

# SHOP DRAWING REVIEW FORM AND TRANSMITTAL

**DATE:** October 1, 2021

**TO:** Carl Hendrickson  
Project Manager  
Veolia Water  
825 West Water Street  
Taunton, MA 02780

**FROM:** Michael Andrus, P.E.  
Project Manager  
BETA Group, Inc.  
701 George Washington Hwy  
Lincoln, Rhode Island 02865

**RE:** City of Taunton, MA  
WWTF Solids Handling Improvements  
Contract S-2020-3

Shop Drawing No. 16130 – Raceways and Fittings

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## **BETA COMMENTS:**

<u>Item</u>	<u>Action Code</u>	<u>Description/Comments</u>
1	2	<b>Raceways and Fittings (various)</b> 1. See comments from SAR

### Action Codes

- 1 - No Exception Taken
- 2 - Make Corrections Noted
- 3 - Amend and Resubmit
- 4 - Rejected, See Remarks

- a. Installation shall proceed only when Action Code is '1' or '2'.
- b. Submittals action coded '3' shall be resubmitted within time limit set in Contract.
- c. Review does not relieve Contractor from responsibility of compliance with the Contract Documents.



TO: BETA Group

701 George Washington Highway

Lincoln, RI 02865

Attention: Mike Andrus

Sent by: M. Cotter

Date: October 1, 2021

SAR Job Number: 18009.00

Reference: Taunton WWTF Upgrades – Phase 1A

Enclosed Herewith We are sending you the following item(s):

- VIA                       Print(s)                       Reproducible(s)                       Original Drawing(s)
- Mail                       Diskette(s)                       Report(s)                       Sketch (es)
- Messenger                       Shop Drawing(s)                       Specification(s)                       Sample(s)
- Express                       Copy of Letter                       Change Order                       Other \_\_\_\_\_
- Email: Filename: \_\_\_\_\_                      Time Sent \_\_\_\_\_ AM

Copies	Date	Description
1		16130-001 REV A - Raceways and Fittings

**These are transmitted as indicated**

- For approval                       For review and comment                       As requested                       For your information

**Remarks**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Copy to**

File(s)

Transmittal Enclosure

-



## Review Comments

**JOB:** Taunton WWTF Upgrades – Phase 1A

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**DATE:** October 1, 2021

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**SUBMITTAL NO.:** 16130-001 REV A

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**SUBJECT:** Raceways and Fittings

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<input type="checkbox"/> NO EXCEPTION	<input type="checkbox"/> MAKE CORRECTIONS
<input type="checkbox"/> TAKEN	<input checked="" type="checkbox"/> NOTED
<input type="checkbox"/> REJECTED	<input type="checkbox"/> REVISE AND RESUBMIT

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for: Dimensions which shall be confirmed and correlated at the job site fabrications process and techniques of construction; coordination of His work with that all other trades; and the satisfactory performance of his work.

**SAR ENGINEERING, INC.**

**DATE:** October 1, 2021    **BY:** M. Cotter

**R-2/21/2003**

### **Comments:**

1. Submittal indicated NEMA 1 junction boxes, this project does not have any areas designated for NEMA 1 per specification 16000 paragraph 1.09.



PROJECT: 9722. - Veolia/Taunton WWTP Solids Handling Improvements

DATE: 09/27/2021

SUBMITTAL: 16130-001 - Raceways and Fittings

REVISION: A

STATUS: New

SPEC #: 16130

TO: Carl Hendrickson, Veolia North America, 125 S. 84th Street, Suite 175, Milwaukee, WI 53214, carl.hendrickson@veolia.com

FROM: Christiaan George, Hart Engineering Corporation, 800 Scenic View Drive, Cumberland, RI 02864, cgeorge@hartcompanies.com

Table with 6 columns: Item, Revision, Description, Status, Date Sent, Date Returned. Row 1: 16130-001, A, Raceways and Fittings, New, 09/27/2021, (blank). Row 2: Notes: (blank)

SHOP DRAWING REVIEW
[ ] 1 - Approved [x] 2 - Approved as Noted
[ ] 3 - Revise and Resubmit [ ] 4 - Rejected
[ ] 5 - Record File Only - No Action Taken
(Above Check Designates Action Code - See Review Comments)
IMPORTANT NOTE FOR CONTRACTOR
Review is only for general compliance with the design concept and information provided in Contract Documents. Corrections and comments made on the Shop Drawings during review do not relieve the Contractor from compliance with the requirements of the plans and specifications. Review and/or approval of a specific item shall not include review or approval of an assembly of which the item is a component. No approval or correction of a Shop Drawing shall be construed as an order for extra work. The Contractor is responsible for: all quantities and dimensions to be confirmed and correlated; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of all trades and subcontractors; and performing all Work in a safe and satisfactory manner.
BETA GROUP, INC. Checked By: MLA
By: MLA Date: 10/01/21

Additional Notes:

Status Codes

- 1-APP - No Exceptions Taken
2-ANR - Make Corrections Noted
3-R&R - Revise and Resubmit
4-REJ - Rejected
5-IPO - For Information Purposes Only
6-NRR - Not Required for Review
ENG - Submitted to Engineer

Sincerely, Hart Engineering Corporation

DATE: 09/27/2021

**Watermark Electric Co. Inc.**

PO Box 70579  
North Dartmouth, MA 02747

(774) 955-0217

TO: Hart Engineering Corp.  
800 Scenic View Drive  
Cumberland, RI 02854

**LETTER OF TRANSMITTAL**

DATE: 9/23/2021	JOB NO:210040
ATTENTION: James Ramos	
RE: Taunton WWTF Improvements Solids Handling	
Submittal # 210040-03	

**WE ARE SENDING YOU**

- Shop Dwgs.
- Copy of letter

- Attached
- Prints
- Subcontract

- Under separate cover via \_\_\_\_\_ the following items:
- Plans
- Specifications
- Purchase Order
- Other

COPIES	SECTION	NO.	DESCRIPTION
1	16130-2.01-A-1	2	Allied GRC Conduit
1	16130-2.01-A-2	3	Cantex Sch. 40 PVC Conduit
1	16130-2.01-A-3	4	Calbond PVC Coated Conduit
1	16130-2.01-B	5-6	AFC Liquidtight Steel Conduit
1	16130-2.01-D-1	7	Crouse Hinds Steel Square Boxes
1	16130-2.01-D-2	8	SCE NEMA-1 Junction Box
1	16130-2.01-D-3	9-10	Calbond PVC Coated Boxes and Fittings
1	16130-2.01-D-5	11-22	Crouse Hinds Cast Boxes and Fittings
1	16130-2.01-D-7	23-28	Allied/Calbond Elbows
1	16130-2.01-D-8	29-30	Crouse Hinds Conduit Hubs
1	16130-2.01-D-9	31-34	Crouse Hinds Link Seals
1	16130-2.01-D-10	35	Crouse Hinds XD Deflexion Coupling
1	16130-2.01-D-11	36-39	OZ Gedney Type CSB Conduit Sealing Bushing
1	16130-2.01-D-12	40-42	Hilti FS-Ons Fire Stop System

**THESE ARE TRANSMITTED as checked below:**

- For approval
- For your use
- As requested
- For review and comment
- For Signature
- Approved as Submitted
- Approved as Noted
- Comments Attached
- Revise and Resubmit

REMARKS \_\_\_\_\_  
COPY TO FILE

*Richard Farland*  
\_\_\_\_\_  
**Richard Farland**

*If enclosures are not as noted, kindly notify us at once*



P.O. BOX 70579 • North Dartmouth, MA 02747  
774-955-0217

# **CITY OF TAUNTON, MA**

## **WWTF 2021 IMPROVEMENTS SOLIDS HANDLING**

### **ELECTRICAL SUBMITTAL**

#### **RACEWAYS AND FITTINGS**

##### **SECTIONS 16130**

**CONTRACTOR:** HART ENGINEERING  
**ENGINEER:** BETA

**SEPTEMBER 2021**

## Galvanized Rigid Metal Conduit (GRC) and Kwik-Couple™ GRC

### Rigid Steel Conduit (GRC)

- Hot-dip galvanized for excellent corrosion resistance
- High strength ductile steel for long life and easy bending
- Smooth, continuous raceways for fast wire-pulling
- UL listed to UL 6, manufactured in accordance with ANSI C80.1
- True Color GRC special orders available
- Available in trade sizes 1/2 thru 6

### Quality, Long Lasting Heavy Duty Steel Conduit



### Kwik-Couple (GRC) Rigid Steel Conduit & Elbows

- Factory-installed Kwik-Couple couplings are available in GRC rigid conduits and elbows

**Just line up the ends, spin the coupling forward onto the next piece and wrench tighten. It's that easy!**

- No separate couplings to purchase, store, carry or install
- Kwik-Release End Cap · Requires no tools
- True Color GRC special orders available
- All the benefits of GRC Conduit
- Patented\*
- Available in Trade sizes 1/2 thru 4

### For Faster Installations Use the Kwik-Couple GRC Connection



\* U.S. Patent Numbers 4258936,4547004.

### Galvanized Rigid Steel Conduit Weights and Dimensions

Trade Size	Metric Designator	Approx. Wt. Per 100 Ft. (30.5M)		Outside Diameter <sup>1</sup>		Nominal Wall Thickness <sup>2</sup>		Quantity In Master Bundle*	
		lb.	kg.	in.	mm.	in.	mm.	ft.	m.
1/2	16	82	37.2	0.840	21.3	0.104	2.60	2500	762.5
3/4	21	109	49.4	1.050	26.7	0.107	2.70	2000	610.0
1	27	161	73.0	1.315	33.4	0.126	3.20	1250	381.3
1-1/4	35	218	98.9	1.660	42.2	0.133	3.40	900	274.5
1-1/2	41	263	119.3	1.900	48.3	0.138	3.50	800	244.0
2	53	350	158.7	2.375	60.3	0.146	3.70	600	183.0
2-1/2	63	559	253.5	2.875	73.0	0.193	4.90	370	112.9
3	78	727	329.7	3.500	88.9	0.205	5.20	300	91.5
3-1/2	91	880	399.1	4.000	101.6	0.215	5.50	250	76.3
4	103	1030	467.1	4.500	114.3	0.225	5.70	200	61.0
5	129	1400	634.9	5.563	141.3	0.245	6.20	150	45.8
6	155	1840	834.5	6.625	168.3	0.266	6.80	100	30.5

<sup>1</sup> Tolerances: Trade Size 1/2 to 1-1/2: ±0.015" (0.38mm); Trade Size 2-6: ± 1% Length equals 10 ft. (3.05m) with a tolerance of +/- .25 in. (6.35mm)

<sup>2</sup> For information only. Not a requirement of the UL standard.

# Schedule 40 Conduit - Bell End



Meets specifications UL 651 and NEMA TC 2  
 Rated for 90° C Cable  
 Sunlight Resistant  
 10' Lengths

**Size As Required**



**Schedule 40 Conduit  
 Belled End  
 10' Lengths**



Part No.	Size	O.D.	I.D.	Min. Wall	Bell Depth	Approx. Wt/Ft	Feet per Pack
A52AE12	1/2	.840	.622	.109	1.750	.162	6,000
A52AE12H	1/2	.840	.622	.109	1.750	.162	3,000
A52AG12	3/4	1.050	.824	.113	2.000	.216	4,400
A52AG12H	3/4	1.050	.824	.113	2.000	.216	2,200
A52BA12	1	1.315	1.049	.133	2.250	.320	3,600
A52BA12H	1	1.315	1.049	.133	2.250	.320	1,800
A52BC12	1-1/4	1.660	1.380	.140	2.500	.434	3,300
A52BC12H	1-1/4	1.660	1.380	.140	2.500	.434	1,650
A52BE12	1-1/2	1.900	1.610	.145	2.750	.520	2,250
A52BE12H	1-1/2	1.900	1.610	.145	2.750	.520	1,130
A52CA12	2	2.375	2.067	.154	3.250	.699	1,400
A52CE12	2-1/2	2.875	2.469	.203	3.500	1.108	930
A52DA12	3	3.500	3.068	.216	4.000	1.450	880
A52DE12	3-1/2	4.000	3.548	.226	4.250	1.744	630
A52EA12	4	4.500	4.026	.237	4.750	2.067	570
A52FA12	5	5.563	5.047	.258	5.750	2.801	380
A52GA12	6	6.625	6.065	.280	6.325	3.636	260
A52JA12	* 8	8.652	7.981	.322	6.500	5.474	180

\* Non UL

**Note:** 20' length available on request

Schedule 40 conduit complies with federal and military specifications by conforming to UL 651.



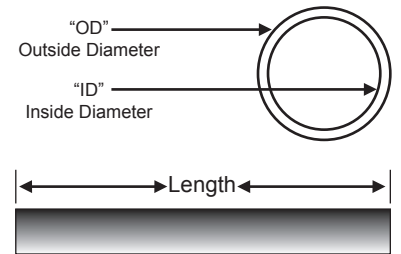
## PVC Coated Rigid Conduit

Calbond PVC coated rigid steel conduit is used for highly corrosive environments. The coating will provide corrosion protection and mechanical protection. Ground continuity is maintained throughout the installation.



### Features:

- Exterior PVC coating thickness is a minimum 0.040"
- Interior Urethane coating thickness is a minimum 0.002"
- Specialized corrosion resistant coating provided on threads
- Sizes available are 1/2" to 6"
- Color coded thread protectors
- Couplings shipped with conduit are packaged separately



### Standards:

Calbond conduit is UL listed with both the PVC coating as a primary protection and the zinc coating as the primary protection per UL6. PVC coated conduit is restricted for use with threaded fittings only (threadless connector not permitted).

### UL Listings and Compliances:

- Calbond PVC coated conduit is UL/CUL listed in accordance to UL6 & ANSI C80.1 Standards
- Calbond PVC coated conduit is UL/CUL listed rigid ferrous metal conduit with polyvinyl chloride coating verified for PVC adhesion performance
- Calbond PVC coated conduit complies with NEMA RN-1
- UL File Number E226472 & E230584

Item Number	Trade Size	Size Metric (mm)	Wall Thickness (in.)	Outside Diam. w/ Coating	Inside Diameter	Weight Per 100 Feet	Feet Per Bundle	Aluminum Item Number
PV0510CT00	1/2"	16	0.104	0.920	0.632	90	1000	PA0510CT00
PV0710CT00	3/4"	21	0.107	1.130	0.836	119	900	PA0710CT00
PV1010CT00	1"	27	0.126	1.395	1.063	175	750	PA1010CT00
PV1210CT00	1-1/4"	35	0.133	1.740	1.394	237	420	PA1210CT00
PV1510CT00	1-1/2"	41	0.138	1.980	1.624	281	380	PA1510CT00
PV2010CT00	2"	53	0.146	2.455	2.083	376	300	PA2010CT00
PV2510CT00	2-1/2"	63	0.193	2.955	2.489	593	170	PA2510CT00
PV3010CT00	3"	78	0.205	3.580	3.090	772	140	PA3010CT00
PV3510CT00	3-1/2"	91	0.215	4.080	3.570	922	110	PA3510CT00
PV4010CT00	4"	103	0.225	4.580	4.050	1089	110	PA4010CT00
PV5010CT00	5"	129	0.245	5.643	5.073	1488	80	PA5010CT00
PV6010CT00	6"	155	0.266	6.705	6.093	1998	50	PA6010CT00

### Calbond

# Technical Specifications

## LIQUID-TUFF™

### UL Liquidtight Flexible Steel Conduit, Type LFMC

Page 1 of 2



#### Scope

This specification covers AFC Cable Systems, Inc. UL LIQUID-TUFF™ Liquidtight Flexible Steel Conduit designed for use as a raceway for power, control and communication cables in accordance with Article 350 of the National Electrical Code. The product is Underwriters Laboratories Inc. (UL) Listed for 80°C (176°F) in a dry location, 60°C (140°F) in a wet location and 70°C (158°F) in an oily location. It is also UL Listed in all trade sizes for direct burial in either earth or concrete encasement, outdoor use and sunlight resistance. This LIQUID-TUFF® is now UL Listed for 70°C OIL RESISTANT applications. In addition the product is CSA certified for use at 75°C (167°F) in dry and oily locations and for minus 25°C (-13°F) low temperature applications. This Liquidtight Flexible Steel Conduit is manufactured and tested in accordance with Underwriters Laboratories Inc. Standard UL 360 and CSA International Standard CSA C22.2 Number 56. The product carries the UL Listing Mark and the CSA Certification Mark.

#### Construction

The Type UL Liquidtight Flexible Steel Conduit shall be formed from a zinc coated galvanized low carbon steel strip having a uniform width and thickness. The construction shall be in accordance with UL 360 and CSA C22.2 Number 56 requirements. The finished Type LFMC dimensions shall be in accordance with Table 5.1 of UL 360 and Table 2 of CSA C22.2 No. 56 which are summarized in Table 3.

#### Jacket – PVC

A rugged moisture, oil and sunlight resistant polyvinyl chloride (PVC) jacket shall be applied directly over the flexible metal conduit with a wall thickness in accordance with Table 4.1 of UL 360 and Table 4 of CSA C22.2 No.56 which are summarized in Table 2.

#### Grounding

Permanent circuit ground protection is provided through the continuous copper bonding strip built into the conduit core in sizes 3/8" through 1¼". A separate grounding conductor is required by the NEC® for trade sizes 1½" and larger. The Canadian Electric Code requires a grounding conductor for all trade sizes of Liquidtight Flexible Metal Conduit.

#### Ordering Information Page 8



#### Reference Standards

UL 360	Standard for Liquidtight Flexible Steel Conduit
CSA C22.2 No. 56	Standard for Flexible Metal Conduit and Liquidtight Flexible Metal Conduit
File Reference(s):	UL E26540; CSA 51593
NEC® Articles:	250.118(6), 350, 390.15, 501.10(B)(2), 502.10(A)(2), 503.10(A)(2), 511.7(A)(1), 645.5(D)(2), 680.21, 680.42, 695.6(E) and 695.14(E)

Department of Defense Adopted UL 360 on October 1, 1987

#### Markings

The surface of the outer jacket shall be clearly marked with a legible print legend in compliance with UL 360 and CSA C22.2 No. 56.

#### Performance Tests

In accordance with UL 360 and CSA C22.2 No. 56, the completed UL LIQUID-TUFF™ Liquidtight Flexible Steel Conduit shall meet all of the performance requirements outlined in Appendix A.





# Technical Specifications

## LIQUID-TUFF™

### UL Liquidtight Flexible Steel Conduit, Type LFMC

Page 2 of 2

**Table 2**  
**Jacket Thickness**

Conduit Trade		Minimum Acceptable Average Thickness of Jacket, (inches)
Trade Size	Metric Designator	
3/8	12	0.030
1/2	16	0.030
3/4	21	0.035
1	27	0.035
1¼	35	0.035
1½	41	0.040
2	53	0.040
2½	63	0.050
3	78	0.050
3½	91	0.060
4	103	0.060

### Appendix A

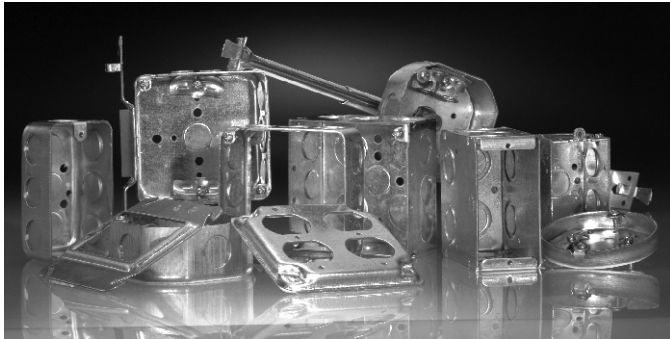
UL Performance Tests	CSA Performance Tests
Resistance and High Current	Physical Properties
Fault Current	Original Tensile and Elongation
Impact	Air Oven Aging Test
Tension	Oil Immersion Test
Crushing	Deformation Test
Pipe Stiffness	Tension
Flexibility	Zinc Coating
Zinc Coating	Low Temperature Flexibility
Vertical Flame	Vertical Flame
Physical Properties	Cold Impact
Deformation	Pinhole Test
Mechanical Water Absorption	Compatibility with Connectors
Moisture Penetration	
Sunlight Resistance	
Test for Secureness of Fittings	
Test for Durability of Ink Printing	

**Table 3**  
**Conduit Diameters**  
**Acceptable Internal and External Diameters**

Conduit Size		Internal Diameter, In.		Over Conduit, In.		Over Jacket, In.	
Trade Size, In.	Metric Designator	Min.	Max.	Min.	Max.	Min.	Max.
3/8	12	0.484	0.504	0.594	0.614	0.690	0.710
1/2	16	0.622	0.642	0.732	0.765	0.820	0.840
3/4	21	0.820	0.840	0.930	0.960	1.030	1.050
1	27	1.041	1.066	1.201	1.226	1.290	1.315
1¼	35	1.380	1.410	1.540	1.570	1.630	1.660
1½	41	1.575	1.600	1.735	1.770	1.865	1.900
2	53	2.020	2.045	2.180	2.215	2.340	2.375
2½	63	2.480	2.505	2.640	2.675	2.840	2.875
3	78	3.070	3.100	3.295	3.335	3.460	3.500
3½	91	3.500	3.540	3.720	3.789	3.960	4.000
4	103	4.000	4.040	4.220	4.280	4.460	4.500

## 4" SQUARE OUTLET BOXES AND COVERS

### Features:



- Ideal for exposed work applications, providing an easy method for the installation of electrical devices (switches, receptacles, fans, lights, etc.)
- Raised ground screw location in the welded boxes saves time in installation
- Available with pre-installed ground screws and pigtails for increased labor savings
- Knockouts are suitable for use without a bonding jumper in circuits above or below 250 volts
- Available in two depths for differing cubic capacity requirements
- Welded or drawn construction to match customer preference
- Extensive cover offering to meet various customer applications and needs

### Applications:

- For use with conduit
- Can be ceiling mounted to be used as a junction box or to mount lighting fixtures
- Available in red for fire alarm applications

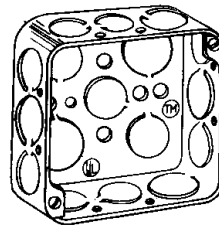
### Certifications and Compliances:

- UL Listed

## 4" SQUARE OUTLET BOXES – 18.0 CUBIC INCH CAPACITY

1 1/4" DEEP – FOR CONDUIT

UL LISTED



TP408

### KNOCKOUTS

Cat. #	Bracket	Description	Sides	Bottom	Unit Qty.	Wt. Lbs. Per 100
TP408	—	Drawn	12 – 1/2"	5 – 1/2"	50	61

## SCE-12N1204LP

### Product Specifications:

**Part Number:** SCE-12N1204LP  
**Description:** Enclosure, Nema-1  
**Height:** 12.00"  
**Width:** 12.00"  
**Depth:** 4.00"



#### Construction

- \* 0.048 In., 0.063 In. & 0.075 In. carbon steel depending on enclosure size.
- \* Spot weld construction.
- \* 1/4-20 Standoffs provided for mounting optional panels.
- \* Butt hinge.
- \* Doors open 180 degrees.
- \* Black quarter turn latches.
- \* Latches are opened or closed with a screwdriver.
- \* Ground stud on door.
- \* Mounting holes in back of enclosure.
- \* Subpanel mounting hardware.

#### Application

Designed to house electrical controls, instruments and components in areas that do not require oil, water and dust tight protection.

#### Options

Tamper-resistant inserts available. Optional mounting straps available.

#### Finish

ANSI-61 gray powder coating inside and out. Optional sub-panels are powder coated white.

#### Industry Standards - (IS8)

- \* NEMA Type 1
- \* UL Listed Type 1
- \* CSA Type 1
- \* IEC 60529
- \* IP 30

#### Optional Accessories

- SCE-128577 Cam, 35 mm Reach - 6 mm External Stop (10 pieces)
- SCE-12N12MP Subpanel, Flat Nema-1
- SCE-DLKLDB Keylocking Door Latch (Black)
- SCE-NMST12 Strap, Nema-1 Mounting

#### Similar Part Numbers

- SCE-10N1004LP Enclosure, Nema-1
- SCE-10N1006LP Enclosure, Nema-1
- SCE-10N804LP Enclosure, Nema-1
- SCE-10N806LP Enclosure, Nema-1
- SCE-12N1004LP Enclosure, Nema-1
- SCE-12N1006LP Enclosure, Nema-1
- SCE-12N1206LP Enclosure, Nema-1
- SCE-12N1208LP Enclosure, Nema-1
- SCE-14N1204LP Enclosure, Nema-1
- SCE-14N1206LP Enclosure, Nema-1

#### Installation Information

- \* Service Parts NEMA 1 Enclosures

## PVC Coated Device Boxes - FSC

Calbond Type FS & FD PVC coated device boxes and covers offer corrosion protection to conduit systems and accommodates wiring devices and access for taps and splices. Covers are available separately. Electrical continuity of the conduit system is maintained across assembled system.



### Features:

- Exterior PVC coating thickness is a minimum 0.040"
- Interior Urethane coating thickness is a minimum 0.002"
- Sizes available are 1/2" to 1"
- Available in Standard (FS) and Deep (FD) Styles
- Sealing sleeves on all conduit openings
- Modified boxes are available upon request
- All available covers are supplied with PVC coating

### Standards:

- UL Listed Standard 514B
- CSA Standard: C22.2 No. 18

### UL listings include:

- Ferrous electrical conduit: File # DYIX.E226472
- Electrical metallic tubing: File # FJMX.E315441
- Ferrous electrical conduit with PVC coating: File # DYJC.E226472
- Non-Ferrous electrical conduit (stainless): File # DYWV.E230584

FSC							
Item Number	Trade Size	Weight Per 100 (lbs)	A	B	C	D	Aluminum Item Number
<b>Single gang</b>							
PV0500FSC1	1/2"	2.2	1.38	1.92	1.69	0.67	PA0500FSC1SA
PV0700FSC2	3/4"	2.4	1.63	1.92	1.69	0.79	PA0700FSC2SA
PV1000FSC3	1"	2.7	2.00	1.92	1.69	0.92	
<b>Double gang</b>							
PV0500FSC12	1/2"	3.3	1.38	1.92	1.69	0.67	
PV0700FSC222	3/4"	3.6	1.63	1.92	1.69	0.79	
PV1000FSC32	1"	4.0	2.00	1.92	1.69	0.92	

## PVC COATED CONDUIT BODIES - LB FORM 8

### Description:

Calbond offers the full line of Form 8 PVC coated conduit bodies. All fittings are supplied with PVC coated cast iron covers. The sleeved threaded ends offer complete protection against corrosion while maintaining full ground continuity throughout the installed system.

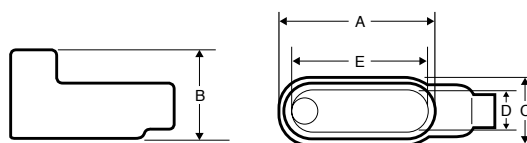


### Features:

- Exterior PVC coating thickness is a minimum 0.040"
- Interior urethane coating thickness is a minimum 0.002"
- Specialized corrosion resistant coating provided on threads
- Fittings are supplied with plastic encapsulated stainless steel screws
- Sizes available are 1/2" to 4"

### Standards:

- UL Listed Standard 514B
- CSA Standard: C22.2 No. 18
- Verified NEMA 4X Rated



Item Number	Trade Size	Metric Size (mm)	A	B	C	D	E	Weight Per 100 (lbs)
PV0500LB18	1/2"	16	5.48	2.26	1.42	1.00	3.31	150
PV0700LB28	3/4"	21	6.35	2.48	1.60	1.19	3.94	200
PV1000LB38	1"	27	7.51	2.85	1.79	1.38	4.56	290
PV1200LB48	1-1/4"	35	8.82	3.38	2.23	1.75	5.31	410
PV1500LB58	1-1/2"	41	10.67	4.07	2.79	2.13	6.50	650
PV2000LB68	2"	53	13.04	4.85	3.79	3.00	8.56	829
PV2500LB78	2-1/2"	63	15.98	6.17	5.04	4.25	10.88	1820
PV3000LB888	3"	78	15.98	6.54	5.04	4.25	10.88	2120
PV3500LB98	3-1/2"	91	14.73	7.60	6.29	5.44	13.44	3120
PV4000LB108	4"	103	14.73	7.85	6.29	5.44	13.44	3200

### Applications:

Conduit outlet bodies are installed in conduit systems to:

- Act as pull outlets for conductors being installed
- Provide openings for making splices and taps in conductors
- Connect conduit sections
- Provide taps for branch conduit runs
- Make 90° bends in conduit runs
- Provide for access to conductors for maintenance and future system changes

### Features:

#### Conduit Outlet Bodies

- Form 7 Condulet outlet bodies approach conduit in size for neat, compact installations
- Form 8 and Mark 9 bodies provide more room for heavier conductors
- Many shapes and sizes are available for rigid threaded conduit – for complete listings see pages 6–12
- Conduit hubs have tapered threads and feature integral bushings for protection of wire insulation
- Form 7 has exclusive snaptight and wedgenut cover attachment to provide clear, unobstructed cover opening
- Built-in rollers on all Form 5 1¼" to 4" C and LB bodies to facilitate wire pulling
- Series 5 bodies available in optional configuration with set screws on hubs for EMT conduit (add suffix -MT to catalog number)

#### Gaskets

Solid gaskets:

- Are used with blank covers
- For Mark 9 and Form 5, can be converted to open type gaskets by tearing out center section along scored lines – ½" to 2" sizes
- For Form 7 are used with all covers

Open gaskets:

- For Form 8 – ½" to 4" sizes
- For Mark 9 – 2½" to 4" sizes

#### Blank Covers

Stainless steel cover screws are standard on Form 7, Form 8, Mark 9, Series 5 and Form 5 covers.

##### • Form 7

Wedge nut design facilitates installation and removal. Nuts are held captive in cover. Covers can be used with or without gaskets. SNAPTIGHT™ Form 7 Covers with integral sealing gaskets are installed without the use of screws, reducing installation time and costs. Covers are reusable.

##### • Form 8

Two cover screws provided on all sizes to provide tight cover and gasket assembly. *Feraloy* iron alloy covers have dome shapes for added strength and extra wiring room.

##### • Mark 9

Self-retaining cover screws.

### Certifications and Compliances:

Outlet Bodies –

- UL Standard: 514B
- Fed. Spec.: W-C-586D
- CSA Standard 22.2 No. 18
- NEMA 3R Raintight (when installed with cover and gasket)

### Standard Materials:

- Form 7, Form 8 outlet bodies – *Feraloy* iron alloy
- Mark 9 outlet bodies – copper-free aluminum
- Form 5 – malleable iron
- Series 5 – die cast aluminum

### Standard Finishes:

- Form 7, Form 8 outlet bodies – electrogalvanized with aluminum acrylic paint
- Mark 9 outlet bodies – natural
- Form 5 – electrogalvanized with aluminum acrylic paint
- Series 5 – aluminum acrylic paint

### Options:

**Description**

**Suffix**

Form 7 body and cover only:

Copper-free aluminum	SA
<i>Corro-free</i> ™ epoxy powder coat - external body only	S752
<i>Corro-free</i> ™ epoxy powder coat - internal and external	S753
Series 5 in an EMT version with set screws on all hubs	MT
Series 5 pre-packaged with neoprene gasket and cover	CGN



Form 7



Mark 9



Form 8



Mogul









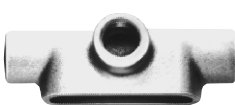
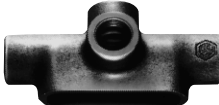

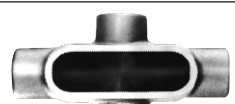
# Condulet® Conduit Bodies - Cast Iron or Aluminum

1F

Dimensions Pgs. See pages 10–12 (Dimensions for Form 5 – see Section CP)

1F

## Threaded Rigid Bodies

Shape	Style	Hub Size										
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	
	<b>C</b>											
	Form 7	C17	C27	C37	C47	C57	C67	C77	C87			
	Form 8	C18	C28	C38	C448	C58	C68	C78	C88			
	Mark 9	C19	C29	C39	C49	C59	C69	C789	C889	C989	C1089	
	Form 5	C50M	C75M	C100M	C125M*	C150M*	C200M*	C250M*	C300M*	C350M*	C400M*	
Series 5	C15	C25	C35	C45	C55	C65	C75	C85	C95*	C105*		
	<b>E</b>											
	Form 7	E17	E27	E37								
	<b>L</b>											
	Form 7	L17	L27	L37	L47	L57	L67					
Double faced – may be used as LL or LR – has 2 openings, one of which is furnished with a blank sheet steel cover												
	<b>LB</b>											
	Form 7	LB17	LB27	LB37	LB47	LB57	LB67	LB777	LB87	LB97	LB107	
	Form 8	LB18	LB28	LB38	LB448	LB58	LB68	LB78	LB888	LB98	LB108	
	Mark 9	LB19	LB29	LB39	LB49	LB59	LB69	LB789	LB889	LB989	LB1089	
	Form 5	LB50M	LB75M	LB100M	LB125M*	LB150M*	LB200M*	LB250M*	LB300M*	LB350M*	LB400M*	
Series 5	LB15	LB25	LB35	LB45	LB55	LB65	LB75	LB85	LB95	LB105		
	<b>LL</b>											
	Form 7	LL17	LL27	LL37	LL47	LL57	LL67	LL777	LL87	LL97	LL107	
	Form 8	LL18	LL28	LL38	LL448	LL58	LL68	LL78	LL888	LL98	LL108	
	Mark 9	LL19	LL29	LL39	LL49	LL59	LL69	LL789	LL889	LL989	LL1089	
	Form 5	LL50M	LL75M	LL100M	LL125M	LL150M	LL200M	LL250M	LL300M	LL350M	LL400M	
Series 5	LL15	LL25	LL35	LL45	LL55	LL65	LL75	LL85	LL95	LL105		
	<b>LR</b>											
	Form 7	LR17	LR27	LR37	LR47	LR57	LR67	LR777	LR87	LR97	LR107	
	Form 8	LR18	LR28	LR38	LR448	LR58	LR68	LR78	LR888	LR98	LR108	
	Mark 9	LR19	LR29	LR39	LR49	LR59	LR69	LR789	LR889	LR989	LR1089	
	Form 5	LR50M	LR75M	LR100M	LR125M	LR150M	LR200M	LR250M	LR300M	LR350M	LR400M	
Series 5	LR15	LR25	LR35	LR45	LR55	LR65	LR75	LR85	LR95	LR105		
	<b>T</b>											
	Form 7	T17	T27	T37	T47	T57	T67	T77	T87	T97	T107	
	Form 8	T18	T28	T38	T448	T58	T68	T78	T88	T98	T108	
	Mark 9	T19	T29	T39	T49	T59	T69	T789	T889	T989	T1089	
	Form 5	T50M	T75M	T100M	T125M	T150M	T200M	T250M	T300M	T350M	T400M	
Series 5	T15	T25	T35	T45	T55	T65	T75	T85	T95*	T105*		
	<b>TA</b>											
	Form 7	TA17	TA27	TA37	TA47	TA57	TA67					
	<b>TB</b>											
	Form 7	TB17	TB27	TB37	TB47	TB57	TB67					
	Form 8	TB18	TB28	TB38	TB448	TB58	TB68					
	Mark 9	TB19	TB29	TB39	TB49	TB59	TB69					
	Series 5	TB15	TB25	TB35	TB45	TB55	TB65					
Form 5	TB50M	TB75M	TB100M	TB125M	TB150M	TB200M						
	<b>X</b>											
	Form 7	X17	X27	X37	X47	X57	X67					
	Form 8	X18	X28	X38	X448	X58	X68					
	Mark 9	X19	X29	X39	X45	X55	X65					
	Series 5	X15	X25	X35	X45	X55	X65					
Form 5	X50M	X75M	X100M	X125M	X150M	X200M						

\* 1/2" - 4" Form 5 LB and C bodies are supplied with built-in rollers to facilitate wire pulling.

# 1F Condulet® Conduit Bodies - Cast Iron or Aluminum

## Covers and Gaskets

### Dimensions for Form 5 – see Section CP

1F

#### Blank Covers



Sheet Steel

Size	Form 7 Wedgenut Cat. #	Form 7 Snpight™ Covers‡ Cat. #	Form 7 Wedgenut w/Integral Gasket Cat. #	Form 8§ Cat. #	Form 8 w/Integral Gasket Cat. #	Form 5 w/Integral Gasket** Cat. #
1/2	170	170SG	170G	180	180G	K50SG
3/4	270	270SG	270G	280	280G	K75SG
1	370	370SG	370G	380	380G	K100SG
1 1/4	470	470SG	470G	480	480G	K125SG
1 1/2	570	570SG	570G	580	580G	K125SG
2	670	670SG	670G	680	680G	K200SG
2 1/2	870	870G		880		K250SG
3	870			880		K250SG
3 1/2	970	970G		980		K350SG
4	970			980		K350SG

‡Form 7 Snpight covers with integral sealing gasket are installed without the use of screws.

§Two cover screws on 1/2" to 2" Form 8 covers and four cover screws on 2 1/2" and larger Form 8 covers.

\*\*For cover without integral gasket, remove G from catalog number.



Sheet Aluminum



Feraloy® Iron Alloy



Cast Aluminum

Size	Mark 9 Cat. #	Mark 9 w/Integral Gasket Cat. #	Form 7 Cat. #	Form 7 w/Integral Gasket Cat. #	Series 5 w/Integral Gasket** Cat. #	Form 7 Wedgenut Cat. #	Form 7 Wedgenut w/Integral Gasket Cat. #	Form 8§ Cat. #	Form 5‡ Cat. #	Form 7 Wedgenut Cat. #
1/2	190	190G	170 SA	170G SA	150 G	170F	170FG	180F	K50CM	170F SA
3/4	290	290G	270 SA	270G SA	250 G	270F	270FG	280F	K75CM	270F SA
1	390	390G	370 SA	370G SA	350 G	370F	370FG	380F	K100CM	370F SA
1 1/4	490	490G	470 SA	470G SA	450 G	470F	470FG	480F	K125CM	470F SA
1 1/2	590	590G	570 SA	570G SA	450 G	570F	570FG	580F	K125CM	570F SA
2	690	690G	670 SA	670G SA	650 G	670F	670FG	680F	K200CM	670F SA
2 1/2	889		870 SA		850 G	870F		880F	K250CM	870F SA
3	889		870 SA		850 G	870F		880F	K250CM	870F SA
3 1/2	989		970 SA		950 G	970F		980F	K350CM	970F SA
4	989		970 SA		950 G	970F		980F	K350CM	970F SA

‡Malleable iron covers.

§Two cover screws on 1/2" to 2" Form 8 covers and four cover screws on 2 1/2" and larger Form 8 covers.

\*\*For cover without integral gasket, remove G from catalog number.

#### Solid Gaskets - Neoprene



Size	Form 7 Cat. #	Form 8* Cat. #	Mark 9† Cat. #	Form 5 Cat. #	Series 5 Cat. #
1/2	GASK571	GASK851N	GASK1941	GK50N	GASK015N
3/4	GASK572	GASK852N	GASK1942	GK75N	GASK025N
1	GASK573	GASK853N	GASK1943	GK100N	GASK035N
1 1/4	GASK574	GASK854N	GASK1944	GK125N	GASK045N
1 1/2	GASK575	GASK805N	GASK1945	GK125N	GASK045N
2	GASK576	GASK806N	GASK1946	GK200N	GASK065N
2 1/2	GASK578	GASK808N	GASK808N	GK250N	GASK085N
3	GASK578	GASK808N	GASK808N	GK250N	GASK085N
3 1/2	GASK579	GASK809N	GASK809N	GK350N	GASK095N
4	GASK579	GASK809N	GASK809N	GK350N	GASK095N

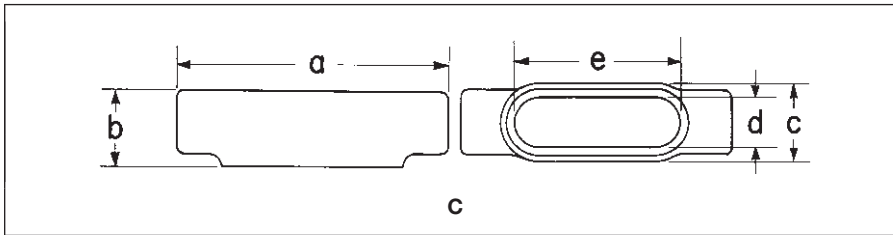
\*1/2 – 1 1/4 are solid gaskets; 1 1/2 – 4 are open gaskets.

†1/2 – 2 are solid gaskets; 2 1/2 – 4 are open gaskets.

# 1F Condulet® Conduit Bodies - Cast Iron or Aluminum

## Dimensions (In Inches)

1F



### Form 7 C

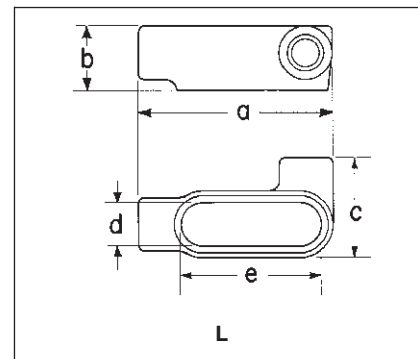
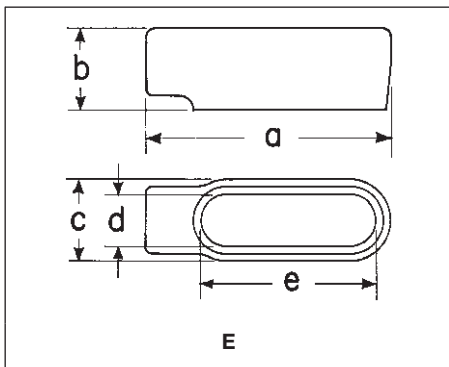
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
a	5 3/8	6	7	7 7/16	8 3/16	9 3/16	12	11 3/4
b	1 3/8	1 5/8	1 7/8	2 5/16	2 9/16	3 1/8	3 5/8	4 3/8
c	1 3/8	1 9/16	1 3/4	2 3/16	2 7/16	3	4 1/4	4 1/4
d	1 5/16	1 1/8	1 3/8	1 3/4	1 15/16	2 7/16	3 9/16	3 9/16
e	3 3/16	3 13/16	4 1/2	5	5 7/16	6 3/8	8 3/8	8 3/8

### Form 8 C

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
a	5 11/16	6 3/32	7 5/16	8 1/2	10 3/8	12 1/4	15 5/8	15 5/8
b	1 7/16	1 11/16	1 15/16	2 3/8	2 25/32	3 3/16	4 7/16	4 13/16
c	1 3/8	1 3/16	1 3/4	2 3/16	2 3/4	3 3/4	5	5
d	1	1 1/16	1 3/8	1 3/4	2 1/8	3	4 1/4	4 1/4
e	3 5/16	3 15/16	4 9/16	5 5/16	6 1/2	8 1/16	10 7/8	10 7/8

### Mark 9 C

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	5	5 11/16	6 19/32	7 1/2	8 1/4	10 1/2	15 5/8	15 5/8	18 3/4	18 3/4
b	1 3/8	1 5/8	1 7/8	2 1/2	2 3/4	3 7/16	4 7/16	4 13/16	5 11/16	5 15/16
c	1 3/8	1 9/16	1 3/4	2 3/16	2 1/2	3 3/16	5	5	6 1/4	6 1/4
d	1 3/16	1 3/8	1 1/2	1 15/16	2 1/4	2 7/8	4 1/4	4 1/4	5 7/16	5 7/16
e	3 5/16	3 15/16	4 9/16	5 5/16	6	8 7/16	10 7/8	10 7/8	13 7/16	13 7/16



### Form 7 E

Size	1/2	3/4	1
a	4 9/16	5 3/16	6
b	1 3/8	1 5/8	1 7/8
c	1 3/8	1 9/16	1 3/4
d	1 5/16	1 1/8	1 3/8
e	3 3/16	3 13/16	4 1/2

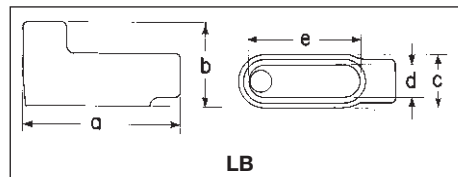
### Form 7 L

Size	1/2	3/4	1	1 1/4	1 1/2	2
a	4 9/16	5 3/16	6	6 1/2	7 1/8	3 3/8
b	1 3/8	1 5/8	1 7/8	2 5/16	2 9/16	3 1/8
c	2 1/4	2 7/16	2 3/4	3 3/16	3 9/16	4 1/8
d	1 5/16	1 1/8	1 3/8	1 3/4	1 15/16	2 7/16
e	3 3/16	3 13/16	4 1/2	5	5 7/16	6 3/8

# Condulet® Conduit Bodies - Cast Iron or Aluminum

1F

## Dimensions (In Inches)



### Form 7 LB

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	4 <sup>9</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	6	6 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	12 <sup>11</sup> / <sub>16</sub>	12 <sup>11</sup> / <sub>16</sub>
b	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	6 <sup>9</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>16</sub>
c	1 <sup>3</sup> / <sub>8</sub>	1 <sup>9</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>16</sub>	3	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>
d	1 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	1 <sup>15</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>16</sub>	3 <sup>9</sup> / <sub>16</sub>	3 <sup>9</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>
e	3 <sup>3</sup> / <sub>16</sub>	3 <sup>13</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	5	5 <sup>1</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>4</sub>

### Form 8 LB

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	4 <sup>15</sup> / <sub>16</sub>	5 <sup>9</sup> / <sub>16</sub>	6 <sup>15</sup> / <sub>32</sub>	7 <sup>17</sup> / <sub>32</sub>	9 <sup>1</sup> / <sub>8</sub>	11	13 <sup>15</sup> / <sub>16</sub>	13 <sup>15</sup> / <sub>16</sub>	16 <sup>7</sup> / <sub>8</sub>	16 <sup>7</sup> / <sub>8</sub>
b	2 <sup>7</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>16</sub>	2 <sup>13</sup> / <sub>16</sub>	3 <sup>11</sup> / <sub>32</sub>	4 <sup>1</sup> / <sub>32</sub>	4 <sup>13</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>2</sub>	7 <sup>9</sup> / <sub>16</sub>	7 <sup>13</sup> / <sub>16</sub>
c	1 <sup>3</sup> / <sub>8</sub>	1 <sup>9</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	5	5	6 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>
d	1	1 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	3	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>16</sub>
e	3 <sup>5</sup> / <sub>16</sub>	3 <sup>15</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>2</sub>	8 <sup>9</sup> / <sub>16</sub>	10 <sup>7</sup> / <sub>8</sub>	10 <sup>7</sup> / <sub>8</sub>	13 <sup>7</sup> / <sub>16</sub>	13 <sup>7</sup> / <sub>16</sub>

### Mark 9 LB

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	4 <sup>19</sup> / <sub>32</sub>	5 <sup>1</sup> / <sub>4</sub>	6 <sup>3</sup> / <sub>32</sub>	7 <sup>1</sup> / <sub>32</sub>	7 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>32</sub>	13 <sup>15</sup> / <sub>16</sub>	13 <sup>15</sup> / <sub>16</sub>	16 <sup>7</sup> / <sub>8</sub>	16 <sup>7</sup> / <sub>8</sub>
b	2 <sup>1</sup> / <sub>8</sub>	2 <sup>13</sup> / <sub>32</sub>	2 <sup>27</sup> / <sub>32</sub>	3 <sup>15</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>4</sub>	4 <sup>19</sup> / <sub>32</sub>	6 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>2</sub>	7 <sup>9</sup> / <sub>16</sub>	7 <sup>13</sup> / <sub>16</sub>
c	1 <sup>3</sup> / <sub>8</sub>	1 <sup>9</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>16</sub>	5	5	6 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>
d	1 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>15</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>7</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>16</sub>
e	3 <sup>5</sup> / <sub>16</sub>	3 <sup>15</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>16</sub>	6	8 <sup>1</sup> / <sub>16</sub>	10 <sup>7</sup> / <sub>8</sub>	10 <sup>7</sup> / <sub>8</sub>	13 <sup>7</sup> / <sub>16</sub>	13 <sup>7</sup> / <sub>16</sub>



### Form 7 LL & LR

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	4 <sup>9</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	6	6 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	12 <sup>11</sup> / <sub>16</sub>	12 <sup>11</sup> / <sub>16</sub>
b	1 <sup>3</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>7</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>16</sub>	2 <sup>9</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>8</sub>	3 <sup>5</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	4 <sup>7</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>8</sub>
c	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>16</sub>	3 <sup>9</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub>	6 <sup>15</sup> / <sub>16</sub>	6 <sup>15</sup> / <sub>16</sub>
d	1 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	1 <sup>15</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>16</sub>	3 <sup>9</sup> / <sub>16</sub>	3 <sup>9</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>
e	3 <sup>3</sup> / <sub>16</sub>	3 <sup>13</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	5	5 <sup>1</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>4</sub>

### Form 8 LL & LR

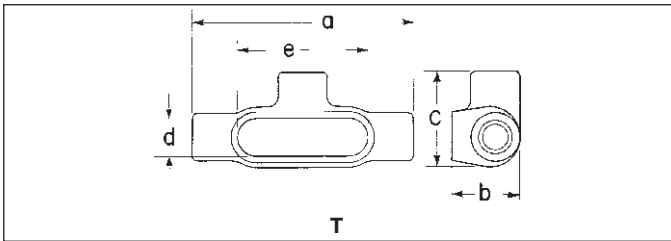
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
a	4 <sup>15</sup> / <sub>16</sub>	5 <sup>9</sup> / <sub>16</sub>	6 <sup>15</sup> / <sub>32</sub>	7 <sup>17</sup> / <sub>32</sub>	9 <sup>1</sup> / <sub>8</sub>	11	13 <sup>15</sup> / <sub>16</sub>	13 <sup>15</sup> / <sub>16</sub>
b	1 <sup>7</sup> / <sub>16</sub>	1 <sup>11</sup> / <sub>16</sub>	1 <sup>15</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	2 <sup>25</sup> / <sub>32</sub>	3 <sup>9</sup> / <sub>16</sub>	4 <sup>13</sup> / <sub>16</sub>
c	2 <sup>5</sup> / <sub>32</sub>	2 <sup>5</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>8</sub>	3 <sup>5</sup> / <sub>32</sub>	4	5	6 <sup>1</sup> / <sub>16</sub>	6 <sup>11</sup> / <sub>16</sub>
d	1	1 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	3	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>
e	3 <sup>5</sup> / <sub>16</sub>	3 <sup>15</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>2</sub>	8 <sup>9</sup> / <sub>16</sub>	10 <sup>7</sup> / <sub>8</sub>	10 <sup>7</sup> / <sub>8</sub>

### Mark 9 LL & LR

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	4 <sup>19</sup> / <sub>32</sub>	5 <sup>1</sup> / <sub>4</sub>	6 <sup>3</sup> / <sub>32</sub>	7 <sup>1</sup> / <sub>32</sub>	7 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>32</sub>	13 <sup>15</sup> / <sub>16</sub>	13 <sup>15</sup> / <sub>16</sub>	16 <sup>7</sup> / <sub>8</sub>	16 <sup>7</sup> / <sub>8</sub>
b	1 <sup>3</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>7</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>16</sub>	4 <sup>7</sup> / <sub>16</sub>	4 <sup>13</sup> / <sub>16</sub>	5 <sup>11</sup> / <sub>16</sub>	5 <sup>15</sup> / <sub>16</sub>
c	2 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>8</sub>	6 <sup>11</sup> / <sub>16</sub>	6 <sup>11</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>8</sub>
d	1 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>15</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>7</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>16</sub>
e	3 <sup>5</sup> / <sub>16</sub>	3 <sup>15</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>16</sub>	6	8 <sup>1</sup> / <sub>16</sub>	10 <sup>7</sup> / <sub>8</sub>	10 <sup>7</sup> / <sub>8</sub>	13 <sup>7</sup> / <sub>16</sub>	13 <sup>7</sup> / <sub>16</sub>

# Condulet® Conduit Bodies - Cast Iron or Aluminum

Dimensions (In Inches)



**Form 7T**

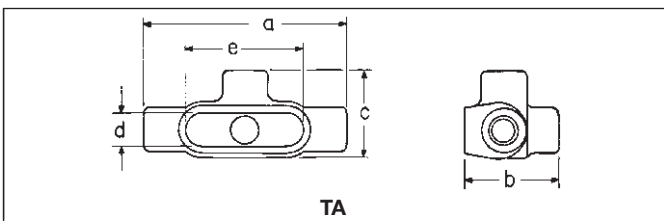
Size	a	b	c	d	e
1/2	5/8	1 3/4	2 7/16	1 5/16	3 3/16
3/4	6 1/4	2	2 5/8	1 1/8	3 13/16
1	7 1/4	2 1/4	3	1 3/8	4 1/2
1 1/4	7 7/16	2 5/16	3 3/16	1 3/4	5
1 1/2	8 3/16	2 9/16	3 9/16	1 15/16	5 7/16
2	9 3/16	3 1/8	4 1/8	2 7/16	6 3/8
2 1/2	12	3 5/8	5 3/4	3 9/16	8 3/8
3	12 7/16	4 3/8	5 3/4	3 9/16	8 3/8
3 1/2	14 5/16	4 7/8	6 15/16	4 1/2	10 1/4
4	14 5/16	5 3/8	6 15/16	4 1/2	10 1/4

**Form 8T**

1/2	5 11/16	1 3/4	2 5/32	1	3 5/16
3/4	6 9/32	2	2 5/16	1 3/16	3 15/16
1	7 5/16	2 1/4	2 5/8	1 3/8	4 9/16
1 1/4	8 1/2	2 5/8	3 5/32	1 3/4	5 5/16
1 1/2	10 3/8	2 25/32	4	2 1/8	6 1/2
2	12 1/4	3 9/16	5	3	8 9/16
2 1/2	15 5/8	4 7/16	6 11/16	4 1/4	10 7/8
3	15 5/8	4 13/16	6 11/16	4 1/4	10 7/8

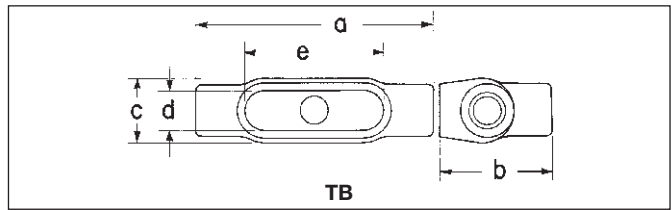
**Mark 9T**

1/2	5	1 3/8	2 1/8	1 3/16	3 5/16
3/4	5 11/16	1 5/8	2 3/8	1 3/8	3 15/16
1	6 9/32	1 7/8	2 5/8	1 1/2	4 9/16
1 1/4	7 1/2	2 1/2	3 3/32	1 15/16	5 5/16
1 1/2	8 1/4	2 3/4	3 7/16	2 1/4	6
2	10 1/2	3 7/16	4 7/8	2 7/8	8 7/16
2 1/2	15 5/8	4 7/16	6 11/16	4 1/4	10 7/8
3	15 5/8	4 13/16	6 11/16	4 1/4	10 7/8
3 1/2	18 3/4	5 11/16	8 7/8	5 7/16	13 7/16
4	18 3/4	5 15/16	8 7/8	5 7/16	13 7/16



**Form 7TA**

Size	a	b	c	d	e
1/2	5 5/8	2 5/8	2 7/16	1 5/16	3 3/16
3/4	6 1/4	2 7/8	2 5/8	1 1/8	3 13/16
1	7 1/4	3 1/4	3	1 3/8	4 1/2
1 1/4	7 7/16	3 9/16	3 3/16	1 3/4	5
1 1/2	8 3/16	3 11/16	3 9/16	1 15/16	5 7/16
2	9 3/16	4 1/4	4 1/8	2 7/16	6 3/8



**Form 7TB**

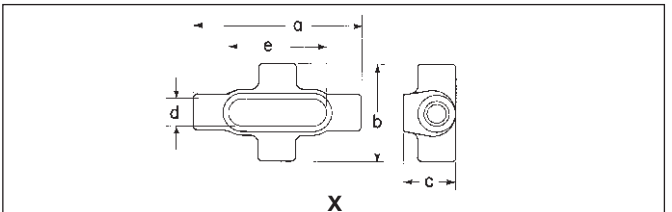
Size	a	b	c	d	e
1/2	5 5/8	2 5/8	1 9/16	1 5/16	3 3/16
3/4	6 1/4	2 7/8	1 3/4	1 1/8	3 13/16
1	7 1/4	3 1/4	2	1 3/8	4 1/2
1 1/4	7 7/16	3 5/16	2 3/16	1 3/4	5
1 1/2	8 3/16	5	2 7/16	1 15/16	5 7/16
2	9 3/16	6 1/8	3	2 7/16	6 3/8

**Form 8TB**

1/2	5 11/16	2 17/32	1 3/8	1	3 5/16
3/4	6 9/32	2 3/4	1 9/16	1 3/16	3 15/16
1	7 5/16	3 1/8	1 3/4	1 3/8	4 9/16
1 1/4	8 1/2	3 11/32	2 2/16	1 3/4	5 5/16
1 1/2	10 3/8	4 1/32	2 3/4	2 1/8	6 1/2
2	12 1/4	4 13/16	3 3/4	3	8 9/16

**Mark 9TB**

1/2	5	2 1/8	1 3/8	1 3/16	3 5/16
3/4	5 11/16	2 13/32	1 9/16	1 3/8	3 15/16
1	6 9/32	2 27/32	1 3/4	1 1/2	4 9/16
1 1/4	7 1/2	3 15/32	2 3/16	1 15/16	5 5/16
1 1/2	8 11/32	3 7/8	2 1/2	2 5/32	5 7/8
2	10 5/8	4 19/32	3 3/32	2 13/16	8 3/32



**Form 7X**

Size	a	b	c	d	e
1/2	5 5/8	3 5/16	1 3/4	1 5/16	3 3/16
3/4	6 1/4	3 1/2	2	1 1/8	3 13/16
1	7 1/4	4	2 1/4	1 3/8	4 1/2
1 1/4	7 7/16	4 1/8	2 5/16	1 3/4	5
1 1/2	8 3/16	4 5/8	2 9/16	1 15/16	5 7/16
2	9 3/16	5 3/16	3 1/8	2 7/16	6 3/8

**Form 8X**

1/2	5 11/16	2 29/32	1 3/4	1	3 5/16
3/4	6 9/32	3 1/16	2	1 3/16	3 15/16
1	7 5/16	3 1/2	2 1/4	1 3/8	4 9/16
1 1/4	8 1/2	4 1/8	2 5/8	1 3/4	5 5/16
1 1/2	10 3/8	5 1/4	2 15/32	2 1/8	6 1/2
2	12 1/4	6 1/4	3 9/16	3	8 9/16

**Mark 9X**

1/2	5 11/16	2 29/32	1 3/4	1	3 5/16
3/4	6 9/32	3 1/16	2	1 3/16	3 15/16
1	7 5/16	3 1/2	2 1/4	1 3/8	4 9/16

## With and Without Mounting Lugs for Threaded Rigid and IMC Conduit

### Application:

- Cast device boxes are installed to:
- accommodate wiring devices in a conduit system
  - act as pull boxes for conductors in a conduit system
  - provide openings to make splices and taps in conductors
  - provide access to conductors for maintenance and future system changes
  - connect conduit sections
  - FSY boxes for mounting surface devices on floor or bench (used with single gang covers)

### Features:

- Internal green ground screw standard on boxes
- Suitable for use in wet locations when used with gasketed covers
- Mounting lugs standard on most boxes
- Tapered threaded hubs (NPT) with integral bushing
- Available for surface mounting (with mounting lugs) or flush mounting (without mounting lugs) as listed
- Available as shallow (FS) or deep (FD) configuration. Use FD if device to be enclosed exceeds 1 5/8" in depth
- Ample wiring room provided in either FS or FD configuration
- Wide selection of surface or flush covers available in three materials (sheet steel, *Feraloy*®, aluminum)
- Covers for flush mounting extend to conceal the rough plaster line
- Available in single gang and multi-gang configurations with hubs, and as blank bodies for drilled and tapped openings

### Standard Materials:

- *Feraloy* iron alloy or copper-free aluminum.

### Standard Finishes:

- *Feraloy* – electrogalvanized and aluminum acrylic paint
- Aluminum – natural

### Options:

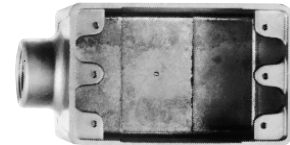
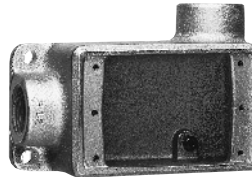
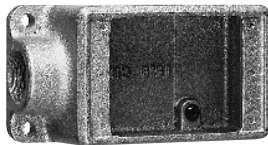
- Finishes:  
*Corro-free*™ epoxy powder coat – add suffix S752

### Size Ranges:

- Hubs – 1/2" to 1"

### Certifications and Compliances:

- UL Standard: 514
- ANSI Standard: C33.84
- Fed. Spec.: W-C-5860
- CSA Standard: C22.2 No. 18



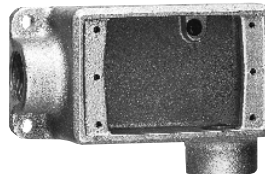
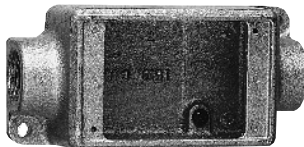
### FS & FD

Size	Cat. #	Cat. #
1/2	FS1*	FD1**
3/4	FS2*	FD2**
1	FS3**	FD3**

Size	Cat. #	Cat. #
1/2	FSR1	FDR1
3/4	FSR2	FDR2**

### Die Cast Aluminum†

Size	Cat. #	Cat. #
1/2	FS1-SA	FSC1-SA
3/4	FS2-SA	FSC2-SA



Size	Cat. #	Cat. #
1/2	FSC1*	FDC1**
3/4	FSC2*	FDC2**
1	FSC3**	FDC3**

Size	Cat. #	Cat. #
1/2	FSL1	FDL1
3/4	FSL2	FDL2**

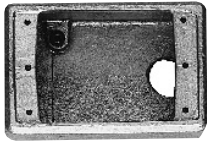
† Mounting lugs and ground screw are not offered with standard die cast box – add suffix SCA to Cat. No. for sand cast aluminum box with mounting lugs and ground screw. (Example: FS1-SCA)

\* Available in sandcast copper-free aluminum – add suffix SCA to Cat. No.

\*\* Available in sandcast copper-free aluminum – add suffix SA to Cat. No.

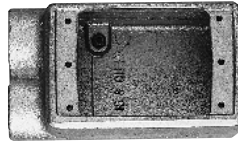
With and Without Mounting Lugs for Threaded Rigid and IMC Conduit

Cast Device Boxes  
3F

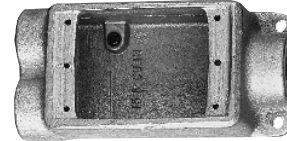


### FS & FD

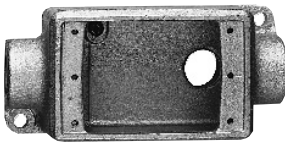
Size	Cat. # †	Cat. # †
1/2	FSA1	FDA1
3/4	FSA2	FDA2



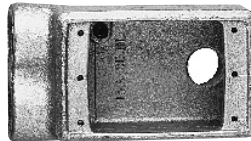
Size	Cat. # †	Cat. # †
1/2	FSS1*	FDD1
3/4	FSS2*	FDD2*
1	FSS3	FDD3



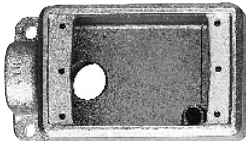
Size	Cat. #	Cat. #
1/2	FSCC1	FDCC1
3/4	FSCC2	FDCC2



Size	Cat. #
1/2	FSCA1
3/4	FSCA2

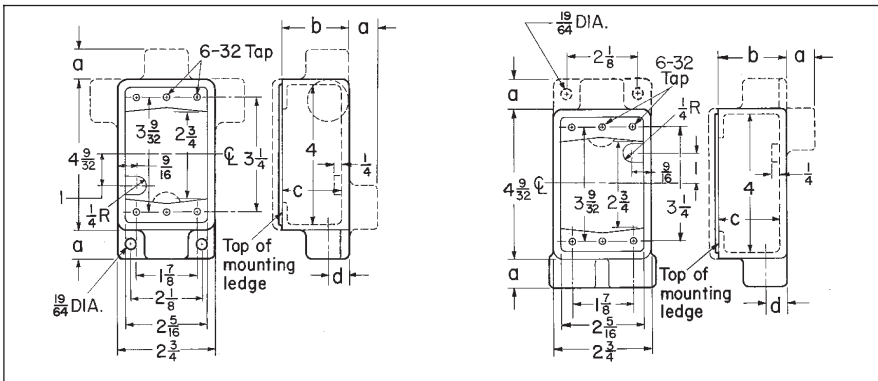


Size	Cat. # †
3/4	FSSA2



Size	Cat. #	Cat. #
1/2	FSLA1	FDLA1
3/4	FSLA2*	FDLA2

## Dimensions



Series	Hub Size	a	b	c	d
FS	1/2	7/8	1 7/8	1 1/16	5/8
	3/4	7/8	1 7/8	1 1/16	3/4
	1	1	1 7/8	1 1/16	7/8
FD	1/2	7/8	2 1/16	2 1/2	5/8
	3/4	7/8	2 1/16	2 1/2	3/4
	1	1	2 1/16	2 1/2	7/8

\* Available in copper-free aluminum; add suffix "SA".  
† Mounting lugs not available.

# Condulet® Single Gang Cast Device Boxes

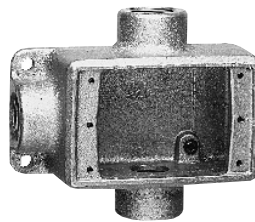
With and Without Mounting Lugs for Threaded Rigid and IMC Conduit

3F Cast Device Boxes

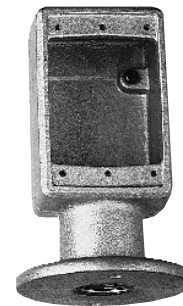


## FS and FD

Size	Cat. #	Cat. #
1/2	FSCT1	FDCT1
3/4	FSCT2*	FDCT2*
1	FSCT3	FDCT3

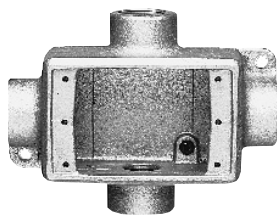


Size	Cat. #	Cat. #
1/2	FST1*	FDT1
3/4	FST2*	FDT2
1		FDT3

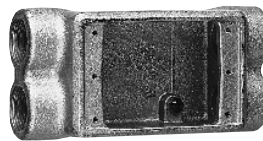


## FSY

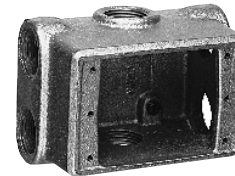
Description	Hub Size	Cat. # †
Single face	1	FSY311
Double face	1	FSY312



Size	Cat. #	Cat. #
1/2	FSX1	FDX1
3/4	FSX2	FDX2
1		FDX3



Size	Cat. # ‡
1/2	FSCD1
3/4	FSCD2

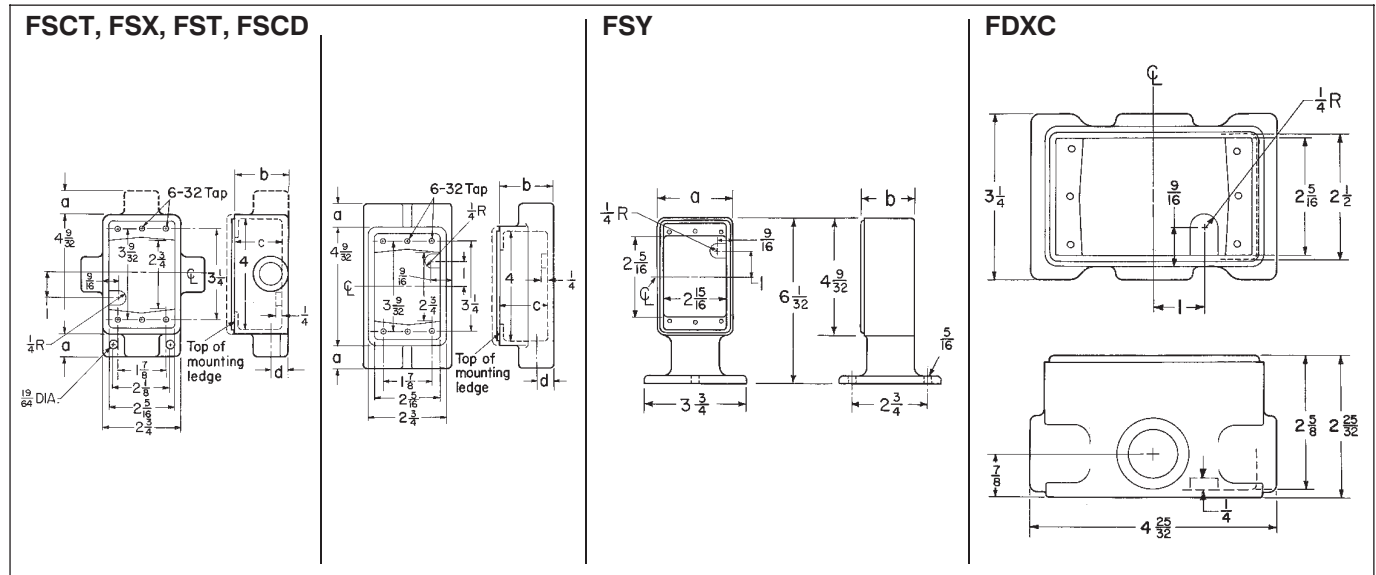


## FDXC†

Hub Size	Cat. # ‡
3/4	FDXC219

† 6 Hubs – all 3/4" pipe tap.  
 \* Available in copper-free aluminum; add suffix "SA".  
 ‡ Not available with mounting lugs.

## Dimensions



## FSCT, FSX, FST, FSCD

Series	Hub Size	a	b	c	d
FS	1/2	7/8	1 7/8	1 11/16	5/8
	3/4	7/8	1 7/8	1 11/16	3/4
	1	1	1 7/8	1 11/16	7/8

## FSY

Description	Hub Size	a	b
Single gang, single face	1	2 3/4	1 15/16
Single gang, double face	1	2 3/4	3 3/8



# 3F Condulet® Single Gang Cast Device Boxes

## With and Without Mounting Lugs

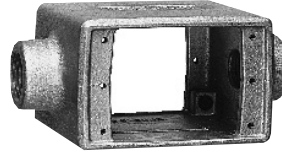
Accessories Pages 35 to 44

Cast Device Boxes  
**3F**



### FS Double Face

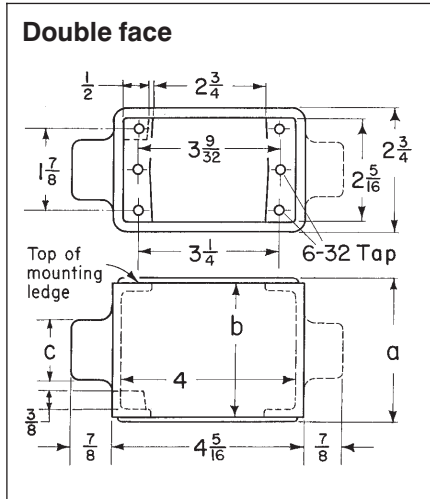
Size	Cat. # †
1/2	FS152
3/4	FS252



### Double Face

Size	Cat. # †
1/2	FSC152
3/4	FSC252

## Dimensions



Series	Hub Size	a	b	c
FS	1/2	3 <sup>9</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>
	3/4	3 <sup>11</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>

† Mounting lugs not available.

# Condulet® Multi-Gang Cast Device Boxes

With and Without Mounting Lugs for Threaded Rigid and IMC Conduit

3F Cast Device Boxes



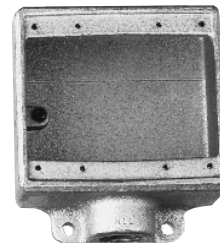
**FS†**  
Two Gang Tandem

Size	Cat. #
1/2	FS17
3/4	FS27



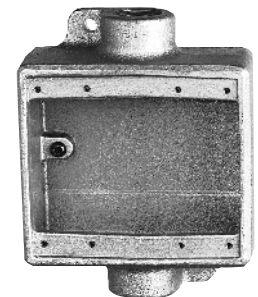
**FSC†**  
Two Gang Tandem

Size	Cat. #
1/2	FSC17
3/4	FSC27



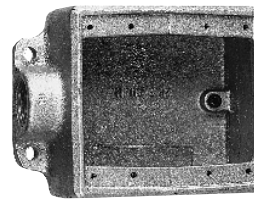
**FS & FD**  
Two Gang

Size	Cat. #	Cat. #
1/2	FS12*	FD12
3/4	FS22*	FD22*
1	FS32	FD32



**FSC & FDC**  
Two Gang

Size	Cat. #	Cat. #
1/2	FSC12	FDC12
3/4	FSC222	FDC222*
1	FSC32	FDC32



**FSE**  
Two Gang

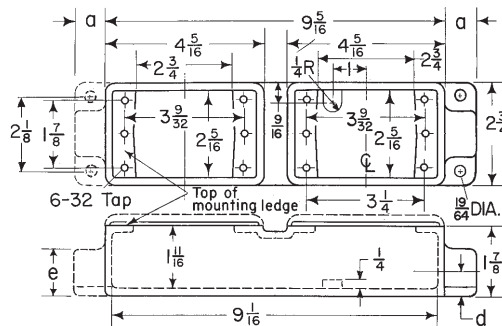
Size	Cat. #
3/4	FSE22

\* Available in copper-free aluminum; add suffix "SA".

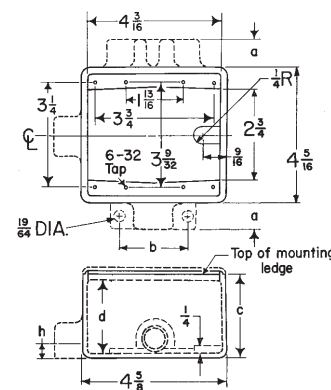
† Use single gang covers only.

## Dimensions

Two gang tandem



Two gang



Two gang tandem

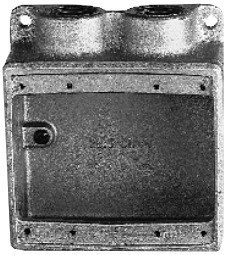
Series	Hub Size	a	d	e
FS	1/2	7/8	5/8	1 1/4
	3/4	7/8	3/4	1 1/2

Two gang

Series	Hub Size	a	b	c	d	h
FS	1/2	7/8	2 1/4	1 7/8	1 11/16	5/8
	3/4	7/8	2 1/4	1 7/8	1 11/16	3/4
	1	1	2 1/2	1 7/8	1 11/16	7/8
FD	1/2	7/8	2 1/4	2 11/16	2 1/2	5/8
	3/4	7/8	2 1/4	2 11/16	2 1/2	3/4
	1	1	2 1/2	2 11/16	2 1/2	7/8

With and Without Mounting Lugs for Threaded Rigid and IMC Conduit

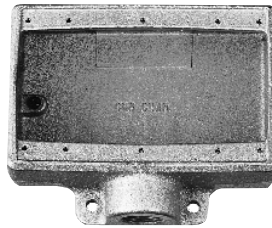
Cast Device Boxes  
3F



### FSS & FDS

Two Gang

Size	Cat. #	Cat. #
3/4	FSS222	FDS222



### FS & FD

Three Gang

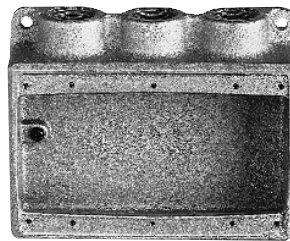
Size	Cat. #	Cat. #
3/4	FS23	FD23
1	FS33	



### FSD

Two Gang

Size	Cat. #
3/4	FSD212*



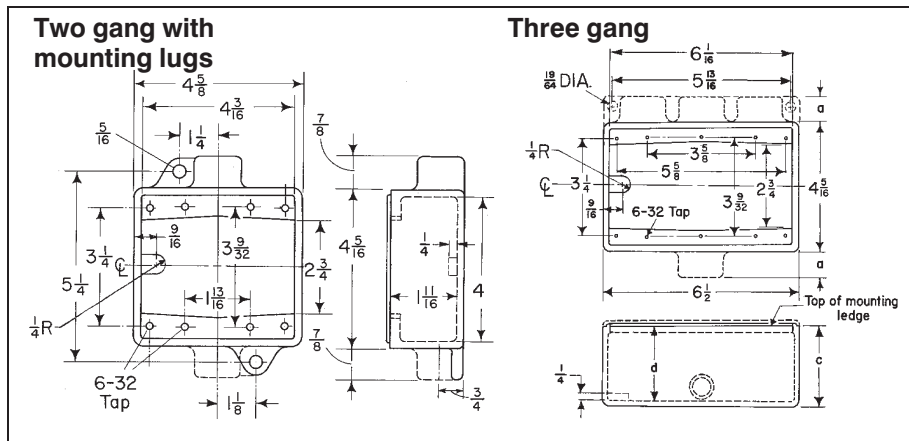
### FSS

Three Gang

Size	Cat. #
3/4	FSS23

\* Hubs on 2 hub side are 1/2".

## Dimensions



### Three gang

Series	Hub Size	a	c	d
FS	3/4	7/8	17/8	11 1/16
	1	1	17/8	11 1/16
FD	3/4	7/8	21 1/16	2 1/2

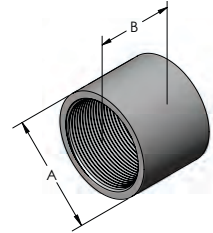
# Galvanized Rigid Conduit (GRC) Couplings & Elbows

## Galvanized Rigid Conduit (GRC) Couplings

Listed to Underwriters Laboratories Safety Standard UL 6  
Manufactured in accordance with ANSI C80.1



Trade Size	Metric Designator	Nominal O.D. (A) <sup>2</sup>		Length (B) <sup>1</sup>		Threads Per Inch <sup>1</sup>	Approximate Weight Per 100 Pieces		Standard Package
		in.	mm.	in.	mm.		lb.	kg.	
1/2	16	1.01	25.7	1 5/8	41.3	14	12	5.4	100
3/4	21	1.25	31.8	1 41/64	41.7	14	18	8.2	50
1	27	1.53	38.7	1 31/32	50.0	11 1/2	30	13.6	30
1 1/4	35	1.87	47.5	2 1/32	51.6	11 1/2	37	16.8	25
1 1/2	41	2.16	54.7	2 1/16	52.4	11 1/2	52	23.6	25
2	53	2.65	67.3	2 1/8	54.0	11 1/2	72	32.7	20
2 1/2	63	3.25	82.6	3 3/16	81.0	8	170	77.1	1
3	78	3.87	98.3	3 5/16	84.1	8	210	95.3	1
3 1/2	91	4.50	114.3	3 13/32	86.5	8	340	154.2	1
4	103	4.88	123.8	3 33/64	89.3	8	300	136.1	1
5	129	6.00	152.4	3 61/64	100.4	8	475	215.5	1
6	155	7.20	182.9	4 1/4	108.0	8	765	347.0	1



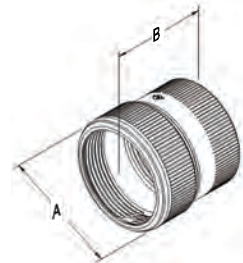
<sup>1</sup>Minimum requirement as per UL Standard

## Super Kwik-Coupling<sup>®</sup>

Listed to Underwriters Laboratories Safety Standard UL 514B  
Manufactured in accordance with ANSI C22.2 No. 18.3-12



Trade Size	Metric Designator	Nominal O.D. (A)		Length (B)		Threads Per Inch <sup>1</sup>	Approximate Weight Per 100 Pieces		Standard Package
		in.	mm.	in.	mm.		lb.	kg.	
2 1/2	63	3.45	87.6	3.19	81.0	8	170	76.5	2
3	78	4.08	103.6	3.31	84.1	8	210	94.5	1
3 1/2	91	4.59	116.6	4.15	105.4	8	270	121.5	1
4	103	5.24	133.1	4	101.6	8	370	166.5	1



<sup>1</sup>Minimum requirement as per UL Standard

### SUPER KWIK-COUPLE™ ELBOWS AVAILABLE

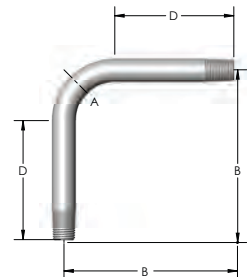
Trade Size 2 1/2 to 4 by special order  
• Single & Double Sided

## Galvanized Rigid Conduit (GRC) 90° Elbows

Listed to Underwriters Laboratories Safety Standard UL 6  
Manufactured in accordance with ANSI C80.1



Trade Size	Metric Designator	Radius (A) <sup>1</sup>		Offset (B) <sup>2</sup>		Straight (D) <sup>1</sup>		Approximate Weight Per 100 Pieces		Standard Package
		in.	mm.	in.	mm.	in.	mm.	lb.	kg.	
1/2	16	4	102	5 7/8	149	1 1/2	38	68	30.8	50
3/4	21	4 1/2	114	7	178	1 1/2	38	109	49.4	50
1	27	5 3/4	146	8 3/4	222	1 7/8	48	201	91.2	25
1 1/4	35	7 1/4	184	10 3/4	273	2	51	336	152.4	20
1 1/2	41	8 1/4	210	12 1/4	311	2	51	460	208.7	15
2	53	9 1/2	241	14 1/2	368	2	51	729	330.7	10
2 1/2	63	10 1/2	267	17	432	3	76	1374	623.2	1
3	78	13	330	19 3/8	498	3 1/8	79	2045	927.6	1
3 1/2	91	15	381	22 3/4	578	3 1/4	83	2860	1297.3	1
4	103	16	406	23 7/8	606	3 3/8	86	3519	1596.2	1
5	129	24	610	34 7/8	886	3 3/8	92	6942	3148.9	1
6	155	30	762	45 1/2	1156	3 3/4	95	11960	5425.1	1



<sup>1</sup>Minimum requirement as per UL Standard

<sup>2</sup>For information only, not a requirement as per UL Standard

Sizes 2 1/2 (63) and larger shipped in palletized cartons or bulk.

Also available in the following Degrees (60°, 45°, 30°, 22 1/2°, 15° & 11 1/2°)

NOTE: Special orders are non-cancelable, non-returnable and non-refundable.

# Galvanized Rigid Conduit (GRC) Couplings & Elbows

## Galvanized Rigid Conduit (GRC) 90°

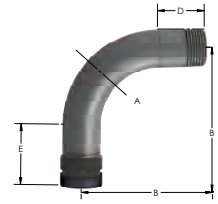
### Super Kwik-Couple™ Elbow

Listed to Underwriters Laboratories Safety Standard UL 514B

Manufactured in accordance with ANSI C22.2 No. 18.3-12



Trade Size	Metric Designator	Radius (A) <sup>1</sup>		Offset (B) <sup>2</sup>		Straight (D) <sup>2</sup>		Straight (E) <sup>2</sup>		Approximate Weight Per 100 Pieces		Standard Package
		in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.	
2 ½	63	10 ½	267	17	432	3	76	4 ½	114	695	1	2
3	78	13	330	19 ⅝	498	3 ⅛	79	4 ¾	121	1015	1	1
3 ½	91	15	381	22 ¾	578	3 ¼	83	5 ⅝	137	1409	1	1
4	103	16	406	23 ⅞	606	3 ⅜	86	5 ⅜	137	1750	1	1



<sup>1</sup>Minimum requirement as per UL Standard

<sup>2</sup>For information only, not a requirement as per UL Standard

Sizes 2 ½ (63) and larger shipped in palletized cartons or bulk.

Also available in the following Degrees (60°, 45°, 30°, 22 ½°, 15° & 11 ¼°)

### SUPER KWIK-COUPLE™ ELBOWS AVAILABLE

Trade Size 2 ½ to 4 by special order

- Single & Double Sided

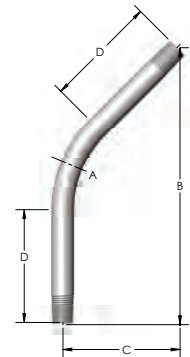
## Galvanized Rigid Conduit (GRC) 45° Elbows

Listed to Underwriters Laboratories Safety Standard UL 6

Manufactured in accordance with ANSI C80.1



Trade Size	Metric Designator	Radius (A) <sup>1</sup>		Offset (B) <sup>2</sup>		Offset (C) <sup>2</sup>		Straight (D) <sup>1</sup>		Approximate Weight Per 100 Pieces		Standard Package
		in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.	
½	16	4	102	7	178	2 ⅞	73	1 ½	38	55	24.9	50
¾	21	4 ½	114	7 ⅞	200	3 ¼	83	1 ½	38	82	37.2	50
1	27	5 ¾	146	9 ⅝	244	4	102	1 ⅞	48	148	67.1	25
1 ¼	35	7 ¼	184	11 ⅞	283	4 ⅝	117	2	51	232	105.2	20
1 ½	41	8 ¼	210	13 ⅞	333	5 ⅜	137	2	51	329	149.2	15
2	53	9 ½	241	15 ¾	400	6 ½	165	2	51	525	238.1	10
2 ½	63	10 ½	267	17 ½	445	7 ¼	184	3	76	932	422.8	1
3	78	13	330	21 ⅞	556	9	229	3 ⅞	79	1515	687.2	1
3 ½	91	15	381	26 ⅞	664	10 ⅞	276	3 ¼	83	2200	997.9	1
4	103	16	406	26 ¼	667	10 ⅞	276	3 ⅜	86	2575	1168.0	1
5	129	24	610	35 ⅞	911	14 ⅞	378	3 ⅜	92	4783	2169.6	1
6	155	30	762	43 ⅞	1102	18	457	3 ¾	95	7590	3442.8	1



<sup>1</sup>Minimum requirement as per UL Standard

<sup>2</sup>For information only, not a requirement as per UL Standard

Sizes 2 ½ (63) and larger shipped in palletized cartons or bulk.

Also available in the following Degrees (90°, 60°, 30°, 22 ½°, 15° & 11 ¼°)

NOTE: Special orders are non-cancelable, non-returnable and non-refundable.

800.882.5543

# Galvanized Rigid Conduit (GRC) Couplings & Elbows

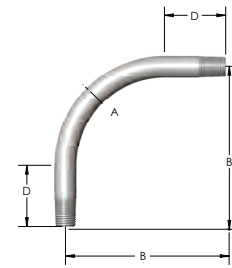
## Galvanized Rigid Conduit (GRC) Large Radius 90° Elbows

Listed to Underwriters Laboratories Safety Standard UL 6

Manufactured in accordance with ANSI C80.1



Trade Size	Metric Designator	Radius (A) <sup>1</sup>		Offset (B) <sup>2</sup>		Straight (D) <sup>1</sup>		Approximate Weight Per 100 Pieces	
		in.	mm.	in.	mm.	in.	mm.	lb.	kg.
1	27	18	457	27 7/8	708	9 7/8	251	644	292.1
1	27	24	610	34 5/8	879	10 5/8	270	792	359.3
1	27	30	762	41	1041	11	279	926	420.0
1	27	36	914	46 3/4	1187	10 3/4	273	1047	474.9
1	27	48	1219	61 1/4	1556	13 1/4	337	1369	621.0
1 1/4	35	18	457	27 7/8	708	9 7/8	251	872	395.5
1 1/4	35	24	610	34 5/8	879	10 5/8	270	1072	486.3
1 1/4	35	30	762	41	1041	11	279	1254	568.8
1 1/4	35	36	914	46 3/4	1187	10 3/4	273	1417	642.8
1 1/4	35	48	1219	61 1/4	1556	13 1/4	337	1853	840.5
1 1/2	41	18	457	27 7/8	708	9 7/8	251	1052	477.2
1 1/2	41	24	610	34 5/8	879	10 5/8	270	1293	586.5
1 1/2	41	30	762	41	1041	11	279	1512	685.8
1 1/2	41	36	914	46 3/4	1187	10 3/4	273	1710	775.7
1 1/2	41	48	1219	61 1/4	1556	13 1/4	337	2236	1014.2
2	53	18	457	27 7/8	708	9 7/8	251	1400	635.0
2	53	24	610	30 3/8	772	6 3/8	162	1473	668.2
2	53	30	762	41	1041	11	279	2013	913.1
2	53	36	914	46 3/4	1187	10 3/4	273	2275	1031.9
2	53	48	1219	61 1/4	1556	13 1/4	337	2975	1349.5
2 1/2	63	18	457	24 3/8	619	6 3/8	162	1910	866.4
2 1/2	63	24	610	31 1/8	791	7 1/8	181	2422	1098.6
2 1/2	63	30	762	37 1/2	953	7 1/2	191	2888	1310.0
2 1/2	63	36	914	44 3/4	1137	8 3/4	222	3447	1563.6
2 1/2	63	48	1219	61 1/4	1556	13 1/4	337	4752	2155.5
3	78	18	457	24 3/8	619	6 3/8	162	2484	1126.7
3	78	24	610	33 1/8	841	9 1/8	232	3393	1539.1
3	78	30	762	38 5/8	981	8 5/8	219	3892	1765.4
3	78	36	914	46 7/8	1191	10 7/8	276	4741	2150.5
3	78	48	1219	60 1/4	1530	12 1/4	311	6058	2747.9
3	78	60	1524	75 7/8	1927	15 7/8	403	7634	3462.8
3 1/2	91	24	610	35 1/8	892	11 1/8	283	4400	1995.8
3 1/2	91	30	762	38 1/2	978	8 1/2	216	4693	2128.7
3 1/2	91	36	914	47	1194	11	279	5757	2611.4
3 1/2	91	48	1219	60 1/4	1530	12 1/4	311	7333	3326.2
4	103	24	610	35 1/8	892	11 1/8	283	5150	2336.0
4	103	30	762	39 3/8	1000	9 3/8	238	5644	2560.1
4	103	36	914	47	1194	11	279	6738	3056.4
4	103	48	1219	60 1/4	1530	12 1/4	311	8583	3893.2
4	103	60	1524	75 7/8	1927	15 7/8	403	10815	4905.7



<sup>1</sup>For information only, not a requirement as per UL Standard

Shipped in palletized cartons or bulk.

Also available in the following Degrees (60°, 30°, 22 1/2°, 15° & 11 1/4°)

Chart continued on next page

NOTE: Special orders are non-cancelable, non-returnable and non-refundable.

# Galvanized Rigid Conduit (GRC) Couplings & Elbows

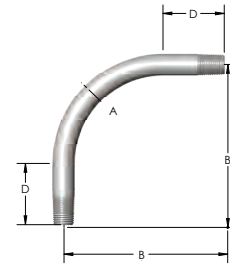
## Galvanized Rigid Conduit (GRC) Large Radius 90° Elbows

Listed to Underwriters Laboratories Safety Standard UL 6

Manufactured in accordance with ANSI C80.1



Trade Size	Metric Designator	Radius (A) <sup>1</sup>		Offset (B) <sup>2</sup>		Straight (D) <sup>1</sup>		Approximate Weight Per 100 Pieces	
		in.	mm.	in.	mm.	in.	mm.	lb.	kg.
5	129	36	914	50 3/4	1289	14 3/4	375	10033	4551.0
5	129	48	1219	65 1/4	1657	17 1/4	438	12833	5821.0
5	129	60	1524	75 7/8	1927	15 7/8	403	14700	6667.9
6	155	36	914	50 3/4	1289	14 3/4	375	13187	5981.6
6	155	48	1219	65 1/4	1657	17 1/4	438	16867	7650.9
6	155	60	1524	75 7/8	1927	15 7/8	403	19320	8763.6



<sup>1</sup>For information only, not a requirement as per UL Standard

Shipped in palletized cartons or bulk.

Also available in the following Degrees (60°, 45°, 30°, 22 1/2°, 15° & 11 1/4°)

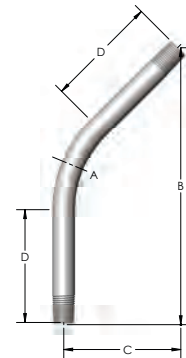
## Galvanized Rigid Conduit (GRC) Large Radius 45° Elbows

Listed to Underwriters Laboratories Safety Standard UL 6

Manufactured in accordance with ANSI C80.1



Trade Size	Metric Designator	Radius (A) <sup>1</sup>		Offset (B) <sup>2</sup>		Offset (C) <sup>2</sup>		Straight (D) <sup>1</sup>		Approximate Weight Per 100 Pieces	
		in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.
1	27	18	457	30	762	12 1/2	318	11	279	420	189
1	27	24	610	36	914	15	381	11	279	640	288
1	27	30	762	40	1016	17	432	11	279	700	315
1	27	36	914	44	1118	18 1/2	470	11	279	620	279
1	27	48	1219	54 1/2	1384	22 1/2	572	12	305	830	374
1 1/4	35	18	457	30	762	12 1/2	318	11	279	610	275
1 1/4	35	24	610	36	914	15	381	11	279	800	360
1 1/4	35	30	762	40	1016	17	432	11	279	900	405
1 1/4	35	36	914	44	1118	18 1/2	470	11	279	900	405
1 1/4	35	48	1219	54 1/2	1384	22 1/2	572	12	305	1130	509
1 1/2	41	18	457	30	762	12 1/2	318	11	279	800	360
1 1/2	41	24	610	36	914	15	381	11	279	920	414
1 1/2	41	30	762	40	1016	17	432	11	279	960	432
1 1/2	41	36	914	44	1118	18 1/2	470	11	279	1100	495
1 1/2	41	48	1219	54 1/2	1384	22 1/2	572	12	305	1360	612
2	53	18	457	30	762	12 1/2	318	11	279	1000	450
2	53	24	610	36	914	15	381	11	279	1200	540
2	53	30	762	40	1016	17	432	11	279	1400	630
2	53	36	914	44	1118	18 1/2	470	11	279	1400	630
2	53	48	1219	54 1/2	1384	22 1/2	572	12	305	1810	815
2 1/2	63	18	457	30	762	12 1/2	318	11	279	1500	675
2 1/2	63	24	610	36	914	15	381	11	279	1500	675
2 1/2	63	30	762	40	1016	17	432	11	279	2200	990
2 1/2	63	36	914	44	1118	18 1/2	470	11	279	2200	990
2 1/2	63	48	1219	54 1/2	1384	22 1/2	572	12	305	2890	1301



<sup>1</sup>Minimum requirement as per UL Standard

<sup>2</sup>For information only, not a requirement as per UL Standard

Sizes 2 1/2 (63) and larger shipped in palletized cartons or bulk.

Also available in the following Degrees (90°, 60°, 30°, 22 1/2°, 15° & 11 1/4°)

Chart continued on next page

NOTE: Special orders are non-cancelable, non-returnable and non-refundable.

800.882.5543

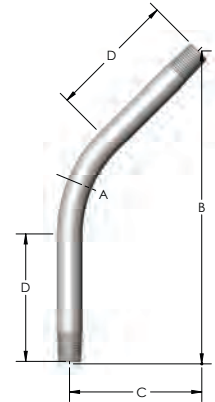
# Galvanized Rigid Conduit (GRC) Elbows & Nipples

## Galvanized Rigid Conduit (GRC) Large Radius 45° Elbows

Listed to Underwriters Laboratories Safety Standard UL 6  
Manufactured in accordance with ANSI C80.1



Trade Size	Metric Designator	Radius (A) <sup>1</sup>		Offset (B) <sup>2</sup>		Offset (C) <sup>2</sup>		Straight (D) <sup>1</sup>		Approximate Weight Per 100 Pieces	
		in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.
3	78	18	457	30	762	12 ½	318	11	279	2000	900
3	78	24	610	36	914	15	381	11	279	2500	1125
3	78	30	762	40	1016	17	432	11	279	2700	1215
3	78	36	914	44	1118	18 ½	470	11	279	2900	1305
3	78	48	1219	54 ½	1384	22 ½	572	12	305	3880	1746
3 ½	91	24	610	36	914	15	381	11	279	2860	1287
3 ½	91	30	762	40	1016	17	432	11	279	2930	1319
3 ½	91	36	914	44	1118	18 ½	470	11	279	3500	1575
3 ½	91	48	1219	54 ½	1384	22 ½	572	12	305	4550	2048
4	103	24	610	36	914	15	381	11	279	3400	1530
4	103	30	762	40	1016	17	432	11	279	4100	1845
4	103	36	914	44	1118	18 ½	470	11	279	4200	1890
4	103	48	1219	54 ½	1384	22 ½	572	12	305	5320	2394
4	103	60	1524	62	1575	26	660	12	305	6090	2741
5	129	36	914	44	1118	18 ½	470	11	279	6000	2700
5	129	48	1219	54 ½	1384	22 ½	572	12	305	7230	3254
5	129	60	1524	62	1575	26	660	12	305	8280	3726
6	155	36	914	44	1118	18 ½	470	12	305	8100	3645
6	155	48	1219	54 ½	1384	22 ½	572	12	305	9300	4185
6	155	60	1524	62	1575	26	660	12	305	10650	4793



<sup>1</sup>Minimum requirement as per UL Standard

<sup>2</sup>For information only, not a requirement as per UL Standard

Sizes 2 ½ (63) and larger shipped in palletized cartons or bulk.

Also available in the following Degrees (90°, 60°, 30°, 22 ½°, 15° & 11 ¼°)

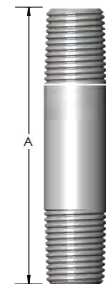
## Galvanized Rigid Conduit (GRC) Nipples

Listed to UL Safety Standard 6

Manufactured in accordance with ANSI C80.1



Trade Size	Metric Designator	Length (A)		Total Thread Length (B) <sup>1</sup>		Threads Per Inch <sup>1</sup>	Approximate Weight Per 100 Pieces		Standard Package
		in.	mm.	in.	mm.		lb.	kg.	
½	16	(Close) 1 ½	29	0.78	19.8	14	6	2.7	25
½	16	1 ½	38	0.78	19.8	14	8	3.6	25
½	16	2	51	0.78	19.8	14	12	5.4	25
½	16	2 ½	64	0.78	19.8	14	15	6.8	25
½	16	3	76	0.78	19.8	14	19	8.6	25
½	16	3 ½	89	0.78	19.8	14	22	10.0	25
½	16	4	102	0.78	19.8	14	26	11.8	25
½	16	5	127	0.78	19.8	14	33	15.0	25
½	16	6	152	0.78	19.8	14	40	18.1	25
½	16	8	203	0.78	19.8	14	54	24.5	25
½	16	10	254	0.78	19.8	14	68	30.8	25
½	16	12	305	0.78	19.8	14	82	37.2	25



<sup>1</sup>Minimum requirement as per UL Standard

NOTE: Special orders are non-cancelable, non-returnable and non-refundable.



# PVC COATED GRC 90° STANDARD ELBOWS

## Features:

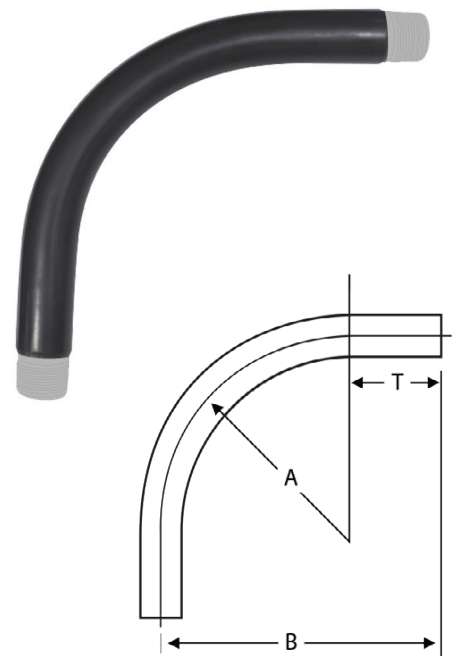
- Exterior PVC coating thickness is a minimum 0.040"
- Interior urethane coating thickness is a minimum 0.002"
- Specialized corrosion resistant coating provided on threads
- Sizes available are ½" to 6"
- Available in 90, 60, 45, and 30 degree bands

## Applications:

Calbond PVC Coated GRC 90° Standard Elbows are available in standard & special radius dimensions and in various degrees as required. All elbows are manufactured from Calbond PVC coated conduit and meet all applicable standards.

## Standards:

- UL/CUL listed in accordance to UL6 & ANSI C80.1 Standards
- UL/cUL listed rigid ferrous metal conduit with polyvinyl chloride coating verified for PVC adhesion performance
- Complies with NEMA RN-1
- UL File Number E226472



Part Number	Trade Size (in)	Metric Size (mm)	A Standard Radius (in)	B Offset (in)	T Tangent (in)	Weight per 100 (lbs)
PV0590EL00	½	16	4.250	6.000	1.700	70
PV0790EL00	¾	21	4.500	6.700	2.200	100
PV1090EL00	1	27	5.750	8.000	2.400	190
PV1290EL00	1¼	35	7.250	9.600	2.800	310
PV1590EL00	1½	41	8.250	10.600	2.600	400
PV2090EL00	2	53	9.500	12.000	3.500	640
PV2590EL00	2½	63	10.500	14.800	4.700	1210
PV3090EL00	3	78	13.000	17.000	5.300	1950
PV3590EL00	3½	91	15.000	20.900	6.100	2630
PV4090EL00	4	103	16.000	21.000	6.500	3280
PV5090EL00	5	129	24.000	32.000	11.200	6750
PV6090EL00	6	155	30.000	41.000	12.100	10510

All dimensions are for informational purposes only \*Tolerances +/- 5%



For more info visit [calbond.com](http://calbond.com)



## Features and Benefits:

- Commercial Hubs are a dependable low profile hub that meet the requirements of UL standards
- Neoprene-grade chloroprene gasket firms into an elastic compound (similar to rubber) and provides environmental protection for industrial applications
- Medium viscosity flame retardant insuliner provides a smooth pulling surface
- Cast threads to meet UL standards and allow quick and easy installation
- Hex surfaces on the body make tightening with a wrench easy
- Thinner, lighter weight construction
- Available in standard and grounded version to meet customer preferences

## Certifications and Compliances:

- UL and cUL Listed
- UL File No. E-19189

## Standard Material & Finishes:

- Body & Nut: Corrosion resistant Zamek-2 & Zamek-3 Type Zinc
- Gasket: neoprene-grade chloroprene
- Insuliner: Lexan920A, medium viscosity flame retardant grade
- Finish - Natural

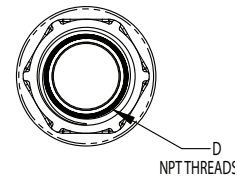
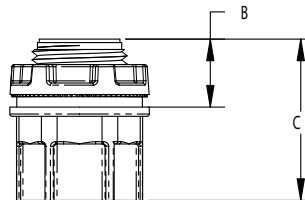
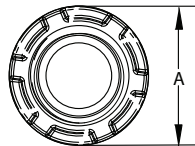


The use of rigid/IMC conduit remains the preferred choice in many applications because of the physical protection of conductors and long service life of the installation. Consequently, the need to terminate conduit into a box or enclosure creates the need for a hub.

The Commercial Hub has been developed to provide a light-weight hub that installs quickly and easily, providing a secure termination.

## CHB HUBS ORDERING AND DIMENSIONAL INFORMATION

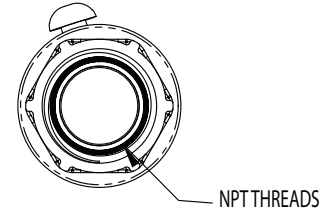
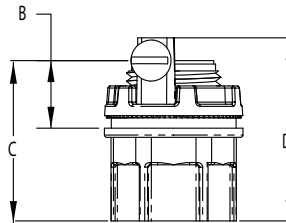
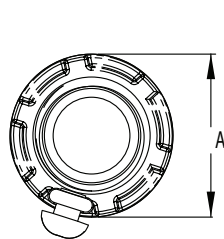
Cat. No.	Trade Size	A	B	C	Unit Qty	Wt. Lbs Per 100
CHB1	1/2"	1 7/32"	39/64"	1 7/16"	25	14
CHB2	3/4"	1 1/2"	2 1/32"	1 39/64"	25	20
CHB3	1"	1 57/64"	13/16"	1 55/64"	25	33
CHB4	1 1/4"	2 1/4"	53/64"	2"	10	43
CHB5	1 1/2"	2 35/64"	55/64"	2 7/64"	10	56
CHB6	2"	3 3/64"	3 1/32"	2 7/32"	10	71
CHB7	2 1/2"	3 9/16"	1 1/64"	2 5/8"	2	135
CHB8	3"	4 3/16"	1 1/64"	2 41/64"	2	156
CHB9	3 1/2"	4 25/32"	3 1/32"	2 41/64"	2	193
CHB10	4"	5 23/64"	1 1/64"	2 41/64"	1	229



CP

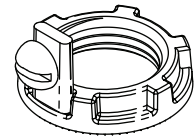
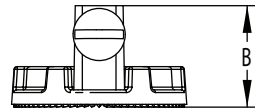
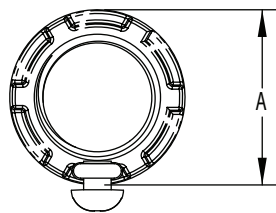
## CHG GROUNDED HUBS ORDERING AND DIMENSIONAL INFORMATION

Cat. No.	Trade Size	A	B	C	D	Unit Qty	Wt. Lbs Per 100
CHG1	1/2"	1 7/32"	39/64"	1 7/16"	1 34/64"	25	14
CHG2	3/4"	1 1/2"	2 1/32"	1 39/64"	1 55/64"	25	21
CHG3	1"	1 57/64"	13/16"	1 55/64"	2 7/64"	25	34
CHG4	1 1/4"	2 1/4"	53/64"	2"	2 3/32"	10	45
CHG5	1 1/2"	2 35/64"	55/64"	2 7/64"	2 23/64"	10	59
CHG6	2"	3 3/64"	3 1/32"	2 7/32"	2 25/64"	10	75
CHG7	2 1/2"	3 9/16"	1 1/64"	2 5/8"	2 49/64"	2	145
CHG8	3"	4 3/16"	1 1/64"	2 41/64"	2 53/64"	2	161
CHG9	3 1/2"	4 25/32"	3 1/32"	2 41/64"	2 15/16"	2	196
CHG10	4"	5 23/64"	1 1/64"	2 41/64"	2 31/32"	1	234



## CHGN GROUND NUT ORDERING AND DIMENSIONAL INFORMATION

Cat. No.	Trade Size	A	B	Ground Screw Size	Unit Qty	Wt. Lbs Per 100
CHGN1	1/2"	1 7/32"	2 1/32"	10 - 32	25	4
CHGN2	3/4"	1 1/2"	53/64"	10 - 32	25	5
CHGN3	1"	1 57/64"	59/64"	10 - 32	25	10
CHGN4	1 1/4"	2 1/4"	3 1/32"	1 1/4 - 20	10	11
CHGN5	1 1/2"	2 35/64"	63/64"	1 1/4 - 20	10	14
CHGN6	2"	3 3/64"	63/64"	1 1/4 - 20	10	16
CHGN7	2 1/2"	3 9/16"	1"	1 1/4 - 20	2	22
CHGN8	3"	4 3/16"	1 5/64"	1 1/4 - 20	2	29
CHGN9	3 1/2"	4 25/32"	1 7/64"	1 1/4 - 20	2	31
CHGN10	4"	5 23/64"	1 9/32"	1 1/4 - 20	1	40



## Environmental Seal for Conduit Passing Through Concrete Walls, Floors, or Ceilings

### Link-Seal Devices

#### Applications:

- Eaton's Crouse-Hinds Link-Seal® is the quick, economical way to seal around conduit in concrete walls, floors and casings. Link-Seal is a modular mechanical seal used for any type of penetration.

#### Features and Benefits:

- Saves time and money – Link-Seal installs in up to 75% less time than competition products
- Positive Hydrostatic Sealing – properly installed, Link-Seal is rated at 20 psig (40 feet of head), which exceeds the performance requirements of most applications
- Environment Seals – Link-Seal environmental seal is designed for long life and use as a permanent seal. Seal elements are specially compounded to resist aging, ozone, sunlight, water and a wide range of chemicals
- Fire Seals – for fire protection in floor and wall penetrations Link-Seal is Factory Mutual approved
- Resistance to high and low temperatures – Link-Seal environmental seal is manufactured from special compounds that resist temperatures from -40°F to +250°F. Link-Seal Fire Seal is manufactured from a silicone material that resists temperatures from -67°F to +400°F
- Corrosion protection – where installation against galvanic corrosion (or electrolysis) is required, Link-Seal provides complete separation pipe and casing. Metal-to-metal contact is eliminated
- Compensates for misalignment – Link-Seal allows for some angular and off-center conduit conditions and still seals effectively
- Absorbs shock, sound and vibration – this inherent benefit of Link-Seal helps reduce conduit failure due to fatigue and threaded connections

#### Standard Materials:

- Rubber Seal Elements:  
EPDM (Black) – Environmental Seals  
Silicone (Grey) – Fire Seals
- Pressure Plates:  
Glass Reinforced Nylon – Environmental Seals  
Steel w/Zinc Dichromate Plate – Fire Seals
- Fasteners:  
Carbon Steel, Zinc Dichromate Plate – Environmental Seals  
316 Stainless Steel – Environmental with Option S316  
Carbon Steel w/Zinc Dichromate – Fire Seals

### Environmental Conduit Seal

#### Ordering Information:

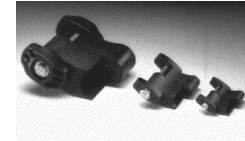
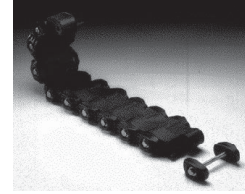
It's easy. Locate the conduit size and type you are installing in the columns on the left. Then locate the seal and sleeve part numbers under the installation method you've selected. No sleeve is needed for cored or cast hole installation.

#### Cored or Cast Hole Method:

Note the appropriate hole diameter and select the seal part number. Example: For 3/4" EMT conduit through a cored hole – Core a 2" diameter hole and install the conduit using Link-Seal part number LSA200-C-04.

#### Sleeve Methods:

Select either the plastic or metal sleeve. Both types of sleeves are designed to be cast into concrete walls or floors. Sleeves are ordered separately. Remember to add the wall or floor thickness to the steel sleeve part number to insure the sleeve is provided in the proper length. Plastic sleeves are a standard 16 long and can be modified in the field.



#### Materials:

The standard product for environmental conduit seals is made from EPDM supplied with steel bolts and nuts with a zinc dichromate finish. These seals are suitable for use in water, direct ground burial and atmospheric conditions. They provide electrical insulation where cathodic protection is required. EPDM rubber is resistant to most inorganic acids and alkalis, and some organic chemicals (acetone, alcohol, ketones).

#### Options:

To order the standard product with 316 stainless steel bolts and nuts, for corrosive environments, replace the "C" in the seal catalog number with "S316". For example, a 1/2" seal for rigid steel conduit for a cored hole is an LSA200-C-04; ordered with stainless steel bolts and nuts the catalog number becomes LSA200-S316-04.

## Environmental Seal for Conduit passing through Concrete Walls, Floors or Ceilings

4F

### Ordering Information - Environmental Conduit Seal

Conduit Nominal Size	Conduit Type*	Conduit Actual O.D. (inches)	Cast/Cored Hole Dia. (inches)	Seal for Cast/Cored Hole Cat. #	Plastic Sleeve Cat. #	Seal for Plastic Sleeve Cat. #	Steel Sleeve Cat. #	Seal for Steel Sleeve Cat. #
1/2"	EMT	.706	2.000	LSA275 C 04	LS CS 2 16	LSA200 C 04	WS2 15 ①	LSA275 C 04
1/2"	IMC	.815	2.000	LSA200 C 04	LS CS 2 16	LSA200 C 04	WS2 21 ①	LSA200 C 04
1/2"	RSC	.840	2.000	LSA200 C 04	LS CS 2 16	LSA200 C 04	WS2 21 ①	LSA200 C 04
3/4"	EMT	.922	2.000	LSA200 C 04	LS CS 3 16	LSA315 C 04	WS2 15 ①	LSA200 C 04
3/4"	IMC	1.029	2.500	LSA275 C 06	LS CS 3 16	LSA315 C 04	WS2 15 ①	LSA200 C 04
3/4"	RSC	1.050	2.500	LSA275 C 06	LS CS 3 16	LSA315 C 04	WS2.5 20 ①	LSA275 C 06
1"	EMT	1.163	2.500	LSA315 C 04	LS CS 3 16	LSA300 C 04	WS2.5 20 ①	LSA275 C 06
1"	IMC	1.290	3.000	LSA300 C 04	LS CS 3 16	LSA300 C 04	WS2.5 10 ①	LSA275 C 06
1"	RSC	1.315	3.000	LSA300 C 04	LS CS 3 16	LSA300 C 04	WS2.5 20 ①	LSA200 C 05
1 1/4"	EMT	1.510	3.000	LSA300 C 04	LS CS 3.5 16	LSA315 C 05	WS3.5 22 ①	LSA315 C 05
1 1/4"	IMC	1.638	3.000	LSA275 C 07	LS CS 3.5 16	LSA300 C 05	WS3.5 22 ①	LSA315 C 05
1 1/4"	RSC	1.660	3.000	LSA275 C 07	LS CS 3 16	LSA200 C 06	WS3.5 22 ①	LSA315 C 05
1 1/2"	EMT	1.740	3.500	LSA315 C 05	LS CS 3.5 16	LSA300 C 05	WS3.5 32 ①	LSA315 C 05
1 1/2"	IMC	1.883	3.500	LSA300 C 05	LS CS 3.5 16	LSA275 C 08	WS3.5 22 ①	LSA300 C 05
1 1/2"	RSC	1.900	3.500	LSA300 C 05	LS CS 3.5 16	LSA275 C 08	WS3.5 22 ①	LSA300 C 05
2"	EMT	2.197	4.000	LSA315 C 06	LS CS 4 16	LSA315 C 06	WS4 23 ①	LSA315 C 06
2"	IMC	2.360	4.000	LSA300 C 06	LS CS 4 16	LSA300 C 06	WS4 23 ①	LSA300 C 06
2"	RSC	2.375	4.000	LSA300 C 06	LS CS 4 16	LSA300 C 06	WS4 23 ①	LSA300 C 06
2 1/2"	EMT/RSC	2.875	4.000	LSA200 C 09	LS CS 4 16	LSA200 C 09	WS4 23 ①	LSA200 C 09
2 1/2"	IMC	2.857	4.000	LSA200 C 09	LS CS 4 16	LSA200 C 09	WS4 23 ①	LSA200 C 09
3"	EMT/RSC	3.500	5.000	LSA300 C 08	LS CS 5 16	LSA300 C 08	WS5 25 ①	LSA300 C 08
3"	IMC	3.476	5.000	LSA300 C 08	LS CS 5 16	LSA300 C 08	WS5 25 ①	LSA300 C 08
3 1/2"	EMT/RSC	4.000	6.000	LSA325 C 05	LS CS 6 16	LSA325 C 05	WS6 28 ①	LSA325 C 05
3 1/2"	IMC	3.971	6.000	LSA325 C 05	LS CS 6 16	LSA325 C 05	WS6 28 ①	LSA325 C 05
4"	EMT/RSC	4.500	6.000	LSA300 C 10	LS CS 6 16	LSA300 C 10	WS6 28 ①	LSA300 C 10
4"	IMC	4.466	6.000	LSA300 C 10	LS CS 6 16	LSA300 C 10	WS6 28 ①	LSA300 C 10
5"	RSC	5.563	8.000	LSA425 C 06	LS CS 8 16	LSA425 C 06	WS8 32 ①	LSA425 C 06
6"	RSC	6.625	10.000	LSA475 C 10	LS CS 10 16	LSA475 C 10	WS8 18 ①	LSA300 C 15

\*EMT – Electrical Metallic Tubing; IMC – Intermediate Metal Conduit; RSC – Rigid Steel Conduit  
 ①Specify length of steel sleeve in inches. Example: S6-28-08 is 8" long. All plastic sleeves come in standard 16" lengths and can be field cut to desired length.  
 The last two digits of the seal part number indicate the number of links (and the number of bolts) per seal.

**Fire Seal for  
Conduit passing through  
Concrete Walls, Floors or Ceilings**

4F

**Fire Conduit Seal  
Ordering Information:**

Locate the conduit size and type you are installing in the columns on the left. Then locate the seal and sleeve part number under the installation method you've selected. No sleeve is needed for cored or cast hole installation.

**Cored or Cast Hole  
Method:**

Note the appropriate hole diameter and select the seal part number. Example: For 3/4" EMT conduit through a cored hole –Core a 2" diameter hole and install the conduit using Link-Seal Part number LSA200-T-04.

**Sleeve Methods:**

Select the appropriate metal sleeve for the size and type of conduit being installed. The sleeve should be ordered separately. Remember to add the wall or floor thickness to the steel sleeve part number to insure the sleeve is provided in the proper length.

**Materials:**

The standard product for fire conduit seals is made from grey silicone supplied with steel bolts and nuts with a zinc dichromate finish. These seals are Factory Mutual approved for use as a 1-hour fire stop and can handle temperature extremes of -67°F to +400°F.

**Options:**

To order the fire seal for a 3-hour rating, replace the "T" in the seal catalog number with a "FS". For example, a 1/2" seal for rigid steel conduit for a cored hole is an LSA200-T-04; ordered with option FS the catalog number becomes LSA200-FS-04. A 3-hour fire seal can also be made by using two Model T's back-to-back. The Model FS is basically two Model T's back-to-back. In Model FS, a tie rod tightens both seals simultaneously – for use when only one side of an opening is accessible.

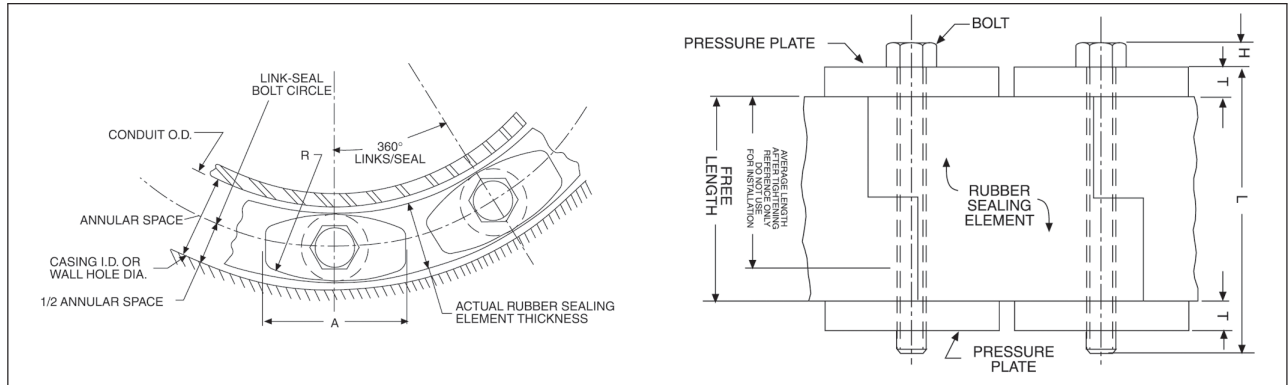
**Fire Conduit Seal - Ordering Information**

Conduit Nominal Size	Conduit Type*	Conduit Actual O.D. (inches)	Cast/Cored Hole Dia. (inches)	Seal for Cast/Cored Hole Cat. #	Steel Sleeve Cat. #	Seal for Steel Sleeve Cat. #
1/2"	EMT	0.706	2.000	LSA275 T 04	WS2 15 ①	LSA275 T 04
1/2"	IMC	0.815	2.000	LSA200 T 04	WS2 21 ①	LSA200 T 04
1/2"	RSC	0.840	2.000	LSA200 T 04	WS2 21 ①	LSA200 T 04
3/4"	EMT	0.922	2.000	LSA200 T 04	WS2 15 ①	LSA200 T 04
3/4"	IMC	1.029	2.500	LSA275 T 06	WS2 15 ①	LSA200 T 04
3/4"	RSC	1.050	2.500	LSA275 T 06	WS2.5 20 ①	LSA275 T 06
1"	EMT	1.163	3.000	LSA315 T 04	WS2.5 20 ①	LSA275 T 06
1"	IMC	1.290	3.000	LSA300 T 04	WS2.5 10 ①	LSA275 T 06
1"	RSC	1.315	3.000	LSA300 T 04	WS2.5 20 ①	LSA200 T 05
1 1/4"	EMT	1.510	3.000	LSA300 T 04	WS3.5 22 ①	LSA315 T 05
1 1/4"	IMC	1.638	3.000	LSA275 T 07	WS3.5 22 ①	LSA315 T 05
1 1/4"	RSC	1.660	3.000	LSA275 T 07	WS3.5 22 ①	LSA300 T 05
1 1/2"	EMT	1.740	3.500	LSA315 T 05	WS3.5 32 ①	LSA300 T 05
1 1/2"	IMC	1.883	3.500	LSA300 T 05	WS3.5 22 ①	LSA300 T 05
1 1/2"	RSC	1.900	3.500	LSA300 T 05	WS3.5 22 ①	LSA275 T 08
2"	EMT	2.197	4.000	LSA315 T 06	WS4 23 ①	LSA315 T 06
2"	IMC	2.360	4.000	LSA300 T 06	WS4 23 ①	LSA300 T 06
2"	RSC	2.375	4.000	LSA300 T 06	WS4 23 ①	LSA300 T 06
2 1/2"	EMT/RSC	2.875	4.000	LSA200 T 09	WS4 23 ①	LSA200 T 09
2 1/2"	IMC	2.857	4.000	LSA200 T 09	WS4 23 ①	LSA200 T 09
3"	EMT/RSC	3.500	5.000	LSA300 T 08	WS5 25 ①	LSA300 T 08
3"	IMC	3.476	5.000	LSA300 T 08	WS5 25 ①	LSA300 T 08
3 1/2"	EMT/RSC	4.000	6.000	LSA325 T 05	WS6 28 ①	LSA325 T 05
3 1/2"	IMC	3.971	6.000	LSA325 T 05	WS6 28 ①	LSA325 T 05
4"	EMT/RSC	4.500	6.000	LSA300 T 10	WS6 28 ①	LSA300 T 10
4"	IMC	4.466	6.000	LSA300 T 10	WS6 28 ①	LSA300 T 10
5"	RSC	5.563	8.000	LSA425 T 06	WS8 32 ①	LSA425 T 06
6"	RSC	6.625	10.000	LSA475 T 10	WS8 18 ①	LSA300 T 15

①Specify length of steel sleeve in inches. Example: WS6-28-08 is 8" long.  
\*EMT – Electrical Metallic Tubing; IMC – Intermediate Metal Conduit; RSC – Rigid Steel Conduit  
The last two digits of the seal part number indicate the number of links (and the number of bolts) per seal.

Dimensions

In Inches:



Technical Information

Link-Seal Cat. #	Rubber Sealing Element			Pressure Plate			Bolt			
	Actual Thickness (inches)	Free Length (inches)	Avg. Length After Tightening (inches)	A (inches)	R (inches)	T (inches)	Hex Across Flats	H (inches)	Thread Size (inches)	L
LSA200 C	.478	1¾	1⅝	1⅙	2¼	⅝	M5 slotted hex	.180	M5	2½
LSA275 C	.607	1¾	1⅝	7⁄8	1⅞	5⁄16	M5 slotted hex	.180	M5	2½
LSA300 C	.687	2½	2	1½	2½	7⁄16	½	7⁄32	5⁄16-5⁄18	3½
LSA315 C	.807	2½	2	1⅞	2½	7⁄16	½	7⁄32	5⁄16-5⁄18	3½
LSA325 C	.875	3	2⅞	3⅞	2	½	½	7⁄32	5⁄16-5⁄18	4
LSA425 C	1.062	3½	2¾	3½	3	¾	9⁄16	¼	3⁄8-3⁄16	5
LSA475 C	1.562	3½	2¾	3½	3½	½	9⁄16	¼	3⁄8-3⁄16	4½

# XD deflection couplings

## Applications:

XD Couplings can be installed indoors, outdoors, buried underground or embedded in concrete in non-hazardous areas. XDs are used with standard rigid conduit or PVC rigid conduit. (PVC requires rigid metal conduit nipples and rigid metal-to-PVC conduit adapters). XDs provide a flexible and watertight connection for protection of conduit wiring systems from damage due to movement.

Typical applications include:

- Underground conduit feeder runs
- Runs between sections of concrete subject to relative movement
- Runs between fixed structures
- Conduit entrances in high rise buildings
- Bridges
- Marinas, docks, piers

## Features:

- XD couplings accommodate the following movements without collapsing or fracturing the conduit, and damaging the wires it contains:
  1. Axial expansion or contraction up to  $\frac{3}{4}$ "
  2. Angular misalignment of the axes of the coupled conduit runs in any direction to  $30^\circ$
  3. Parallel misalignment of the axes of coupled conduit runs in any direction to  $\frac{3}{4}$ "
- Inner sleeve maintains constant I.D. in any position and provides a smooth insulated wireway for protection of wire insulation
- Watertight flexible neoprene outer jacket is corrosion-resistant and protects the grounding strap and the attachment points of the hubs
- Tinned copper flexible braid grounding straps assure grounding continuity
- Stainless steel jacket clamps for strength and corrosion resistance
- Standard tapered electrical threads fit standard rigid conduit
- Integral hub bushing protects insulation of conductors

## Certifications and compliances:

- UL Standard 514B
- CSA 22.2 No. 18 3-12
- Wet locations

## Size ranges:

- 1" to 6" (smaller sizes can be obtained by using reducing bushings)

## Standard materials and finishes:

### Hubs:

- *Feraloy*<sup>®</sup> iron alloy – hot dip galvanized

### Outer jacket:

- Molded neoprene – natural (black)

### Jacket clamps:

- Stainless steel – natural

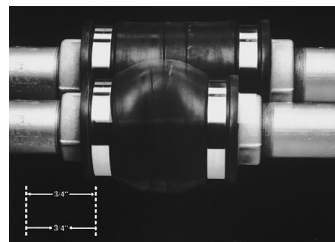
### Inner sleeve:

- Molded plastic – natural (brown)

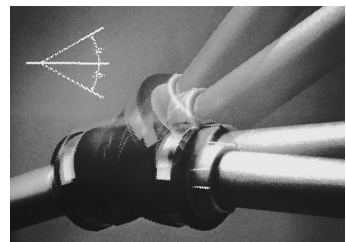
### Bonding strap:

- Braided tinned copper

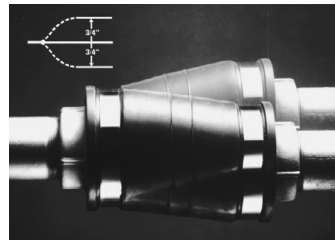
**Hot dip galvanized now standard!**



1. Axial expansion/contraction

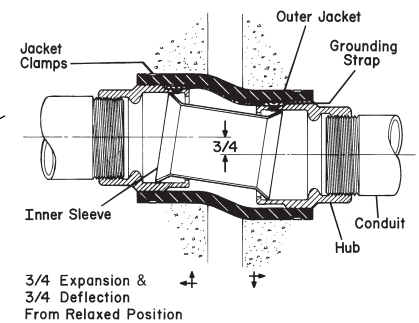
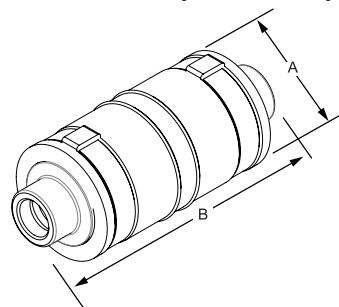


2. Angular misalignment



3. Parallel misalignment

## Dimensions (in inches):



Conduit size	Cat. #	A Dia	B Length
1"	<b>XD3 HDG</b>	$3\frac{15}{16}$	7
1 $\frac{1}{4}$ "	<b>XD4 HDG</b>	$4\frac{1}{4}$	$7\frac{3}{8}$
1 $\frac{1}{2}$ "	<b>XD5 HDG</b>	$4\frac{1}{2}$	$7\frac{1}{4}$
2"	<b>XD6 HDG</b>	$4\frac{15}{16}$	$7\frac{1}{4}$
2 $\frac{1}{2}$ "	<b>XD7 HDG</b>	$5\frac{5}{16}$	$7\frac{1}{2}$
3"	<b>XD8 HDG</b>	$5\frac{15}{16}$	$7\frac{3}{8}$
3 $\frac{1}{2}$ "	<b>XD9 HDG</b>	$6\frac{1}{2}$	$7\frac{3}{4}$
4"	<b>XD010 HDG</b>	$6\frac{15}{16}$	$7\frac{1}{8}$
5"	<b>XD012 HDG</b>	8	$7\frac{3}{4}$
6"	<b>XD014 HDG</b>	9	$8\frac{3}{8}$

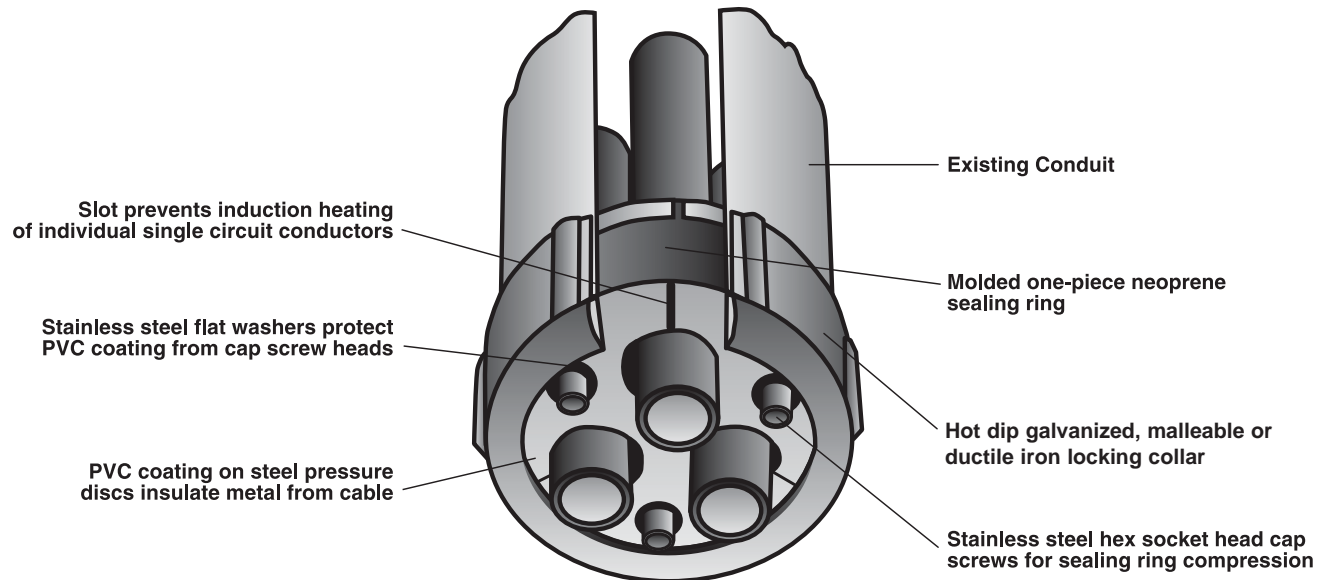
<sup>R</sup> $\frac{3}{4}$ " trade size can be created using third party certified 1" -  $\frac{3}{4}$ " reducing bushings.



# Conduit Sealing Bushings

## Type CSB

For use with Cable



### Details of Construction:

**Pressure Discs:** Thick metal discs with custom drilled holes to accommodate cables. Steel discs are slotted at cable holes to eliminate induction heating effect of single conductor alternating current. Steel discs are PVC coated for corrosion protection, to insulate cable holes and to prevent plates from bridging to other ferrous parts. Uncoated aluminum plates are available. Copper alloy, stainless steel or phenolic discs are available at price addition.

**Screws & Washers:** Corrosion-proof stainless steel socket head screws are used to compress the two discs against the sealing ring. Hex head stainless steel machine screws are available. PVC coated discs have stainless steel washers to prevent screws from damaging coating. (Suffix - P type only.)

**Locking Collar:** Malleable iron hot dip galvanized; suffix "A" for aluminum. Gaskets are provided to prevent locking collar and end of conduit from damaging PVC coated disc. (Suffix - P type only.)

**Sealing Ring:** Thick one-piece neoprene ring custom drilled. Neoprene is specifically compounded for the following operating characteristics:

1. Low compression modulus (the ability of the neoprene sealing ring to seal with low-tightening force).
2. Very low compression set (maintain seal over extended period without having to retighten).
3. Anti-oxidant (resistance to ozone attack).
4. Anti-oxidant (resistance to weathering).
5. Low crystallization (suitable for use at low temperatures).
6. Fire retardant (will not support combustion).

For modifications or special requirements, contact your local representative for price and availability.

# Conduit Sealing Bushings

For Use with Insulated Wire, Cable and Rigid Metal Conduit

## Type CSB Series

### Type CSBE:

Seals against pressure from the outside of the fitting and to provide some support for the cables when fitting is used in vertical position as shown in illustration.

### Type CSBI:

Seals against fluids or gases that are inside a conduit and prevents them from entering an enclosure.

### Type CSBG:

Provides all the features of Types CSBE and CSBI and in addition prevents the sealing bushing from moving out of the end of the conduit should the internal pressure be high or if the fitting is used on conduit in an inverted position. The Type CSBG fittings are capable of sealing against gas or fluid pressure of 100 psig, (non-segmented) Type CSBI and CSBE – 50 psig (non-segmented.) Segmenting reduces above pressure in half. Can also be supplied with Lay-In-Lug grounding wire connector, see page QA14.

### Use:

- These conduit Sealing Bushings are used for sealing the ends of conduit in applications involving higher static gas or fluid pressures than can be handled by standard sealing bushings.
- For use with IMC or EMT, a short nipple of Rigid Metal Conduit should be used to accommodate the Conduit Sealing Bushing. For Schedule 40 PVC Conduit, contact your local representative.

### Features:

- The complete assembly is provided with 1 or multiple holes to accommodate the size and number of cables which emerge from the conduit. When the fitting is in place and the screws are tightened, the neoprene sealing ring is compressed between the metal plates and is forced against the inside wall of the conduit and also against the cable insulation to effect a complete seal at the conduit end.

- Blank fittings are available. These are intended as abandonment devices only. **Do not field drill.**
- Consult your local representative for all other applications.
- These fittings are simple to install. They eliminate the special preparation of the end of the conduit or the compounding of the conduit thread which is required on other types of sealing fittings used to seal against high pressures.

### Materials:

Slotted PVC coated steel discs, neoprene sealing ring and stainless steel socket head cap screws and washers. Locking collars on type CSBG are hot dipped galvanized malleable or ductile iron.

### Optional Materials:


Also available with aluminum or brass/bronze pressure discs (Metal Plates) on Type CSBI and CSBE bushings. To specify, substitute suffix "A" or "B" for "P" in catalog number. (Example: CSBI-200A-1) Locking Collar and Pressure Discs are also available in Aluminum or Bronze on Type CSBG Bushings. Example (CSBG-200A-1) Consult your local representative for price and availability.

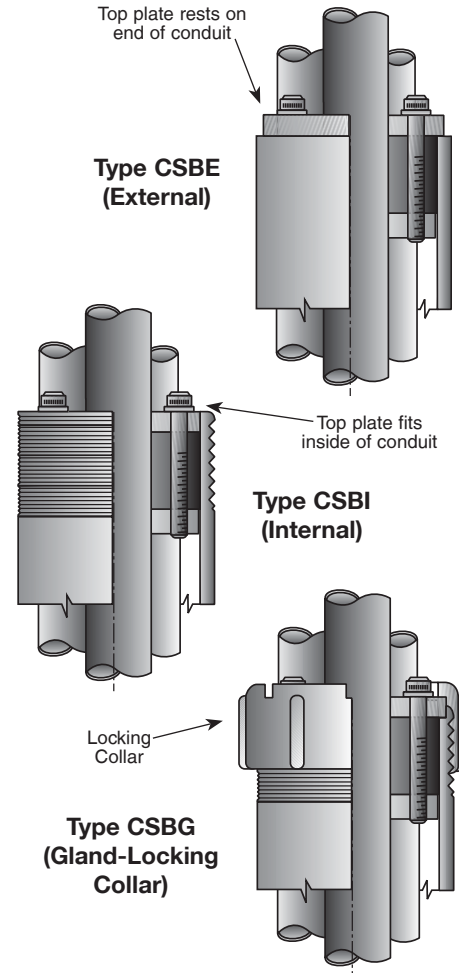
### Alternate Construction: (Catalog # SEG)

Segmented Design – Segmental pressure discs and slit-neoprene sealing ring produce a come-apart design which allows the sealing bushing to be installed without having to thread it along the cable or allows installation around cables already pulled.

Also available with slit neoprene sealing ring and one piece pressure discs.

### Third Party Certification:

UL Listed: E-11857  
 Type CSBG with aluminum pressure disks is Listed by Underwriters Laboratories, Inc. as an outlet bushing, service entrance seal or service head.



**TO ORDER SPECIFY:**

- 1 Catalog Number
- 2 Conduit Size
- 3 Number of Cables
- 4 Outside Diameters of Cables Over Insulation
- 5 Segmented, if Required
- 6 Two Neoprene Sealing Rings, if required (prices on application). Suffix G-2.

Conduit Size	Max. Diameter of Wire Permitted – Inches				Type CSBE Catalog Number		Type CSBI Catalog Number		Type CSBG Catalog Number	
	1 Wire	2 Wires	3 Wires	4 Wires	Blank†	One to Four Wires	Blank†	One to Four Wires	Blank†	One to Four Wires
1½"	.78	.59	.54	.44	CSBE-150P-0	CSBE-150P-1	CSBI-150P-0	CSBI-150P-1	CSBG-150P-0	CSBG-150P-1
2"	.89	.77	.71	.59	CSBE-200P-0	CSBE-200P-1	CSBI-200P-0	CSBI-200P-1	CSBG-200P-0	CSBG-200P-1
2½"	1.32	.96	.89	.78	CSBE-250P-0	CSBE-250P-1	CSBI-250P-0	CSBI-250P-1	CSBG-250P-0	CSBG-250P-1
3"	1.89	1.26	1.13	.96	CSBE-300P-0	CSBE-300P-1	CSBI-300P-0	CSBI-300P-1	CSBG-300P-0	CSBG-300P-1
3½"	2.13	1.38	1.38	1.13	CSBE-350P-0	CSBE-350P-1	CSBI-350P-0	CSBI-350P-1	CSBG-350P-0	CSBG-350P-1
4"	2.63	1.63	1.51	1.26	CSBE-400P-0	CSBE-400P-1	CSBI-400P-0	CSBI-400P-1	CSBG-400P-0	CSBG-400P-1
5"	3.45	2.00	1.88	1.63	CSBE-500P-0	CSBE-500P-1	CSBI-500P-0	CSBI-500P-1	CSBG-500P-0	CSBG-500P-1
6"	4.32	2.44	2.21	2.07	CSBE-600P-0	CSBE-600P-1	CSBI-600P-0	CSBI-600P-1	CSBG-600P-0	CSBG-600P-1

† Blank fittings are intended as abandonment and future use devices only. Blank fittings cannot be field drilled.

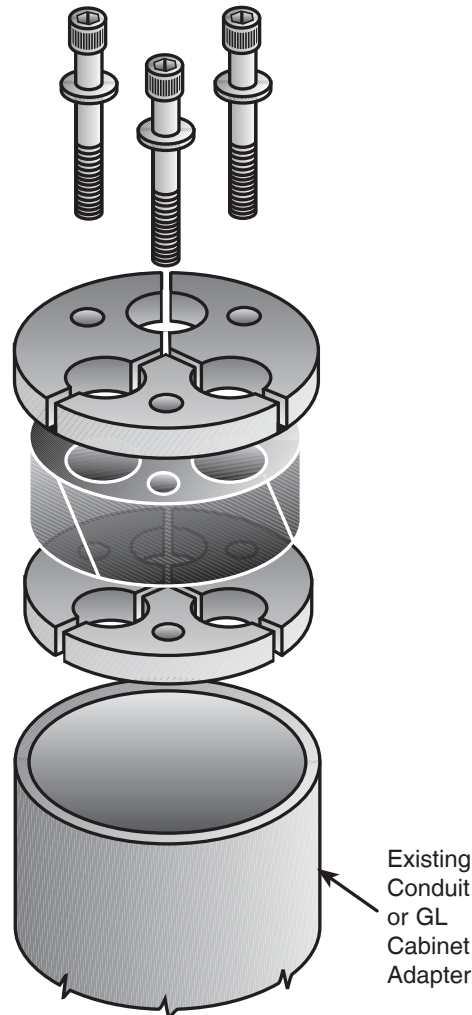
# Conduit Sealing Bushings

## Type CSB Series

### 1 Segmental Design (Figure 1):

Segmental pressure discs and slit neoprene sealing ring produce a come-apart design which allows the sealing bushing to be installed without having to thread it along the cable or allows installation around cables already terminated. Maximum diameter of wire or cable may need to be reduced. (Include Catalog Number "SEG"). Also available with slit neoprene sealing ring and one piece pressure discs.

Type CSBE  
Segmental Design  
Figure 1



### 2 Double Sealing Ring:

A second neoprene sealing ring may be added for cable support applications. Add suffix "G2" to catalog number. Contact your local representative for price and availability.

### 3 Close/Short Nipples:

Short nipples which can be screwed into conduit hubs or couplings. Seal Fittings are then installed in the open ends of these nipples. To specify a fitting complete with nipple add "N" after Catalog Number. (Example: CSBG 200P-N).

### 4 Type GL Cabinet Adapter (Figure 2):

For use with sealing bushings when exposed wires enter cabinets. Hot dip galvanized malleable or ductile iron is standard; aluminum if specified. Adapter assembly includes special smooth bore nipple, gasket and locknut. Type GL Cabinet Adapters must be ordered separately. See table for catalog numbers.

Thread length on special smooth bore nipples will accommodate 1/8" thick cabinet or structure on Type CSBG (specify if thicker than 1/8"), and up to 3/4" thickness on Types CSBE & CSBI.

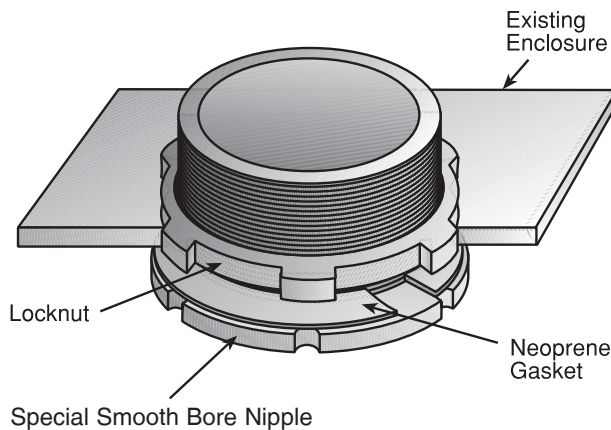
These fittings are designed for use in schedule 40 Rigid Metal Conduit. For use with IMC or EMT, a short nipple of Rigid Metal Conduit should be used to accommodate the Conduit Sealing Bushing. Contact your local representative for application involving Schedule 40 or Schedule 80 PVC Conduit.

Conduit Size	Catalog Number
1 1/2	GL150
2	GL200
2 1/2	GL250
3	GL300
3 1/2	GL350
4	GL400
5	GL500
6	GL600

Blank fittings are intended as abandonment and future use devices only.  
DO NOT FIELD DRILL.

### Dimensional Data:

See Page RA19



Type GL  
Cabinet Adapter  
Figure 2

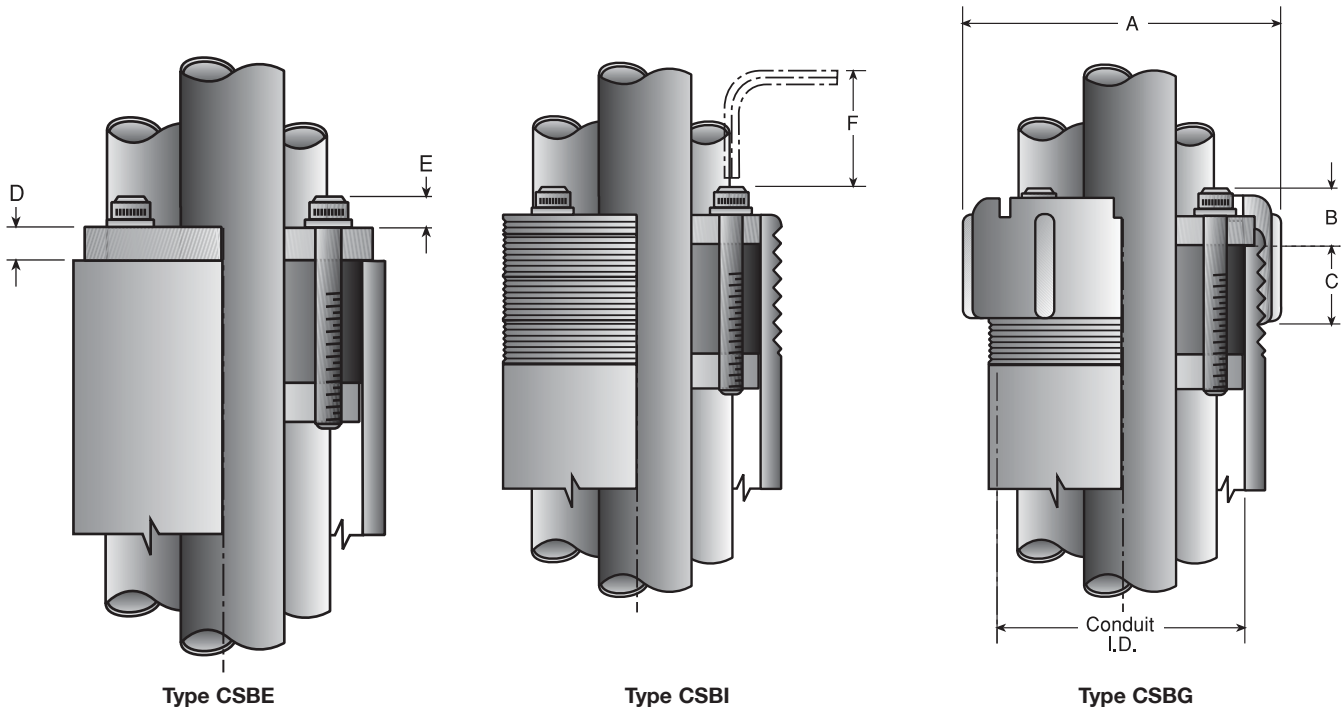
# Conduit Sealing Bushings

For Use with Cable in Rigid Conduit\*

Type CSB Series Dimensional Data:

Conduit* Size	Max. Diameter of Wire Permitted – Inches (non segmented)				Conduit ID	Dimensions in Inches					
	1 Hole	2 Holes	3 Holes	4 Holes		A Dia.	B	C	D	E	F Min
1½"	.78	.49	.53	.44	1.610	2 <sup>9</sup> / <sub>16</sub>	5/8	7/8	5/16	5/16	1/4
2"	1.02	.77	.71	.61	2.067	2 <sup>13</sup> / <sub>14</sub>	5/8	7/8	5/16	5/16	1/4
2½"	1.32	.96	.89	.78	2.469	3 <sup>3</sup> / <sub>8</sub>	3/4	7/8	5/16	5/16	1/4
3"	1.89	1.20	1.13	.96	3.068	4 <sup>1</sup> / <sub>8</sub>	3/4	7/8	5/16	5/16	1/4
3½"	2.13	1.32	1.32	1.13	3.548	4 <sup>9</sup> / <sub>16</sub>	7/8	7/8	7/16	3/8	1/2
4"	2.57	1.63	1.51	1.26	4.026	5 <sup>1</sup> / <sub>8</sub>	5/16	1	7/16	3/8	1/2
5"	3.45	2.00	1.88	1.63	5.047	6 <sup>1</sup> / <sub>4</sub>	5/16	1	7/16	3/8	1/2
6"	4.32	2.51	2.38	2.13	6.065	7 <sup>3</sup> / <sub>8</sub>	5/16	1	7/16	3/8	1/2

\*Standard fittings may be used with corresponding sizes of schedule 40 pipe or tubes and cored holes which have the same internal diameter as conduit I.D. shown above.



# FS-ONE High Performance Intumescent Firestop Sealant

## Product description

- Intumescent (expands when exposed to fire) firestop sealant that helps protect combustible and non-combustible penetrations for up to 4 hours fire rating

## Product features

- Smoke, gas and water resistant after material has cured
- Contains no halogen, solvents or asbestos
- High fire rating properties
- Water based, easy to clean
- Protects most typical firestop penetration applications
- Paintable
- Single component systems available
- Meets LEED™ requirements for indoor environmental quality credit 4.1 Low Emitting Materials, Sealants and Adhesives and 4.2 Paints and Coatings

## Areas of application

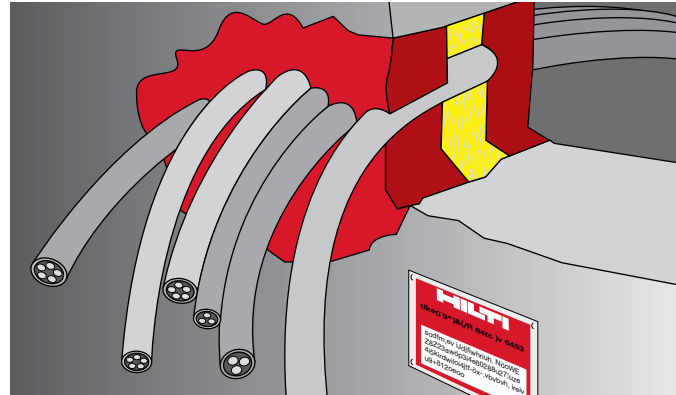
- Steel, copper and EMT pipes
- Insulated steel and copper pipes
- Cable bundles
- Closed or vented plastic pipes
- HVAC penetrations

## For use with

- Concrete, masonry, drywall and wood floor assemblies
- Wall and floor assemblies rated up to 4 hours

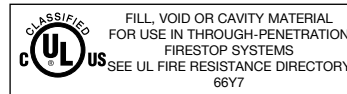
## Examples

- Sealing around combustible pipe penetrations in fire rated construction
- Sealing around non-combustible penetrations in fire rated construction



Technical Data*	FS-ONE
<b>Chemical basis</b>	Water-based intumescent acrylic dispersion
<b>Color</b>	Red
<b>Application temperature</b>	40°F to 104°F (5°C to 40°C)
<b>Skin forming time</b>	Approx. 20-30 min.
<b>Curing time</b>	Approx. 2 mm / 3 days
<b>Movement capability</b>	Approx. 5%
<b>Expansion rate (unrestricted)</b>	Up to 3-5 times original volume
<b>Temperature resistance (cured)</b>	-40°F to 212°F (-40°C to 100°C)
<b>Surface burning characteristics (ASTM E 84-96)</b>	Flame Spread: 0 Smoke Development: 5
<b>Sound transmission classification (ASTM E 90-99)</b>	56 (Relates to specific construction)
<b>Approvals</b>	<ul style="list-style-type: none"> <li>• California State Fire Marshal - No. 4485-1200:108</li> <li>• City of New York - MEA 326-96-M Vol. IV</li> </ul>
<b>Tested in accordance with</b>	<ul style="list-style-type: none"> <li>• UL 1479</li> <li>• ASTM E 814</li> <li>• ASTM E 84</li> </ul>

\*At 73°F (23°C) and 50% relative humidity



## Installation instructions for FS-ONE

### Notice

- Before handling, read Material Safety Data Sheet and product label for safe usage and health information.
- Instructions below are general guidelines — always refer to the applicable drawing in the UL Fire Resistance Directory or Hilti Firestop Systems Guide for complete installation information

### Opening

1. Clean the opening. Surfaces to which FS-ONE will be applied should be cleaned of loose debris, dirt, oil, moisture, frost and wax. Structures supporting penetrating items must be installed in compliance with local building and electrical standards.

### Application of firestop sealant

2. Install the prescribed backfilling material type and depth to obtain the desired rating (if required). Leave sufficient depth for applying FS-ONE.
3. Application of firestop sealant: Apply FS-ONE to the required depth in order to obtain the desired fire rating. Make sure FS-ONE contacts all surfaces to provide maximum adhesion. For application of FS-ONE use a standard caulking gun, foil pack gun, bulk loader and bulk gun. With FS-ONE buckets, Graco type sealant pumps may be used. (Contact pump manufacturer for proper selection).

4. Smoothing of firestop sealant: To complete the seal, tool immediately to give a smooth appearance. Excess sealant, prior to curing, can be cleaned away from adjacent surfaces and tools with water.
5. Leave completed seal undisturbed for 48 hours.
6. For maintenance reasons, a penetration seal could be permanently marked with an identification plate. In such a case, mark the identification plate and fasten it in a visible position next to the seal.

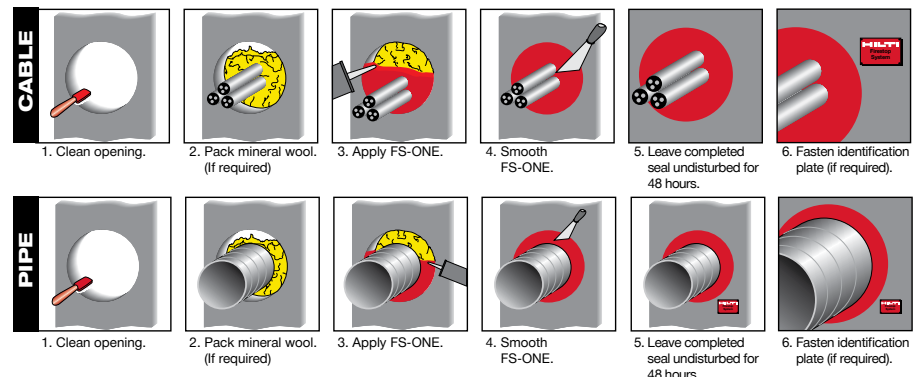
### Not for use

- High movement expansion joints
- Underwater

- On materials where oil, plasticizers or solvents may bleed i.e. impregnated wood, oil based seals, green or partially vulcanized rubber
- In any penetration other than those specifically described in this manual or the test reports

### Storage

- Store only in the original packaging in a location protected from moisture at temperatures between 40°F (5°C) and 86°F (30°C)
- Observe expiration date on the package



**Hilti. Outperform. Outlast.**

MSDS No.: 259  
 Revision No.: 010  
 Revision Date: 08/17/04  
 Page: 1 of 2

**Product name:** FS-ONE High Performance Intumescent Firestop Sealant  
**Description:** One-part acrylic-based sealant  
**Supplier:** Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121  
**Emergency # (Chem-Trec.):** 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

### INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number:	PEL:	TLV:	STEL:
Polyacrylate dispersion	Mixture	NE	NE	NE
Calcium carbonate	001317-65-3	5 mg/m <sup>3</sup> (T)	10 mg/m <sup>3</sup> (T)	NE
Zinc borate	138265-88-0	NE	NE	NE
Ammonium polyphosphate	068333-79-9	NE	NE	NE
Talc	014807-96-6	20 mppcf	2 mg/m <sup>3</sup>	NE
Expandable graphite	012777-87-6	5 mg/m <sup>3</sup> (T)	2 mg/m <sup>3</sup> (T)	NE
Ethylene glycol	000107-21-1	NE	C:100 mg/m <sup>3</sup> (A)	NE
Polybutene	009003-29-6	NE	NE	NE
Iron oxide	001309-37-1	10 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	NE
Glass filament	065997-17-3	NE	5 mg/m <sup>3</sup> (T)	NE
Silicon dioxide	014808-60-7	0.05 mg/m <sup>3</sup> (T)	0.1 mg/m <sup>3</sup> (T)	NE
Water	007732-18-5	NE	NE	NE

**Abbreviations:** PEL = OSHA Permissible Exposure Limit. TLV = ACGIH Threshold Limit Value. C = Ceiling. STEL = Short Term Exposure Limit. NE = None Established. NA = Not Applicable. (T) indicates "as total dust". (R) indicates "as respirable fraction". (A) indicates "as an aerosol". mppcf = million particles per cubic foot.

### PHYSICAL DATA

<b>Appearance:</b>	Red paste.	<b>Odor:</b>	Odorless.
<b>Vapor Density: (air = 1)</b>	Not determined.	<b>Vapor Pressure:</b>	23mbar @ 20C / 68F
<b>Boiling Point:</b>	Not applicable.	<b>VOC Content:</b>	75.0 g/L.
<b>Evaporation Rate:</b>	Not applicable.	<b>Solubility in Water:</b>	Soluble.
<b>Specific Gravity:</b>	1.5	<b>pH:</b>	Not determined.

### FIRE AND EXPLOSION HAZARD DATA

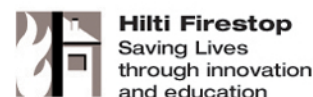
<b>Flash Point:</b>	Non-flammable.	<b>Flammable Limits:</b>	Not applicable.
<b>Extinguishing Media:</b>	Not applicable. Use extinguishing media as appropriate for surrounding fire.		
<b>Special Fire Fighting Procedures:</b>	None known. Use a self-contained breathing apparatus when fighting fires involving chemicals.		
<b>Unusual Fire and Explosion Hazards:</b>	None known. Thermal decomposition products can be formed such as oxides of carbon, sulfur and phosphorous.		

### REACTIVITY DATA

<b>Stability:</b>	Stable.	<b>Hazardous Polymerization:</b>	Will not occur.
<b>Incompatibility:</b>	Strong acids, peroxides, and oxidizing agents.		
<b>Decomposition Products:</b>	Thermal decomposition can yield CO and CO <sub>2</sub> .		
<b>Conditions to Avoid:</b>	None known.		

### HEALTH HAZARD DATA

<b>Known Hazards:</b>	None known.
<b>Signs and Symptoms of Exposure:</b>	Possibly irritating upon contact with the eyes or upon repeated contact with the skin.
<b>Medical Conditions</b>	Eye and skin conditions.
<b>Aggravated by Exposure:</b>	
<b>Routes of Exposure:</b>	Dermal.



**Hilti. Outperform. Outlast.**

MSDS No.: 259  
 Revision No.: 010  
 Revision Date: 08/17/04  
 Page: 2 of 2

**Carcinogenicity:** IARC classifies crystalline silica (quartz sand) as Group I based upon evidence among workers in industries where there has been long-term and chronic exposure (via inhalation) to silica dust; e.g. mining, quarry, stone crushing, refractory brick and pottery workers. This product does not pose a dust hazard; therefore, this classification is not relevant. Based upon the nature and intended use of this product, it does not pose an increased cancer risk to workers.

### EMERGENCY AND FIRST AID PROCEDURES

**Eyes:** Immediately flush with plenty of water. Call a physician if symptoms occur.

**Skin:** Immediately wipe off material and wash with soap and water. Material can adhere to the skin. If material has adhered to the skin, use an abrasive containing hand cleaner. If material does not come off, buff with a pumice stone.

**Inhalation:** Move victim to fresh air if discomfort develops. Call a physician if symptoms persist.

**Ingestion:** Seek medical attention. Do not induce vomiting unless directed by a physician. If a large quantity was ingested, give 1 to 2 glasses of water to dilute. Never give anything by mouth to an unconscious person.

**Other:** Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure.

### CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

**Ventilation:** General (natural or mechanically induced fresh air movements).

**Eye Protection:** Not required, however, safety glasses should be worn in most industrial settings.

**Skin Protection:** Avoid skin contact. Cloth gloves are suitable for hand protection.

**Respiratory Protection:** None normally required. Where ventilation is inadequate to control vapors, use a NIOSH-approved respirator with organic vapor cartridges. Never enter a confined space without an appropriate air-supplied respirator.

### PRECAUTIONS FOR SAFE HANDLING AND USE

**Handling and Storing Precautions:** Store in a cool, dry area preferably between 40o and 77o F. Keep from freezing. Do not store in direct sunlight. Avoid contact with the eyes or skin. Practice good hygiene; i.e. always wash thoroughly after handling and before eating or smoking. For industrial use only. Keep out of reach of children. Follow label/use instructions.

**Spill Procedures:** Immediately wipe away spilled material before it hardens. Place in a container for proper disposal in accordance with all applicable local, state, or federal requirements.

### REGULATORY INFORMATION

**Hazard Communication:** This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

**HMIS Codes:** Health 1, Flammability 0, Reactivity 0, PPE B

**DOT Shipping Name:** Not regulated.

**IATA / ICAO Shipping Name:** Not regulated.

**TSCA Inventory Status:** Chemical components listed on TSCA inventory. SARA Title III, Section 313: This product contains < 3% ethylene glycol (CAS 107-21-1) and < 15% zinc borate (re: zinc compounds) which are subject to reporting under Section 313 of SARA Title III (40 CFR Part 372).

**EPA Waste Code(s):** Not regulated by EPA as a hazardous waste.

**Waste Disposal Methods:** Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health and environmental regulations.

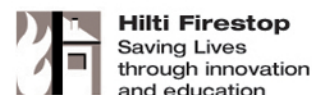
### CONTACTS

**Customer Service:** 1 800 879 8000      **Technical Service:** 1 800 879 8000

**Health / Safety:** 1 800 879 6000 Jerry Metcalf (x6704)

**Emergency # (Chem-Trec):** 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.



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