Firestopping Submittal Package

metacaulk®

Project: Commercial Plumbing Contractors (PVC & PEX Thru Gyp Board)
Architect:
General Contractor:
Installation Contractor:
Distributor (and Contact):

Manufacturer's Representative:

Table of Contents

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

RectorSeal 2601 Spenwick Drive, Houston, Texas 77055 Phone 800.231.3345 rectorseal.com

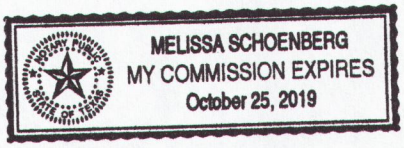
ALL PRODUCTS CONTAIN NO ASBESTOS OR PCB'S AND ARE CONSIDERED V.O.C. COMPLIANT.

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

RECTORSEAL
A CSW Industrials Company

2601 Spenwick Dr
Houston, TX 77055

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

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% form 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:

Metacaulk® Product	Location
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.

Metacaulk Product	EQ Credit	VOC Content (g/l)
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 (H20 = 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, CO_2 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 (H20 = 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, CO_2 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

SAFETY DATA SHEET

METACAULK® WRAP STRIP

Firestop for penetrations

Section 1 – Product and Company Information

Product Name
Metacaulk® Wrap Strip

Product Codes
66133, 66135, 66136

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 (H20 = 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, CO_2 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

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 (H20 = 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, CO_2 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

SAFETY DATA SHEET

METACAULK® INTUMESCENT SLEEVE

Prefabricated firestop system

Section 1 – Product and Company Information

Product Name
Metacaulk® Intumescent Sleeve

Product Codes
66582, 66584

Chemical Family
Organic/Inorganic

Use
Intumescent sleeve

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 (H20 = 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, CO_2 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

RECTORSEAL

A CSW Industrials Company

PRODUCT DATA SHEET

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

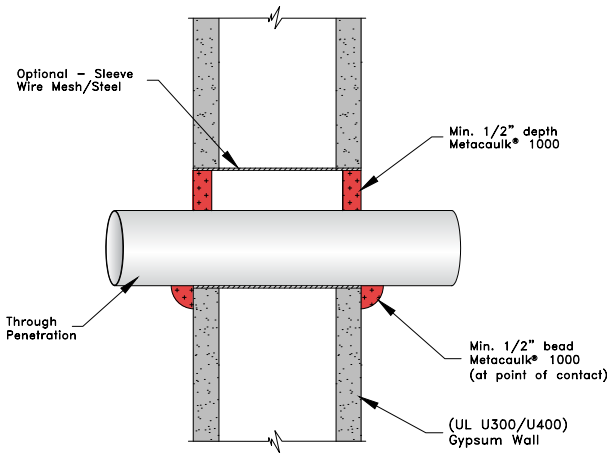
- Water based
- Excellent freeze-thaw
- Flexible set
- Highly intumescent
- Paintable
- VOC compliant
- Safe and easy to use
- 3 Year shelf life

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.



UL Listed Syste: WL1114
Tested as Per UL 2079 @ 25% Compression or extension for 500 cylces

For additional Technical Service, call toll free 800-231-3345

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 Interek 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.

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, CO_2, 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.

IFC INTERNATIONAL FIRESTOP COUNCIL THE Source of Firestop Expertise® MEMBER

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

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.

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 Towel
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

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, CO_2, 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.

IFC INTERNATIONAL FIRESTOP COUNCIL
THE Source of Firestop Expertise®
MEMBER

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

RECTORSEAL®

A CSW Industrials Company

PRODUCT DATA SHEET

METACAULK® WRAP STRIP

For Penetration

Description

Metacaulk® Wrap Strip is a strip of highly intumescent firestop material used primarily for plastic and insulated pipe applications. When exposed to heat, this product expands and forms a hard char to seal off the penetration preventing the passage of flames and hot gases.

Applications

Metacaulk Wrap Strip can firestop difficult penetrations such as plastic pipe, and insulated pipe.

Packaging

Code	Size	Qty. per Case
66135	1"x12"	6
66136	2"x12"	4

Installation Data

Metacaulk Wrap Strip is simple to install. Tightly wrap the required number of strips continuously around the penetrant to completely fill the annular space or as required by system design. Push the strips into the opening to the required depth. If a cold smoke seal is required, apply the recommended sealant in the opening over the strips.

Consult UL Directory for complete instructions and system listings.

Testing Data

Metacaulk Wrap Strip is classified by Underwriters Laboratories as a Fill, Void or Cavity Material. For specific test criteria, see UL Product iQ or call RECTORSEAL. Metacaulk Wrap Strip was tested at positive pressure for a minimum .01 inches (2.5 Pa) of water in accordance with UL 1479 and ASTM E 814 test standards. 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.

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.

Characteristics | Features

- Easy to install
- Cost effective
- Versatile, Flexible
- Highly intumescent
- Excellent freeze/thaw characteristics
- Long length means less waste
- Forms a very hard char when burned

Material Properties

Asbestos Fillers	None
Solvents	None
Hazardous Ingredients	None

Activation of Intumescence:	
Expansion Begins	375˚F (190˚C)
Expansion Greatest	575˚F - 1100˚F 302˚C - 593˚C

Color	Black
Freeze/Thaw	Excellent

ASTM E 84, 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 Wrap Strip should be stored in a cool, dry place. Keep products stored under protective cover, in their original containers. 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, CO_2, 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.

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PRODUCT DATA SHEET

METACAULK® PIPE COLLAR

Prefabricated Firestop System

Description

Metacaulk® Pipe Collars are prefabricated for open and closed through-penetration firestop systems using 1 1/2"(38 mm) to 6" (152 mm) plastic pipe. An easy locking tab assures easy installation. The collar design greatly reduces the time and expense that is required to install competitive collars.

Applications

Metacaulk Pipe Collars are used to seal off plastic pipe both in closed and vented (DWV) conditions. Also for use on up to 6" (152 mm) diameter ABS (cellular core or solid core), FRPP, PVC and CPVC pipe. The collar may be used on up to 3 hour rated concrete floors and walls, up to 2 hour rated gypsum walls and up to 2 hour rated wood floors.

Packaging

Code	Size	Qty. per Case
66352	1½"	12
66353	2"	12
66350	3"	6
66351	4"	6
66354	6"	2

Characteristics | Features

- Saves on labor cost
- Easy installation
- Economical
- No measurement of material required
- Highly intumescent
- Tested for pvc, cpvc, abs and pvc/abs foam core, frpp

Installation Data

Metacaulk Pipe Collar are prefilled and very easy to install.

Step 1 Select the proper collar to fit the diameter of pipe used.

Step 2 Making sure annular space is within the limits set by the tested conditions, attach collar around the pipe on the underside of the floor or to each side of a wall by firmly placing against the wall or floor and securing interlocking tabs [1 1/2" (38 mm), 2" (51 mm), 3" (76 mm) and 4" (102 mm)] or fastening the buckle [6" (152 mm)].

Step 3 If needed, mark and predrill wall or floor for required anchors. Properly secure the appropriate anchor into each of the anchoring tabs. In concrete, use 1/4" (6 mm) x 1 1/4" (32 mm) hex washer head type concrete anchors or appropriate steel expansion/wedge anchors. In gypsum, use 1/8" (3 mm) x 2" (51 mm) MOLLY type hollow wall anchors or 1 1/2" drywall or drywall laminating screws. Fender washers have been provided to be used with the fasteners.

Step 4 If an additional smoke seal is required, Metacaulk 1000 may be applied within the annular space before the attachment of the collar.

Consult UL Directory for complete instructions and system listings.

Material Properties

Asbestos Fillers	None
Solvents	None
Hazardous Ingredients	None

Activation of Intumescence:	
Expansion Begins	375˚F (190˚C)
Expansion Greatest	575˚F - 1100˚F 302˚C - 593˚C

Testing Data

Metacaulk Pipe Collars are classified by Underwriters Laboratories as a Firestop Device. For specific test criteria, see the UL Product iQ or call RectorSeal. Metacaulk® Pipe Collars were tested at a minimum .01 inches (2.5 Pa) of water positive pressure in accordance with UL 1479 (ASTM E814) test standards. 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.

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.

Inspection & Repair

RectorSeal recommends that a firestop system inspection be conducted during installation of the material in accordance with ASTM E2174 and ASTM E 2393. 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 Pipe Collars should be stored in a dry place. Keep product stored under protective cover in original container.

Limitations

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

Cautions

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.

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PRODUCT DATA SHEET

METACAULK® INTUMESCENT SLEEVE

Firestop Device

Description

Metacaulk® Intumescent Sleeve is a firestop seal for PVC, cc-PVC, CPVC, FRPP, PP, ABS and PVDF pipe and rigid, non-metallic conduit installations. Easily installed without modifications, steel bolts or fasteners, the Intumescent Sleeve is an ideal approach for firestopping combustible pipes penetrating the uneven contours of a concrete fluted deck assembly. It eliminates the need for collars or wrap strips and is great for use on pipes that penetrate walls at less than a 90° angle. It also eliminates the need to firestop on both sides of a penetration.

The Intumescent Sleeve easily wraps around pipes and is manufactured from a durable galvanized steel outer shell that is lined with a highly intumescent material. The Intumescent Sleeve is fastened with either fiberglass tape, pop rivets or hose clamps around the pipe. When used with Metacaulk® 1000 or 150+ Sealant, it produces an immediate smoke seal.

Applications

Metacaulk Intumescent Sleeve will firestop both sides of wall when installed from either side and provides a cost-effective alternative to collars for pipes going through walls and floors. The Intumescent Sleeve can also be used in applications that require retrofit.

The Intumescent Sleeve can be used with PVC, cc-PVC, CPVC, FRPP, PP, ABS and PVDF pipe and rigid, non-metallic conduits in sizes ranging from 2 inch to 8 inch. The Sleeve has been tested for use in concrete floor/wall installations and concrete fluted deck assemblies. For application with 8 inch (20 cm) diameter or smaller PVC and CPVC, the sleeve has been approved with an optional sleeve (S/10 or heavier) cast or grouted into the floor or wall.

Characteristics | Features

- Easy installation
- Economical
- No measurement of material required
- Can be retrofitted, easily removed and replaced
- Highly intumescent
- Tested for PVC, CPVC, ABS and PVC/ABS Foam Core, FRPP, PP, PVDF

Packaging

Code	Size	Qty. per Case	Dimensions (in)	Cubic Feet
66584	2", 3", 4"	6	20x9x2	.21
66582	6", 8"	1	18x8x.25	.02

Installation Data

RectorSeal Intumescent Sleeves are pre-firestopped and very easy to install

Step 1 Select the proper sleeve to fit the diameter of pipe used – Use the 234 sleeve for 2 in. (51 mm) or 3 in. (76 mm) or 4 in. (102 mm) diameter pipe OR the 68 sleeve for 6 in. (152 mm) or 8 in. (203 mm) diameter pipe.

Step 2 Determine the number of Sleeves required for application.

Step 3 Determine method of sleeve fastening to be used (fiberglass tape, pop rivets, hose clamps or tie wire).

Step 4 For installation, wrap the sleeve around pipe from above or below floor or either side of wall with the intumescent material side facing pipe, allowing bare metal end to overlap approximately 2 in. (51 mm).

Step 5 Secure the sleeve around pipe with selected fastening method.

Step 6 Push/slide the sleeve through assembly so that it is centered within floor and/or ceiling or centered within wall. The ends of the sleeve should extend the same distance beyond each side of the floor or wall surface.

Step 7 The Sleeve requires a minimum 0.25 in. (6 mm) annular space. Following sleeve installation, a backing material, such as backer rod compressed into the space may be used. Recess backing material to accommodate the required depth of sealant.

Step 8 Fill annular space cavity with the required depth of firestop sealant.

Consult UL Online Certification Directory for complete instructions and system listings

Testing Data

Metacaulk Intumescent Sleeves are classified by Underwriters Laboratories as a Firestop Device. For specific test criteria, see the UL Product iQ or call RectorSeal. Metacaulk Intumescent Sleeves were tested at a minimum .01 inches (2.5 Pa) of water positive pressure in accordance with UL 1479 (ASTM E814) test standards. 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.

Inspection & Repair

RectorSeal recommendsthat 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 Intumescent Sleeve should be stored in a dry place. Keep product stored under protective cover in original container. A stock rotation program is recommended.

Limitations

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

Cautions

KEEP OUT OF REACH OF CHILDREN.

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.

Material Properties

Asbestos Fillers	None
Solvents	None
Hazardous Ingredients	None

Activation of Intumescence:	
Expansion Begins	375˚F (190˚C)

Trade Size	Outer Diameter
2 in. (5.08 cm)	2.375 in. (6.03 cm)
3 in. (7.62 cm)	3.5 in. (8.9 cm)
4 in. (10.16 cm)	4.5 in. (11.4 cm)
6 in. (15.24 cm)	6.625 in. (16.8 cm)
8 in. (20.32 cm)	8.635 in. (21.9 cm)

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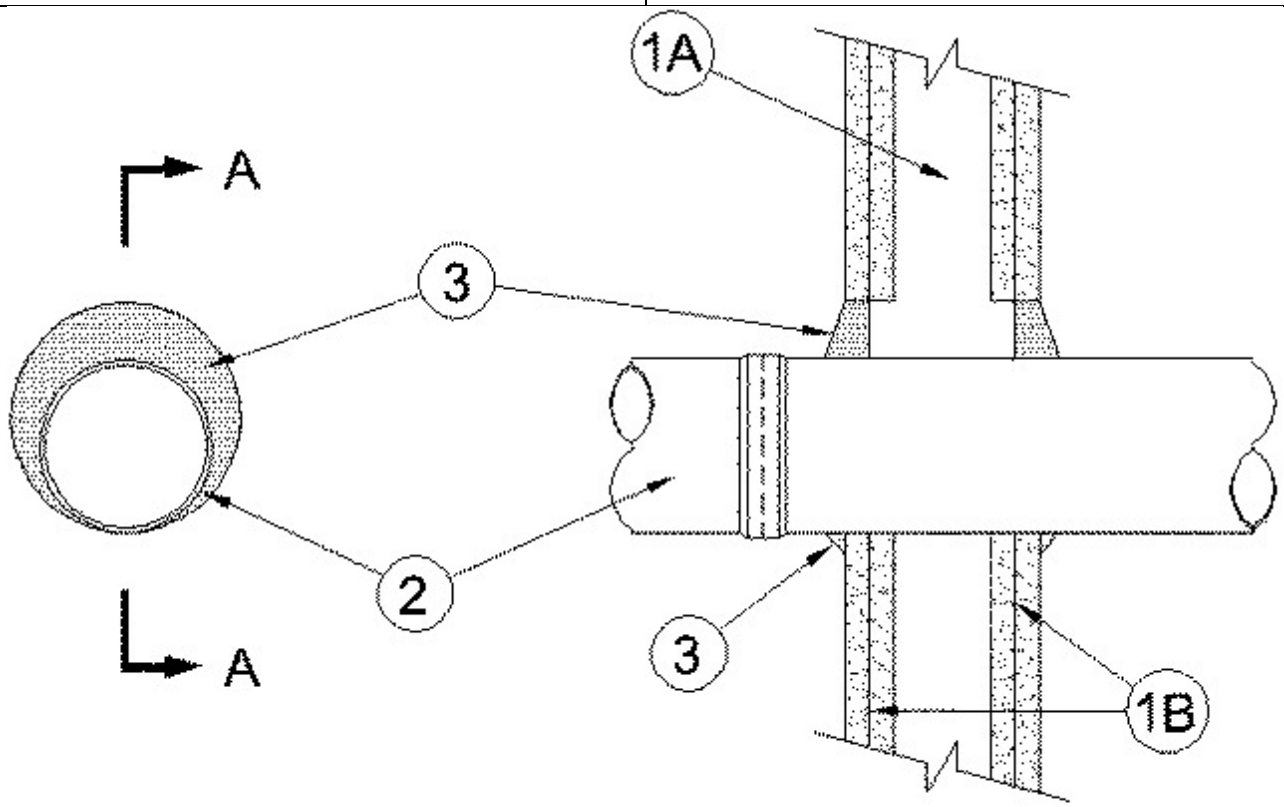
System No. W-L-2258

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 - 0 Hr	FT Ratings - 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 Ratings - 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. **Wall Assembly —** The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the material and in the manner specified in the individual U300, U400, or V400 or W400 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* —** Nom 5/8 in. (16 mm) thick, 4 ft (1.2 m) wide with square or tapered edges. The gypsum board thickness, type, number of layers, fastener types and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 8 in. (203 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 Penetrating Products* - Glass Pipe —** Nom 6 in. (152 mm) diam (or smaller) glass pipe installed concentrically or eccentrically in opening, for use in closed (process or supply) or vented (drain, waste or vent) piping systems. The annular space between pipe and periphery of opening shall be min 0 in. to max 1-3/8 in. (35 mm). Pipe to be rigidly supported on both sides of wall assembly. Pipe connections to be located a min 3 in. (76 mm) from wall surfaces.

The max diam of the glass pipe permitted within the firestop system is dependent upon the type of fill material (Item 3) used as shown in Item 3.

SCHOTT NORTH AMERICA INC

3. **Fill, Void, or Cavity Materials* - Sealant —** Min thickness of 5/8 in. (16 mm) applied within the annulus between pipe and periphery of the opening, flush with both surfaces of wall assembly. Additional sealant to be applied such that a min ¼ in. (6 mm) crown is formed around the through penetrant on both surfaces of wall.

The max diam of the glass pipe permitted within the firestop system is dependent upon the type of fill material as shown in the table below:

Type of Fill Material	Max Diam of Glass Pipe, in. (mm)
FlameSafe® FS 900+	6 (152)
FlameSafe®FS1900, Metacaulk 1000, Metacaulk 350i, Biostop 350i or Biostop 500+	4 (102)

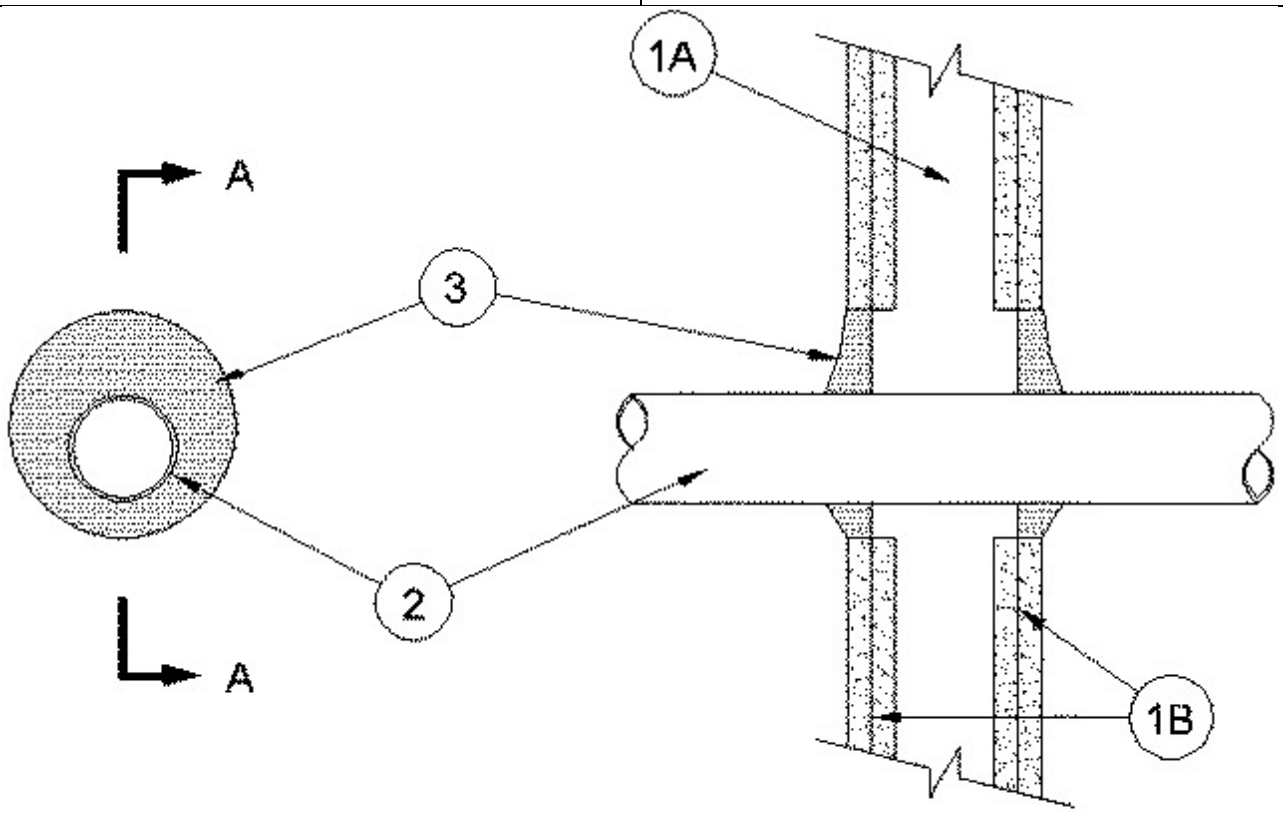
RECTORSEAL — FlameSafe® FS1900, FlameSafe® FS900+, Metacaulk MC 150+, Metacaulk 1000, Metacaulk 350i, Biostop BF150+, Biostop 350i or Biostop 500+

*** 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-2259

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 - 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 Ratings - 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. **Wall Assembly —** The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the material 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* —** Nom 5/8 in. (16 mm) thick, 4 ft (1.2 m) wide with square or tapered edges. The gypsum board thickness, type, number of layers, fasteners type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 4 in. (102 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. **Nonmetallic Pipe —** One nonmetallic pipe or conduit to be installed either concentrically or eccentricity within the firestop system. The annular space between the through penetrant and the periphery of the opening shall be a min 5/8 in.(16 mm) to a max 1 in. (25 mm). Pipe or conduit to be rigidly supported on both sides of wall assembly. The following types of nonmetallic pipes or conduits may be used:

A. **Polyvinyl Chloride (PVC) Pipe —** Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste, or vent) piping systems.

B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe —** Nom 2 in. (51 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.

C. **Rigid Nonmetallic Conduit+ —** Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code, (NFPA No. 70).

D. **Acrylonitrile Butadiene Styrene (ABS) Pipe —** Nom 2 in. (51 mm) diam Schedule 40 cellular or solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

3. **Fill, Void, or Cavity Materials* - Sealant —** Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. Additional fill material to be installed such that a min 1/4 in. (6 mm) thick crown is formed around the through penetrant at both surfaces of wall.

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.**

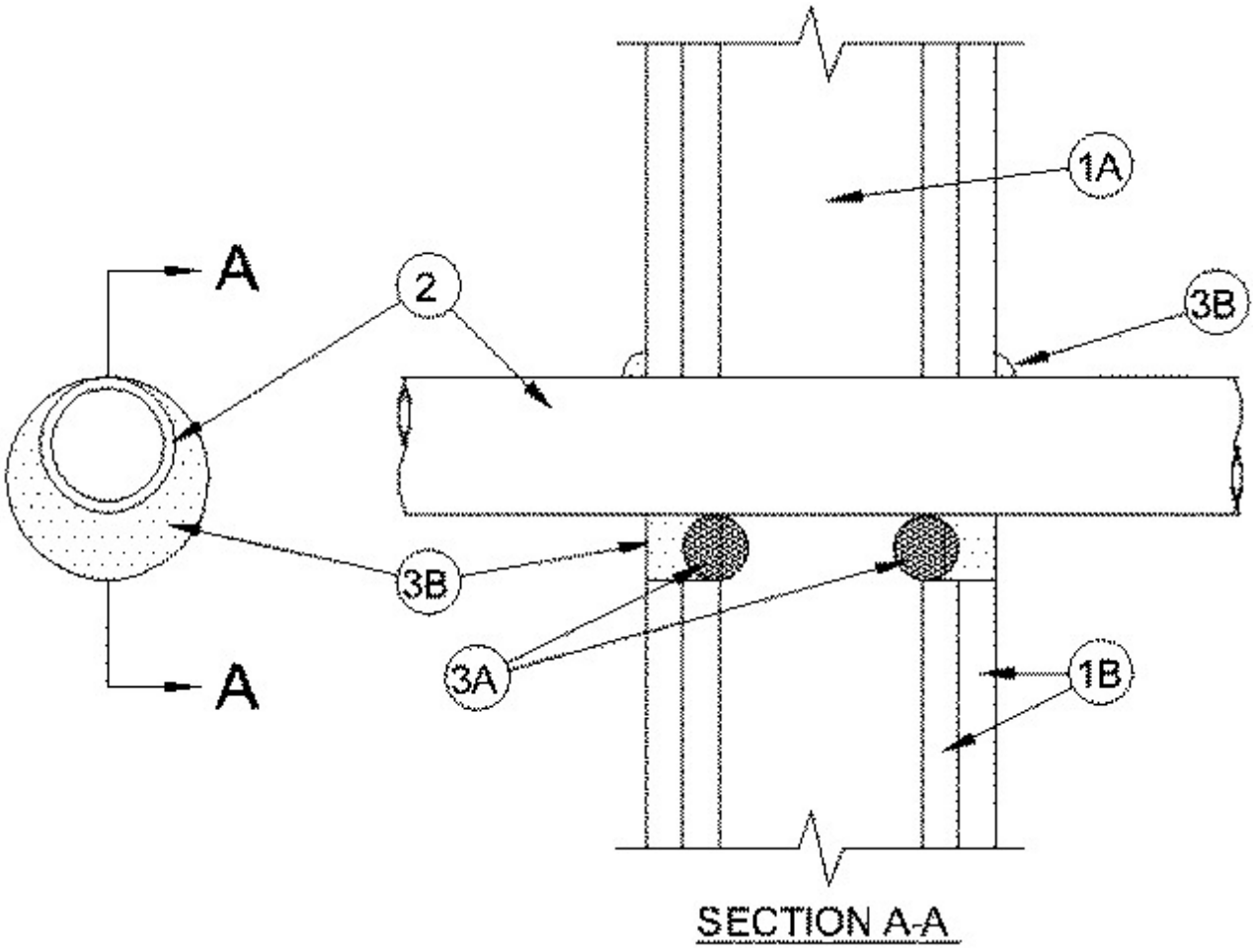
+Bearing the UL Listing Mark

System No. W-L-2262

November 28, 2007

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 hour 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 inch lumber spaced 16 inch OC. Steel studs to be min 2-1/2 inch wide and spaced max 24 inch OC.

B. **Gypsum Board* —** 5/8 in. thick, 4 feet 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 Wall and Partition Design. Maximum diameter of opening is 3-5/8 in.

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

2. **Nonmetallic Pipe —** One non-metallic pipe to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 (point contact) to max 1-1/4 in. Pipe to be rigidly supported on both sides of wall assembly. The following types and sizes of non-metallic pipes may be used:

A. **Polyvinyl Chloride (PVC) Pipe —** Nom 2 in. diam (or smaller) Schedule 40 solid core or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe —** Nom 2 in. diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.

C. **Electrical Non-Metallic Tubing (ENT) —** Nom 2 in. (or smaller) PVC tubing installed in accordance with Article 331 of the National Electrical Code (NFPA 70).

D. **Cross Linked Polyethylene (PEX) Tubing —** Nom 1 in. diam (or smaller) SDR 9 PEX tubing for use in closed (process or supply) piping systems.

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

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

B. **Fill Void or Cavity Materials* - Caulk —** Min 5/8 in. thickness of fill material applied within the annulus on both surfaces of the wall assembly. A min 1/2 in. diam bead of caulk shall be applied to the pipe/gypsum board interface at the point contact location on both sides of wall.

RECTORSEAL — MC 150+ Caulk

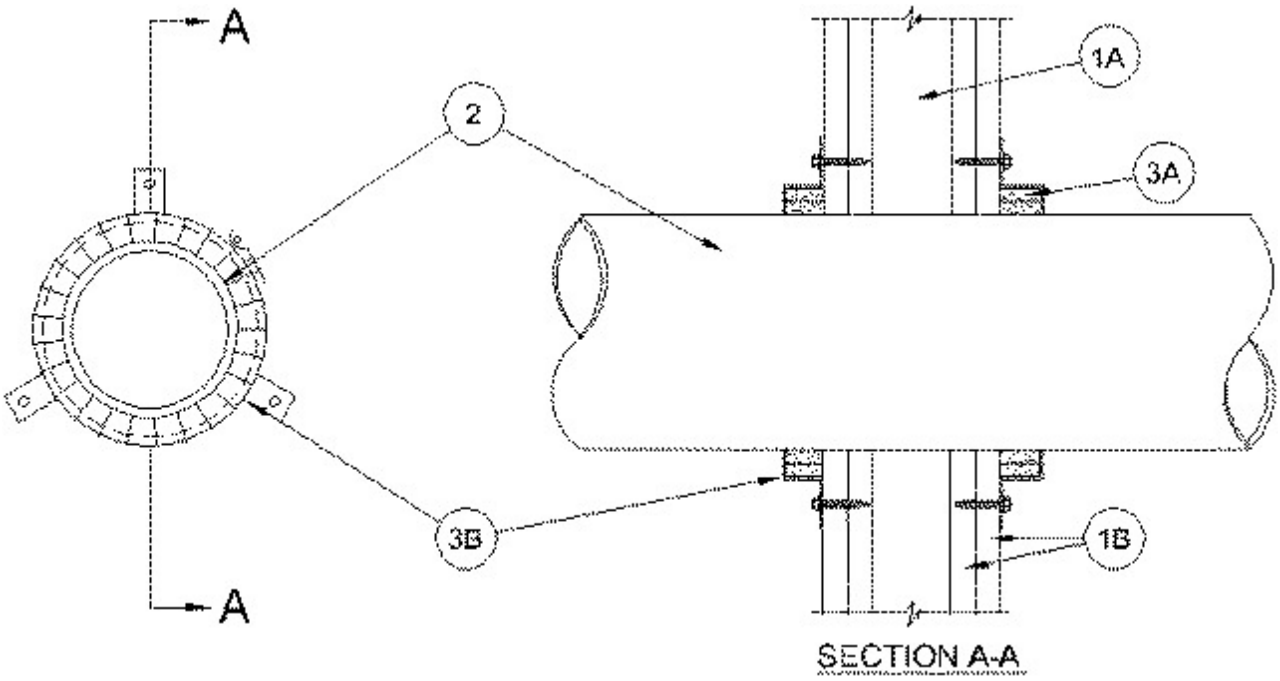
*Bearing the UL Classification Mark

System No. W-L-2274

June 02, 2011

F Rating — 1 and 2 Hr (See Item 1)

T Rating — 1 and 2 Hr (See Item 1)



1. **Wall Assembly —** The 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 shall 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 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm)OC.

B. **Gypsum Board* —** Min 5/8 in. (16 mm) thick, 4 ft (1.22 m)wide with square or tapered edges. The gypsum board type, thickness, number of layers and orientation shall be as specified in the individual U400 Wall and Partition Design. Max diam of opening is 5 in. (127 mm).

The hourly F and T Ratings of the firestop system re equal to the hourly rating of the wall in which it is installed.

2. **Through Penetrants —** One nonmetallic pipe to be installed concentrically within the firestop system. A max annular space of 1/4 in. (6 mm) is required within the firestop system. Pipe to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes may be used:

A. **Polyvinyl Chloride (PVC) Pipe —** Nom 4 in. (6 mm) diam (or smaller) Schedule 40 solid or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe —** Nom 4 in. (6 mm) diam (or smaller) SDR 13.5 or Schedule 40 CPVC pipe for use in closed (process or supply) piping systems. Schedule 40 CPVC pipe for use in vented (drain, waste or vent) piping systems.

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

A. **Fill, Void or Cavity Material* - Wrap Strip —** Two layers of nom 1/4 in. (6 mm) thick by 2 in. (51 mm) wide intumescent wrap strip individually wrapped around the outer circumference of

the penetrant. Butted ends in successive layers shall be offset. Wrap strip butted tightly against both surfaces of wall. Wrap strip secured with tape or tie wire.

RECTORSEAL — Metacaulk Wrap Strip

B. **Steel Collar —** Collar fabricated from coils of precut min 0.016 in. thick (No. 28 gauge) galv steel available from fill material manufacturer. Collar shall be nom 2 in. (51 mm) deep with 1 in. (25 mm) wide by 1-1/2 in. (38 mm) long anchor tabs on 4 in. (102 mm) centers for secure to both surfaces of wall. In addition, collar contains retainer tabs, 1/2 in. wide by 3/4 in. (19 mm) long, located opposite the anchor tabs. Collar shall be wrapped over the wrap strip, overlapping min 1 in. (25 mm) The retainer tabs are folded 90 deg towards the pipe to maintain the annular space around the pipe and to retain the wrap strip. Collar secured to both surfaces of wall at each anchor tab by means of 1-1/2 in. (38 mm) long steel laminate screws or 1/8 in. (3 mm) diam by 2 in. (51 mm) long steel hollow wall anchors in conjunction with 1/4 in. (6 mm) by 5/8 in. (16 mm) diam washers.

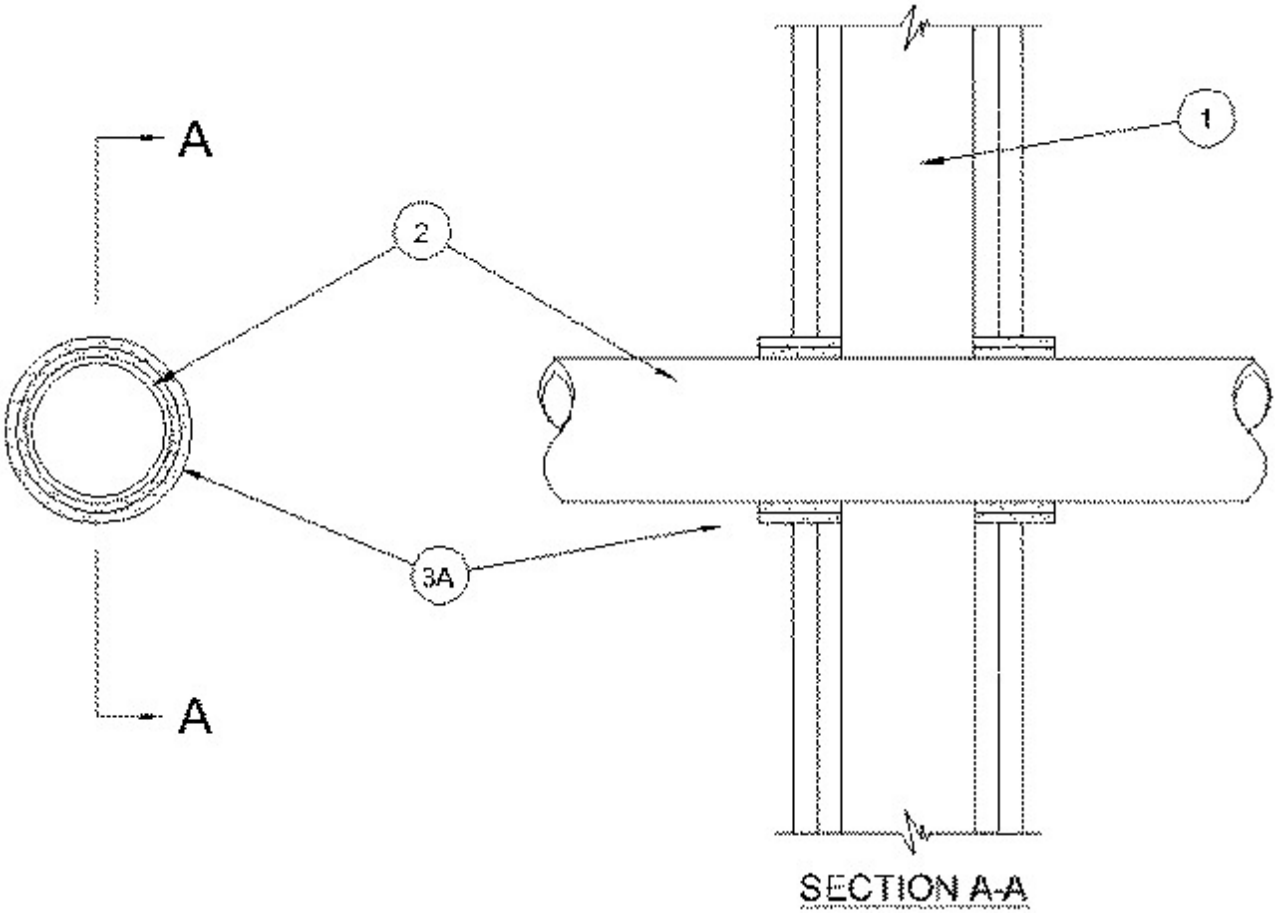
*Bearing the UL Classification Mark

System No. W-L-2276

June 19, 2004

F Rating — 2 Hr

T Rating — 2 Hr



1. **Wall Assembly —** The 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 shall consist of either wood or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.

B. **Gypsum Board* —** Min 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers and orientation shall be as specified in the individual U300 or U400 Wall and Partition Design. Max diam of opening is 5-1/2 in.

2. **Through Penetrants —** One nonmetallic pipe to be centered within the firestop system. A nom annular space of 1/2 in. is required within the firestop system. Pipe to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes may be used:

A. **Acrylonitrile Butadiene Styrene (ABS) Pipe —** Nom 4 in. diam (or smaller) Schedule 40 cellular or solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. **Polyvinyl Chloride (PVC) Pipe —** Nom 4 in. diam (or smaller) Schedule 40 (or heavier) cellular or solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

C. **Chlorinated Polyvinyl Chloride (CPVC) Pipe —** Nom 4 in. diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.

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

A. **Fill, Void or Cavity Material* - Wrap Strip —** Two layers of nom 1/4 in. thick by 2 in. wide intumescent wrap strip individually wrapped around the outer circumference of the pipe and slid into the annular space such that wrap strip extends ¾ in. beyond both surfaces of wall. Butted ends in successive layers shall be offset. Wrap strip secured with tape, wire or tie wire.

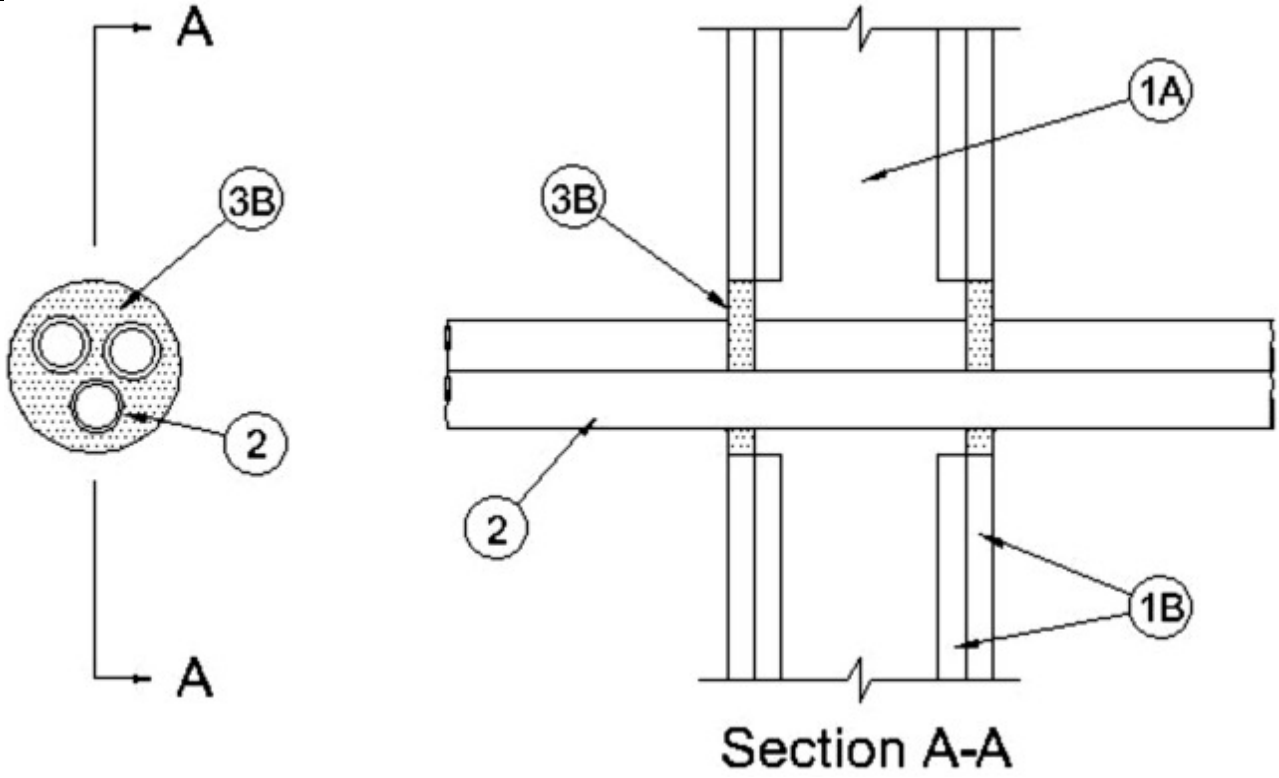
RECTORSEAL — Metacaulk Wrap Strip

*Bearing the UL Classification Mark

System No. W-L-2287

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 and 1-1/2 Hr (See Item 1)	FT Ratings - 1 and 1-1/2 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 - Less Than 1 CFM/sq ft	FTH Ratings - 1 and 1-1/2 Hr (See Item 1)
	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 specified 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 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.

B. **Gypsum Board* —** 5/8 in. (16 mm) thick, 4 ft (1.2 mm) 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 Wall or Partition Design in the UL Fire Resistance Directory. Max diam of opening is 4 in. (102 mm).

The hourly F and T Ratings of the firestop system are dependent on the hourly fire rating of the wall assembly in which it is installed as shown in the table below:

Rating of Wall, Hr	F Rating, Hr	T Rating, Hr
2	1	1-1/2

1	1	1

2. **Through Penetrant —** Nom 1 in. (25 mm) diam (or smaller) SDR 9 (or heavier) cross-linked polyethylene (PEX) tubing for use in closed (process or supply) piping systems. A max of three tubes to be bundled together and installed eccentrically or concentrically within the firestop system. Of the three tubes, a max of one shall have a nom diam greater than 3/4 in. (19 mm). The annular space between the tubing and the periphery of the opening shall be min 5/8 in. to max 1-1/4 in. Separation between the tubing shall be a min 0 in. (point contact) to max 3/8 in. (10 mm). Tubing to be rigidly supported on both sides of the wall assembly.

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

A. **Packing Material —** (Optional, Not shown) - Polyethylene backer rod or foam plastic sheets friction fitted into annular space for 2 hr fire-rated wall assemblies only. Packing material 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. Additional fill material to be forced within tubing bundle to max extent possible.

RECTORSEAL — FlameSafe FS 900+, FS 1900, Metacaulk MC 150+, Metacaulk 1000, Metacaulk 350i, Biostop BF 150+, Biostop 350i or Biostop 500+

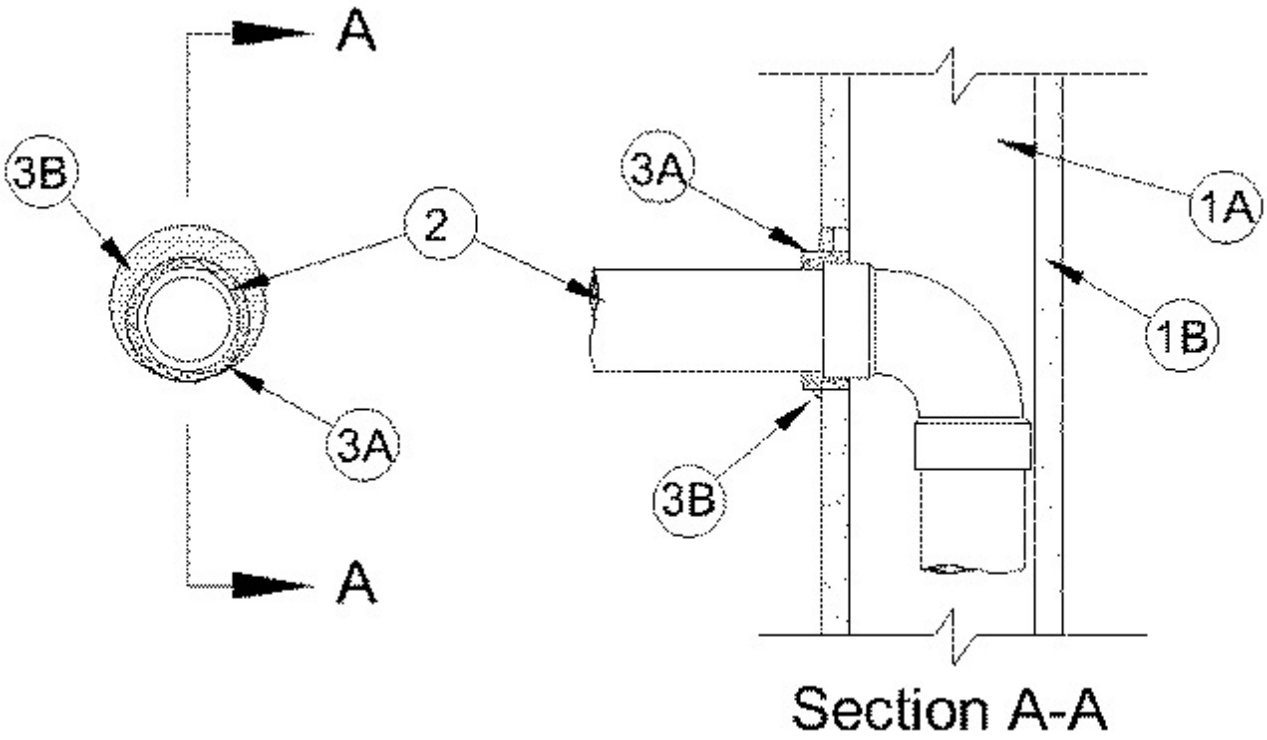
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

System No. W-L-2346

November 14, 2013

F Rating — 1 Hr

T Rating — 3/4 Hr



Section A-A

1. **Wall Assembly —** The 1 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 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 wood studs. Wood studs to consist of nom 2 by 6 in. lumber spaced 16 in. OC.

B. **Gypsum Board* —** Min 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers and orientation shall be as specified in the individual U300 Wall and Partition Design. Max diam of opening is 5-1/2 in.

2. **Through Penetrants —** One nonmetallic pipe installed within stud cavity and connected to a 90° elbow. Additional nonmetallic pipe connected to elbow and penetrates one side of wall concentrically or eccentrically within the opening. The annular space between nonmetallic pipe and periphery of opening shall be min 1/2 in to max 1 in. Pipe to be rigidly supported within wall and on penetrated side of wall assembly. The following types and sizes of nonmetallic pipes may be used:

A. **Polyvinyl Chloride (PVC) Pipe —** Nom 3 in. diam (or smaller) Schedule 40 cellular or solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe —** Nom 3 in. diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.

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

A. **Fill, Void or Cavity Material* - Wrap Strip —** Nom 1/4 in. thick by 1 in. wide intumescent wrap strip. Two layers of wrap strip are individually wrapped around the through-penetrant with ends butted and held in place with tie wire. Butted ends in successive layer shall be offset.

Wrap strips extend 1/4 in. beyond surface of wall.

RECTORSEAL — Metacaulk Wrap Strip

B. **Fill, Void or Cavity Material* - Caulk —** Min 1/4 in. thickness of fill material applied between wrap strip and periphery of opening, flush with surface of wall.

RECTORSEAL — Metacaulk 1000, Metacaulk 350i and MC150+.

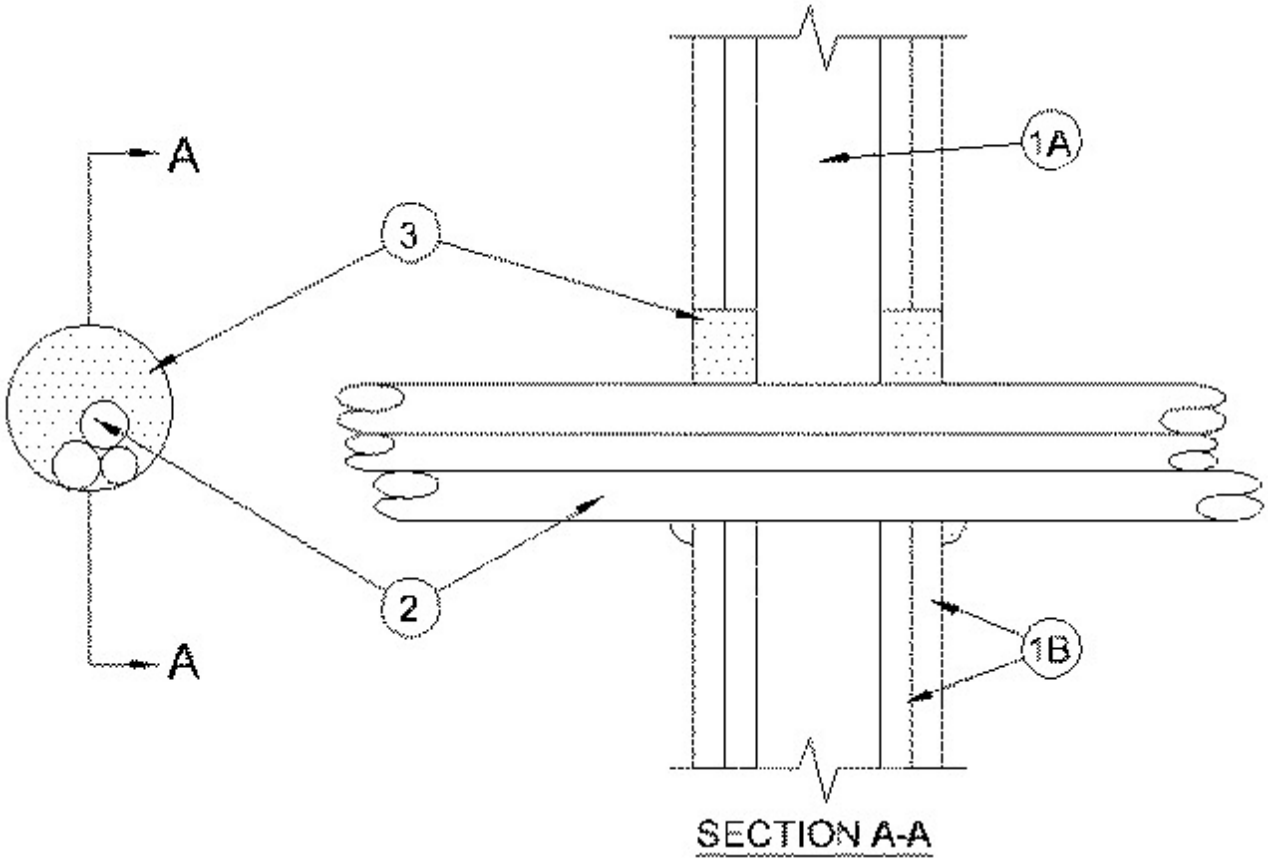
*Bearing the UL Classification Mark

System No. W-L-2373

December 03, 2003

F Ratings — 1 and 2 Hr (See Item 1)

T Rating — 0 Hr



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. Steel studs to be min 3-1/2 in. wide and spaced max 24 in. OC. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC.

B. **Gypsum Board* —** Thickness, type, number of layers and fasteners as required 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 rating of the wall assembly in which it is installed.

2. **Through-Penetrants —** Multiple nonmetallic pipes, tubing or conduit installed within opening. Aggregate cross-sectional area of penetrants in opening to be max 33 percent of the aggregate cross-sectional area of the opening. Annular space between pipes, tubing or conduit and edge of opening shall be min 0 in. (point contact) to max 1 in. Separation between pipes, tubing or conduit shall be min 0 in. (point contact). Pipes, tubing or conduit to be rigidly supported on both sides of wall assembly. The following types of pipes, tubing or conduit may be used:

A. **Polyvinyl Chloride (PVC) Pipe —** Nom 1-1/2 in. diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe —** Nom 1-1/2 in. diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping

systems.

C. **Rigid Nonmetallic Conduit+ —** Nom 1-1/2 in. diam (or smaller) Schedule 40 PVC conduit installed in accordance with Article 347 of the National Electrical Code (NFPA No. 70).

D. **Crosslinked Polyethylene (PEX) Tubing —** Nom 1 in. diam (or smaller) SDR 9 PEX tubing for use in closed (process or supply) piping systems.

3. **Fill, Void or Cavity Material*- Sealant —** Min 5/8 in. thickness of sealant applied within annulus, flush with both surfaces of wall assembly. A min 1/4 in. diam bead of caulk shall be applied to the penetrant/gypsum board interface at the point contact location on both sides of wall.

RECTORSEAL — MC 150+

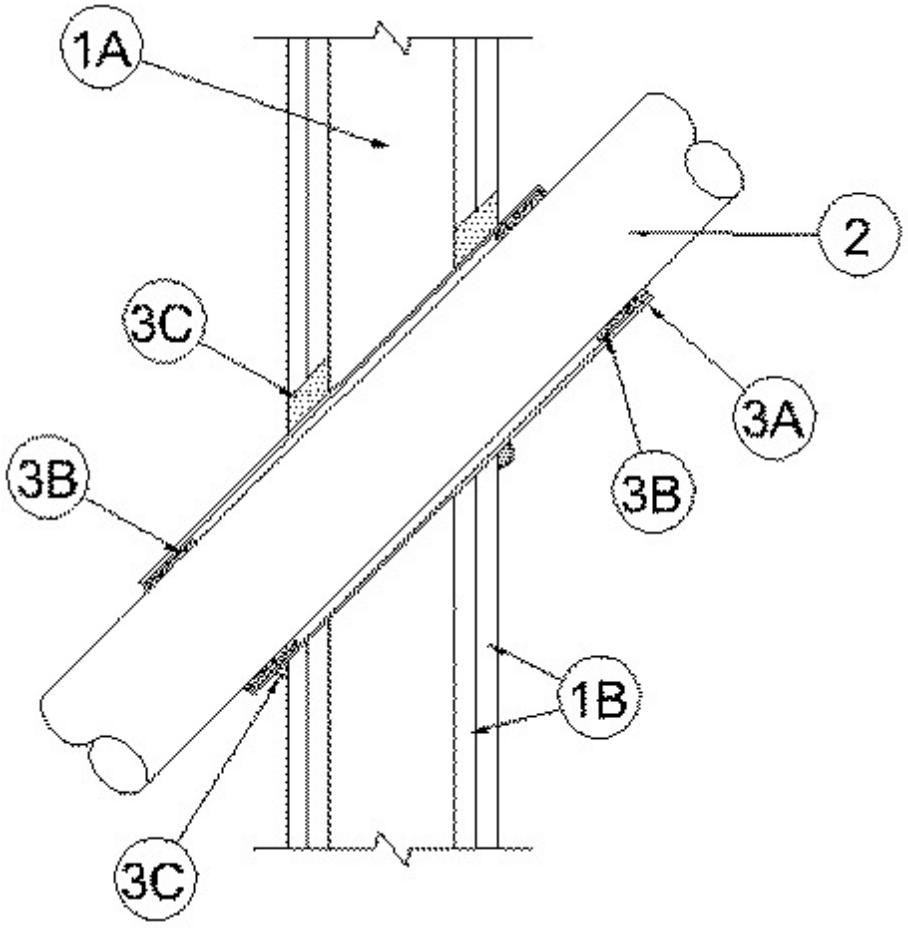
*Bearing the UL Classification Mark

System No. W-L-2375

December 03, 2003

F Ratings — 1 and 2 Hr (See Item 1)

T Rating — 1/2 Hr



1. **Wall Assembly —** The 1 and 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* —** Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Diam of opening is max 6 in.

2. **Through Penetrants —** One nonmetallic pipe or conduit to be to be installed either concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of opening shall be 1/2 to 1 in. The penetrant may be installed at an angle not greater than 45 degrees from perpendicular. Penetrant to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes or conduits may be used:

A. **Polyvinyl Chloride (PVC) Pipe —** Nom 4 in. diam (or smaller) Schedule 40 cellular core or solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe —** Nom 4 in. diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.

C. **Rigid Non Metallic Conduit+ —** Nom 4 in. diam (or smaller) Schedule 40 PVC conduit installed in accordance with Article 347 of the National Electrical Code (NFPA No. 70).

D. **Acrylonitrile Butadiene Styrene (ABS) Pipe —** Nom 4 in. diam (or smaller) Schedule 40 solid or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

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

A. **Metallic Sleeve —** Cylindrical sleeve fabricated from min 0.016 in. thick (28 gauge) galv sheet steel and having a min 1 in. lap along the longitudinal seam. Sleeve to extend a min of 1-1/2 in. to a max 2 in. beyond both sides of the wall. The inside diam of the sleeve shall be 1 in. larger than outside diam of nonmetallic pipe or conduit such that an annular space will be present between the steel sleeve and the pipe around the entire circumference of the pipe to accommodate the layers of wrap strips (Item 3B). The annular space between the outside of the wrap strip layer(s) and the inside of the sleeve shall be 1/2 in. The annular space between the outside of the sleeve and the periphery of the opening shall be min 0 in. (point contact) to max 1/2 in.

B. **Fill, Void or Cavity Materials* - Wrap Strip —** Nom 1/4 in. thick by 1 in. wide intumescent strips. Two layers of wrap strips are individually wrapped tightly around penetrant with the ends butted and held in place with duct tape. Butted ends in successive layers shall be offset. Layers of wrap strip to be recessed into sleeve on both sides of wall such that the outer edges of wrap strips are flush with the outer edges of the sleeve. A min 1/2 in. wide stainless steel hose clamp shall be secured around the outside of the sleeve over the center of the wrap strips on both ends of the sleeve.

RECTORSEAL — Metacaulk Wrap Strip

C. **Fill, Void or Cavity Materials* - Caulk —** Min 5/8 and 1-1/4 in. thickness of caulk applied within annulus between metallic sleeve and periphery of the opening, flush with both surfaces of wall assembly for 1 and 2 Hr rated assemblies, respectively. Min 1/2 in. diam bead of caulk shall be applied at the sleeve/gypsum board interface at the point contact location on both surfaces of wall assembly.

RECTORSEAL — Metacaulk 1000

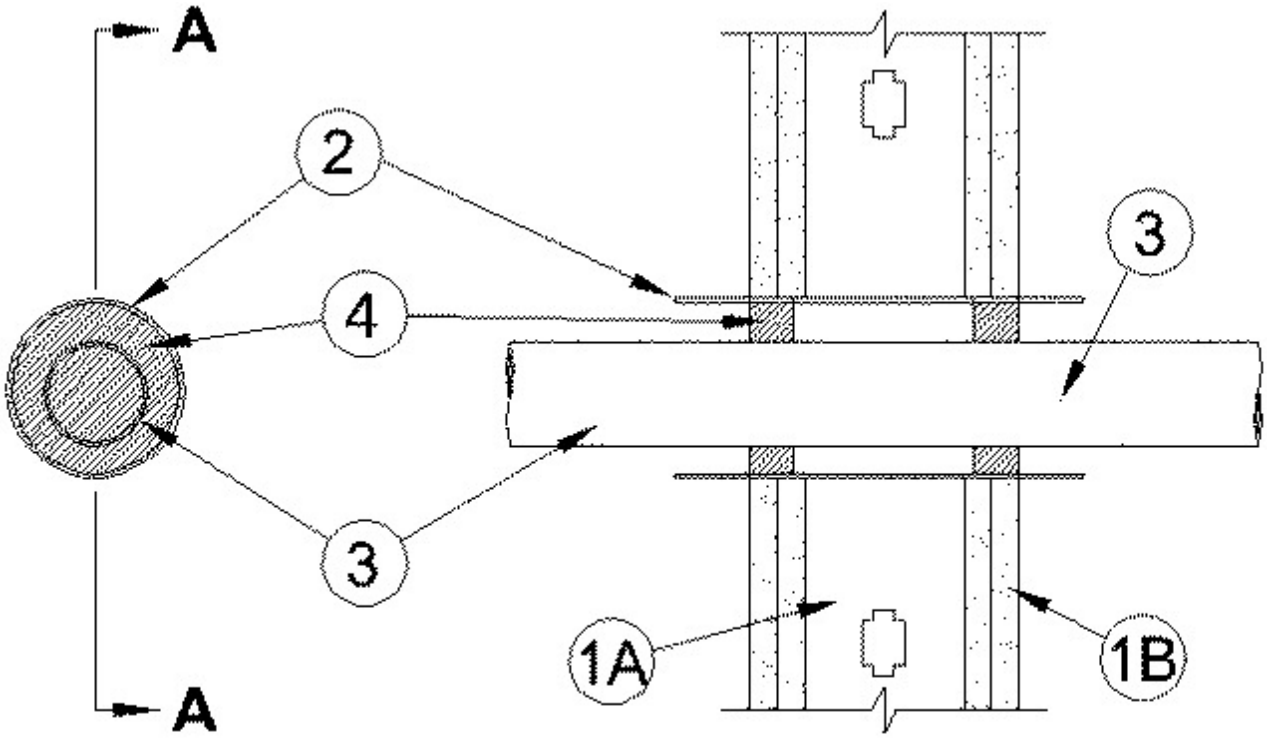
*Bearing the UL Classification Mark

System No. W-L-2437

June 24, 2005

F Ratings — 1 and 2 Hr (See Item 1)

T Ratings — 0 and 1/4 Hr (See Item 1)



Section A-A

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

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

B. **Gypsum Board* —** One or two layers of nom 1/2 or 5/8 in. (13 or 16 mm) thick gypsum board as specified in the individual Wall and Partition Design. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 4 in. (102 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 T Ratings are 0 and 1/4 hr when installed in 1 and 2 hr rated walls, respectively.

2. **Steel Sleeve —** Cylindrical sleeve fabricated from min 0.021 in. (0.5 mm) thick (26 gauge) galv sheet steel and having a min 1 in. (25 mm) lap along the longitudinal seam. Steel sleeve to be 2 in. (51 mm) longer than the thickness of wall such that, when installed, the ends of the sleeve will project up to 1 in. (25 mm) beyond each surface of the wall. Sleeve installed by coiling the sheet steel to a diam smaller than the opening, inserting the coil through the opening and releasing the coil.

3. **Through Penetrant —** Nom 51 mm (2 in.) diam (or smaller) Schedule 40 cellular core polyvinyl chloride (PVC) pipe installed eccentrically or concentrically within the firestop system. An annular space between penetrant and edge of sleeve shall be min 1/2 in. (13 mm) to max 1-1/8 in. (29 mm). Pipe to be rigidly supported on both sides of wall assembly.

4. **Fill, Void or Cavity Materials* —** (Caulk) Min 5/8 in. (16 mm) thickness of caulk applied within the annulus, flush with both surfaces of wall.

RECTORSEAL — MC 150+

*Bearing the UL Classification Mark

System No. W-L-2526

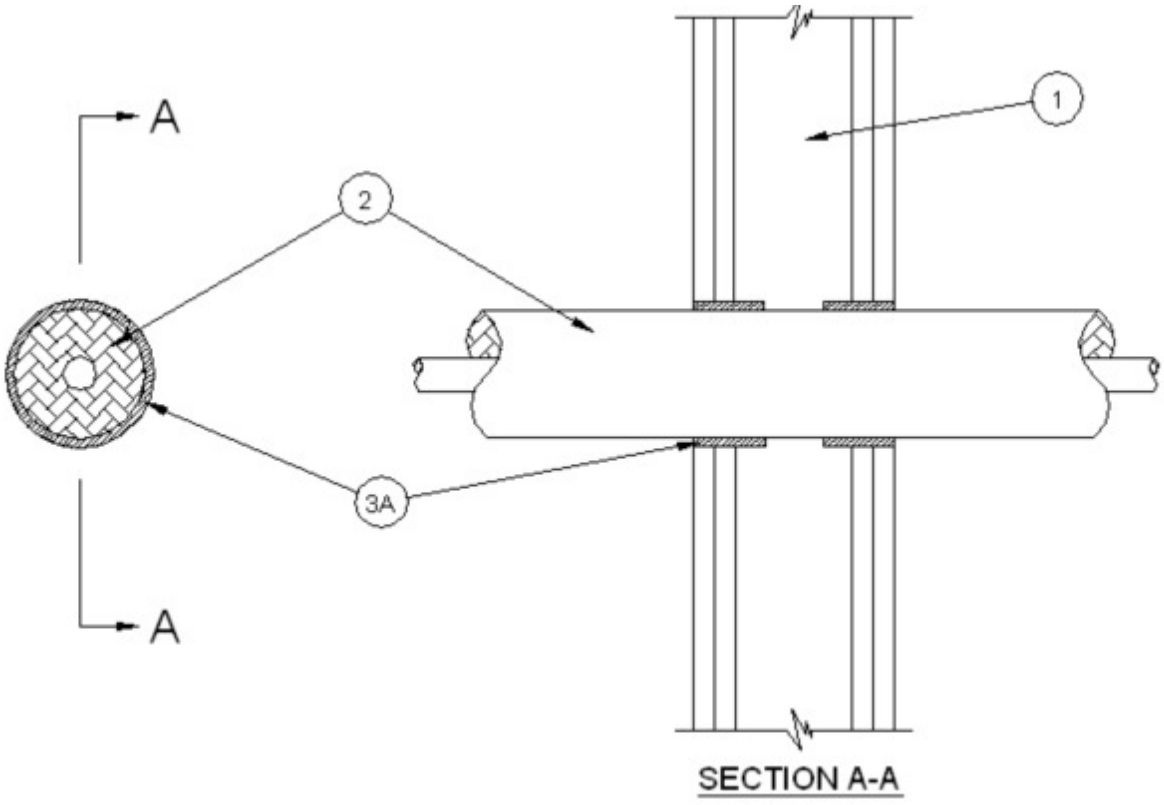
June 26, 2008

F Rating —1 or 2 Hr(See Item 1)

T Rating —0 or 2 Hr (See Item 1)

L Rating at Ambient - Less than 1 CFM/ft^3 (See Item 3B)

L Rating At 400° F - Less than 1 CFM/ft ^{3} (See Item 3B)



SECTION A-A

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. **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 U300, U400 or V400 Wall and Partition Design. Max diam of opening is 2-3/4 in. (70 mm).

B. **Studs —** Wall framing shall 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 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.

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 or 2 for 1 or 2 hour rated constructions, respectively.

2. **Through Penetrant —** One nonmetallic pipe, or tube to be installed eccentrically or concentrically within the firestop system. Annular space to be min 1/4 in. (6 mm) to max 3/8 in. (10 mm). Pipe or tube to be rigidly supported on both sides of the wall assembly. The following types and sizes of nonmetallic pipes and tubes may be used:

A. **Cross-linked polyethylene (PEX) Tubing —** Nom 3/4 in. (19 mm) diam (or smaller)

UPONOR - WIRSBO AQUAPEX pre insulated cross-linked polyethylene (PEX) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe insulation is crosslinked closed cell foam with a nominal thickness of 1/2 in. (13 mm) (or smaller).

B. **Cross-linked polyethylene (PEX) Tubing —** Nom 3/4 in. (19 mm) diam (or smaller) UPONOR - WIRSBO AQUAPEX plus Red or Blue pre insulated cross-linked polyethylene (PEX) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe insulation is Crosslinked closed cell foam with a nominal thickness of 1/2 in. (13 mm) (or smaller).

C. **Cross-linked polyethylene (PEX) Tubing —** Nom 3/4 in. (19 mm) diam (or smaller) UPONOR - WIRSBO hePEX plus pre insulated cross-linked polyethylene (PEX) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe insulation is Crosslinked closed cell foam with a nominal thickness of 1/2 in. (13 mm) (or smaller).

D. **Cross-linked polyethylene (PEX) Tubing —** Nom 3/4 in. (19 mm) diam (or smaller) UPONOR - Pre sleeved WIRSBO AQUAPEX, AQUAPEX plus, or hePEX plus pre insulated cross-linked polyethylene (PEX) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe sleeve is a corrugated plastic sleeve between the tube and the insulation. Pipe insulation is Crosslinked closed cell foam with a nominal thickness of 1/2 in. (13 mm) (or smaller).

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

A. **Fill, Void or Cavity Material* - Wrap Strip —** One layer of nom 1/4 in. (6 mm) thick by 1 in. (25 mm) wide intumescent wrap strip individually wrapped around the outer circumference of the pipe and slid into the annular space such that wrap strip installed flush with both surfaces of wall. Wrap strip secured with tape, wire or tie wire.

RECTORSEAL — Metacaulk Wrap Strip

B. **Fill void Cavity material* -Sealant —** (Optional Not Shown) Min 1/2 in. (13 mm) crown bead of fill material applied at the pipe wrap strip interface. Min 1/2 in. (13 mm) thickness of sealant to be placed within any annular spaces between the wrap strip and the periphery of opening.

RECTORSEAL — Metacaulk 1000

The L Rating only applies when Item 3B is used.

*Bearing the UL Classification Mark

System No. W-L-2528

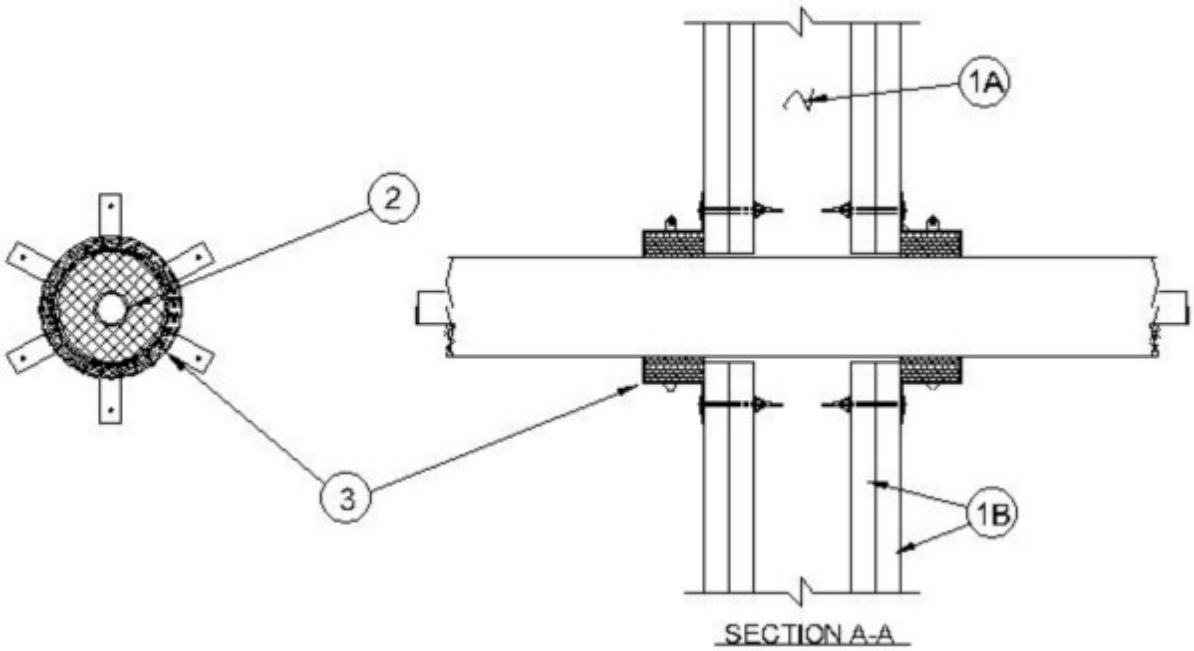
June 26, 2008

F Rating —1 or 2 Hr (See Item 1)

T Rating —0 or 2 Hr (See Item 1)

L Rating at Ambient - less than 1 CFM/ft^3 (See Item 3B)

L Rating At 400° F - Less than 1 CFM/ft ^{3} (See Item 3B)



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 shall 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 2-1/2 in. (64 mm) wide and 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 U300, U400 or V400 Wall and Partition Design. Max diam of opening is 2 in. (51 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 or 2 for 1 or 2 hour rated constructions, respectively.

2. **Through Penetrant —** One nonmetallic pipe, or tube to be installed eccentrically or concentrically within the firestop system. Annular space to be min 1/4 in. (6 mm) to max 3/8 in. (10 mm). Pipe or tube to be rigidly supported on both sides of the wall assembly. The following types and sizes of nonmetallic pipes and tubes may be used:

A. **Crosslinked polyethylene (PEX) Tubing —** Nom 3/4 in. (19 mm) diam (or smaller) UPONOR - WIRSBO AQUAPEX pre insulated crosslinked polyethylene (PEX) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe insulation is crosslinked closed cell foam with a nominal thickness of 1/2 in. (13 mm) (or smaller).

B. **Crosslinked polyethylene (PEX) Tubing —** Nom 3/4 in. (19 mm) diam (or smaller) UPONOR - WIRSBO AQUAPEX plus Red or Blue pre insulated crosslinked polyethylene (PEX) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe insulation is crosslinked closed cell foam with a nominal thickness of 1/2 in. (13 mm) (or smaller).

C. **Crosslinked polyethylene (PEX) Tubing —** Nom 3/4 in. (19 mm) diam (or smaller) UPONOR - WIRSBO hePEX plus pre insulated crosslinked polyethylene (PEX) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe insulation is crosslinked closed cell foam with a nominal thickness of 1/2 in. (13 mm) (or smaller).

D. **Crosslinked polyethylene (PEX) Tubing —** Nom 3/4 in. (19 mm) diam (or smaller) UPONOR - Pre sleeved WIRSBO AQUAPEX, AQUAPEX plus, or hePEX plus pre insulated crosslinked polyethylene (PEX) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe sleeve is a corrugated plastic sleeve between the tube and the insulation. Pipe insulation is crosslinked closed cell foam with a nominal thickness of 1/2 in. (13 mm) (or smaller).

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

A. **Firestop Device* —** Galv steel collar lined with an intumescent material sized to fit specific diam of the through penetrant. Device to be installed around through penetrant in accordance with accompanying installation instructions. Device incorporates anchor tabs for securement to both surfaces of the wall by means of 1/8 in. diam by 2-1/2 in. (3.2 by 64 mm) long steel hollow wall anchors.

RECTORSEAL — Metacaulk Pipe Collar

B. **Fill void Cavity material* -Sealant —** (Optional — Not Shown) Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall.

RECTORSEAL — METACAULK 1000 METACAULK 150+ or METACAULK 1200

The L Rating only applies when Item 3B is used.

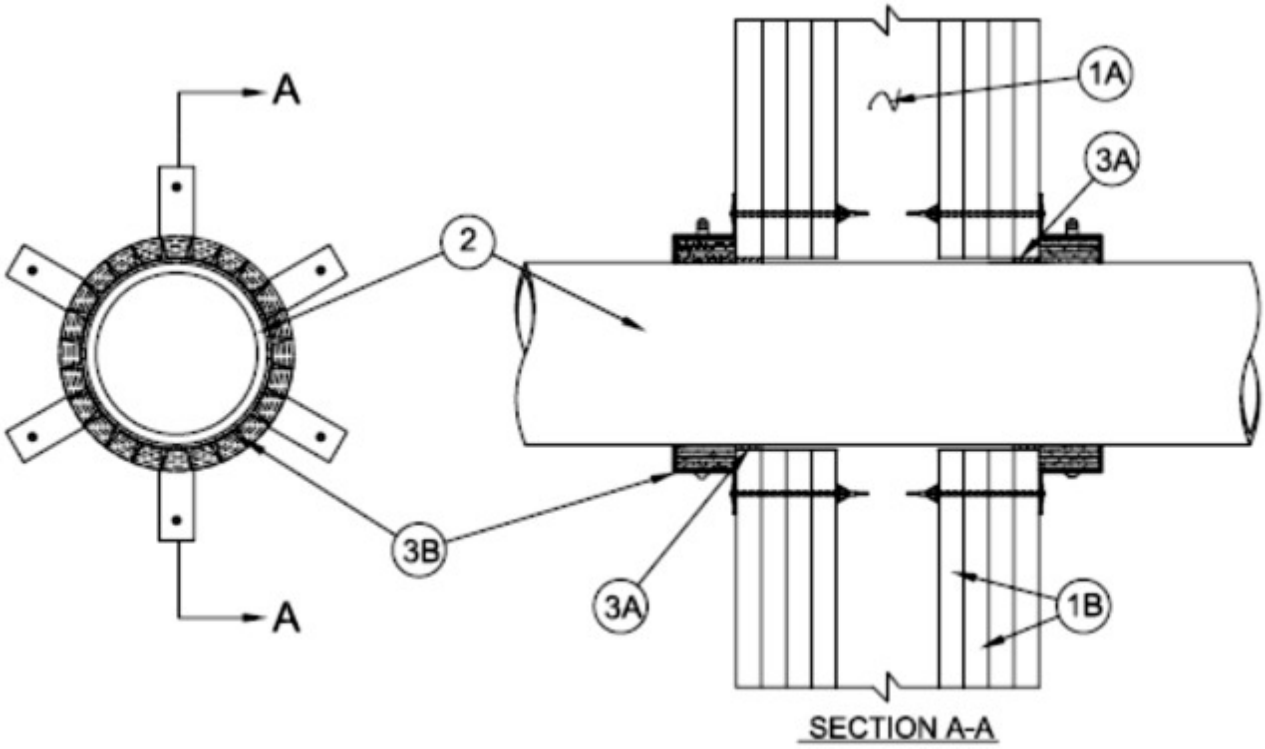
*Bearing the UL Classification Mark

System No. W-L-2544

May 26, 2009

F Rating — 4 Hr

T Ratings— 2-3/4 and 4 Hr (See Items 3 and 3A)



1. **Wall Assembly —** The 4 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 2-1/2 in. (64 mm) wide steel channel studs spaced max 24 in. (610 mm) OC.

B. **Gypsum Board* —** Thickness, type, number of layers and fasteners as required in the individual Wall and Partition Design. Max diam of opening is 5 in. (12 mm).

2. **Through Penetrants —** Nom 4in. (102 mm) diam (or smaller). Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe and periphery of opening shall be min 0 in. (point contact) to max 1/2 in. (13 mm). Pipe to be rigidly supported on both sides of wall assembly.

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

A. **Fill, Void or Cavity Materials * - Caulk —** Min thickness of 5/8 in. (16 mm) of caulk applied within annulus, flush with both surfaces of wall assembly.

RECTORSEAL — Metacaulk 1000

B. **Firestop Device* —** Galv steel collar lined with an intumescent material sized to fit specific diam of the through penetrant. Device to be installed around through penetrant in accordance with accompanying installation instructions. Device incorporates anchor tabs for securement to both surfaces of the wall by means of 1/4 in. diam by 4 in. (6 by 102 mm) long steel hollow wall anchors.

RECTORSEAL — Metacaulk Pipe Collar

T Rating is 2-3/4 hours when Item 3 is used.

3A. **Firestop System — (Alternate to Item 3) —** The firestop system shall consist of the following:

A. **Fill, Void or Cavity Materials * - Caulk —** (Optional) — Min thickness of 5/8 in. (16 mm) of caulk applied within annulus flush with both surfaces of wall assembly.

RECTORSEAL — Meta caulk 1000

B. **Fill, Void or Cavity Material* - Wrap Strip —** Two layers of nom 1/4 in. (6 mm) thick by 2 in. (1 mm) wide intumescent wrap strip individually wrapped around the outer circumference of the pipe such that wrap strip is flush with both surfaces of wall. Butted ends in successive layers shall be offset. Wrap strip secured with tape, wire or tie wire.

RECTORSEAL — Metacaulk Wrap Strip

C. **Steel Collar —** Collar fabricated from coils of precut min 0.016 in. thick (No. 28 gauge) galv steel available from fill material manufacturer. Collar shall be nom 2 in. (51 mm) deep with 1 in.(25 mm) wide by 1-1/2 in. (38 mm) long anchor tabs on 4 in. (102 mm) centers to secure to both surfaces of wall. In addition, collar contains retainer tabs, 1/2 in. (13 mm) wide by 3/4 in. (19 mm) long, located opposite the anchor tabs. Collar shall be wrapped over the wrap strip, overlapping min 1 in. The retainer tabs are folded 90 deg towards the pipe to maintain the annular space around the pipe and to retain the wrap strip. Collar secured to both surfaces of wall at each anchor tab by means of 1/4 in. diam by 4 in. (6 by 102 mm) long steel hollow wall anchors in conjunction with 1/4 in. by 5/8 in. (6 by 16 mm) diam washers.

T rating is 4 hr when Item 3A is used.

*Bearing the UL Classification Mark

System No. W-L-2556

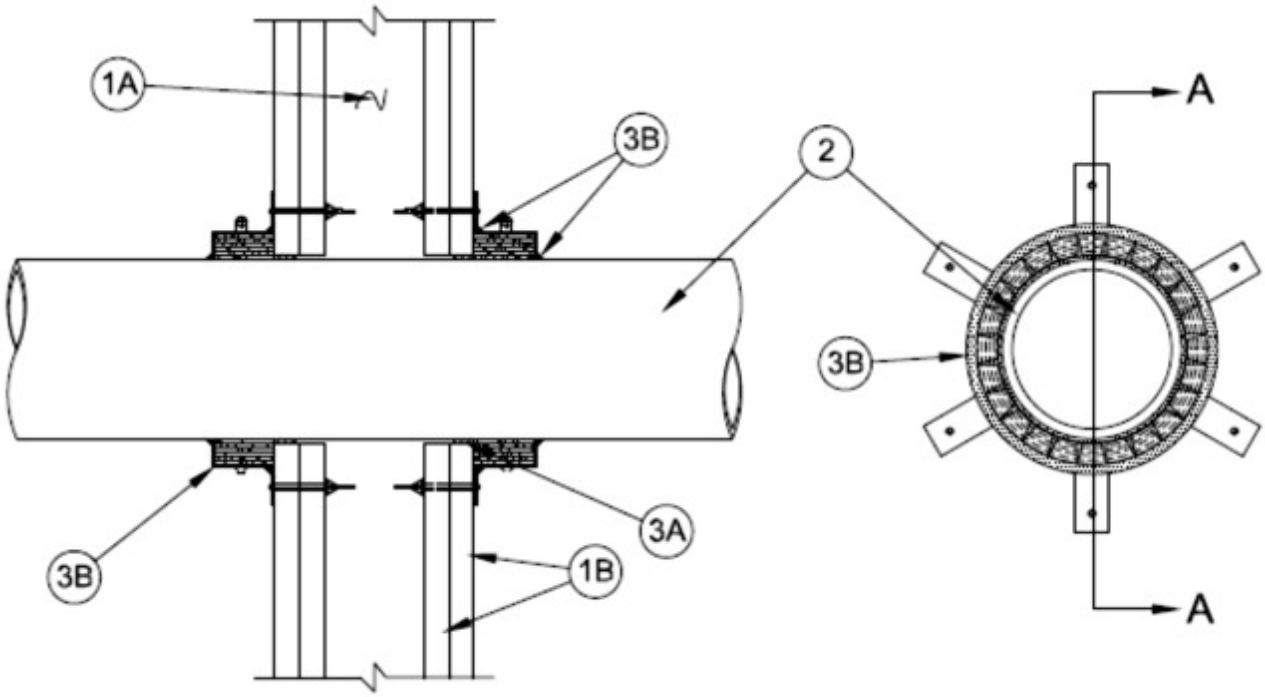
March 10, 2011

F Rating — 1 or 2 Hr (See Item 1)

T Rating — 0 or 1-1/2 Hr (See Item 3)

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)



Section A-A

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 3-1/2 in. (89 mm) wide steel channel studs spaced max 24 in. (610 mm) OC.

B. **Gypsum Board* —** Thickness, type, number of layers and fasteners as required in the individual Wall and Partition Design. Max diam of opening is 5 in. (12 mm).

2. **Through Penetrants —** Nom 4in. (102 mm) diam (or smaller). Schedule 40 solid core PVDF pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe and periphery of opening shall be min 0 in. (point contact) to max 1/2 in. (13 mm). Pipe to be rigidly supported on both sides of wall assembly.

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

A. **Fill, Void or Cavity Materials * - Caulk —** (Optional, Required or air leakage) Min thickness of 1/2 in. (13 mm) of caulk applied within annulus, flush with both surfaces of wall assembly.

RECTORSEAL — Metacaulk MC150+, 350i, 1000, 1100, 1200, FS900+, FS1900, FS4000

Air leakage rating only applies when Item 3A is used.

The T rating is 1-1/2 only when Item 3A is used.

B. **Fill, Void or Cavity Material* - Wrap Strip —** Layers of nom 1/4 in. (6 mm) thick by 2 in. (51 mm) wide intumescent wrap strip individually wrapped around the outer circumference of the pipe such that wrap strip is flush with both surfaces of wall. Butted ends in successive layers shall be offset. Wrap strip secured with tape, wire or tie wire. Three layers are to be used for nom 4 in. (102 mm) diam pipe two layers for nom 3 in. (76 mm) diam Pipe and one layer for nom 2 in. (51 mm) diam pipe

RECTORSEAL — Metacaulk Wrap Strip or Flamesafe Wrap Strip

C. **Steel Collar —** Collar fabricated from coils of precut min 0.016 in. thick (No. 28 gauge) galv steel available from fill material manufacturer. Collar shall be nom 2 in. (51 mm) deep with 1 in.(25 mm) wide by 1-1/2 in. (38 mm) long anchor tabs on 4 in. (102 mm) centers to secure to both surfaces of wall. In addition, collar contains retainer tabs, 1/2 in. (13 mm) wide by 3/4 in. (19 mm) long, located opposite the anchor tabs. Collar shall be wrapped over the wrap strip, overlapping min 1 in. The retainer tabs are folded 90 deg towards the pipe to maintain the annular space around the pipe and to retain the wrap strip. Collar secured to both surfaces of wall at each anchor tab by means of 3/16 in. diam by 3 in. (5 by 76 mm) long steel hollow wall anchors in conjunction with 1/4 in. by 5/8 in. (6 by 16 mm) diam washers.

D. **Firestop Device* —** (As an alternate to Items 3B and 3C) Galv steel collar lined with an intumescent material sized to fit specific diam of the through penetrant. Device to be installed around through penetrant in accordance with accompanying installation instructions. Device incorporates anchor tabs for securement to both surfaces of the wall by means of 3/16 in. diam by 3 in. (5 by 76 mm) long steel hollow wall anchors.

RECTORSEAL — Metacaulk Pipe Collar or Flamesafe Pipe Collar

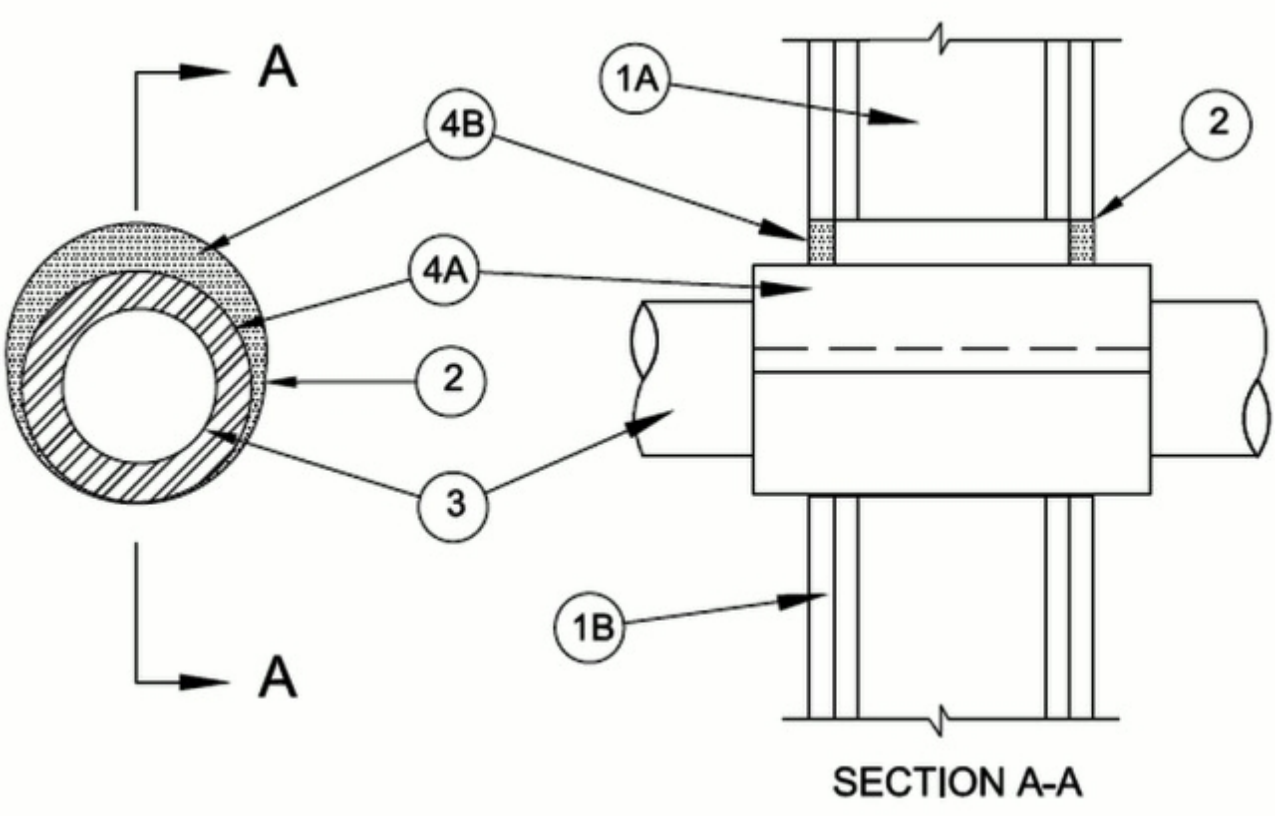
*Bearing the UL Classification Mark

System No. W-L-2569

June 11, 2012

F Ratings - 1 and 2 Hr (See Item 1)

T Ratings - 0, 1/4 and 2 (See Items 2 and 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 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.

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, V400 or W400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 10-1/2 in. (267 mm).

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

2. **Metallic Sleeve —** (Optional) Cylindrical sleeve fabricated from min 0.018 in. (0.46 mm) thick (28 gauge) galv sheet steel and having a min 1 in. (25 mm) lap along the longitudinal seam. Sheet steel coiled to a diam less than circular cutouts in wall assembly, inserted through both sides of wall and allowed to uncoil against the circular cutouts in the wall assembly. Sleeve to be installed flush with or extending max 1 in. (25 mm) beyond each surface of the wall assembly.

The T Rating of the firestop system is 0 hr when sleeve extends beyond either surface of the wall.

3. **Through Penetrants —** One nonmetallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe or conduit and periphery of opening shall be min 1/4 in. (6 mm) to max 1 in. (25 mm). Pipe or conduit to be rigidly supported on both sides of the wall assembly. The following types and sizes of nonmetallic pipes may be used:

A. **Polyvinyl Chloride (PVC) Pipe —** Nom 8 in. (203 mm) diam (or smaller) Schedule 40 solid or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe —** Nom 8 in. (203 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.

C. **Rigid Nonmetallic Conduit+ —** Nom 6 in. (152 mm) diam (or smaller), Schedule 40, PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).

D. **Acrylonitrile Butadiene Styrene (ABS) Pipe —** Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

E. **Polyvinylidene Fluoride (PVDF) Pipe —** Nom 4 in. (102 mm) diam (or smaller) Schedule 40 PVDF pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

The T Rating is 2 hr for Penetrants A, B and C. The T Rating for Penetrant D is 0 hr. The T Rating for Penetrant E is 1/4 hr.

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

A. **Firestop Device —** Galv steel sleeve lined with an intumescent material sized to fit the specific diam of the through penetrant. Device to be installed in accordance with the manufacturer\'s installation instructions along with the following: Device to be wrapped around outer circumference of through penetrant and installed through the annular space of the opening. The device shall be secured together by means of min 3/4 in. (19 mm) wide glass cloth electrical tape, duct tape, fiberglass tape, pop rivets, hose clamps or tie wires around the outer circumference of through penetrant, spaced max 2 in. (51 mm) OC. In walls having a nominal thickness of 8 in. (203 mm) or less, the device shall be centered within the wall and extend equally beyond each surface of the wall. In walls having a nominal thickness greater than 8 in. (203 mm) , two devices shall be installed within the opening with butted ends and extending equally beyond each surface of the wall.

RECTORSEAL — FlameSafe® Intumescent Sleeve, Metacaulk Intumescent Sleeve or Biostop Intumescent Sleeve

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.

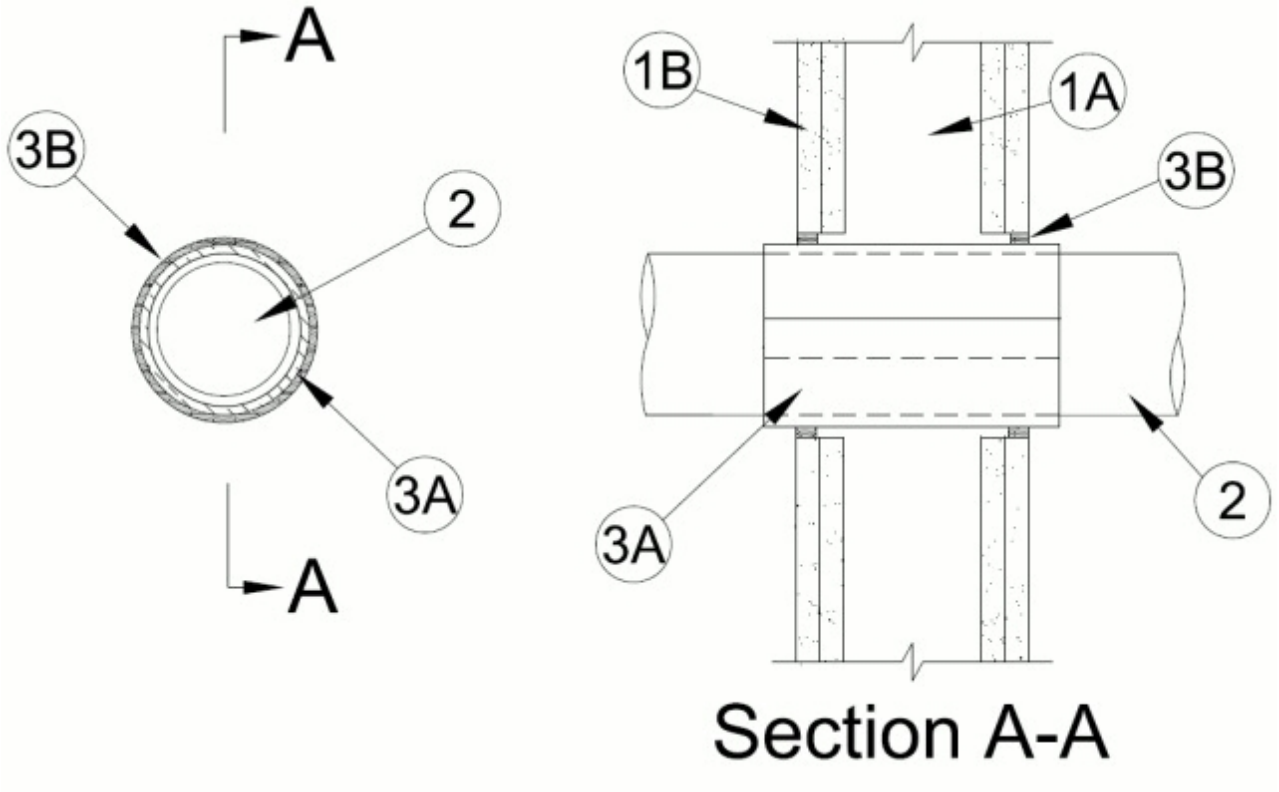
RECTORSEAL — Metacaulk 1000, 150+, Biostop 500+, 150+, FlameSafe 1900, 900+

*Bearing the UL Classification Mark

System No. W-L-2606

June 04, 2015

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 and 2 Hr (See Item 1)	FT Ratings — 1 and 2 Hr (See Item 1)
	FH Ratings — 1 and 2 Hr (See Item 1)
	FTH Ratings — 1 and 2 Hr (See Item 1)



System tested with a pressure differential of 50 Pa between the exposed and the unexposed surfaces with the higher pressure on the exposed side.

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, 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 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.

B. **Gypsum Board* —** Min 5/8 in. (16 mm) with square or tapered edges. Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Diam of opening shall be max 1-11/16 in. (43 mm) larger than OD of through penetrant. Max diam of opening is 8 in. (203 mm).

The hourly F, FT, FH and FTH 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 nonmetallic pipe to be installed concentrically within the firestop system. The annular space between the pipe and periphery of opening shall be max 7/8 in. (22 mm). Pipe to be rigidly supported on both sides of the wall assembly. The following types and sizes of nonmetallic pipes may be used:

A. **Polypropylene (PP-R) Pipe —** Nom 6 in. diam - 160 mm OD (or smaller) SDR 17.6 MF Aquatherm Blue Pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

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

A. **Firestop Device* —** Galv steel sleeve lined with an intumescent material sized to fit the specific diam of the through penetrant. Device to be installed in accordance with the manufacturer's installation instructions along with the following: Device to be wrapped around outer circumference of through penetrant and installed through the annular space of the opening. The device may be temporarily secured by means of tape or tie wires around the outer circumference of through penetrant to allow for installation of the fill material (Item 3B). The device shall be centered within the wall and extend equally beyond each surface of the wall.

RECTORSEAL — FlameSafe® Intumescent Sleeve 68, Metacaulk Intumescent Sleeve 68 or Biostop Intumescent Sleeve 68

B. **Fill, Void or Cavity Material* — Sealant —** Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall.

RECTORSEAL — Metacaulk 1000, Metacaulk 150+, Biostop 500+, Biostop 150+, FlameSafe 1900

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