Nom 20 in. (508 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 20 in. (508 mm) diam (or smaller) cast or ductile iron pipe.

C. **Steel Conduit** — Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit.

D. **Copper Tube** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

4. **Packing Material** — (Optional) — Polyethylene backer rod firmly packed into annular space as a permanent form. Packing material to be recessed min 1/2 in. (13 mm) from top of sleeve in floor or from both ends of sleeve in wall as required to accommodate the caulk fill material (Item 5).

5. **Fill, Void or Cavity Material*** — **Caulk** — For pipes larger than 12 in. (305 mm), applied to fill the annular space to a min depth of 1/2 in. (13 mm) flush with the top edge of steel sleeve in floor or both ends of steel sleeve in wall. For pipes

in. (305 mm) and less, sealant applied to fill the annular space to a min depth of 1/2 in. (13 mm) flush with the top edge of floor or both sides of wall. A min 1/4 in.(6 mm) diam bead of caulk shall be applied to the area of point contact with the wall or floor.

RECTORSEAL — Metacaulk 1000

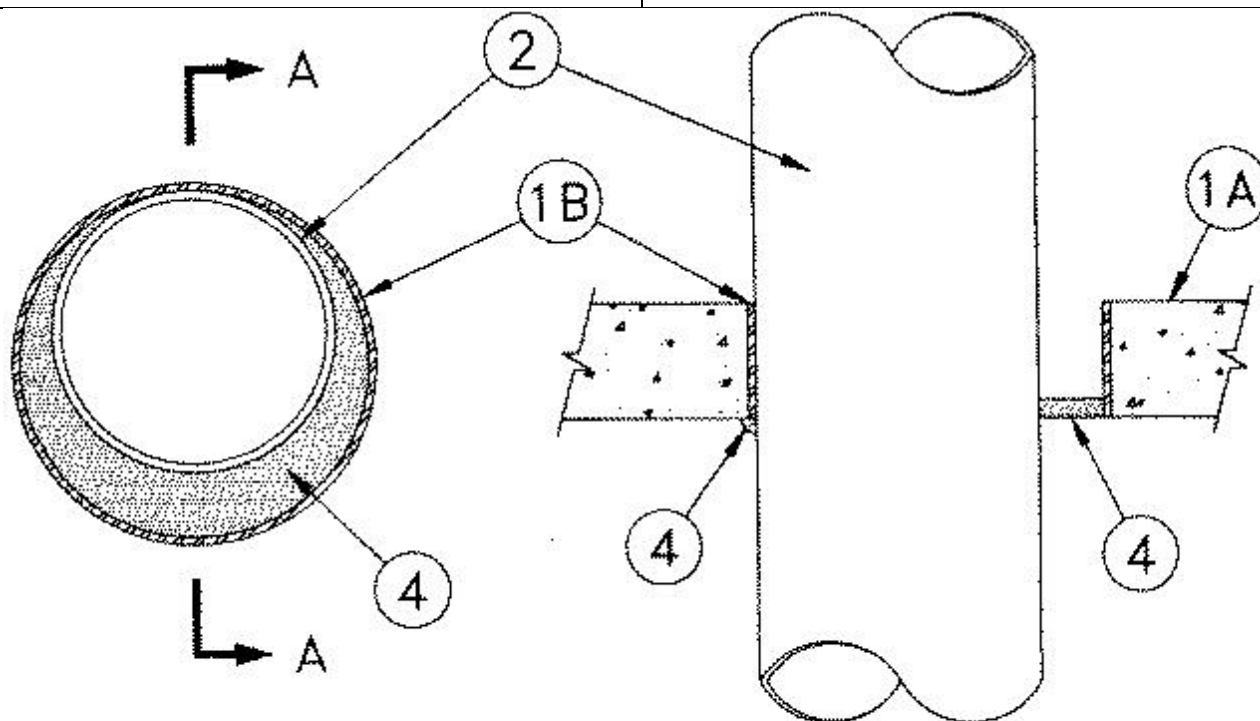
*Bearing the UL Classification Mark



System No. C-AJ-1403

July 15, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 and 3 Hr (See Item 4)	F Rating — 2 and 3 Hr (See Item 4)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft	FH Rating — 2 and 3 Hr (See Item 4)
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — Less Than 1 CFM/sq ft



SECTION 'A-A'

1A. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced light weight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Floor may also be constructed of any 6 in. (152 mm) thick UL Classified hollow core **Precast Concrete Units**. Max diam of opening is 9-5/8 in. (254 mm). When precast concrete units are used the max diam of opening is 7 in. (178 mm).

See **Concrete Blocks** (CAZT) and **Precast Concrete Units*** (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

1B. Metallic Sleeve — (Optional) - Nom 5 in. (127 mm) (or smaller), Schedule 10 (or heavier) steel pipe sleeve, cast or grouted into floor or wall assembly. Sleeve to be flush with floor or wall surfaces.

2. Through Penetrants — One metallic pipe or tubing to be installed concentrically or eccentrically into opening such that the annular space between the pipe and the periphery of the opening is min 0 in. (point of contact) to max value shown in table below. Pipe to be firmly supported on both sides of opening. The following types and sizes of pipes may be used:

A. Steel Pipe — Nom 8 in. (203 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe.

B. Iron Pipe — Nom 8 in. (203 mm) diam (or smaller) cast or ductile iron pipe.

C. Conduit — Nom 4 in. (102 mm) diam (or smaller) electrical metallic tubing or nom 6 in. (152 mm) diam (or smaller) steel conduit.

D. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. Packing Material — (not shown) Min 1 in. (25 mm) diam backer rod firmly pressed into opening as a permanent form. Forming material to be recessed by min depth of 1/2 in. (13 mm) from floor surface or both surfaces of wall.

4. Fill, Void, or Cavity Materials* - Caulk — Fill material applied within the annulus, flush with either the bottom or top surface of floor or one surface of the wall. When wall is constructed of concrete blocks, fill material shall be installed within the annular space on both sides of wall. A min 3/8 in. (10 mm) bead of the caulking material shall be applied, on the same side of the sealant in the annular space, at the point of contact of pipe and periphery of opening at bottom or top floor surface or at wall surface. In floors of precast concrete units, fill material shall be installed on the bottom side of the floor. For 3 Hr F and FH-ratings (see table below), an additional 1/4 in. (6 mm) of the caulk specified shall be applied around the entire circumference of the penetrant at the bottom or top floor surface or at wall surface. The fill material thickness is dependent on the hourly F and FH-ratings, the type and size of penetrant and type of fill material as tabulated below:

Type of Penetrant	Max Diam of Penetrant In. (mm)	Max Annular Space(In.)	Type of Fill Material	Thickness of Fill Material In. (mm)	F and FH-Ratings Hr
Steel or Iron Pipe	8 (203)	1 (25)	FS900+	1/2 (13)	2
Copper Pipe, Copper Tube, Conduit	4 (102)	1 (25)	FS900+	1/2 (13)	2
Steel or Iron Pipe	4 (102)	1/2 (13)	FS1900 Metacaulk 1000, Metacaulk 350i, Biostop 350i or Biostop 500+	3/4 (19)	2
Steel or Iron Pipe	8 (203)	1 (25)	FS900+	1 (25)	3
Copper Pipe, Copper Tube, Conduit	4 (102)	1 (25)	FS900+	1 (25)	3

RECTORSEAL — FlameSafe® FS900+, FlameSafe FS1900, Metacaulk MC 150+, Metacaulk 1000, Metacaulk 350i, Bionstop BF 150+, Biostop 350i or Biostop 500+

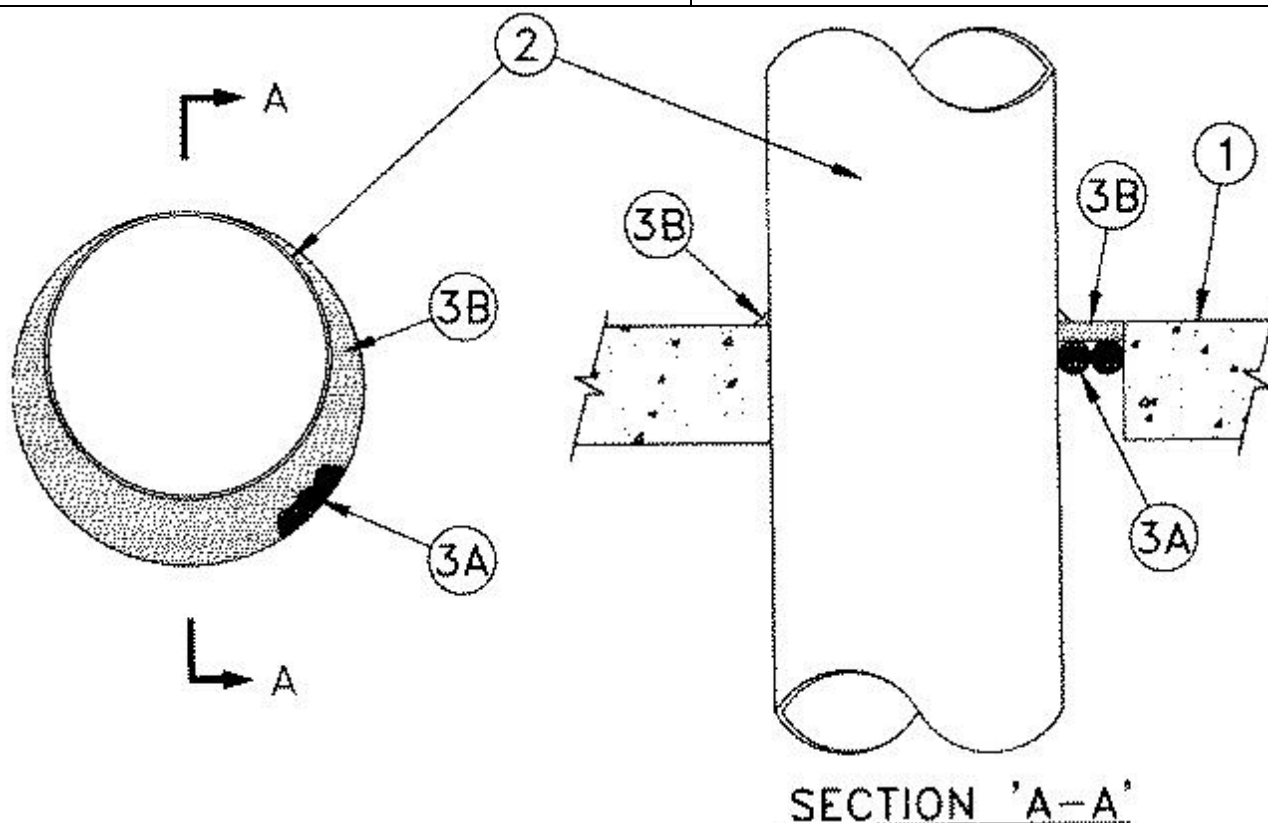
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. C-AJ-1404

July 15, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
	FH Rating — 0 Hr
	FTH Rating — 0 Hr



1. Floor or Wall Assembly — Min 2-1/2 in. (64 mm) thick reinforced light weight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Floor may also be constructed of any 6 in. thick UL Classified hollow-core **Precast Concrete Units***. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 24-7/8 in. (632 mm). When precast concrete units are used the max diam of opening is 7 in. (178 mm).

See **Concrete Blocks** (CAZT) and **Precast Concrete Units*** (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

2. Through Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The annular space shall be min 0 in. to max 7/8 in. (22 mm) The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe** — Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 24 in. (610 mm) diam (or smaller) cast or ductile iron pipe.

C. **Conduit** — Nom 6 in. (152 mm) diam (or smaller) steel electrical metallic tubing or steel conduit.

D. **Copper Tubing** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. **Firestop System** — The firestop system shall consist of the following:

A. **Packing Material** — Foam backer rod firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall, as required to accommodate the required thickness of fill material.

B. **Fill, Void, or Cavity Materials* - Sealant** — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor, or with both surfaces of wall. Min 1/4 (6 mm) in. thick crown of the fill material shall be applied around the entire circumference of the penetrant at the top surface of floor or both surfaces of wall. In floors of precast concrete units, material shall be installed symmetrically on both sides of the floor.

RECTORSEAL — FlameSafe® FS900+, FlameSafe FS1900, Metacaulk MC 150+, Metacaulk 1000, Metacaulk 350i, Biostop BF 150+, Biostop 350i or Biostop 500+

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. C-AJ-1426

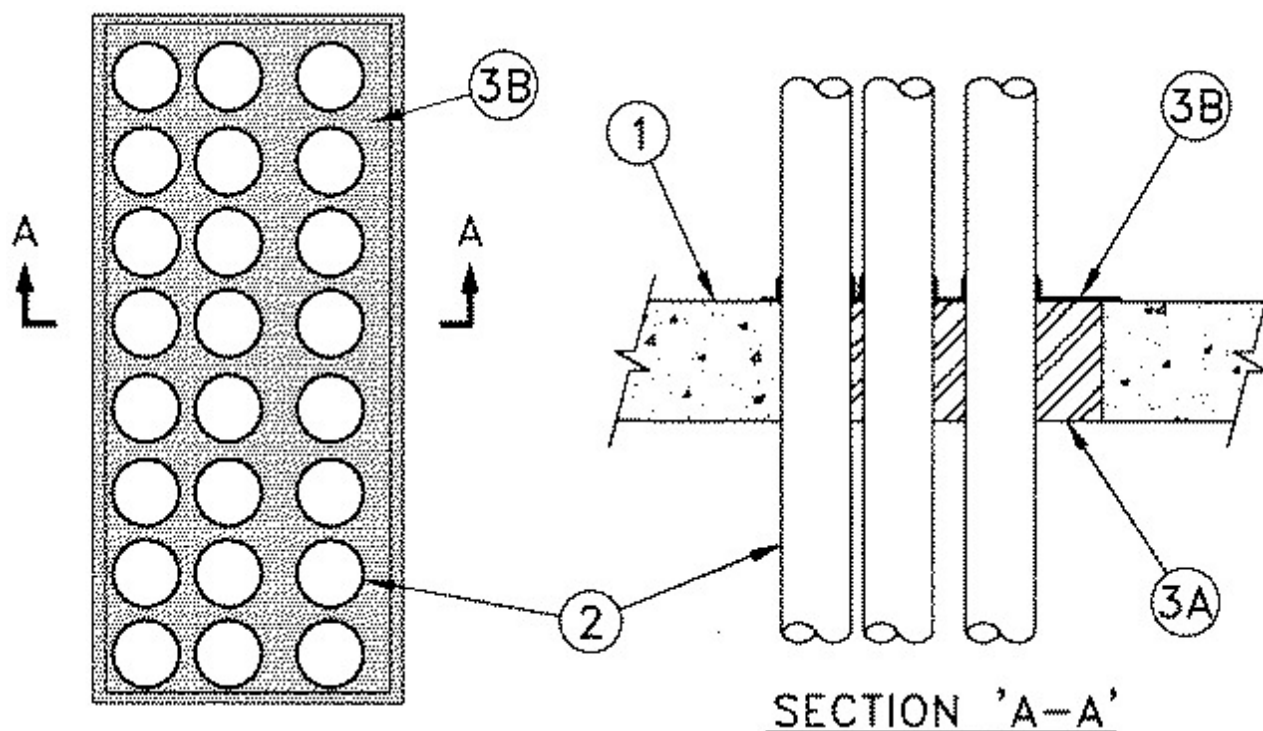
May 27, 2014

F Rating — 2 Hr

T Rating — 0 Hr

L Rating At Ambient — Less Than 1 CFM/sq ft (See Item 2)

L Rating At 400 F — Less Than 1 CFM/sq ft (See Item 2)



1. **Floor or Wall Assembly** — Min 4-1/2 in. (114 mm) thick reinforced light weight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max area of opening is 864 sq. in. (0.56 m²) with max dimension of 48 in. (1.22 m).

See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. **Through Penetrants** — A max of twenty-four pipes, conduit or tubing to be installed within the opening. The space between the pipes, conduit or tubing shall be within the range of 5/16 in. (8 mm) to 2-1/2 in. (64 mm). The space between pipes, conduit or tubing and periphery of opening shall be min 0 in. (0 mm, point contact) to max 2 in. (51 mm). **L Ratings apply only when the min annular space between the through penetrants and the edge of the opening is equal to or greater than 1/4 in. (6 mm).** Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall. The following types and sizes of metallic pipes, conduits or tubing may be used:

- A. **Steel Pipe** — Nom 4 in. (102 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.
- B. **Iron Pipe** — Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.
- C. **Conduit** — Nom 4 in. (102 mm) diam (or smaller) electrical metallic tubing or steel conduit.
- D. **Copper Tubing** — Nom 1-1/2 in. (38 mm) diam (or smaller) Type L (or heavier) copper tubing.

3. **Firestop System** — The firestop system shall consist of the following:

A. **Packing Material** — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening and in between the penetrants as a permanent form. Packing material to be installed flush with top surface of floor or with both surfaces of wall .

B. **Fill, Void, or Cavity Materials*** — Min 1/8 in. (3.2 mm) wet thickness of fill material applied to completely cover the mineral wool packing material and to lap min 1/2 in. (13 mm) onto the top surface of floor or onto both surfaces of wall. Spray to lap a min of 1/2 in. (13 mm) onto penetrant surfaces on the top surface of the floor or on both surfaces of the wall .

RECTORSEAL — FlameSafe FS3000, Metacaulk 1200, 1500 or Biostop 750, 800 Spray

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

July 15, 2014

Page 54

aluminum conduit is used, the max diam of the steel sleeve is 4 in. (102 mm).

3. Through Penetrants — One or more nom 1-1/2 in. (38 mm) diam (or smaller) flexible steel conduit or one or more nom 1 in. (25 mm) diameter (or smaller) flexible aluminum conduit bundled together and installed within the opening. Max diam of through penetrant bundle shall not exceed 4 in. (102 mm) and 2-1/2 in. (64 mm) for flexible steel conduit and flexible aluminum conduit, respectively. The space between the through penetrants shall be a min 0 in. (0 mm, point contact) to a max 1/4 in. (6 mm). The annular space between the through penetrants and periphery of opening shall be min 0 in. (0 mm, point contact) to max 2 in. (51 mm) for flexible steel conduit. The annular space between the through penetrants and periphery of opening shall be min 0 in. (0 mm, point contact) to max 1-1/2 in. (38 mm) for flexible aluminum conduit. Through penetrants to be rigidly supported on both sides of floor or wall assembly.

See **Flexible Metal Conduit** (DXUZ) category in the Electrical Construction Materials Directory for names of manufacturers.

The F Rating of the firestop system is dependent upon the type of through penetrant used. If flexible aluminum conduit is used, the F Rating of the firestop system is 2 hr. If flexible steel conduit is used, the F Rating of the firestop system is 3 hr.

4. Firestop System — The firestop system shall consist of the following:

A. Packing Material — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Additional packing material shall be forced into interstices of flexible aluminum conduit to max extent possible. Packing material to be recessed from top surface of floor or from both surfaces of wall and hollow-core precast concrete units as required to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall. At the point contact location between penetrating items and concrete, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the concrete/penetrating item interface on the top surface of floor and on both surfaces of wall or hollow-core precast concrete units. Additional sealant shall be forced into interstices of through penetrants to max extent possible.

RECTORSEAL — FS900+ Sealant, FS 1900 Sealant, Metacaulk MC 150+ or Biostop BF 150+

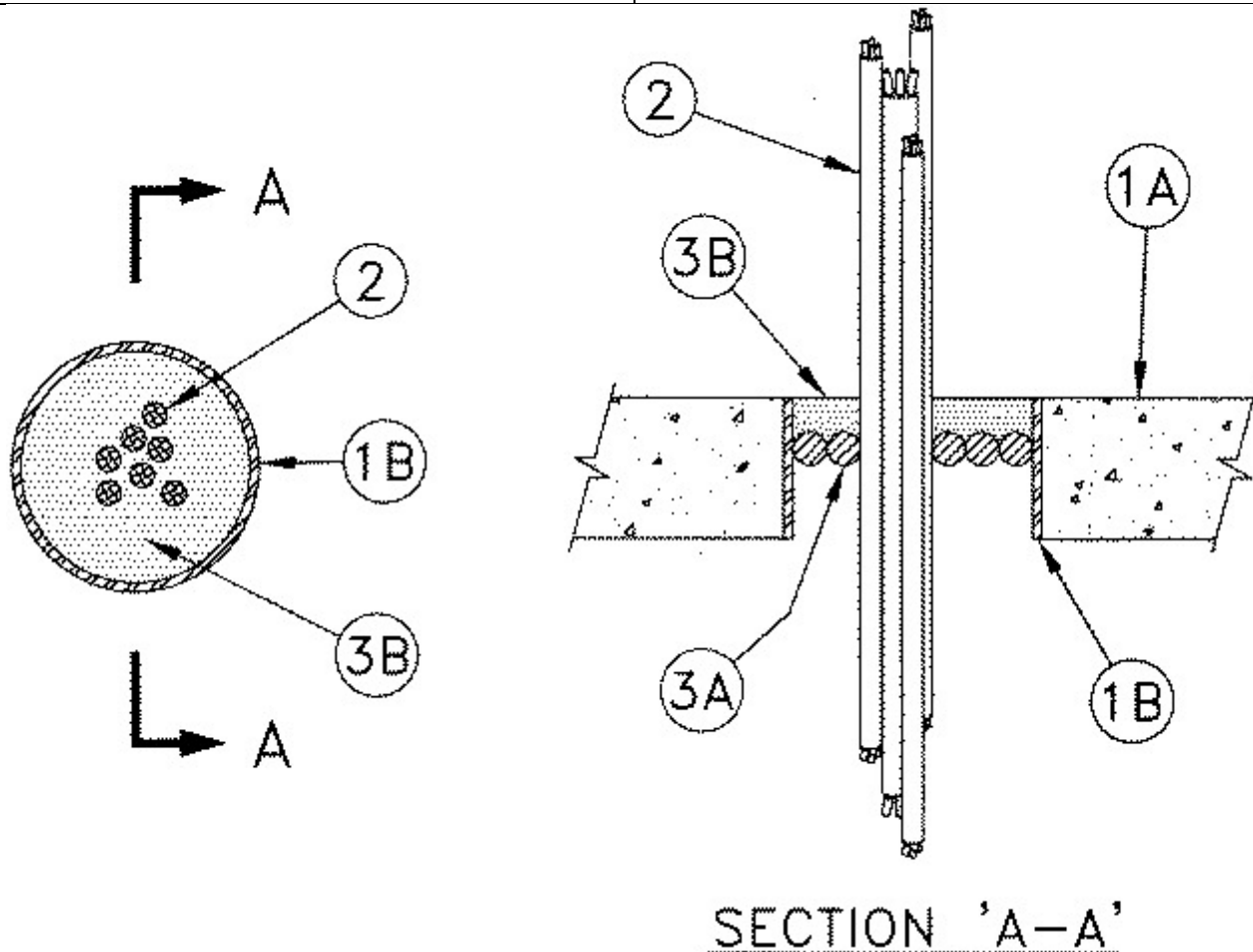
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. C-AJ-3199

February 04, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 and 3 Hr (See Items 1A and 2)	F Rating — 2 and 3 Hr (See Items 1A and 2)
T Rating 0	FT Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft	FH Rating — 2 and 3 Hr (See Items 1A and 2)
L Rating At 400 F — 1.4 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — 1.4 CFM/sq ft



1A. **Floor or Wall Assembly** — Min 4-1/2 in. (114 mm) thick reinforced light weight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units***. Max diam of opening is 6 in. (152 mm).

See **Concrete Blocks (CAZT) Precast Concrete Units (CFTV)** and categories in the Fire Resistance Rating Directory for names of manufacturers.

The F and FH Ratings of the firestop system are dependent upon the diam of the opening. If the diam of the opening or metallic sleeve (Item 1B) is 4-3/8 in. (111 mm) or less, the F and FH Ratings of the firestop system are 3 hr. If the diam of the opening or metallic sleeve is greater than 4-3/8 in. (111 mm), the F and FH Ratings of the firestop system are 2 hr.

1B. **Metallic Sleeve** — (Optional)- Max 6 in. (152 mm) diameter Schedule 10 (or heavier) steel pipe sleeve, cast or grouted into floor or wall assembly, flush with top surface of floor or both surfaces of wall assembly.

2. **Cables** — Aggregate cross-sectional area of cables in opening to be max 40 percent of the cross-sectional area of the opening. Cables installed in a bundle. The annular space between the cable bundle and the periphery of the opening shall be min 3/8 in. (10 mm) to max 1-3/16 in. (30 mm). Cables to be rigidly supported on both sides of floor or wall assembly. Any combination of the following types and sizes of cables may be used:

- A. Max 1/C - 750 MCM THHN power cable with PVC insulation and jacket.
- B. Max 72 conductors 62.5/125 fiber optic cable with PVC insulation and jacket.
- C. Max 7/C - No. 16 AWG power and control cables with rubber insulation and neoprene jacket.
- D. Max 400 pairs - No. 24 AWG telephone communication cable with PVC insulation and jacket.
- E. Max 1/C — 350 kcmil (or smaller) cable with PVC insulation and jacket or hypalon insulation and ethylene propylene rubber jacket.
- F. Max 16/C — No. 16 AWG (or smaller) cable with PVC insulation and jacket.
- G. Max 4/C — No. 12 AWG (or smaller) cable with rubber insulation and neoprene jacket.
- H. Max six, 3/C - No. 2/0 AWG (or smaller) copper conductors aluminum or steel jacketed **Metal Clad or Armored Cable+**.

When Items 2E, 2F, 2G or 2H are used, the F and FH Ratings of the firestop system are 2 hr. When Items 2A, 2B, 2C and 2D are only used, the F and FH Ratings of the firestop system are 3 hr.

3. **Firestop System** — The Firestop system shall consist of the following:

A. **Packing Materials** — Nom 1 in. (25 mm) diam foam backer rod or min 4 pcf (64 kg/m³) mineral wool insulation, firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall to accommodate the required thickness of fill material.

B. **Fill, Void, or Cavity Materials*** — Caulk - Min 1 in. (25 mm) thickness of fill material applied within the annulus and interstices between cables, flush with top surface of floor or both surfaces of wall. When the floor is constructed of hollow-core precast concrete units, fill material shall be installed on both sides of the floor. When Item 2F is used only, the fill material may be applied within the annulus, flush with either the bottom or top surface of the floor or one surface of the wall. When Item 2F is used only and the floor is constructed of hollow-core precast concrete units, the fill material shall be installed on both sides of the floor.

RECTORSEAL — FlameSafe® FS1900, Metacaulk 1000, Metacaulk 350i, Biostop 350i or Biostop 500+

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

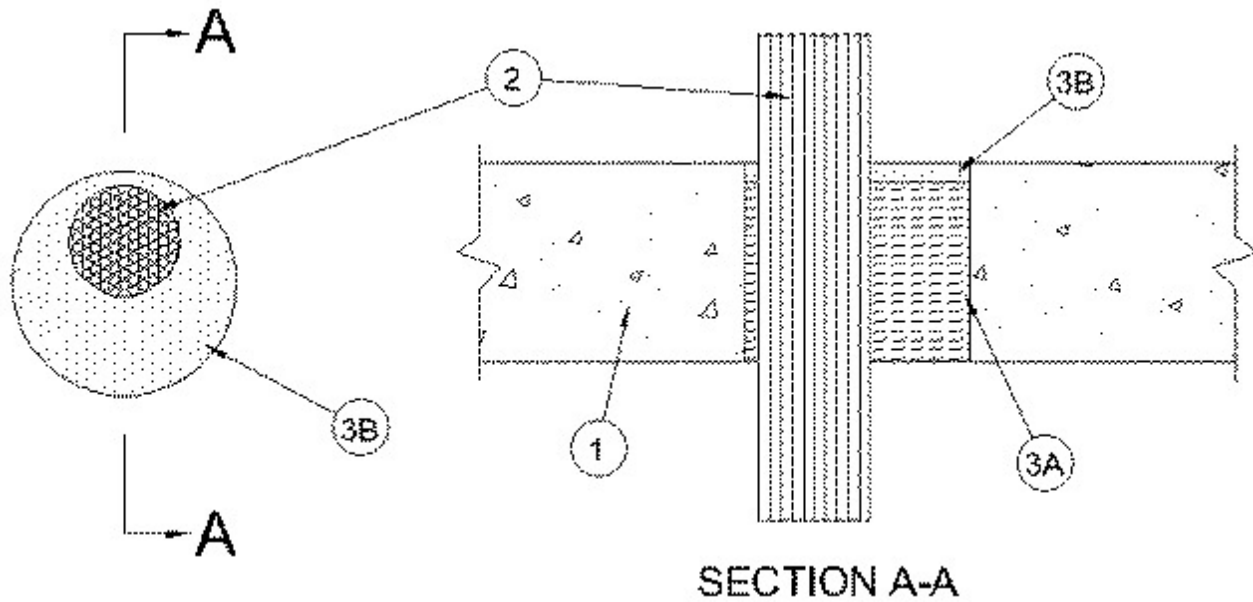
+Bearing the UL Listing Mark



System No. C-AJ-3234

July 16, 2014

ANSI/UL1479	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
	FH Rating — 2 Hr
	FTH Rating — 0 Hr
L Rating at Ambient - Less than 1 CFM/sp ft	L Rating at Ambient - Less than 1 CFM/sp ft
L Rating at 4000 F - 1.4 CFM/sq ft	L Rating at 4000 F - 1.4 CFM/sq ft



1. **Floor or Wall Assembly** — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete floor or min 5 in. (127 mm) thick reinforced lightweight or normal weight wall. Wall may also be constructed of any UL Classified **Concrete Blocks***. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units***. Max diam of the opening is 6 in. (152 mm).

See **Concrete Block (CAZT)** and **Precast Concrete Units (CFTV)** categories in the Fire Resistance Directory for names of manufacturers.

2. **Cables** — Aggregate cross-sectional area of cables in opening to be max 25 percent of the cross-sectional area of the opening. Cables installed individually or in bundles having a max bundle diam of 3 in. (76 mm). The annular space between cable bundle and the periphery of the opening shall be min 3/8 in. (10 mm) to max 2-5/8 in. (67 mm). Cables to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of cables may be used:

A Max 100 pair No. 24 AWG (or smaller) copper conductor cable with polyvinyl chloride (PVC) jacketing and insulation.

B Max 3/C No. 2/0 AWG (or smaller) aluminum conductor service entrance cable with PVC insulation and jacket.

C Max 3/C with ground No. 12 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.

D Max 1/C No. 350 kcmil (or smaller) copper conductor power cable with XLPE (cross-linked polyethylene) or PVC insulation and XLPE or PVC jacket.

E Max RG59/U (or smaller) copper conductor coaxial cable with fluorinated ethylene insulation and jacketing.

F Max 62.5/125 fiber optic cable with PVC insulation and jacketing.

G Max RG/6 No. 18 AWG Type copper conductor CATV coaxial cable with PVC insulation and jacket.

H Max 7/C No. 12 AWG (or smaller) copper conductor cable with XLPE or PVC insulation and jacket.

2A. **Through Penetrating Product*** — (Not Shown) As an alternate to Item 2, max 3/C No. 2/0 AWG (or smaller) copper conductors aluminum or steel **Metal Clad Cable+**. One or more cables to be installed either concentrically or eccentrically within the firestop system. Aggregate cross-sectional area of cables in opening to be max 25 percent of the aggregate cross-sectional area of the opening. Cables installed individually or in bundles having a max bundle diam of 3 in. (76 mm). The annular space between the cable bundle and the periphery of the opening shall be a min 3/8 in. (10 mm) to a max 2-5/8 in. (67 mm). Cables to be rigidly supported on both sides of floor or wall assembly.

AFC CABLE SYSTEMS INC

ALFLEX CORP

3. **Firestop System** — The firestop system shall consist of the following:

A. **Packing Material** — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall and hollow-core precast concrete units as required to accommodate the required thickness of fill material.

B. **Fill, Void or Cavity Material* - Sealant** — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall or hollow-core precast concrete units. Additional sealant shall be forced into interstices of cable bundle to max extent possible.

RECTORSEAL — FS900+ Sealant, Metacaulk MC 150+, Biostop BF 150+

+Bearing the UL Listing Mark

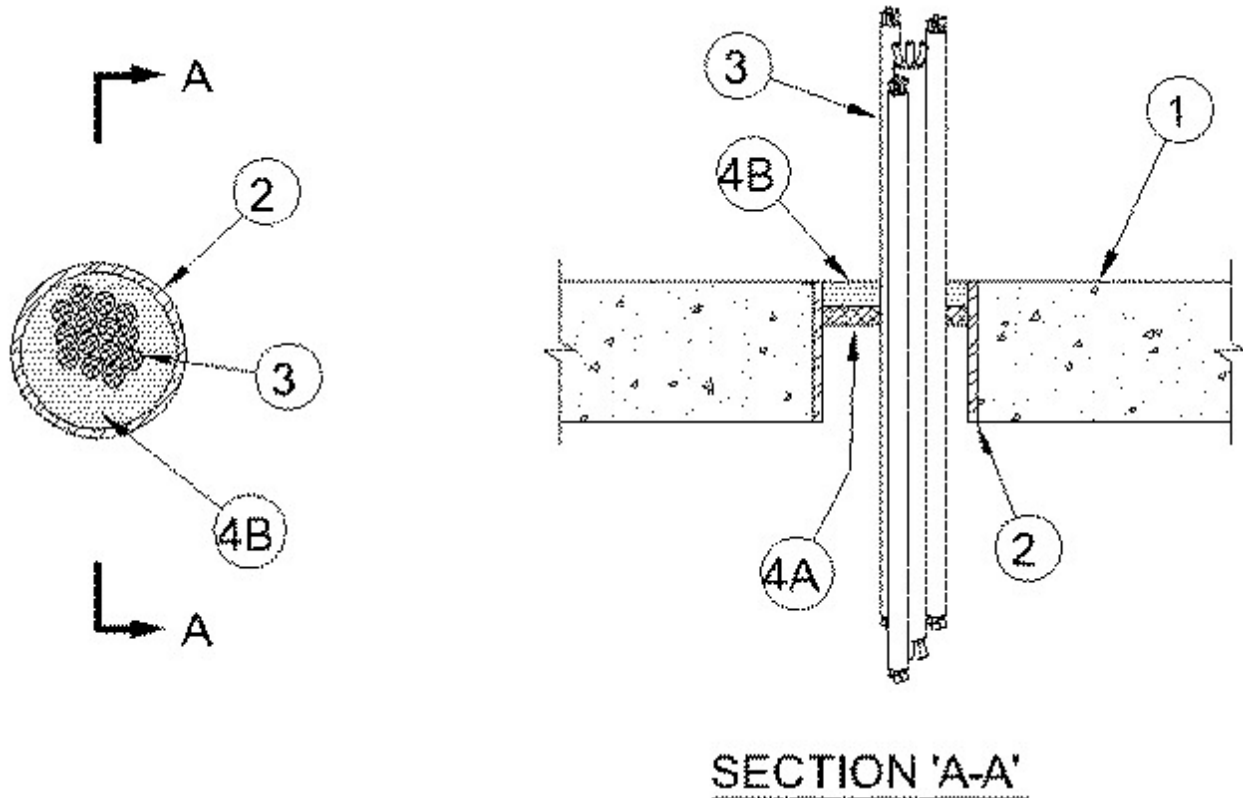
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. C-AJ-3241

July 16, 2014

ANSI/UL1479	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Rating — 1/2 Hr	FT Rating — 1/2 Hr
	FH Rating — 3 Hr
	FTH Rating — 1/2 Hr



1. Floor or Wall Assembly — Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Floor may also be constructed of any min 6 in. thick UL Classified hollow-core **Precast Concrete Units***. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 6 in.

See **Concrete Blocks** (CAZT) and **Precast Concrete Units** (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

2. Metallic Sleeve — (Optional) — Nom 6 in. diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces.

3. Cables — Aggregate cross-sectional area of cables in sleeve or opening to be max 19.3 percent of the cross-sectional area inside the sleeve/opening or a max 2-9/16 in. diam cable bundle may be used. The annular space between cables and periphery of opening shall be min of 0 in. (point contact) to max 3-1/8 in. Cables to be bundled together and rigidly supported on both sides of floor or wall assembly. Any combination of the following types and sizes of cable may be used:

A. Max 400 pairs, 24 AWG telephone communication cable with PVC insulation and jacket.

B. Max 62.5/125 fiber optic cable with PVC insulation and jacketing.

C. Max 4/C No. 2/0 AWG (or smaller) aluminum or copper conductor aluminum or steel jacketed Metal-Clad or Armored-Clad cable.

D. Max 7/C No. 12 AWG copper conductor power and control cables; XLPE or PVC insulation with XLPE or PVC jacket.

E. Max RG59/U (or smaller) coaxial cable with fluorinated ethylene insulation and jacketing.

F. Type RG 59/U coaxial cable with polyethylene (PE) insulation and PVC jacket.

4. Firestop System — The details of the firestop system shall be as follows:

A. **Packing Material** — Min 1 in. thick backer rod, mineral wool or fiberglass batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or both surfaces of wall as required to accommodate the required thickness of fill material. When the floor is constructed of hollow-core precast concrete units, packing material shall be installed symmetrically on both sides of floor and recessed from both floor surfaces.

B. **Fill, Void or Cavity Materials*** — Min 1 in. thickness of fill material applied within annulus, flush with top surface of floor or both surfaces of wall assembly. When the floor is constructed of hollow-core precast concrete units, fill material shall be installed symmetrically on both sides of floor, flush with both floor surfaces.

RECTORSEAL — FS 900+ Sealant, Metacaulk MC 150+, Biostop BF 150+

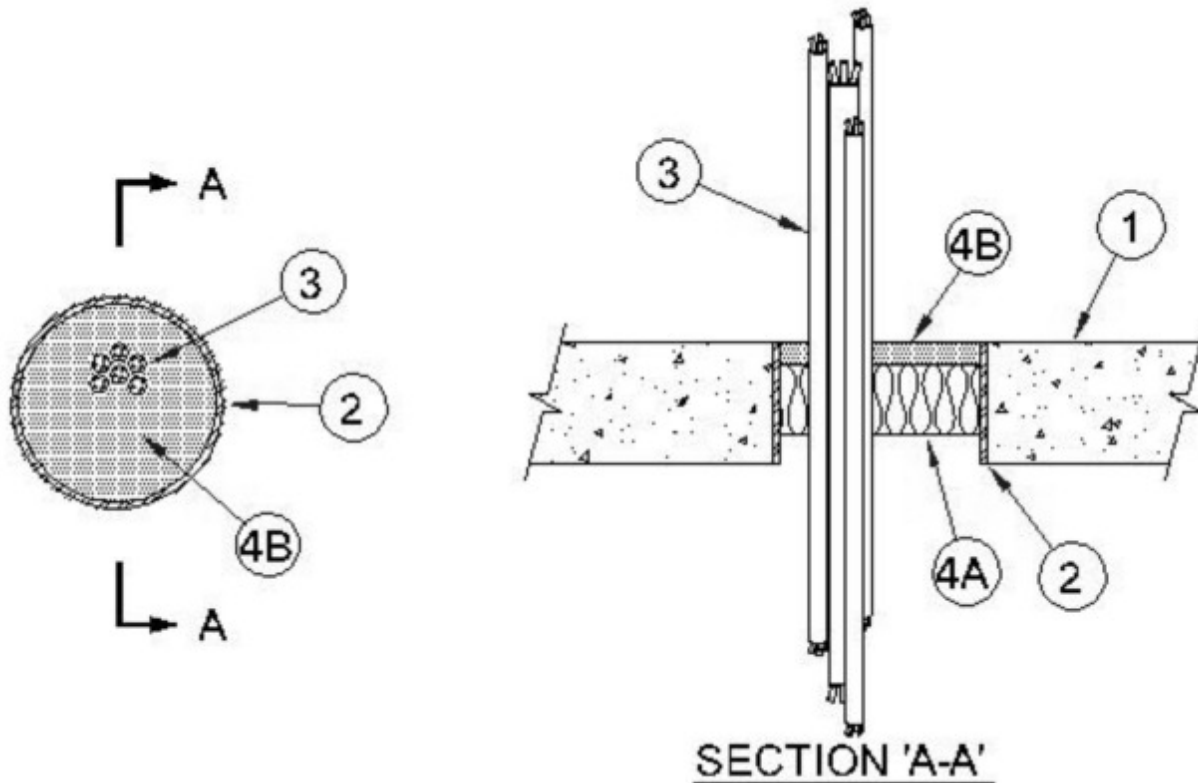
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. C-AJ-3286

July 16, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Rating — 1/2 Hr	FT Rating — 1/2 Hr
	FH Rating — 3 Hr
	FTH Rating — 1/2 Hr



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Floor may also be constructed of any min 6 in. thick UL Classified hollow-core **Precast Concrete Units***. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 6 in. (152 mm).

See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Nonmetallic Sleeve (Optional) — Nom 6 in. diam (or smaller) Schedule 40 polyvinyl chloride (PVC) pipe cast or grouted into floor or wall assembly, flush with floor or wall surfaces.

3. Cables — Aggregate cross-sectional area of cable bundle in opening to be max 45 percent of the cross-sectional area of the opening. Min separation between cable bundle and between cables and periphery of opening is 1/4 in. Max annular space between cable bundle and periphery of opening is 2 in. Cables to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of copper or aluminum conductor cables may be used:

A. Max 1/C 350 kcmil cable with crosslinked polyethylene (XLPE) jacket.

B. Max 400 pair No. 24 AWG cable with PVC insulation and jacket.

C. Max. 3/C No. 2/0 AWG aluminum conductor SER cable with PVC insulation and jacketing.

D. Max. 3/C No. 12 AWG copper conductor cable with PVC insulation and jacket (Romex).

E. Max. RG59/U copper conductor coaxial cable with fluorinated ethylene insulation and jacket.

F. Max. 62.5/125 fiber optic cable with PVC insulation and jacket.

G. Max. RG/6 No. 18 AWG copper conductor CATV coaxial cable with PVC insulation and jacket.

H. Max. 4/C No. 2/0 AWG copper conductor, steel or aluminum armored or metal clad cable (MC cable).

4. Firestop System — The firestop system shall consist of the following:

A. Packing Material — Min 4 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall or hollow-core concrete floor as required to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Material* - Caulk — Min 1/2 in. thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall. When the floor is constructed of hollow-core precast concrete units, fill material shall be installed symmetrically on both sides of floor, flush with both floor surfaces.

RECTORSEAL — FlameSafe® FS900+, FlameSafe FS1900, Metacaulk MC 150+, Metacaulk 1000, Metacaulk 350i, Biostop BF 150+, Biostop 350i or Biostop 500+

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. C-AJ-3304

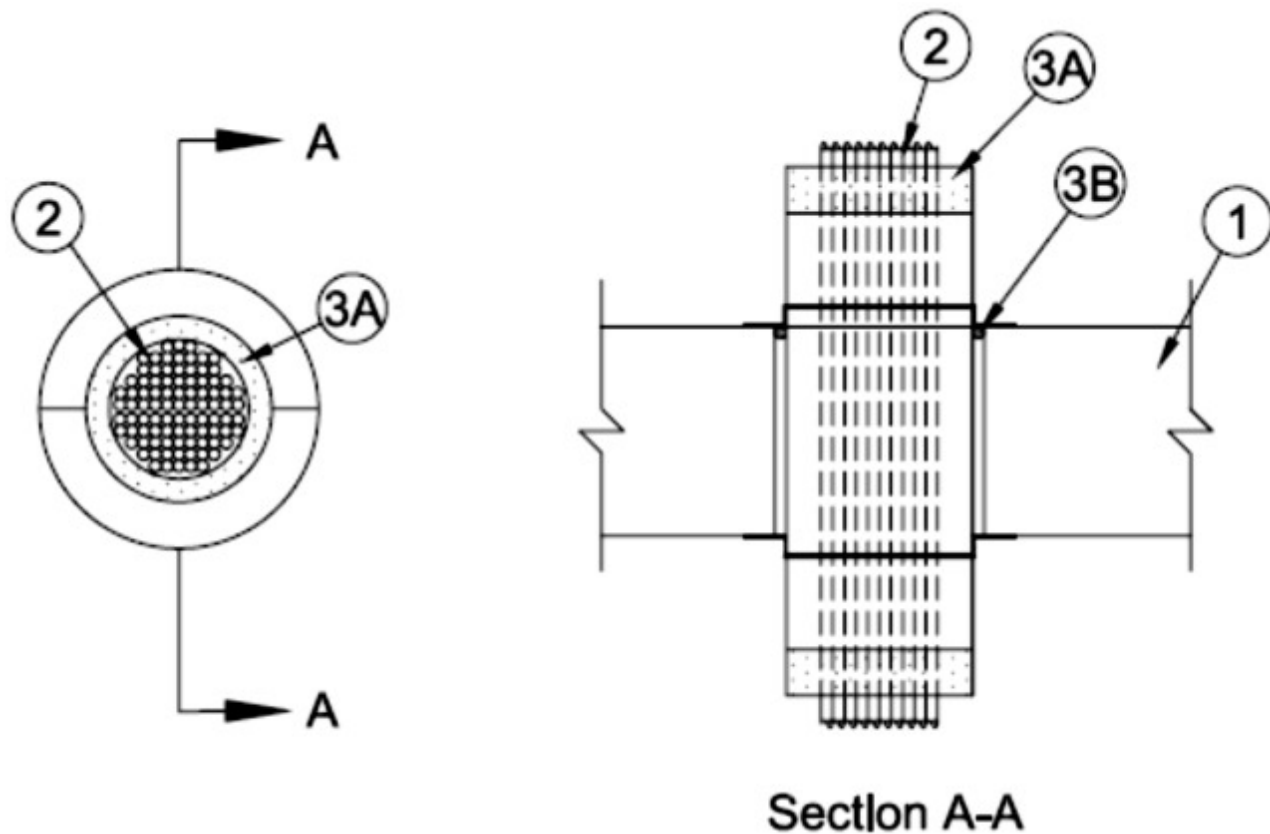
June 29, 2009

F Rating — 3 Hr

T Rating — 1 Hr

L Rating At Ambient — 2.5 CFM

L Rating At 400 F — Less than 1 CFM



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Diam of opening to be 2 in. or 4 in. (51 or 102 mm) to accommodate firestop device (Item 3A).

See **Concrete Blocks** (CAZT) category in Fire Resistance Directory for names of manufacturers.

2. Cables — Aggregate cross-sectional area of cables in firestop device (Item 3A) to be max 70 percent of the aggregate cross-sectional area of the firestop device. One or more cables may be installed concentrically or eccentrically within the firestop device. Any combination of the following types and sizes of cables may be used:

- A. Max 2/C No. 18 AWG with polyvinyl chloride (PVC) insulation and jacket materials.
- B. Max 4 pair No. 24 AWG telephone cable with PVC insulation and jacket materials.
- C. Max RG/U (or smaller) coaxial cable with fluorinated ethylene insulation and jacket materials.
- D. Max 3/C (with ground) No. 14 AWG (or smaller) nonmetallic sheathed (Romex) cable with PVC insulation and jacket materials.
- E. Max /C No. 4 AWG copper conductor cable with insulation and jacket materials.

F. Max 12 core No. 26 AWG shielded multi coax cable with foam high density polyethylene insulation and PVC jacket.

G. 1/C No. 8 AWG copper conductor cable with PVC insulation and nylon jacket materials.

H. Max 100 pair No. 24 AWG copper conductor telephone cable with PVC insulation and jacket materials.

I. Max 7/C No. 12 AWG copper conductors with PVC insulation and jacket materials.

J. Max 62.5/125 micron fiber optic cables with having a min Riser rating.

3. Firestop System — The firestop system shall consist of the following:

A. Firestop Device* — Nom 2 in or 4 in. (51 or 102 mm) diam by 10 in. (254 mm) powdered coated steel transit incorporating internal intumescent material, foam plugs and mounting flanges. Firestop device to be friction fit within opening and installed with its ends projecting an equal distance beyond each surface of the floor or wall assembly in accordance with the accompanying installation instructions. The annular space between the firestop device and the periphery of the opening shall be nom 1/16 in. (1.6 mm). Firestop device secured in place by means of fill material (Item 3B) and steel split mounting flanges sized to accommodate the firestop device. Steel split mounting flanges installed on both sides of floor or wall after installation of fill material and secured together with supplied steel set screws. Nom 1 in. (25 mm) thick foam plugs installed flush with each end of device on both sides of floor or wall assembly.

RECTORSEAL — Metacaulk® 2" round Pass Through Device Metacaulk® 4" round Pass Through Device

B. Fill, Void or Cavity Materials* - Sealant — Min 1/8 in. (3 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall prior to the installation of the mounting flanges.

RECTORSEAL — Metacaulk 1000 or Fireputty pad.

*Bearing the UL Classification Mark



System No. C-AJ-3306

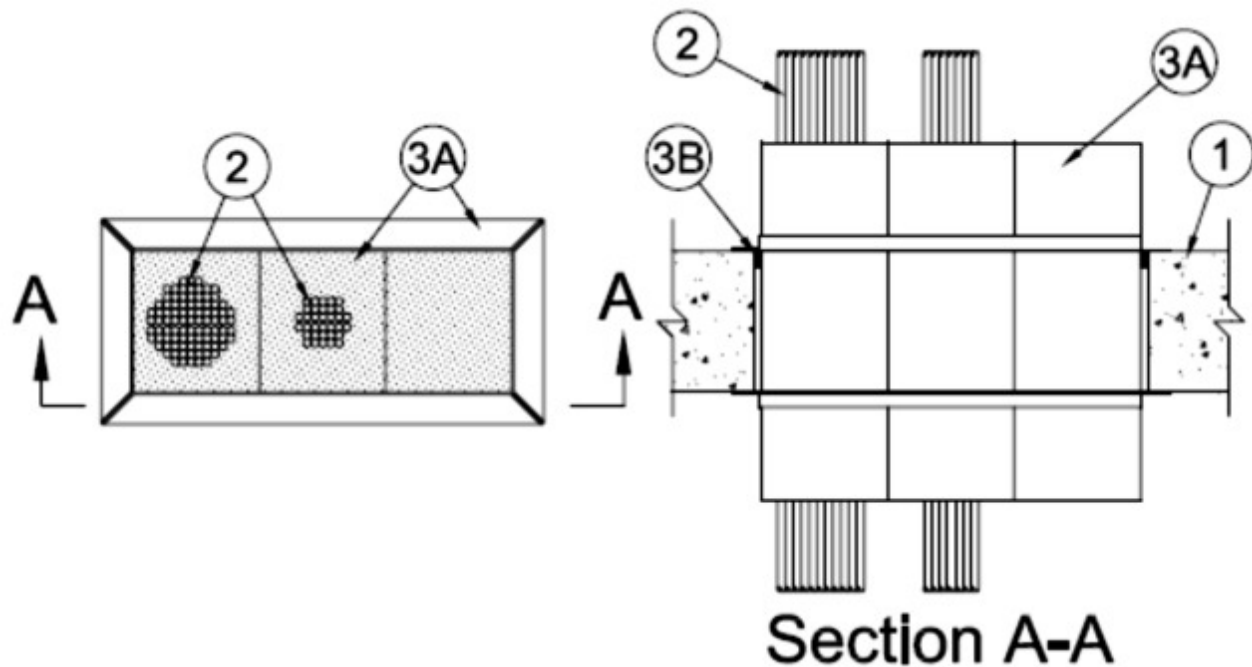
June 29, 2009

F Rating — 3 Hr

T Rating — 0 Hr

L Rating At Ambient — 3 or 5 CFM (See Item 2)

L Rating At 400 F — Less than 1 or 1.6 CFM (See Item 2)



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max area of opening is 50 in.² (362.9 cm²) with a max dimension of 12-1/8 in. (30 mm).

See **Concrete Blocks** (CAZT) category in Fire Resistance Directory for names of manufacturers.

2. Cables — One or more cables may be installed concentrically or eccentrically within each firestop device (Item 3A). Cables installed in a bundle having max bundle diam of 3 in. (76 mm). Cable bundle to be rigidly supported on both sides of floor or wall assembly. Any combination of the following types and sizes of cables may be used:

A. Max 2/C No. 18 AWG copper conductor thermostat cable with polyvinyl chloride (PVC) insulation and jacket materials.

B. Max 4 pair No. 24 AWG copper conductor Cat5e or Cat 6 telephone cable with PVC insulation and jacket materials.

C. Max RG/U (or smaller) coaxial cable with foam high density polyethylene insulation and PVC jacket materials.

D. Max 3/C (with ground) No. 14 AWG (or smaller) nonmetallic sheathed (Romex) cable with PVC insulation and jacket materials.

E. Max 1/C No. 8 AWG copper conductor cable with PVC insulation and nylon jacket materials.

F. Max 12 core No. 26 AWG shielded multi coax cable with foam high density polyethylene insulation and PVC jacket.

- G. Max 48MM62.5 micron fiber optic cables with having a min FT-6 rating.
- H. Max 62.5/125 micron micron fiber optic cables with having a min Riser rating.
- I. Max 1/C 3/0 AWG copper conductor cable with PVC insulation and jacket materials.
- J. Max three copper conductors (with ground) No. 12 AWG Metal Clad Cable+.
- K. Max four copper conductors No. 2 AWG Metal Clad Cable+. AFC Cable System Inc.
- L. Max 1/C 2/0 AWG non halogen copper conductor cable.
- M. Max 300 pair No. 24 AWG copper conductor telephone cable with PVC insulation and jacket materials.
- N. Max 30 pair No. 22 copper conductor shielded switchboard cable with PVC insulation and jacket materials.
- O. Max RG/6 (or smaller) coaxial cable with fluorinated ethylene (FE) or PVC insulation and jacket materials.
- P. Max RG/U (or smaller) coaxial cable with fluorinated ethylene (FE) or PVC insulation and jacket materials.
- Q. Max 7/C No. 12 AWG copper conductors with PVC insulation and jacket materials.
- R. Max 4 pair No. 23 AWG copper conductor Cat 6 telephone cable with PVC insulation and jacket materials.
- S. Max three copper conductors (with ground) No. 12 AWG steel Armored Cable+.
- T. Max 04-02 2 5M fiber optic cables having a max diameter of 0.450 in. (11.4 mm).
- U. Max 1/C No. 750 kcmil copper conductors with PVC insulation and fabric jacket materials.
- V. Max 3/C with ground No. 2/0 AWG aluminum conductor SER cable with cross linked polyethylene (XLPE) insulation and PVC jacket.

The L rating is 3 CFM at ambient and less than 1 CFM at elevated temperature when only one cable bundle is used.

3. Firestop System — The firestop system shall consist of the following:

A. Firestop Device* — A max of three square firestop devices may be ganged together. Each device consists of a nom 4 by 4 by 10 in. (102 by 102 by 254 mm) powder coated steel transit incorporating internal intumescent material, foam plugs and mounting flanges. Firestop device to be centered within opening and installed with ends projecting an equal distance beyond each surface of the floor or wall assembly in accordance with the accompanying installation instructions. The annular space between the firestop device(s) and the periphery of the opening shall be nom 1/4 in. (6 mm). Firestop devices secured in place by means of fill material (Item 4B) and steel split mounting flanges sized to accommodate the firestop device. Steel split mounting flanges installed on both sides of floor or wall after installation of fill material and secured to together with supplied steel set screws. Nom 1 in. (25 mm) thick pre-cut foam plugs sized to accommodate the cable bundle and installed flush with each end of device on both sides of floor or wall assembly.

RECTORSEAL — Metacaulk® 4" square Pass Through Device

B. Fill, Void or Cavity Materials* - Caulk or Putty — Min 1/8 in. (3 mm) thickness of caulk or min 1/2 in. (13 mm) thickness of putty applied within the annulus, flush with top surface of floor or with both surfaces of wall prior to the installation of the mounting flanges.

RECTORSEAL — Metacaulk 1000 or Fireputty pad.

*Bearing the UL Classification Mark



System No. C-AJ-3308

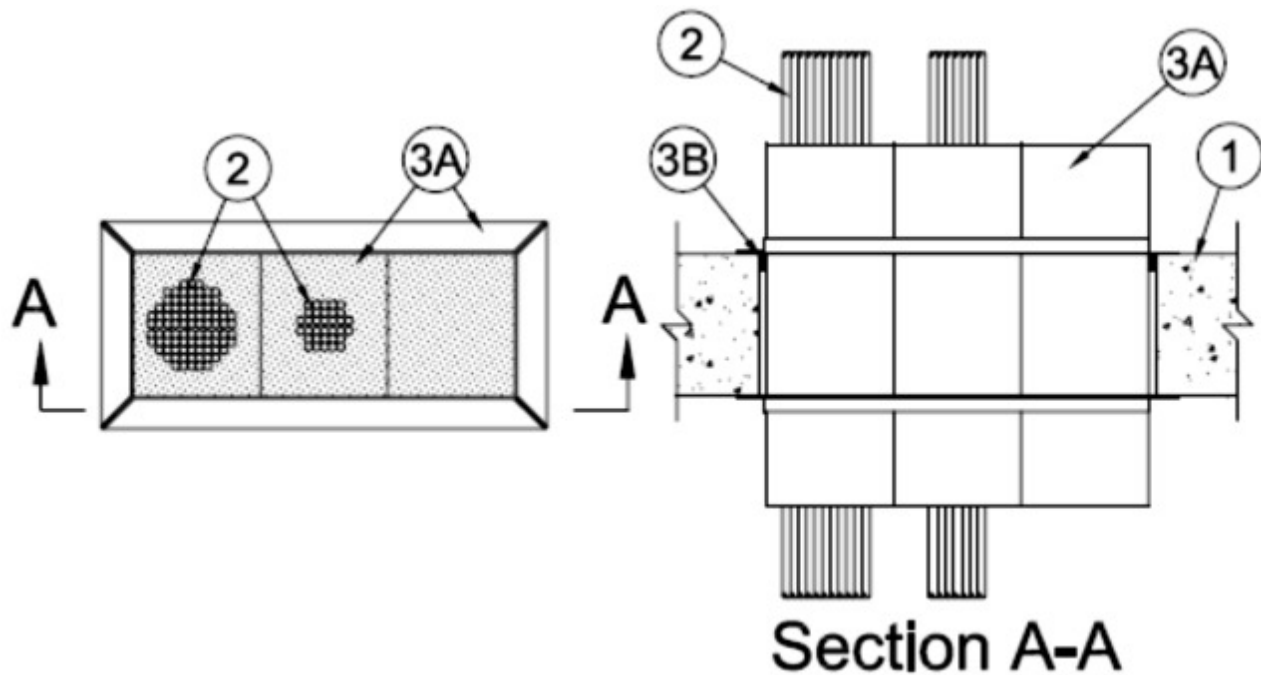
June 29, 2009

F Rating — 3 Hr

T Rating — 1 Hr

L Rating At Ambient — 1.5 or 3 CFM (See Item 2)

L Rating At 400 F — Less than 1 or 2 CFM (See Item 2)



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max area of opening is 20-1/8 in.² (130 cm²) with a max dimension of is 7-5/8 in. (194 mm).

See **Concrete Blocks** (CAZT) category in Fire Resistance Directory for names of manufacturers.

2. Cables — One or more cables may be installed concentrically or eccentrically within each firestop device (Item 3A). Cables installed in a bundle having max bundle diam of 2 in. (51 mm). Cable bundle to be rigidly supported on both sides of floor or wall assembly. Any combination of the following types and sizes of cables may be used:

A. Max 4 pair No. 24 AWG copper conductor Cat5e or Cat 6 telephone cable with polyvinyl chloride (PVC) insulation and jacket materials.

B. Max 4 pair No. 23 AWG copper conductor Cat 6 telephone cable with PVC insulation and jacket materials.

L Rating is 3 CFM at ambient and 2 CFM at elevated temperature when more than one cable bundle is used.

3. Firestop System — The firestop system shall consist of the following:

A. Firestop Device* — A max of three square firestop devices may be ganged together. Each device consists of a nom 2-1/2 by 2-1/2 by 10 in. (64 by 64 by 254 mm) powder coated steel transit incorporating internal intumescent material, foam plugs and mounting flanges. Firestop device to be centered within opening and installed with ends projecting an equal distance beyond each surface of the floor or wall assembly in accordance with the accompanying

installation instructions. The annular space between the firestop device(s) and the periphery of the opening shall be nom 1/4 in. (6 mm). Firestop devices secured in place by means of fill material (Item 4B) and steel split mounting flanges sized to accommodate the firestop device. Steel split mounting flanges installed on both sides of floor or wall after installation of fill material and secured to together with supplied steel set screws. Nom 1 in. (25 mm) thick pre-cut foam plugs sized to accommodate the cable bundle and installed flush with each end of device on both sides of floor or wall assembly.

RECTORSEAL — Metacaulk® 2" square Pass Through Device, Metacaulk® 4" square Pass Through Device

B. Fill, Void or Cavity Materials* - Caulk or Putty — Min 1/8 in. (25 mm) thickness of caulk or min 1-1/2 in. thickness of putty applied within the annulus, flush with top surface of floor or with both surfaces of wall prior to the installation of the mounting flanges.

RECTORSEAL — Metacaulk1000 or Metacaulk Fire Rated Putty

*Bearing the UL Classification Mark



Metacaulk Box Guard Inserts for use with max 2-1/8 by 4 by 2-1/8 in deep. flush device UL Listed Metallic Outlet Boxes without internal clamps in 2 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep steel studs and constructed of the materials and in the manner specified in the individual U400 Series Wall and Partition Designs in the Fire Resistance Directory. One 47 mm wide by 71 mm high insert adhered to the interior back wall of the outlet box in accordance with the installation instructions supplied with the product. Installation to comply with the National Electrical code, (NFPA 70). Outlet boxes installed with steel cover plates. When protective material is used within outlet boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Box Guard Inserts for use with max 4 by 4 by 2-1/8 in deep flush device UL Listed Metallic Outlet Boxes without internal clamps in 2 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep steel studs and constructed of the materials and in the manner specified in the individual U400 Series Wall and Partition Designs in the Fire Resistance Directory. One 94 mm wide by 95 mm high insert adhered to the interior back wall of the outlet box in accordance with the installation instructions supplied with the product. Installation to comply with the National Electrical Code, (NFPA 70). Outlet boxes installed with steel cover plates. When protective material is used within outlet boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Box Guard Inserts for use with max 4-1/2 by 8-1/2 by 1-5/8 in deep . flush device UL Listed Metallic Outlet Boxes without internal clamps in 2 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep steel studs and constructed of the materials and in the manner specified in the individual U400 Series Wall and Partition Designs in the Fire Resistance Directory. Two 94 mm wide by 95 mm high inserts are evenly spaced and adhered to the interior back wall of the outlet box in accordance with the installation instructions supplied with the product. Installation to comply with the National Electrical Code, (NFPA 70). Min 3/4 in. deep plaster rings installed over outlet box. After installation of gypsum board, nom 1/4 in. thickness of RectorSeal Metacaulk 1000 or Biostop 500+ Sealant, bearing the UL Classification Marking for Fill, Void or Cavity Materials, applied between the base layer of wallboard and the plaster ring. Outlet boxes installed with steel cover plates. When protective material is used within and around outlet boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Box Guard Inserts for use with max 4 by 4 by 1-1/2 in. deep flush device UL Listed Metallic Outlet Boxes without internal clamps in 1 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep wood studs and with max 4 by 4 by 2-1/8 in. deep flush device UL Listed Metallic Outlet Boxes without internal clamps in 1 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep steel studs and constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory. One 94 mm wide by 95 mm high insert adhered to the interior back wall of the outlet box in accordance with the installation instructions supplied with the product. Installation to comply with the National Electrical Code, (NFPA 70). Outlet boxes installed with plastic cover plates. When protective material is used within outlet boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Box Guard Inserts for use with 4-11/16 by 4-11/16 by 2-1/8 in. deep flush device UL Listed Metallic Outlet Boxes without internal clamps in 1 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep steel studs and constructed of the materials and in the manner specified in the individual U400 Series Wall and Partition Designs in the Fire Resistance Directory. One 111 mm wide by 111 mm high insert adhered to the interior back wall of the outlet box in accordance with the installation instructions supplied with the product. Smaller sized inserts may be cut and combined to achieve the 111 mm by 111 mm coverage and adhered to the interior back wall of the outlet box. Installation to comply with the National Electrical Code, (NFPA 70). Outlet boxes installed with plastic or steel cover plates. When protective material is used within outlet boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Box Guard Inserts for use with 4-11/16 by 4-11/16 by 2-1/8 in. deep flush device UL Listed Metallic Outlet Boxes without internal clamps in 2 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep steel studs and constructed of the materials and in the manner specified in the individual U400 Series Wall and Partition Designs in the Fire Resistance Directory. One 111 mm wide by 111 mm high insert adhered to the interior back wall of the outlet box in accordance with the installation instructions supplied with the product. Smaller sized inserts may be cut and combined to achieve the 111 mm by 111 mm coverage and adhered to the interior back wall of the outlet box. Installation to comply with the National Electrical Code, (NFPA 70). Outlet boxes installed with steel cover plates. When protective material is used within outlet boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Box Guard Inserts for use with max 3-3/4 by 5-1/2 by 2-1/2 in deep flush device UL Listed Metallic Outlet Boxes without internal clamps in 1 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep steel or wood studs and constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory. One 94 mm wide by 95 mm high and one 47 mm wide by 71 mm high inserts adhered to the interior back wall of the outlet box in accordance with the installation instructions supplied with the product. Installation to comply with the National Electrical Code, (NFPA 70). Outlet boxes installed with steel cover plates. When protective material is used within outlet boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Box Guard Inserts for use with 4-3/8 by 4-7/8 by 2-1/4 in. deep flush device UL Listed Metallic Outlet Boxes without internal clamps in 1 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep steel studs and constructed of the materials and in the manner specified in the individual U400 Series Wall and Partition Designs in the Fire Resistance Directory. One 111 mm wide by 111 mm high insert adhered to the interior back wall of the outlet box in accordance with the installation instructions supplied with the product. Smaller sized inserts may be cut and

combined to achieve the 111 mm by 111 mm coverage and adhered to the interior back wall of the outlet box. Installation to comply with the National Electrical Code, (NFPA 70). Outlet boxes installed with plastic or steel cover plates. When protective material is used within outlet boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Box Guard Inserts , for use with 4-3/8 by 4-7/8 by 2-1/4 in. deep flush device UL Listed Metallic Outlet Boxes without internal clamps in 2 hr fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep steel studs and constructed of the materials and in the manner specified in the individual U400 Series Wall and Partition Designs in the Fire Resistance Directory. One 111 mm wide by 111 mm high insert adhered to the interior back wall of the outlet box in accordance with the installation instructions supplied with the product. Smaller sized inserts may be cut and combined to achieve the 111 mm by 111 mm coverage and adhered to the interior back wall of the outlet box. Installation to comply with the National Electrical Code, (NFPA 70). Outlet boxes installed with steel cover plates. When protective material is used within outlet boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Box Guard Inserts for use with max 4-11/16 by 4-11/16 by 2-1/8 in. flush device UL Listed Metallic Outlet Boxes installed with steel mud rings and plastic or steel cover plates in 1 h or 2 h fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep wood or steel studs and constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the Fire Resistance Directory. Min 3-1/2 in. thick fiberglass (min 0.5 pcf) or mineral wool (min 4.0 pcf) batt insulation is to be installed within the wall cavity. One 4-3/8 by 4-3/8 in. insert adhered to the interior back wall of the outlet box in accordance with the instructions supplied with the product. Installation to comply with the National Electrical Code (NFPA 70). When protective material is used within outlet boxes on both sides of the wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Box Guard Inserts for use with max 4-11/16 by 4-11/16 by 2-1/8 in. flush device UL Listed Metallic Outlet Boxes installed with steel mud rings and plastic or steel cover plates in 1 h fire rated gypsum board wall assemblies framed with min 6 in. deep wood or steel studs and constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the Fire Resistance Directory. Nom 6-1/2 in. thick fiberglass insulation (min 0.5 pcf) is to be installed within the wall cavity. One 4-3/8 by 4-3/8 in. insert adhered to the interior back wall of the outlet box in accordance with the instructions supplied with the product. Installation to comply with the National Electrical Code (NFPA 70). When back to back boxes are inter connected a 1/4 in. depth of Metacaulk 1000 in the open end of each conduit of the box.

UL does not furnish a detail drawing for these listings



Metacaulk® Cover Guard Gaskets for use with max 4-11/16 by 4-11/16 in. flush device UL Listed Metallic Outlet Boxes installed with steel or plastic cover plates in 2 h fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep steel studs and constructed of the materials and in the manner specified in the individual U400 Series Wall and Partition Designs in the Fire Resistance Directory. Nom 2 by 4 in. or 4 by 4 in. gaskets to be installed on the inside of single gang or double gang cover plates, respectively, prior to attachment to device. Installation to comply with Article 370 of the National Electrical Code, (NFPA 70). When protective material is used within cover plates on outlet boxes on each sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided the boxes are not installed back-to-back.

Metacaulk® Cover Guard Gaskets for use with max 4-11/16 by 4-11/16 in. flush device UL Listed Metallic Outlet Boxes installed with steel or plastic cover plates in 1 h fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep wood or steel studs and constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the Fire Resistance Directory. Min 4 in. thick fiberglass (min 0.5 pcf) or mineral wool (min 4.0 pcf) batt insulation is to be installed within the wall cavity. Nom 2 by 4 in. or 4 by 4 in. gaskets to be installed on the inside of single gang or double gang cover plates, respectively, prior to attachment to device. Installation to comply with Article 370 of the National Electrical Code, (NFPA 70). When protective material is used within cover plates on outlet boxes on each sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided the boxes are not installed back-to-back.

Metacaulk Cover Guard for use with max 4-11/16 by 4-11/16 in. flush device UL Listed Metallic Outlet Boxes installed with Decora style steel or plastic cover plates in 1 h fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep wood or steel studs and constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the Fire Resistance Directory. Min 4 in. thick fiberglass (min 0.5 pcf) or mineral wool (min 4.0 pcf) batt insulation is to be installed within the wall cavity. Nom 4 by 4 in. gaskets to be installed on the inside of double gang cover plates prior to attachment to device. Installation to comply with Article 370 of the National Electrical Code, (NFPA 70). When protective material is used within cover plates on outlet boxes on each sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided the boxes are not installed back-to-back.

UL does not furnish a detail drawing for these listings



Metacaulk® Fire Rated Putty Pads for use with max 4 by 4 in. flush device UL Listed Metallic Outlet Boxes installed with steel cover plates in 1 and 2 h fire rated gypsum wallboard wall assemblies framed with min 3-1/2 in. deep wood or steel studs and constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory. Min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the side of the outlet box against the stud) and completely seal against the stud within the stud cavity. When moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk® Fire Rated Putty Pads for use with max 2-3/16 by 3-3/4 by 2-11/32 in. deep UL Listed Nonmetallic Outlet Boxes manufactured by Pass & Seymour Inc. under the trade name Slater, made from polyvinyl chloride and bearing a 2 h rating under the "Outlet Boxes and Fittings Classified for Fire Resistance" category in the Fire Resistance Directory. Putty pads and boxes for use in 2 h fire rated gypsum board wall assemblies framed with min 3-1/2 in. deep wood or steel studs and constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory. Outlet box secured to studs by means of mounting tab supplied with the outlet box. Min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box including the side of the outlet box against the stud. Outlet boxes installed with steel or plastic cover plates. When moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk® Fire Rated Putty Pads for use with max 4 by 4 in. flush device UL Listed Metallic Outlet Boxes Installed with steel or plastic cover plates in 1 h fire rated gypsum wallboard wall assemblies framed with min 3-1/2 in. deep steel studs and constructed of the materials and in the manner specified in the individual U400 Series Wall and Partition Designs in the Fire Resistance Directory. Two layers of min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box including the side of the outlet box against the stud. Nom 1/2 in. plaster rings installed over outlet boxes. After installation of gypsum board, nom 1/4 in. thickness of RectorSeal Metacaulk® 1000 Sealant, bearing the UL Classification Marking for Fill, Void or Cavity Materials, applied between gypsum board and the plaster ring. When moldable putty pad outlet box protective material and fill material are used on boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk® Fire Rated Putty Pads for use with max 4 by 3-3/4 by 3 in. deep UL Listed Nonmetallic Outlet Boxes manufactured by Carlon Electrical Products, made from polyvinyl chloride, and bearing a 2 hr rating under the "Outlet Boxes and Fittings Classified for Fire Resistance" category in the Fire Resistance Directory. Putty pads and boxes for use in 1 and 2 hr fire rated gypsum wallboard wall assemblies framed with min 3-1/2 in. deep wood studs and constructed of the materials and in the manner specified in the individual U300 Series Wall and Partition Designs in the Fire Resistance Directory. Outlet box secured to wood stud by means of two nailing tabs in conjunction with nails supplied with the outlet box. Min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the side of the outlet box against the stud) including the nailing tab and completely seal against the stud within the stud cavity. Outlet boxes installed with steel or plastic cover plates. When moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back-to-back.

Metacaulk Fire Rated Putty Pads for use with max 4-11/16 by 4-11/16 by 2-1/8 in. flush device UL Listed Metallic Outlet Boxes installed with steel mud rings and plastic or steel cover plates in 1 h fire rated gypsum board wall assemblies framed with min 6 in. deep wood or steel studs and constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the Fire Resistance Directory. Nom 6-1/2 in. thick fiberglass insulation (Min 0.5 pcf) is to be installed within the wall cavity. Min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box including the side of the outlet box against the stud. Installation to comply with the National Electrical Code (NFPA 70). When back to back boxes are inter connected a 1/4 in. thickness formed plug of Putty Pad or Metacaulk 1000 in the open end of each conduit of the box.

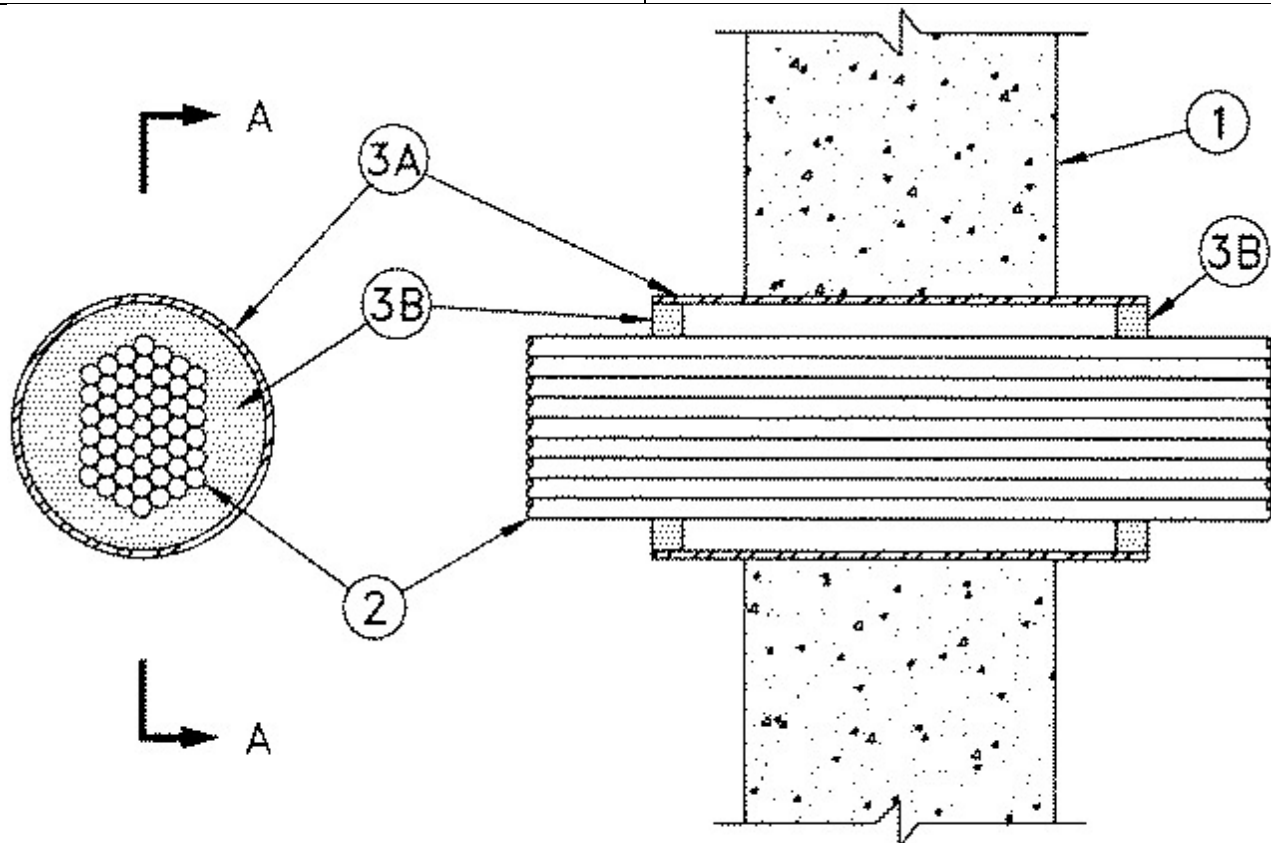
UL does not furnish a detail drawing for these listings



System No. W-J-3084

July 16, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 1 Hr	FT Rating — 1 Hr
	FH Rating — 2 Hr
	FTH Rating — 1 Hr
L Rating at Ambient - Less than 1 CFM/sq ft	L Rating at Ambient - Less than 1 CFM/sq ft
L Rating at 400° F - 1.4 CFM/sq ft	L Rating at 400° F - 1.4 CFM/sq ft



SECTION 'A-A'

1. **Wall Assembly** — Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 4-1/2 in. (114 mm).

See **Concrete Blocks** (CAZT) in Volume 1 of the Fire Resistance Directory for names of manufacturers.

2. **Cables** — Aggregate cross-sectional area of cables in opening to be max 18.6 percent of the cross-sectional area of the opening. Cables to be bundled together and rigidly supported on both sides of wall assembly. The annular space between cable bundle and edge of metallic sleeve (Item 3A) shall be min 0 in. to max 2 in. (51 mm). The following types and sizes of cables may be used:

A. Max 7/C No. 16 AWG (or smaller) copper conductor power and control cables with XLPE or PVC insulation and XLPE or PVC jacket.

B. Max 4 pairs No. 24 AWG (or smaller) copper conductor data cables with Hylar insulation and jacket.

C. Max 2/C No. 12 AWG (or smaller) cables with PVC insulation and jacket.

D. Max 62.5/125 micron fiber optic cables with PVC insulation and jacket.

E. Type RG59/U coaxial cables with polyethylene (PE) insulation and PVC jacket.

3. Firestop System — The firestop system shall consist of the following:

A. **Metallic Sleeve** — Nom 4 in. (102 mm) diam (or smaller) steel, iron, or EMT sleeve with 0.083 in. (2.1 mm) wall thickness (or thicker), tightly fitted into wall opening. Length of sleeve to be equal to thickness of wall plus 2 in. (51 mm) such that, when installed, the ends of the sleeve project 1 in. (25 mm) beyond each surface of the wall. Sleeve is optional when wall thickness is equal to or greater than 8 in. (203 mm).

B. **Fill, Void or Cavity Material* - Sealant** — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with ends of steel sleeve. Fill material to be forced into interstices of cable group to seal any voids on both surfaces of wall. A min 3/8 in. (10 mm) bead of the sealant shall be applied at the interfaces of the sleeve and both wall surfaces.

RECTORSEAL — FlameSafe® FS900+, Metacaulk MC 150+, Biostop BF 150+

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

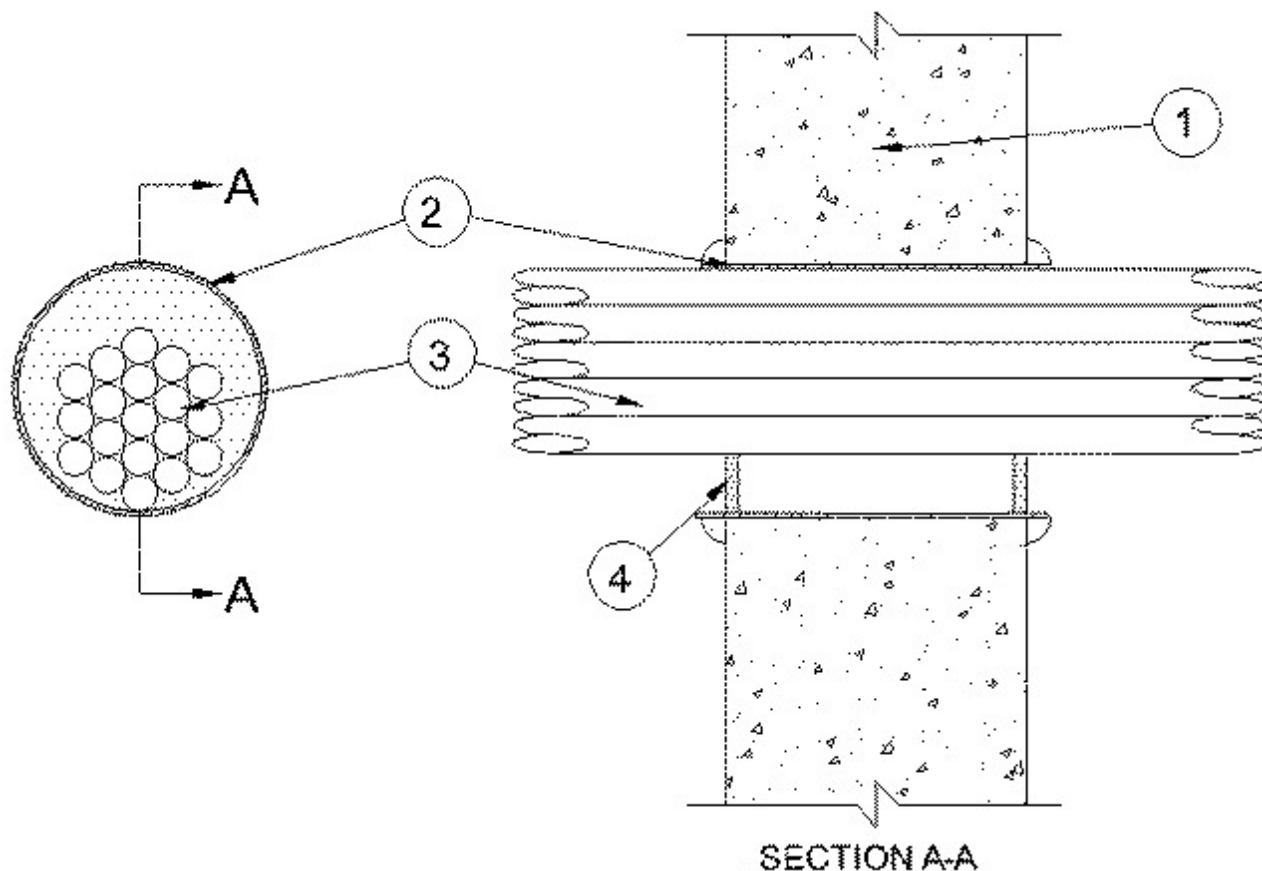


System No. W-J-3113

December 03, 2003

F Rating — 2 Hr

T Rating — 1/2 Hr



1. **Wall Assembly** — Min 6 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 4 in.

See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. **Metallic Sleeve** — (Optional) — Cylindrical sleeve fabricated from min No. 26 gauge galv sheet steel and having a min 1 in. overlap along the longitudinal seam. Ends of sleeve to be flush with or extend a max 1 in. beyond each surface of wall.

3. **Cables** — Aggregate cross-sectional area of cables to be min 25 percent to max 64 percent of the aggregate cross-sectional area of the opening. Cables to be tightly bundled and rigidly supported on both sides of wall assembly. The annular space between the cables and the periphery of opening shall be min 0 in. (point contact) to max 2 in. Any combination of following types and sizes of copper conductor cables may be used:

A. Max 2/C with ground, No. 12 AWG MC (BX) cable with polyvinyl chloride (PVC) insulation on conductors inside a steel armored jacket.

B. Max 3/C with ground, No. 12 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.

C. Max 8/C No. 12 AWG (or smaller) Type SOW-A P-123-70-MSHA.

D. Max 25 pair, No. 24 AWG (or smaller) copper conductor telephone cable with XLPE/PVC insulation, with or without PVC jacket.

E. Max RG6 (or smaller) television coaxial cable CATVX.

F. Max 4 pair, No. 24 AWG (or smaller) copper conductor data cable with Hylar insulation and jacketing.

G. Max 1/C, No. 18 AWG (or smaller) Type MTW or THHN or THWN or gas & oil res II 600V (UL) or AWM VW-1 power cable.

H. Max 1/C, No. 14 AWG (or smaller) Type MTW or THHN or THWN or gas & oil res II 600V (UL) or AWM VW-1 power cable.

I. Max 1/C, No. 10 AWG (or smaller) Type THHN or THWN gasoline & oil resistant II 600V VW-1 E116364 (UL) power cable.

J. Optical Fiber Cable max 62.5/125 Type UFNR.

K. Max 3/C, No. 4/0 with ground, AWG aluminum Triple E Alloy AA8176 Type SE cable Style U Type XHH-W-2 CDRS E32071 (UL) service entrance cable.

L. Max 3/C, No. 18 AWG with ground and shield E120910.

4. Firestop System — The firestop system shall consist of the following:

A. **Fill, Void or Cavity Material* - Caulk** — Min 1/2 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. When steel sleeve is not used or when steel sleeve is flush with the wall surfaces, a min 1/4 in. diam bead of caulk shall be applied at interface of cables and periphery of opening at point contact location on both surfaces of wall. When steel sleeve is used, a bead of caulk is applied to the steel sleeve/concrete interface on both sides of wall.

RECTORSEAL — MC 150+, Metacaulk 1000

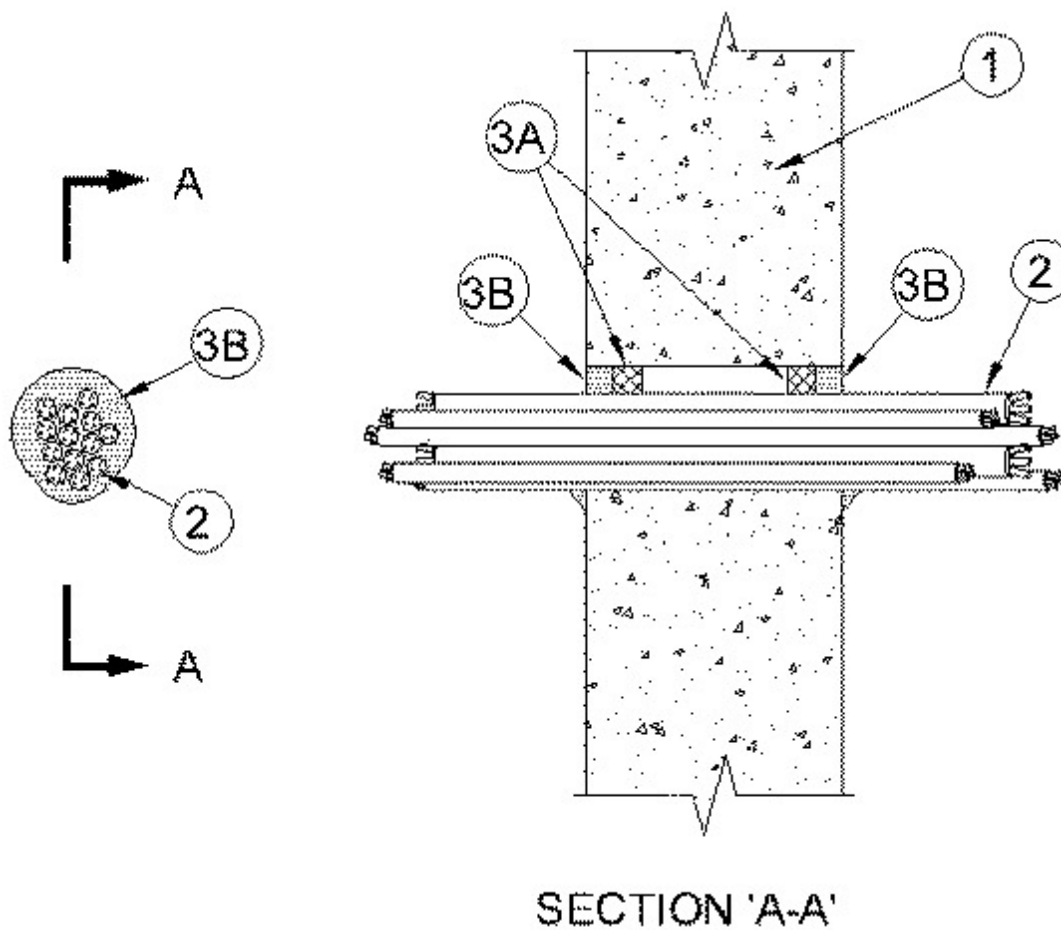
*Bearing the UL Classification Mark



System No. W-J-3144

July 16, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 and 2 Hr (See Item 1)	F Rating — 1 and 2 Hr (See Item 1)
T Rating — 1/2 and 1 Hr (1/2 (See Item 1)	FT Rating — 1/2 and 1 Hr (See Item 1)
	FH Rating — 1 and 2 Hr (See Item 1)
	FTH Rating — 1/2 and 1 Hr (See Item 1)



1. Wall Assembly — Min 4-7/8 in. and 6-1/8 in. thick lightweight or normal weight (100-150 pcf) concrete for 1 and 2 hr rated assemblies, respectively. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 5 in.

See **Concrete Blocks** (CAZT) in Volume 1 of the Fire Resistance Directory for names of manufacturers.

The hourly T Rating is 1/2 hr and 1 hr for 1 and 2 hr rated assemblies, respectively.

2. Cables — Aggregate cross-sectional area of cables to be max 64 percent of the cross-sectional area of the opening. Cables to be tightly bundled and rigidly supported on both sides of wall assembly. The annular space between the cables and the periphery of opening shall be min 0 in. (point contact) to max 1-1/4 in. Any combination of following types and sizes of copper conductor cables may be used:

A. Max 3/C with ground, No. 12 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.

B. Max 1/C No. 350 kcmil (or smaller) copper conductor cable with cross-linked polyethylene (XLPE) jacket.

C. Max 7/C No. 12 AWG (or smaller) copper conductor power and control cables with XLPE or PVC insulation with XLPE or PVC jacket.

D. Max 400 pair No. 24 AWG copper telephone cables, with Polyvinyl Chloride (PVC) insulation and jacket.

E. Max 4/C No. 2/0 (or smaller) aluminum or copper conductor, aluminum or steel jacketed metal-clad or armored-clad cable.

F. Max RG/6 No. 18 AWG Type CATV copper conductor coaxial cable with Polyvinyl Chloride (PVC) insulation and jacket.

G. Max 3/C No. 2/0 AWG (or smaller) copper or aluminum conductor SER cables with PVC insulation and jacket.

H. Max RG59/U (or smaller) television coaxial cable with fluorinated ethylene insulation and jacketing.

I. Max 62.5/125 micron fiber optic cables with PVC insulation and jacket.

3. Firestop System — The firestop system shall consist of the following:

A. **Packing Material** — (Optional) — Mineral wool or fiberglass insulation or foam backer rod compressed and firmly packed into annular space from each end of opening and recessed 5/8 in. from each wall surface.

B. **Fill, Void or Cavity Material* - Sealant** — Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At point contact location, 1/2 in. diam bead of sealant applied at interface of cables and periphery of opening on both surfaces of wall.

RECTORSEAL — FS 900+ Sealant, Metacaulk MC 150+, Biostop BF 150+

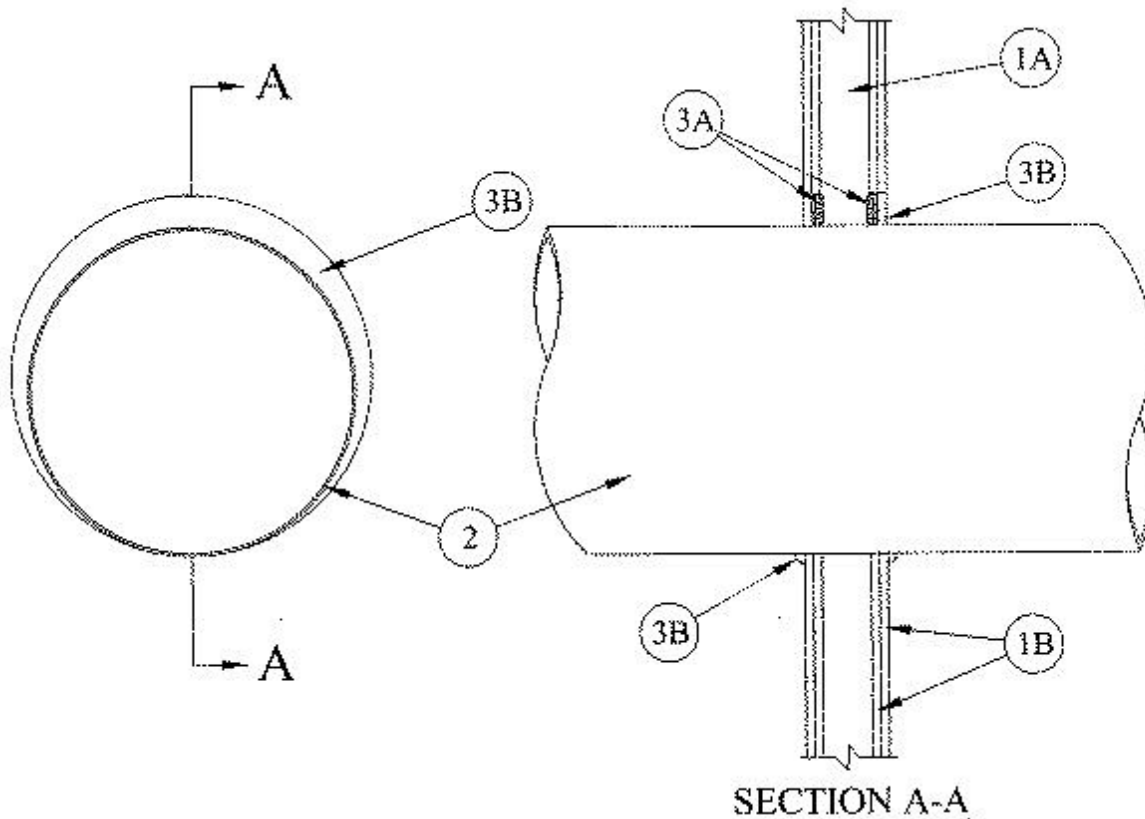
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. W-L-1152

July 16, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 and 2 Hr (See Item 1)	F Rating — 1 and 2 Hr (See Item 1)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft	FH Rating — 1 and 2 Hr (See Item 1)
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — Less Than 1 CFM/sq ft



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in. (610 mm) OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing in all four sides.

B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (1.2 m) wide with square or tapered edges.

The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Design in the UL Fire Resistance Directory. Max diam of opening is 26-3/8 in. (670 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls.

The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.

2. Through Penetrant — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min 0 in. (point contact) to max 2-3/8 in. (60 mm). Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduit or tubing may be used:

A. **Steel Pipe** — Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 24 in. (610 mm) diam (or smaller) cast or ductile iron pipe.

C. **Conduit** — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or nom 6 in. diam (or smaller) steel conduit.

D. **Copper Tubing** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. Firestop System — The firestop system shall consist of the following:

A. **Forms** — Use to prevent the leakage of fill material during installation in 2 hr fire-rated assemblies. Forms to be rigid sheet material or polyurethane backer rod, cut to fit the contour of the through penetrant and friction fitted into the opening on both sides of wall. Forms to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.

B. **Fill, Void or Cavity Material*** — **Sealant** — Min 5/8 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall. At the point contact location between through penetrant and gypsum board, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the gypsum board/through penetrant interface on both surfaces of wall.

RECTORSEAL — FlameSafe FS900, FS900+, FS1900, Metacaulk MC 150+, Metacaulk 1000, Metacaulk 350i, Biostop BF 150+, Biostop 350i or Biostop 500+

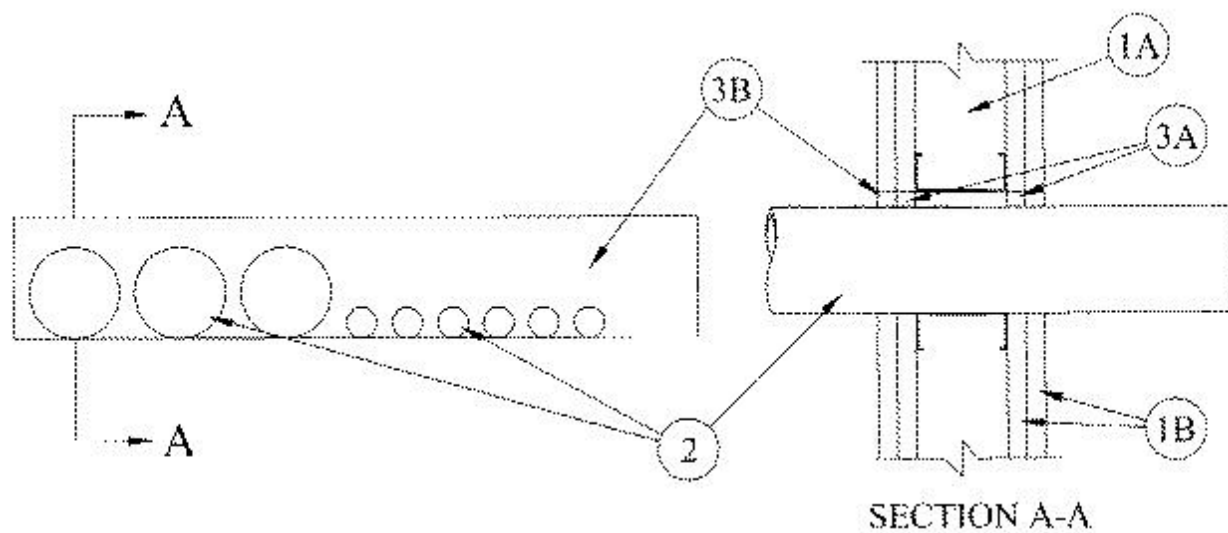
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. W-L-1207

July 16, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1B)	F Ratings - 1 and 2 Hr (See Item 1B)
T Rating - 0 Hr	FT Rating - 0 Hr
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Ratings - 1 and 2 Hr (See Item 1)
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Rating - 0 Hr
	L Rating At Ambient - Less Than 1 CFM/sq ft
	L Rating At 400 F - Less Than 1 CFM/sq ft



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in. (610 mm) OC. Additional framing members to be installed in stud cavity containing the through penetrants to form a rectangular box around the through penetrants.

B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (1.2 m) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max area of opening is 90-1/2 sq in. (584 cm²) with max dimensions of 22-5/8 in. (575 mm) for steel stud walls. Max area of opening is 58 sq in. (374 cm²) with max dimensions of 14-1/2 in. (368 mm) for wood stud walls.

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Through Penetrants — One or more through penetrants to be installed within the opening. Only three through penetrants shall have a nom diam greater than 1 in. (25 mm). The space between the through penetrants shall be a nom 1/2 in. (13 mm). The annular space between through penetrants and periphery of opening shall be min 0 in. (point contact) to max 1/2 in. (13 mm) for through penetrants having a nom diam greater than 1 in. (25 mm). The annular space between through penetrants and periphery of opening shall be min 0 in. (point contact) to max 2-7/8 in. (73 mm) for through penetrants having a nom diam 1 in. (25 mm) or less. The through penetrants to be rigidly supported on both sides of wall assembly. The following types and sizes of through penetrants may be used:

A. **Steel Pipe** — Nom 3 in. (76 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 3 in. (76 mm) diam (or smaller) cast or ductile iron pipe.

C. **Conduit** — Nom 3 in. (76 mm) diam (or smaller) steel electrical metallic tubing or galv steel conduit.

3. **Firestop System** — The firestop system shall consist of the following:

A. **Forms** — (Optional) Used to prevent the leakage of fill material during installation in 2 hr fire-rated assemblies. Forms to be rigid sheet material or polyurethane backer rod, cut to fit the contour of the through penetrant and friction fitted into the opening on both sides of wall. Forms to be recessed from both surfaces of wall to accommodate the required thickness of fill material.

B. **Fill, Void or Cavity Material*** — **Sealant** — Min 5/8 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall. At the point contact location between through penetrants and gypsum board, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the gypsum board/through penetrant interface on both surfaces of wall.

RECTORSEAL — FS900+, FS929+, FS901+CG, FS905+CG and FS955+CG, Metacaulk MC 150+, Biostop BF 150+

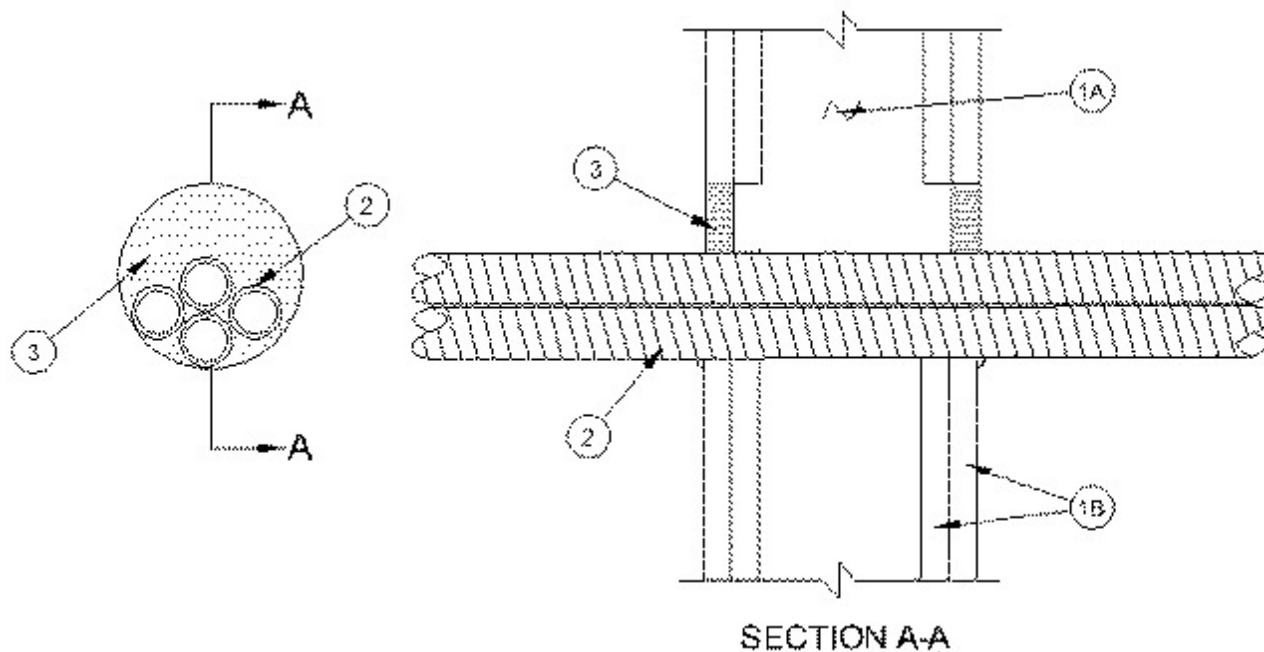
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. W-L-1343

July 16, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Ratings - 1 and 2 Hr (See Item 1)
T Rating - 0 Hr	FT Rating - 0 Hr
L Rating At Ambient - 1.7 CFM/sq ft	FH Ratings - 1 and 2 Hr (See Item 1)
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Rating - 0 Hr
	L Rating At Ambient - 1.7 CFM/sq ft
	L Rating At 400 F - Less Than 1 CFM/sq ft



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in. (406 mm) OC.

B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (1.2 m) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400 or V400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 6 in. (152 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Through Penetrants — One or more nom 1-1/2 in. (38 mm) diam (or smaller) flexible steel conduits bundled together and installed within the opening. Max diam of through penetrant bundle shall be 4 in. (102 mm). The space between the through penetrants shall be a min of 0 in. (point contact) to a max of 2 in. (51 mm). The annular space between the through penetrants and periphery of opening shall be min 0 in. (point contact) to max 2 in. (51 mm). Conduit to be rigidly supported on both sides of wall assembly.

See **Flexible Metal Conduit** (DXUZ) category in the Electrical Construction Materials Directory for names of manufacturers.

3. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall. At the point contact location between through penetrants and gypsum board, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the gypsum board/through penetrant interface on both surfaces of wall. Additional sealant shall be forced into interstices of through penetrants to max extent possible.

RECTORSEAL — FS 900+ Sealant, Metacaulk MC 150+, Biostop BF 150+

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

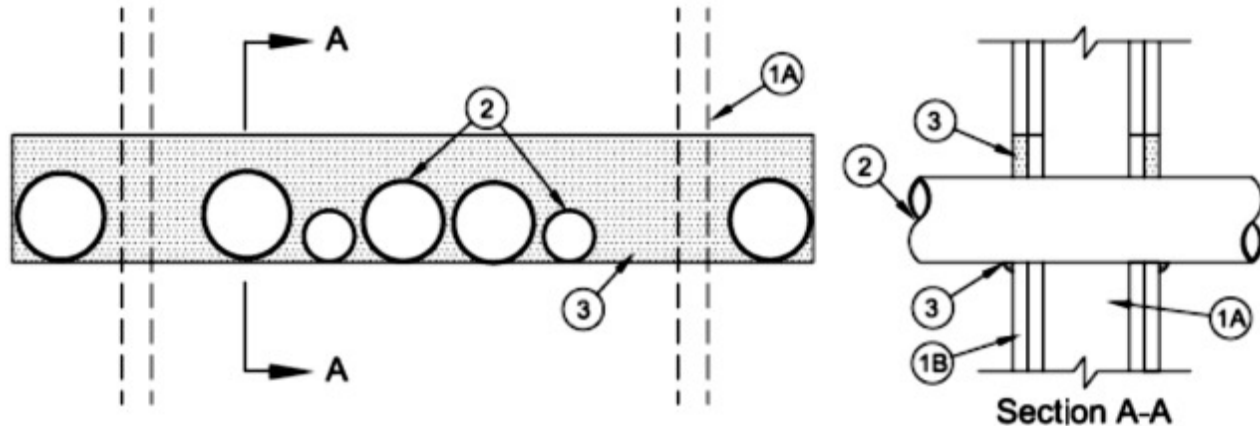


System No. W-L-1454

May 21, 2009

F Ratings — 1 and 2 Hr (See Item 1)

T Ratings — 0 and 1/4 Hr (See Item 1)



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing shall consist of min 3-5/8 in. (92 mm) wide steel channel studs spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — Min 5/8 in. (16 mm) thick. The gypsum board type, thickness, number of layers and orientation shall be as specified in the individual U400 or V400 Wall and Partition Design. Max area of opening is 216 in.² (1394 cm²) with a max dimension of 36 in. (914 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed. The hourly T Rating is 0 hr and 1/4 hr for 1 hr and 2 hr fire rated assemblies, respectively.

2. Through Penetrants — Multiple pipes or conduits installed in single layer array within the firestop system. The annular space between the pipes and conduits and the edges of the opening shall be min 0 in. (point contact) to max 3 in. (76 mm). The separation between pipes and conduits to be min 1/4 in. (6 mm) to max 3 in. (76 mm). Pipes and conduits to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or conduits may be used:

A. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.

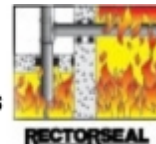
B. Conduit — Nom 4 in. (51 mm) diam (or smaller) rigid steel conduit or steel electrical metallic tubing (EMT).

3. Fill Void or Cavity Materials* - Caulk — Min 5/8 in. (16 mm) thickness of fill material installed to completely fill annular space between pipes, conduits and gypsum flush with each surface of wall. Min 1/4 in. (6 mm) diam bead of fill material applied to the through penetrant/wall interface at the point contact locations on both sides of the wall.

RECTORSEAL — MC 150+

4. Packing Material — (Optional, Not Shown) - For 2 hr fire rated walls only, optional foam backer rod may be installed within the annulus and recessed a min 5/8 in. (16 mm) from both surfaces of wall.

*Bearing the UL Classification Mark

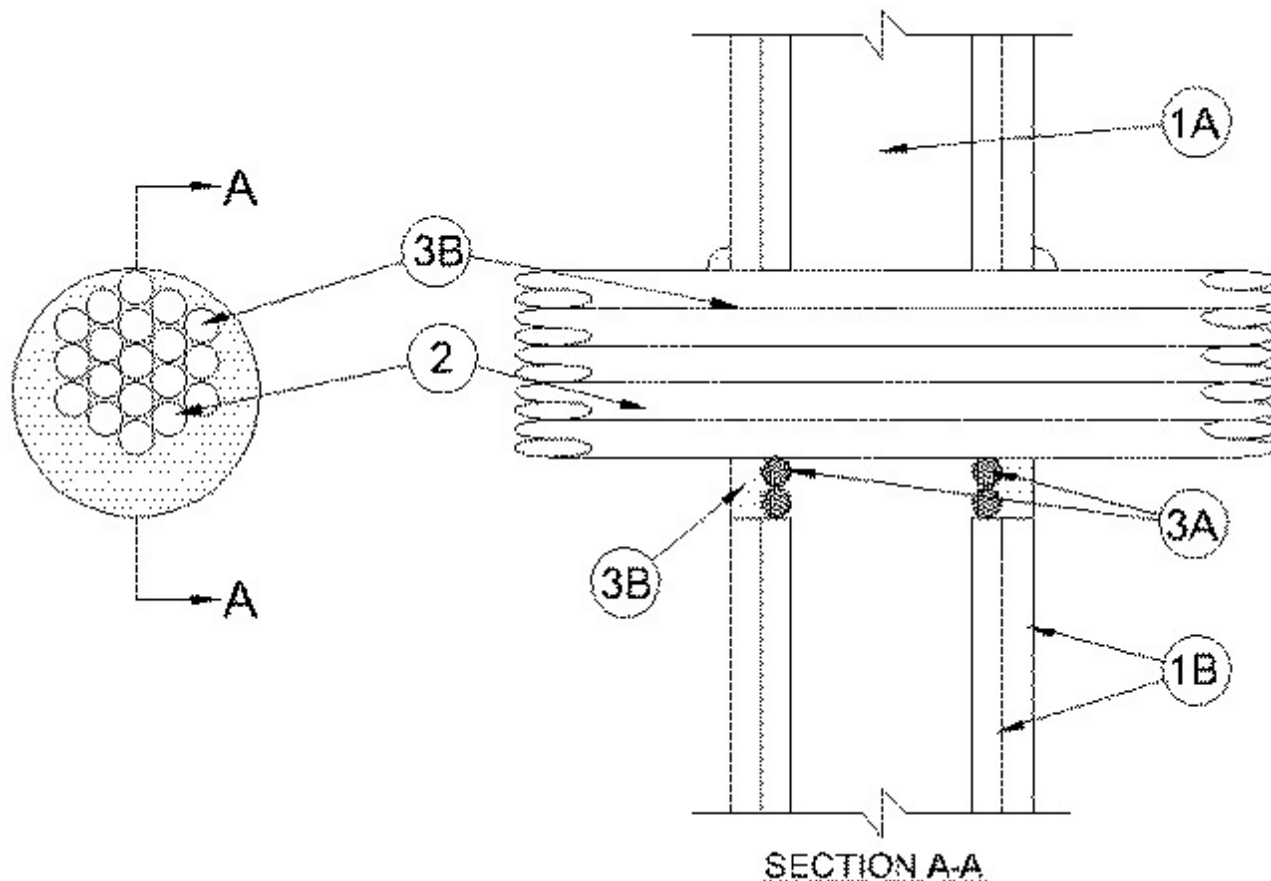


System No. W-L-3188

October 07, 2002

F Ratings — 1 and 2 Hr (See Item 1)

T Ratings — ½ and ¾ Hr (See Item 2)



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 3-1/2 in. wide and spaced max 24 in. OC.

B. Gypsum Board* — One or two layers of nom 5/8 in. thick gypsum board as specified in the individual Wall and Partition Design. Max diam of opening is 4 in.

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly.

2. Cables — Aggregate cross-sectional area of cables to be min 25 percent to max 64 percent of the aggregate cross-sectional area of the opening. Cables to be tightly bundled and rigidly supported on both sides of wall assembly. The annular space between the cables and the periphery of opening shall be min 0 in. (point contact) to max 2 in. Any combination of following types and sizes of copper conductor cables may be used:

A. Max 2/C with ground, No. 12 AWG MC (BX) cable with polyvinyl chloride (PVC) insulation on conductors inside a steel armored jacket.

B. Max 3/C with ground, No. 12 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.

C. Max 3/C with ground, No. 10 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.

D. Max 25 pair, No. 20 AWG (or smaller) copper conductor telephone cable with XLPE/PVC insulation, with or without PVC jacket.

E. Max RG59/U (or smaller) television coaxial cable with fluorinated ethylene insulation and jacketing.

F. Max 4 pair, No. 24 AWG (or smaller) copper conductor data cable with Hylar insulation and jacketing.

G. Max 2/C, No. 22 AWG (or smaller) copper conductor alarm cable with PVC insulation.

H. Max 1/C, No. 14 AWG (or smaller) Type MTW or THHN or THWN or gas & oil res II 600V (UL) or AWM VW-1 power cable.

I. Max 1/C, No. 10 AWG (or smaller) Type THHN or THWN gasoline & oil resistant II 600V VW-1 E116364 (UL) power cable.

J. Max 4/C, No. 18 AWG Type CL-2 Barostat II Sun res (UL) Listed thermostat cable.

K. Max 3/C, No. 4/0 with ground, AWG aluminum Triple E Alloy AA8176 Type SE cable Style U Type XHH-W-2 CDRS E32071 (UL) service entrance cable.

When annular space is greater than 1 in., the T Rating is ½ hr. When annular space is 1 in. or less, T Rating is ¾ hr.

3. Firestop System — The firestop system shall consist of the following:

A. Packing Material — For 2 hr wall assemblies, foam backer rod firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Material* - Caulk — Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At point contact location, ½ in. diam bead of caulk applied at interface of cables and periphery of opening on both surfaces of wall.

RECTORSEAL — MC 150+

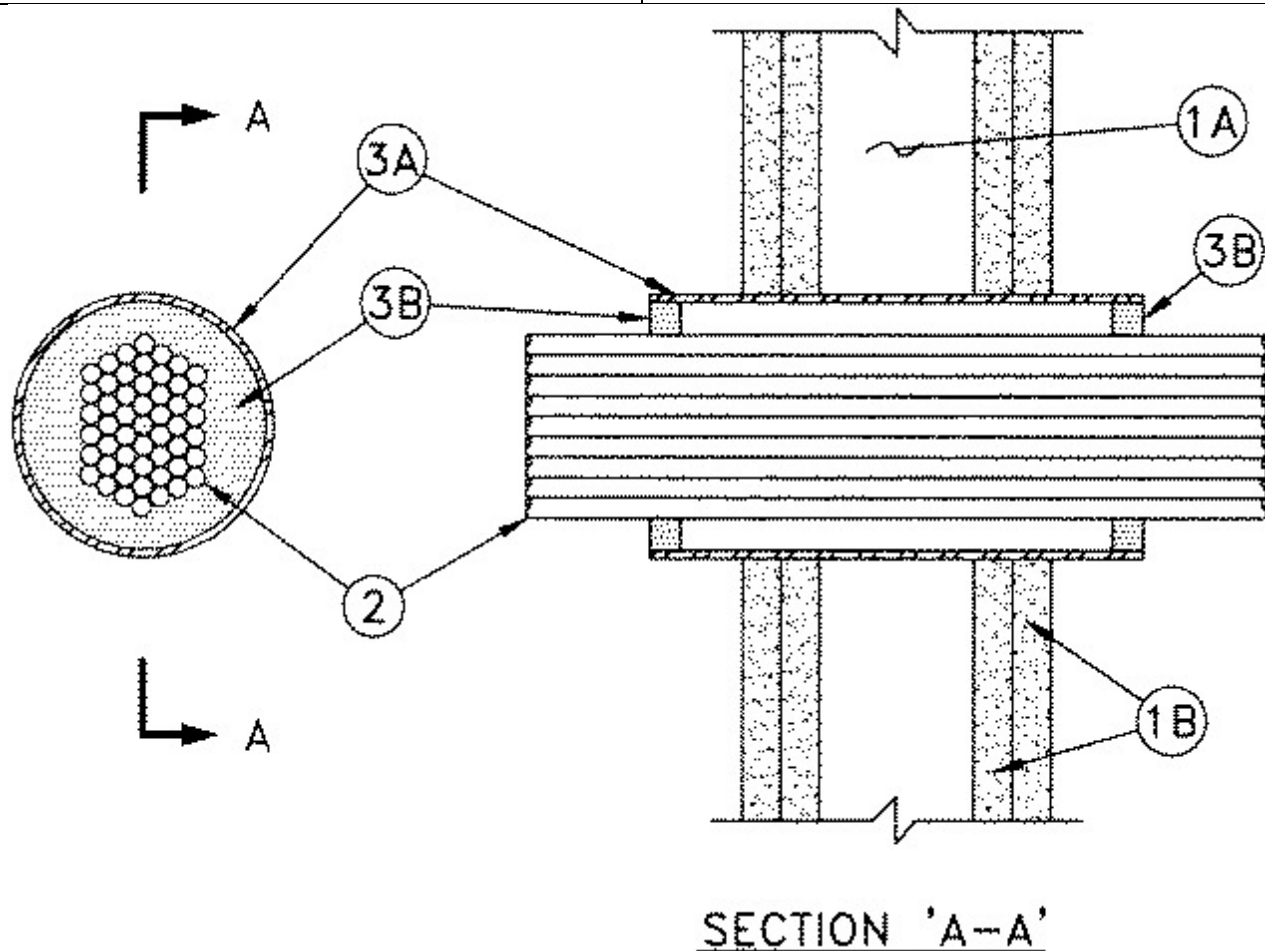
*Bearing the UL Classification Mark



System No. W-L-3199

July 16, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 1/2 and 1 Hr (See Item 1)	FT Ratings - 1/2 and 1 Hr (See Item 1)
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Ratings - 1 and 2 Hr (See Item 1)
L Rating At 400 F - 1.4 CFM/sq ft	FTH Ratings - 1/2 and 1 Hr (See Item 1)
	L Rating At Ambient - Less Than 1 CFM/sq ft
	L Rating At 400 F - 1.4 CFM/sq ft



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (1.2 m) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 4-1/2 in. (114 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

The hourly T Rating is 1/2 hr and 1 hr for 1 and 2 hr rated assemblies, respectively.

2. Cables — Aggregate cross-sectional area of cables in opening to be max 18.6 percent of the cross-sectional area of the opening. Cables to be bundled together and rigidly supported on both sides of wall assembly. The annular space between cable bundle and edge of metallic sleeve (Item 3A) shall be min 0 in. (point contact) to max 2 in. (51 mm). The following types and sizes of cables may be used:

A. Max 7/C No. 16 AWG (or smaller) copper conductor power and control cables with XLPE or PVC insulation and XLPE or PVC jacket.

B. Max 4 pairs No. 24 AWG (or smaller) copper conductor data cables with Hylar insulation and jacket.

C. Max 2/C No. 12 AWG (or smaller) cables with PVC insulation and jacket.

D. Max 62.5/125 micron fibre optic cables with PVC insulation and jacket.

E. Type RG59/U coaxial cables with polyethylene (PE) insulation and PVC jacket.

3. Firestop System — The firestop system shall consist of the following:

A. **Metallic Sleeve** — Nom 4 in. (102 mm) diam (or smaller) steel, iron, or EMT sleeve with 0.083 in. (2.1 mm) wall thickness (or thicker), tightly fitted into wall opening. Length of sleeve to be equal to thickness of wall plus 2 in. (51 mm) such that, when installed, the ends of the sleeve project 1 in. (25 mm) beyond each surface of the wall.

B. **Fill, Void or Cavity Material* - Sealant** — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with ends of steel sleeve. Fill material to be forced into interstices of cable group to seal any voids on both surfaces of wall. A min 3/8 in. (10 mm) bead of the sealant shall be applied at the interfaces of the sleeve and both wall surfaces.

RECTORSEAL — FlameSafe® FS900+, Metacaulk MC 150+, Biostop BF 150+

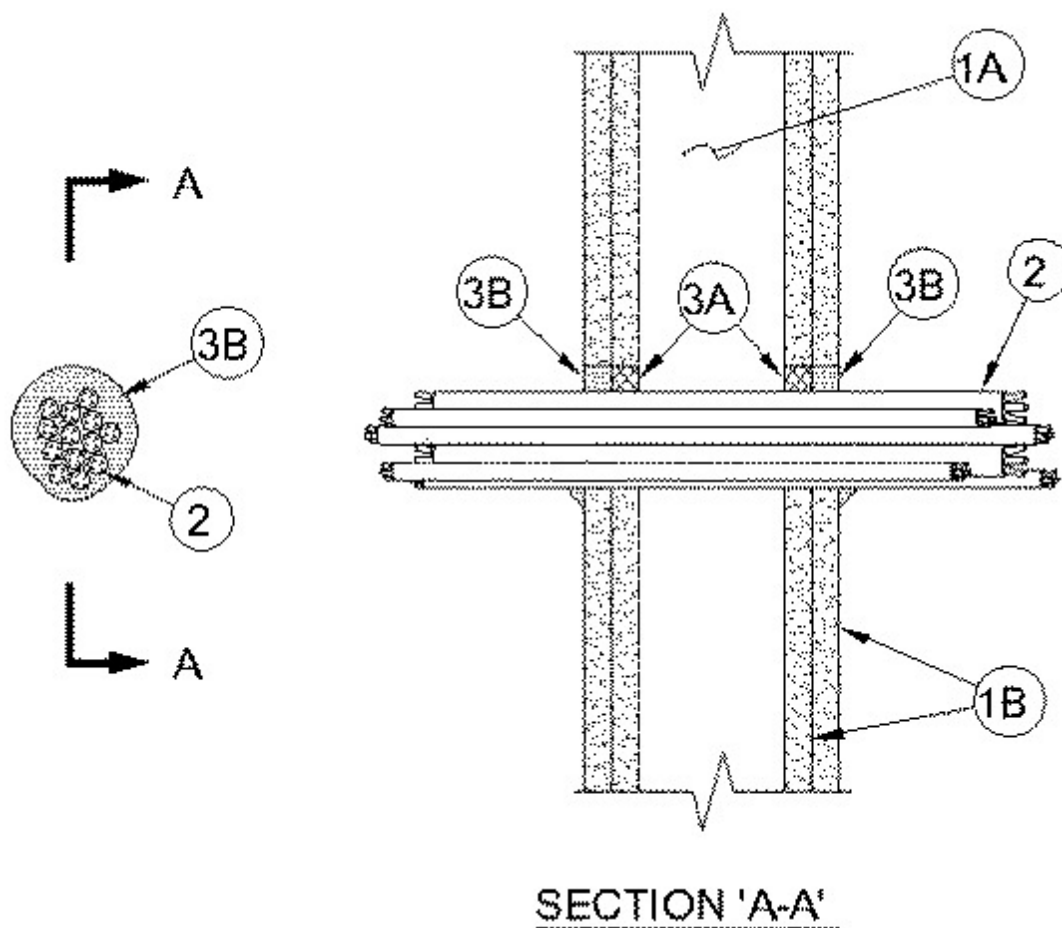
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. W-L-3269

July 16, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 1/2 and 1 Hr (See Item 1)	FT Ratings - 1/2 and 1 Hr (See Item 1)
L Rating At Ambient - Less Than 1 CFM/sq ft (See Item 3)	FH Ratings - 1 and 2 Hr (See Item 1)
L Rating At 400 F - Less Than 1 CFM/sq ft (See Item 3)	FTH Ratings - 1/2 and 1 Hr (See Item 1)
	L Rating At Ambient - Less Than 1 CFM/sq ft (See Item 3)
	L Rating At 400 F - Less Than 1 CFM/sq ft (See Item 3)



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — One or two layers of nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. Max diam of opening is 5 in. (127 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly. The hourly T Rating is 1/2 and 1 Hr for 1 and 2 Hr rated assemblies, respectively.

2. **Cables** — Aggregate cross-sectional area of cables to be max 64 percent of the cross-sectional area of the opening. Cables to be tightly bundled and rigidly supported on both sides of wall assembly. The annular space between the cables and the periphery of opening shall be min 0 in. (point contact) to max 1-1/4 in. (32 mm). Any combination of following types and sizes of copper conductor cables may be used:

- A. Max 3/C with ground, No. 12 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.
- B. Max 1/C No. 350 kcmil (or smaller) copper conductor cable with cross-linked polyethylene (XLPE) jacket.
- C. Max 7/C No. 12 AWG (or smaller) copper conductor power and control cables with XLPE or PVC insulation with XLPE or PVC jacket.
- D. Max 400 pair No. 24 AWG copper telephone cables, with Polyvinyl Chloride (PVC) insulation and jacket.
- E. Max 4/C No. 2/0 (or smaller) aluminum or copper conductor, aluminum or steel jacketed metal-clad or armored-clad cable.
- F. Max RG/6 No. 18 AWG Type CATV copper conductor coaxial cable with Polyvinyl Chloride (PVC) insulation and jacket.
- G. Max 3/C No. 2/0 AWG (or smaller) copper or aluminum conductor SER cables with PVC insulation and jacket.
- H. Max RG59/U (or smaller) television coaxial cable with fluorinated ethylene insulation and jacketing.
- I. Max 62.5/125 micron fiber optic cables with PVC insulation and jacket.

3. **Firestop System** — The firestop system shall consist of the following:

- A. **Packing Material** — (Optional) — Mineral wool or fiberglass insulation or foam backer rod compressed and firmly packed into annular space from each end of opening and recessed 5/8 in. (16 mm) from each wall surface.
- B. **Fill, Void or Cavity Material* - Sealant** — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At point contact location, 1/2 in. (13 mm) diam bead of sealant applied at interface of cables and periphery of opening on both surfaces of wall. The fill material to be applied within the interstices of the cables to max extent possible for the L Ratings to apply.

RECTORSEAL — FS 900+ Sealant, Metacaulk MC 150+, BF Biostop 150+

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



System No. W-L-3354

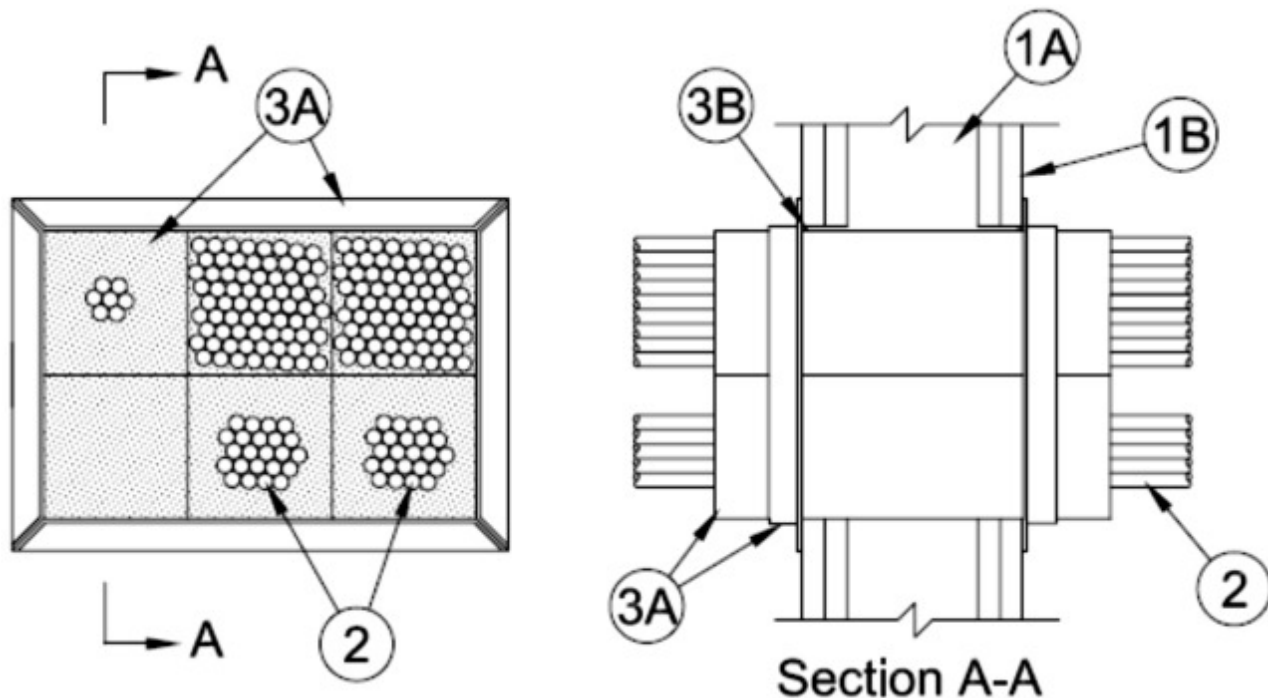
June 14, 2010

F Ratings — 1 or 2 Hr (See Item 1)

T Rating — 0 Hr

L Rating At Ambient — Less Than 1 and 2.8 CFM/Device (See Item 2)

L Rating At 400 F — Less Than 1 and 1.6 CFM/Device (See Item 2)



1. Wall Assembly — The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — Min 5/8 in. thick gypsum board. Max area of opening is 98.5 in.² (635 cm²) with a max dimension of is 12-1/8 in. (308 mm) for square devices. Diam of opening is 4-1/2 in. (114 mm) for round devices.

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Cables — Within the loading area of each firestop device module the cables may represent a 0 to 100 percent visual fill. Cable bundles to be rigidly supported on both sides of wall assembly. Any combination of the following types and sizes of cables may be used:

A. Max 2/C No. 18 AWG copper conductor thermostat cable with polyvinyl chloride (PVC) insulation and jacket materials.

B. Max 4 pair No. 24 AWG copper conductor Cat5e or Cat 6 telephone cable with PVC insulation and jacket materials.

C. Max RG/U (or smaller) coaxial cable with foam high density polyethylene insulation and PVC jacket materials.

D. Max 3/C (with ground) No. 14 AWG (or smaller) nonmetallic sheathed (Romex) cable with PVC insulation and jacket materials.

E. Max 1/C No. 8 AWG copper conductor cable with PVC insulation and nylon jacket materials.

F. Max 12 core No. 26 AWG shielded multi coax cable with foam high density polyethylene insulation and PVC jacket.

G. Max 48MM62.5 micron fiber optic cables with having a min FT-6 rating.

H. Max 62.5/125 micron fiber optic cables with having a min Riser rating.

I. Max 1/C 3/0 AWG copper conductor cable with PVC insulation and jacket materials.

J. Max three copper conductors (with ground) No. 12 AWG **Metal Clad Cable+**.

K. Max four copper conductors No. 2 AWG **Metal Clad Cable+**.

AFC CABLE SYSTEMS INC

L. Max 1/C 2/0 AWG non halogen copper conductor cable.

M. Max 300 pair No. 24 AWG copper conductor telephone cable with PVC insulation and jacket materials.

N. Max 30 pair No. 22 copper conductor shielded switchboard cable with PVC insulation and jacket materials.

O. Max RG/6 (or smaller) coaxial cable with fluorinated ethylene (FE) or PVC insulation and jacket materials.

P. Max RG/U (or smaller) coaxial cable with fluorinated ethylene (FE) or PVC insulation and jacket materials.

Q. Max 7/C No. 12 AWG copper conductors with PVC insulation and jacket materials.

R. Max 4 pair No. 23 AWG copper conductor Cat 6 telephone cable with PVC insulation and jacket materials.

S. Max three copper conductors (with ground) No. 12 AWG steel **Armored Cable+**.

T. Max 04-02 2 5M fiber optic cables having a max diameter of 0.450 in. (11.4 mm).

U. Max 1/C No. 750 kcmil copper conductors with PVC insulation and fabric jacket materials.

V. Max 3/C with ground No. 2/0 AWG aluminum conductor SER cable with cross linked polyethylene (XLPE) insulation and PVC jacket.

L Rating is less than 1 CFM/Device for a single cable or a blank at ambient and at 400 F. The L Rating is 2.8 CFM/Device and 1.6 CFM/Device at ambient and at 400 F, respectively, for all other percentages of fill.

3. Firestop System — The firestop system shall consist of the following:

A. Firestop Device* — A max of six square firestop devices may be ganged together. As an alternate, one round device may be centered within a round opening. Each device consists of a nom 4 by 4 by 10 in. (102 by 102 by 254 mm) or 4 in. (102 mm) diam by 10 in. (254 mm) powder coated steel transit incorporating internal intumescent material, foam plugs and mounting flanges. Firestop device(s) to be installed within opening with ends projecting an equal distance beyond each surface of wall assembly in accordance with the accompanying installation instructions. The annular space between device(s) and periphery of opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3 mm). Firestop device(s) secured in place by means of steel split mounting flanges sized to accommodate the firestop device. Steel split mounting flanges installed on both sides of wall and secured together with supplied steel set screws. Nom 1 in. (25 mm) thick pre-cut foam plugs sized to accommodate the cables and installed flush with each end of device on both sides of wall assembly. Foam plugs may be recessed 1 in. (25 mm) from each end of device (see Item 3C).

RECTORSEAL — Metacaulk® 4" square Pass Through Device, Metacaulk® 4"round Pass Through Device

B. Fill, Void or Cavity Materials* - Caulk or Putty — Min 1/8 in. (3 mm) thickness of caulk or min 1/2 in. (13 mm) thickness of putty applied within the annulus, flush with both surfaces of wall. If three or less cable transits (Item 3A) are ganged together, the fill material may be optional. L Rating applies only when fill material is used. An additional bead of caulk shall be placed between ganged devices on both sides of floor or wall when multiple devices are used.

RECTORSEAL — Metacaulk 1000 or Fireputty pad.

C. Fill, Void or Cavity Materials* - Putty — (Not Shown. Optional) Foam plug within device recessed 1 in. from each end of device and min 1 in. (25 mm) thickness of putty applied within resulting annulus and interstices of cable bundles, flush with both ends of device.

RECTORSEAL — Fireputty pad.

+ Bearing the UL Listing Mark

*Bearing the UL Classification Mark

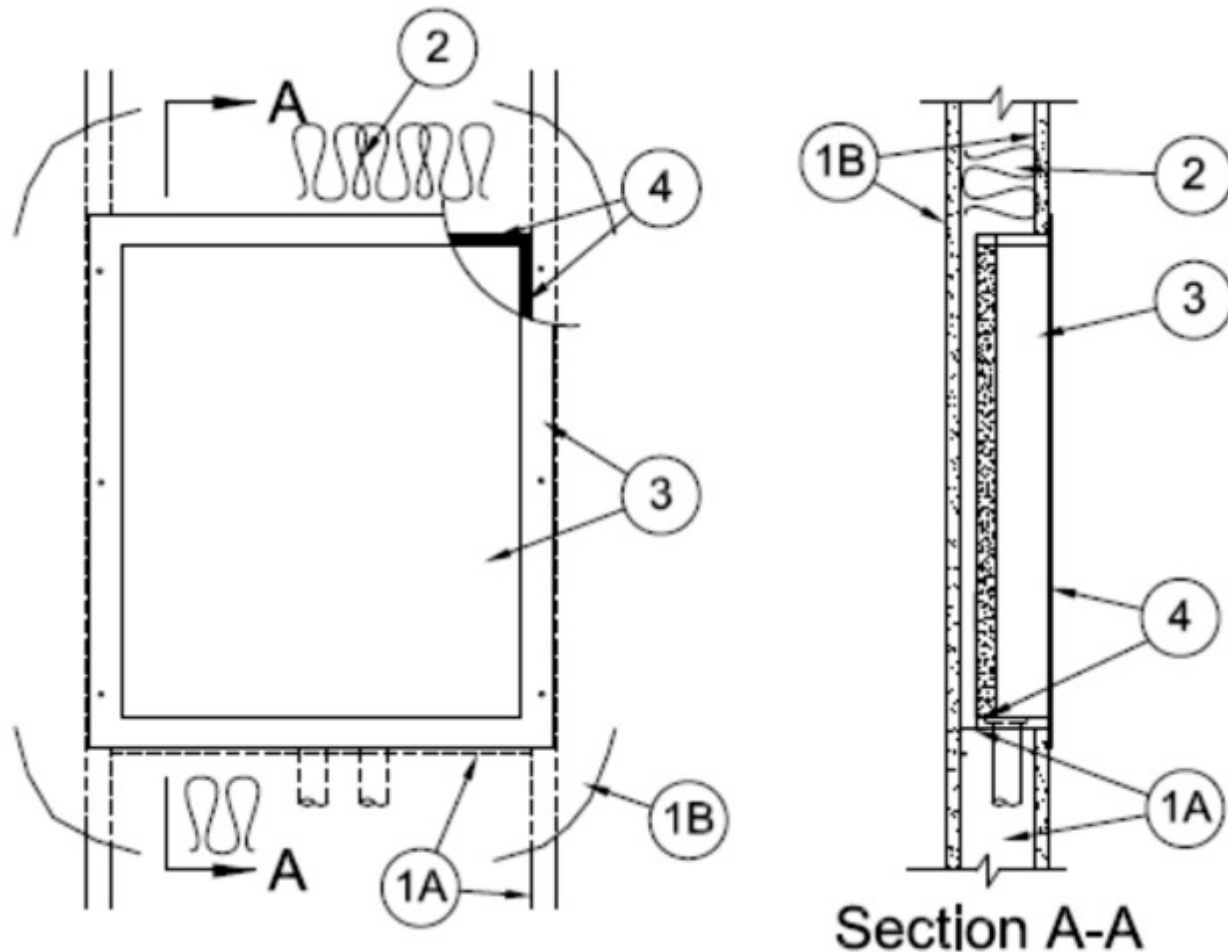


System No. W-L-7203

June 02, 2011

F Ratings — 1 and 2 Hr (See Item 1)

T Ratings — 1 and 2 Hr (See Item 1)



1. Wall Assembly — The 1 or 2 hr fire rated framed gypsum board wall assembly shall be constructed of the materials and in the manner specified in the individual U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing shall consist of steel channel studs. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — The gypsum board type, thickness, number of layers and orientation shall be, as specified in the individual Wall and Partition Design. Size of cutout made to accommodate steel box (Item 3) is to be 1/4 in. (6 mm) wider and 1/4 in. (6 mm) higher than the width and height of the steel box.

The hourly F and T Ratings are equal to the hourly rating of the wall assembly.

2. Insulation — The spaces between the sides of the steel box and the studs, the space between the back of the box and the gypsum board and the stud cavities above, below and on each side of the steel box are to be tightly packed with min R19 glass fiber batt insulation or mineral wool insulation to the full depth of the stud cavity.

3. Steel Box — Min 16 gauge, max 24 in. (610 mm) wide by max 24 in. (610 mm) high by max 4 in. (102 mm) deep recessed steel utility box with screw cover or hinged steel door installed through one side of wall only. Steel box secured to steel studs with steel screws. Bottom and/or top of steel box may be penetrated by up to five nom 1 in. (25 mm) diam steel EMT conduits and up to four nom 3/4 (19 mm) steel EMT conduits. Open conduits which terminate within the box shall be

sealed with caulk (Item 5) or plugged with a ball of putty (Item 6).

4. Fill, Void or Cavity Materials* — Nom 1/16 in. (2 mm) thick intumescent material supplied in 1, 6 and 12 in. (25, 152 and 305 mm) wide strips. Min one layer of intumescent material applied to inside perimeter of box (item 3) closest to cover or door. Two 12 in. (305 mm) wide strips cut to the width of the box to completely cover the interior surface of the box cover. Two 6 in. (152 mm) wide cut to the width of the box to cover the top and bottom of the interior back panel of the box.

RECTORSEAL — Metacaulk Joint Strip, Biostop Joint Strip, FlameSafe Joint Strip.

5. Fill, Void or Cavity Materials* - Caulk or Sealant — (Not Shown) - Nom 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with surface of wall. Nom 1/4 in. (6 mm) in diam bead of caulk applied to the point contact locations at the box/gypsum interface. The end of each open pipe or tube which terminates within the box shall be sealed with a min 1/2 in. (13 mm) depth of caulk.

RECTORSEAL — Metacaulk 1000, Biostop 500+, FlameSafe 1900

6. Fill, Void or Cavity Materials* - Putty — (Not Shown) - As an alternate to the caulk (Item 5), the end of each conduit which terminates within the box may be sealed with a min 1/2 in. (13 mm) depth of putty fill material.

RECTORSEAL — Metacaulk Fire Rated Putty, Biostop Fire Rated Putty

*Bearing the UL Classification Mark