

Super Firetemp™ EC
Electrical Circuit Protection System
Introduction

Johns Manville Super Firetemp EC is a noncombustible fireproofing product made from a unique, structural-grade calcium silicate. It has excellent fire resistance. Super Firetemp EC is inorganic and is not affected by exposure to sunlight and does not lose its fire resistance properties from aging.

The purpose of Johns Manville's Super Firetemp EC Electrical Circuit Protection System is to prevent electrical circuit system failures from occurring when a fire is present around the system. Its effectiveness has been proven in fire tests performed at Underwriters Laboratories located at Northbrook, IL.

Applications

Super Firetemp EC has a UL one-hour fire rating and is designed to be used on electrical systems composed of conduit and its accessories ranging from $\frac{1}{2}$ " to 4" (13 mm to 102 mm) EMT, intermediate weight and rigid conduit. The Super Firetemp EC system can be used in interior applications or exterior applications when weatherproofing is applied.

Advantages

Durable. Super Firetemp EC has a hard, nondusting surface combined with excellent mechanical strength.

Clean. Because Super Firetemp EC is screwed into place and not blown on, there are no requirements for protective curtains.

Easy to Install. Super Firetemp EC is easily handled and requires no special tools. The product will cut with a handsaw or band saw. It can easily be installed in the field using drywall screws and a power screwdriver.

Attractive. The product can be covered with aluminum or stainless steel jacketing.

Economical. Super Firetemp EC simplifies on-site labor and can greatly reduce overall job costs. Product preparation and application are easy; no special tools are required, and cleanup is minimal.

Approvals and Requirements

When installed according to the directions stated herein, the enclosure will provide a one-hour fire-resistive barrier for electrical circuit systems.

Johns Manville Super Firetemp EC meets the following classifications and requirements:

Agency	Listing
UL Inc.	UL Classification XCLF
NFPA	1996 Electrical Code
	Articles
	695 Fire Pumps
	Section 695-8
	700 Emergency Systems
	Section 700-9
	Section 700-12
	Section 700-17
ASTM	E1725

Guide Specification and Installation Instructions
Part 1 – General
1.01 Description of System

- A. This fireproofing system shall be a complete system of fireproofing materials supplied as specified by Johns Manville.
- B. This system is designed for application on electrical circuit systems as shown on the drawings.

1.02 Quality Assurance

- A. Supplier Qualifications: The Super Firetemp EC system as supplied by Johns Manville is approved for use on this project.
- B. Applicator Qualifications: Applicators bidding on this work represent that they are fully apprised of Super Firetemp EC products and application procedures contained in this document.

1.03 Submittals

- A. Product Data: Submit copies of Super Firetemp EC data and these application instructions and drawings.
- B. Samples: Submit samples of Super Firetemp EC, Super Calstik and other materials as requested.

1.04 Product Delivery, Storage and Handling

- A. Materials shall be delivered in packaged lots, clearly marked with Johns Manville's name, brand and type of material with UL or other labels as required.
- B. Materials shall be stored in a clean, dry warehouse with careful handling to avoid damage.

1.05 Job Conditions

- A. Environmental Conditions: While a warm environment is desirable, Super Firetemp EC may be applied in subfreezing or wet weather, if necessary. See sealant manufacturer's instructions for additional requirements that may apply.
- B. Ventilation: When Johns Manville Super Firetemp EC is saw-cut in the field, workers must follow personal protection as indicated in the product warning label or Material Safety Data Sheet (MSDS).
- C. Coordination: Fireproofing must be coordinated with other construction to avoid retrofits that would interfere with the integrity of the finished fireproofing job. At the same time, the fireproofing should be applied last to minimize the possibility of incidental damage to the finished system.

1.06 Codes

- A. Install all Super Firetemp EC in strict accordance with all published, applicable regulations by local, state or federal agencies that may have jurisdiction.
- B. Johns Manville Super Firetemp EC Electrical Circuit Protection System is listed under UL Classification XCLF in the UL Building Materials Directory.

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Part 2 – Product Information

2.01 Super Firetemp EC

- A. Description: Super Firetemp EC is a molded calcium silicate product possessing such strength and resiliency that, with normal handling, can be installed without damage.
- B. Easy Application
 - B.1 May be field-installed using ordinary tools such as drywall screws and a power screwdriver.
 - B.2 May be field-cut using a handsaw or band saw. Field cuts with a handsaw should be made by using a miter box for the saw to follow.
 - B.3 Miscellaneous materials such as drywall screws and sealants as approved by Johns Manville.

Part 3 – Installation

3.01 Inspection

- A. Verify that the conduit to be fireproofed is as represented in the design criteria.

3.02 Job Preparation

- A. The electrical conduit and components must comply with the local code and must be between $\frac{1}{2}$ " and 4" (13 mm and 102 mm) nominal EMT, intermediate weight or rigid conduit. The enclosure is constructed with Super Firetemp EC for a 1-hour enclosure.
- B. The installation of Super Firetemp EC must be coordinated with other construction work to avoid retrofits or damage to the enclosure. Plan the work such that the enclosure will not have to be opened or taken apart after it has been installed.
- C. The enclosure must be located so that the installer does not have to cut into the Super Firetemp EC to make room for adjacent equipment or building structures.
- D. Super Firetemp EC can be installed in any weather condition. If for any reason the insulation should become wet, it must be dried before it is subjected to subfreezing temperatures. See sealant manufacturer's instructions for additional requirements that may apply.
- E. It is important to have the proper tools. Super Firetemp EC can be cut with an ordinary handsaw or band saw. For cutting miters, 90-degree angles and square cuts, it is necessary to have a miter box big enough for the desired Super Firetemp EC or a band saw set up for cutting the proper angles.

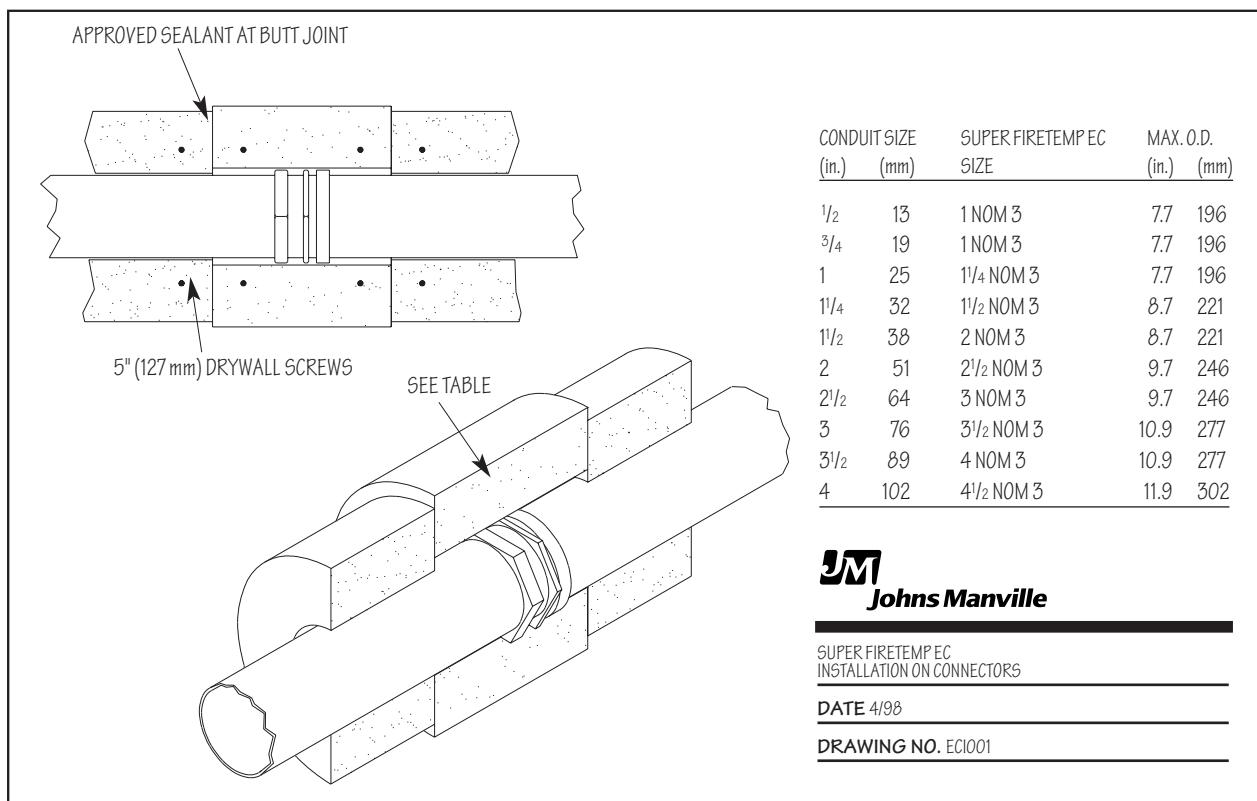
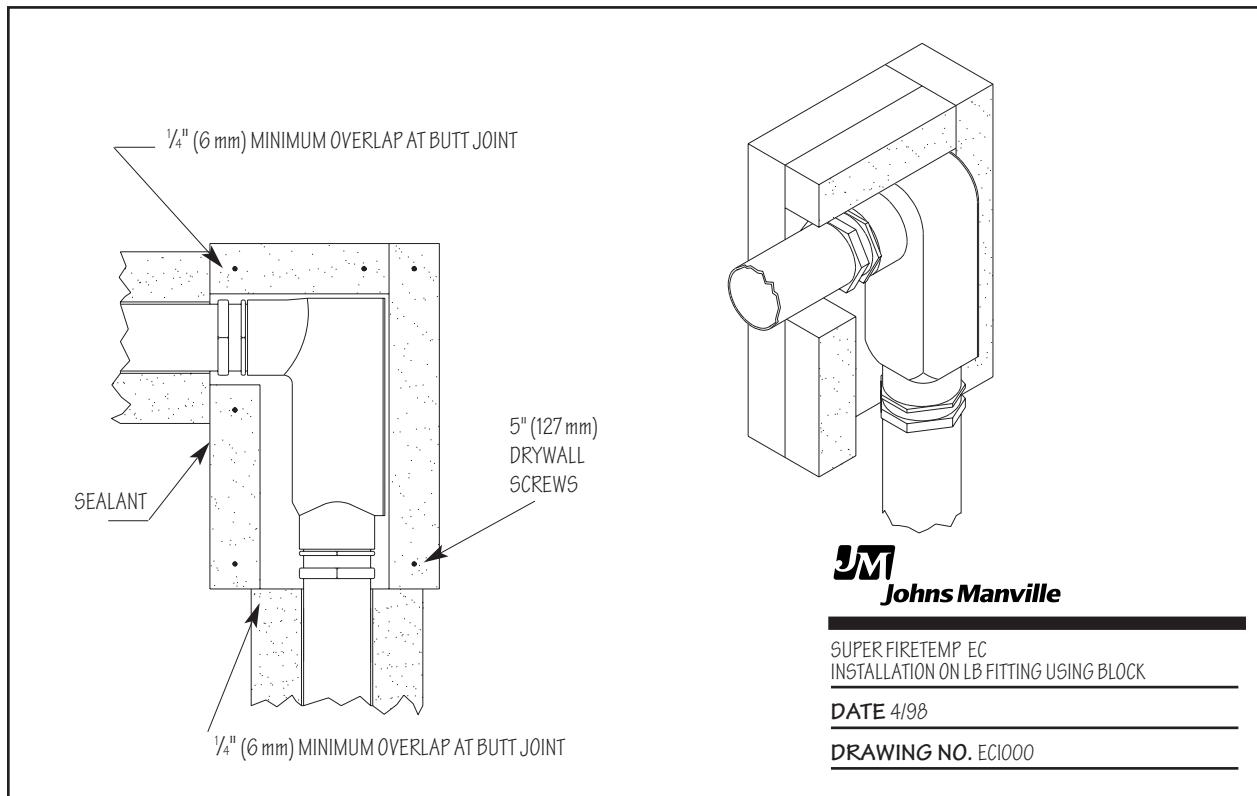
3.03 Installation

- A. Support the electrical conduit using conventional supports such as unistrut, threaded rods or other support systems. The structures must be capable of supporting the weight of the Super Firetemp EC and the weight of the conduit assembly. Supports up to 18" (457 mm) long must be insulated all the way to the support structure. Supports longer than 18" (457 mm) must be insulated with Super Firetemp EC for a minimum of 18" (457 mm).
- B. When penetrating a fire-rated wall or ceiling, use an approved through-penetration protection system prior to installing Super Firetemp EC.
- C. Completely cover the electrical conduit with Super Firetemp EC conduit cover. Use $\frac{3}{8}$ " (10 mm) bead of an

approved sealant on all butt joints. Approved sealants for this system are Hilti Elastomeric (FS 601), GE Silicone (Pencil 300) and Super Calstik Glue.

- D. Fasten Super Firetemp EC half sections together by placing 5" (127 mm) long drywall screws in the conduit cover. The screws should be placed such that at least two screws are between $1\frac{1}{2}$ " and 3" (38 mm and 76 mm) from each end of the conduit cover, one screw on each side of the conduit. No greater distance is allowed between screws than 15" (381 mm). For stretches of conduit cover that are uninterrupted for more than 3' (0.9 m), a minimum of a 3" (76 mm) staggered joint is required (see Drawing EC 1007). For stretches less than 3' (0.9 m), no joint is required (see Drawing EC 1006).
- E. For round-type conduit supports and conduit tees, make a tee out of the conduit covering (see Drawing EC 1005). Stuff all openings where the support exits the insulation system with mineral wool, and caulk with an approved sealant as listed in 3.03.C.
- F. For unistrut-type supports, use Super Firetemp EC Block to build a box around the supports. Leave $\frac{1}{8}$ " (3 mm) space all the way around the support system to allow for expansion. Stuff all openings where the support exits the insulation system with mineral wool and caulk with an approved sealant as listed in 3.03.C. The maximum O.D. of the opening, where the conduit exits the box, must be $\frac{1}{2}$ " (13 mm) smaller than the maximum O.D. of the pipe insulation (see Drawings EC 1008 and EC 1009). The pipe insulation must overlap the hole a minimum of $\frac{1}{4}$ " (6 mm) on all sides.
- G. The conduit can be insulated prior to being secured to the unistrut as shown in Drawing EC 1010. If it helps for installing the conduit, short sections of Super Firetemp EC conduit cover can be installed on the conduit at the unistrut locations. Be sure to leave the minimum 3" (76 mm) staggered joints where required.
- H. Fasten Super Firetemp EC Block sections together with 5" (127 mm) drywall screws at joints where sections meet at right angles. Screws should be placed such that each piece of block has a minimum of four screws holding it in each of its corners, and the distance between screws is no greater than 15" (381 mm).
- I. Protect elbows by fabricating a cover cut on location using a handsaw and miter box or a band saw set up for making mitered cuts (see Drawing EC 1002).
- J. Protect LB fittings by fabricating a cover in the field using a handsaw and miter box or a band saw set up for making mitered cuts. LB fitting covers can be made from conduit covers (see Drawing EC 1003) or by making a box around them out of Super Firetemp EC Block (see Drawing EC 1000).
- K. Cover other electrical components using the Super Firetemp EC block to box them in. Leave an $\frac{1}{8}$ " (3 mm) space all the way around the support system to allow for expansion. Seal the butt joints with an approved sealant as listed in 3.03.C.
- L. Cover connectors with oversized conduit cover as shown in Drawing EC 1001.
- M. In some cases, grooving is necessary to make pieces fit. No more than a $\frac{1}{8}$ " (13 mm) deep groove is allowed.

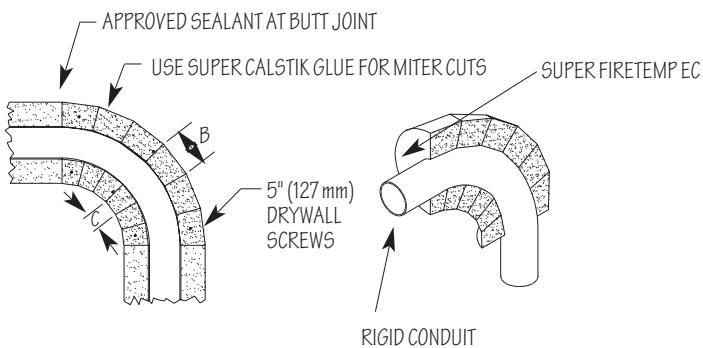
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CONDUIT SIZE (in.)	CONDUIT SIZE (mm)	SUPER FIRETEMP EC SIZE	MAX. O.D. (in.)	A (in.)	B (in.)	C (in.)	(mm)		
1/2	13	1 NOM 3	7.7	196	4	3 ⁵ / ₁₆	84	3/8	10
3/4	19	1 NOM 3	7.7	196	4	3 ⁷ / ₁₆	87	7/16	11
1	25	1 NOM 3	7.7	196	4	3 ³ / ₄	95	3/4	19
1 ¹ / ₄	32	1 ¹ / ₄ NOM 3	7.7	196	6	2 ¹⁵ / ₁₆	75	1 ⁵ / ₁₆	24
1 ¹ / ₂	38	1 ¹ / ₂ NOM 3	8.7	221	6	3 ³ / ₈	86	1 ¹ / ₈	29
2	51	2 NOM 3	8.7	221	6	3 ⁵ / ₈	92	1 ³ / ₈	35
2 ¹ / ₂	64	3 NOM 3	9.7	246	6	4	102	1 ¹ / ₂	38
3	76	3 ¹ / ₂ NOM 3	10.9	277	6	4 ¹³ / ₁₆	122	2	51
3 ¹ / ₂	89	4 NOM 3	10.9	277	6	5 ⁵ / ₁₆	135	2 ¹ / ₂	64
4	102	4 ¹ / ₂ NOM 3	11.9	302	8	4 ⁵ / ₁₆	110	2	51

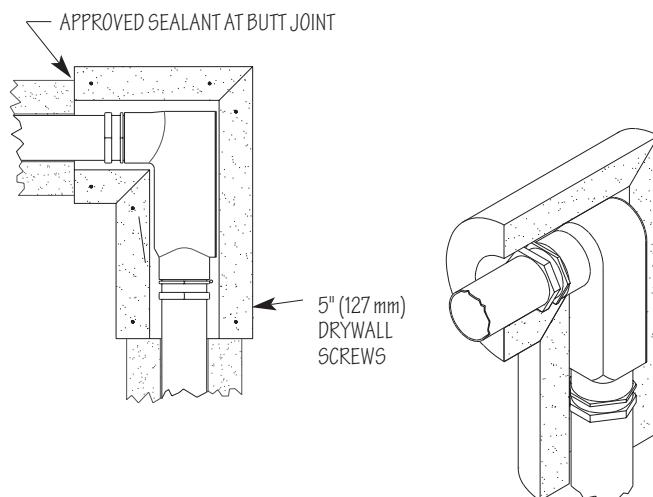


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SUPER FIRETEMP EC
INSTALLATION ON 90-DEGREE ELBOW USING PIPE COVER

DATE 4/98

DRAWING NO. EC1002



CONDUIT SIZE (in.)	CONDUIT SIZE (mm)	SUPER FIRETEMP EC SIZE	MAX. O.D. (in.)	(mm)
1/2	13	2 NOM 3	9.7	246
3/4	19	2 NOM 3	9.7	246
1	25	2 NOM 3	9.7	246
1 ¹ / ₄	32	3 NOM 3	9.7	246
1 ¹ / ₂	38	3 NOM 3	9.7	246
2	51	4 NOM 3	10.9	277
2 ¹ / ₂	64	5 NOM 3	11.9	302
3	76	6 NOM 3	12.9	328
3 ¹ / ₂	89	7 NOM 3	14.1	358
4	102	7 NOM 3	14.1	358

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SUPER FIRETEMP EC
INSTALLATION ON LB FITTING USING PIPE COVER

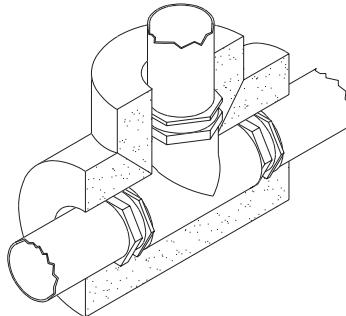
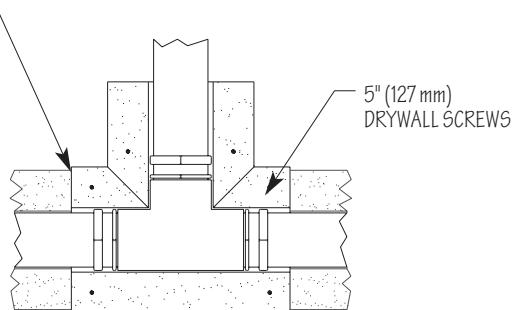
DATE 4/98

DRAWING NO. EC1003

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APPROVED SEALANT AT BUTT JOINT

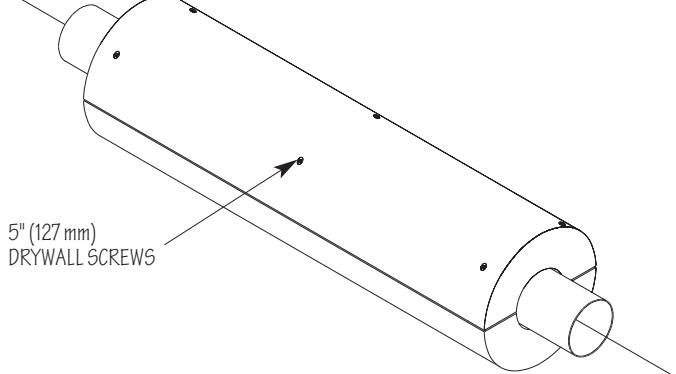


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SUPER FIRETEMP EC
INSTALLATION ON T-JOINT USING PIPE COVER

DATE 4/98

DRAWING NO. ECI005



CONDUIT SIZE (in.)	CONDUIT SIZE (mm)	SUPER FIRETEMP EC SIZE	MAX. O.D. (in.)	MAX. O.D. (mm)
1/2	13	1 NOM 3	7.7	196
3/4	19	1 NOM 3	7.7	196
1	25	1 NOM 3	7.7	196
1 1/4	32	1 1/4 NOM 3	7.7	196
1 1/2	38	1 1/2 NOM 3	8.7	221
2	51	2 NOM 3	8.7	221
2 1/2	64	2 1/2 NOM 3	9.7	246
3	76	3 NOM 3	9.7	246
3 1/2	89	3 1/2 NOM 3	10.9	277
4	102	4 NOM 3	10.9	277

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SUPER FIRETEMP EC
INSTALLATION ON CONDUIT SPANS 3' (0.9 m) OR SHORTER

DATE 4/98

DRAWING NO. ECI006

Super Firetemp™ EC

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CONDUIT SIZE (in.)	SUPER FIRETEMP EC SIZE (mm)	MAX. O.D. (in.)	(mm)	
1/2	13	1 NOM 3	7.7	196
3/4	19	1 NOM 3	7.7	196
1	25	1 NOM 3	7.7	196
1 1/4	32	1 1/4 NOM 3	7.7	196
1 1/2	38	1 1/2 NOM 3	8.7	221
2	51	2 NOM 3	8.7	221
2 1/2	64	2 1/2 NOM 3	9.7	246
3	76	3 NOM 3	9.7	246
3 1/2	89	3 1/2 NOM 3	10.9	277
4	102	4 NOM 3	10.9	277

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SUPER FIRETEMP EC
INSTALLATION ON CONDUIT SPANS 3' (0.9 m) OR LONGER

DATE 4/98

DRAWING NO. EC1007

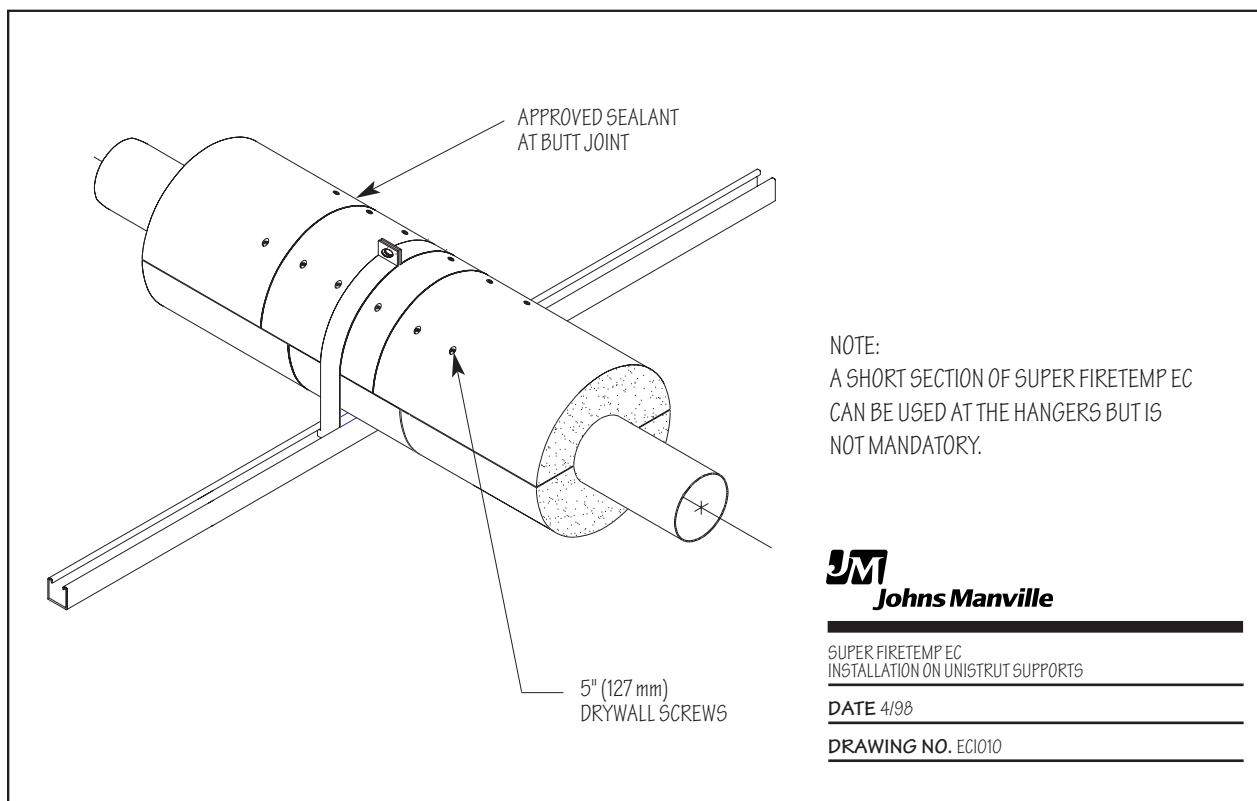
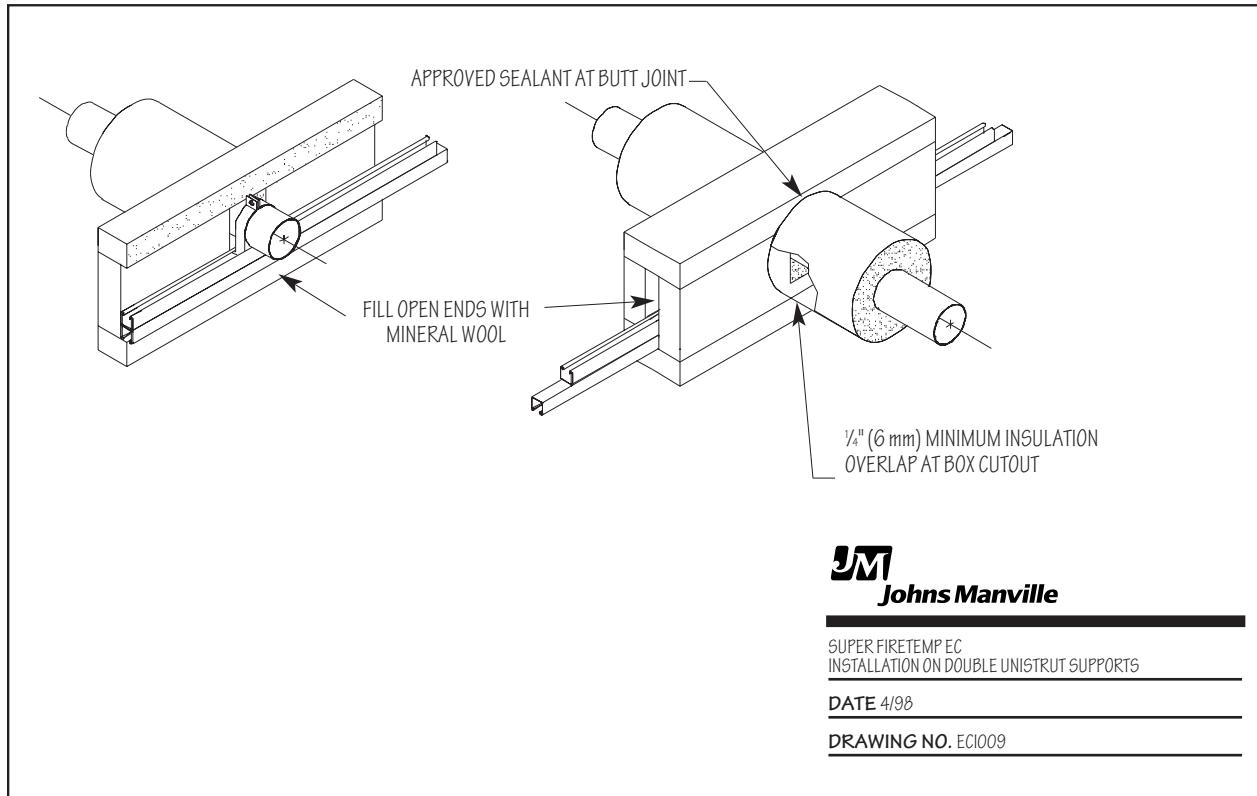
SUPER FIRETEMP EC
INSTALLATION ON SINGLE UNISTRUT SUPPORTS

DATE 4/98

DRAWING NO. EC1008

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Note: For technical information and assistance regarding application information, code approvals and performance specifications, call **1-800-872-0338**. If this piece is more than one year old, please contact Johns Manville for the current information.

For Order Placement

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Fruita, CO 81521	Denver, Colorado
(970) 525-4226	USA
(800) 525-4226	(303) 978-2980
Fax: (970) 858-9641	Fax: (303) 978-4661



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The physical and chemical properties of Super Firetemp™ represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Any references to numerical flame spread or smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the Sales Office nearest you for current information. **All Johns Manville products are sold subject to Johns Manville's Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville Limited Warranty and Limitation of Remedy, call the 800 number below.** For information on other Johns Manville thermal insulations and systems, call **1-800-654-3103**. To access automated fax-on-demand service in the United States and Canada, simply call **1-888-INSULFX** (1-888-467-8539) from a fax or phone.