

Unions, Sealing Fittings, Flexible Couplings, Elbows, Drain/Breather, Close-Up Plugs: Explosionproof

UNILETS® for Use with Threaded Metal Conduit

Applications: Unions

- UNY and UNF unions are used for joining conduit and connecting conduit to enclosures. Facilitates modifications, permits removal of enclosures without turning or removal of conduit.
- Expansion unions compensate for expansion and contraction of conduit.

Applications: Sealing Fittings

- Prevent passage of gases, vapors or flames from one portion of conduit system to another. Restrict any explosion to the sealed off enclosure. Prevent pressure piling within conduit system.
- Required in Class 1, Division 1 and 2 locations within 18" of enclosures containing apparatus that may cause arcs, sparks or high temperatures.
- Required in Class I, Division 1 and 2 locations where 2" or larger conduit enters enclosure, fitting housing terminals, splices or taps.
- Required in Class 1, Division 1 and 2 locations at the boundary where conduit leaves classified location.
- Required in Class 1, Division 1 and 2 locations where two or more enclosures are connected by 36" or less conduit. Seal must be located within 18" of either enclosure.
- Required where cables (which exceed rate of gas or vapor transmission permitted for seals) are used in Class 1, Division 2 locations.

Applications: Sealing Hubs

- Used to seal vertical conduit risers at switch gear and motor control centers, sheet metal structures, or cast boxes and enclosures.

Applications: Flexible Couplings

- Used in areas where vibration and/or movement is a problem. Also used in place of rigid conduit in difficult-bend situations.

Applications: Combination Drain/Breather

- ECBD, when installed in bottom of housing, functions as a drain for water formed by condensation within system. Installed in top of housing, it serves as a breather, providing ventilation to minimize condensation and prevent mildew formation.



① UNY/UNF Unions



② UNY/UNF Expansions Unions



③ EY, EYS, EYD Series Drain Seals



④ ES Series Sealing Hubs



⑤ EXGJH/EXLK Flexible Couplings



PLG Close-Up Plugs



BR Bell Reducer



EL Elbows



ECDB Drain/Breathers

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UNILETS® for Use with Threaded Metal Conduit

Features: All Fittings

- Explosionproof, dust-ignitionproof.
- Smooth, rounded integral bushing in each hub protects conductor insulation.
- Accurately tapped, tapered threads for tight, rigid joints and ground continuity.

Features: Non-Expansion Unions

- ① Concentric ring interlocked design of 1/2", 3/4" and 1" sizes makes possible smaller diameter, allowing use in tighter spaces. 1-1/4" and larger UNY sizes have removable male nipple.
- Choice of malleable iron or aluminum.

Features: Expansion Unions

- ② One-piece design eliminates need for disassembly during installation.
- Telescoping cylinder within cylinder design permits expansion or contraction.
- Standard or long types available.
- Small external diameters—excellent in restricted areas in wiring of pumps, motors, and other equipment.
- Internal phosphor bronze "bonding jumper" ring assures positive ground between telescoping cylinders.

Features: Sealing Fittings

- ③ Raintight construction.
- Removable nipple in male sealing fitting may be used interchangeably in top or bottom hub.
- EYS—for sealing vertical conduit. Large opening for damming and filling.
- Expanded Fill EYSEF/EYDEF—allow up to 40% conduit fill in compliance with the National Electrical Code.
- EYSF/EYSM—for sealing vertical conduit. Large opening for damming and filling.
- ESUF/ESUM for sealing vertical or horizontal conduit. Pouring spout rotates 90°. Removable cover provides full access for damming 2-1/2" thru 4" sizes have threaded cover openings for damming.
- EYF/EYM—close radius type for sealing vertical or horizontal conduit runs.
- EYDM Drain Sealing Fittings—close radius type for sealing vertical conduit runs. Access cover has drain valve for automatic draining of water accumulation above the seal.
- Kwiko® A sealing cement is a specially formulated water soluble powder. Mixed to the proper proportions, it is poured in sealing fittings and hardens to contain

and restrict the passage of gases and explosions in classified areas.

- Fiber Filler—makes dams around and between all conductors to prevent sealing compound from leaking while being poured in its liquid state.

Features: Sealing Hubs

- ④ UL Listed for use in hazardous locations when Kwiko® A Sealing Compound or Crouse-Hinds Chico® A Sealing Compound are used to make the seal.

Features: Flexible Couplings

- ⑤ Heavy duty design resists mechanical abuse. Watertight.
- Electrical conductivity equal to rigid conduit on a similar length basis—no bonding jumper required.
- Interior insulating liner protects conductors from abrasion under vibrating conditions.
- EXGJH—both end fittings are female, each furnished with a removable male nipple.
- EXLK—female end fitting with union at one end and a female end fitting with a removable male nipple at the other end.

Standard Materials

- UNY and UNF (Non-Expansion) Unions, 1/2" thru 1": steel or aluminum. 1-1/4" thru 6": malleable iron or aluminum.
- UNY and UNF Expansion Unions: steel.
- UNL Unions: malleable iron and steel.
- EYSF/EYSM, EYF/EYM and EYDM Seals: malleable iron or Almag 35 aluminum.
- EYS, EYSEF/EYDEF, and ESUF/ESUM: malleable iron.
- EYD and EYS Seals: Grayloy®-iron.
- EXGJH and EXLK Couplings, 1/2" thru 2": outer bronze braid, inner brass core with insulating liner; 2-1/2" thru 4": outer stainless steel braid, inner stainless steel core with insulating liner. End Fittings: 1/2" thru 2"—brass; 2-1/2" thru 4"—stainless steel.
- PLG Close-Up Plugs: malleable iron, steel, or aluminum.
- BR Reducers: malleable iron or aluminum.
- EL and UNA Elbows: malleable or cast iron.
- ECDB Combination Drain/Breather: stainless steel.

Standard Finishes

- Unions—UNY, UNF and UNL (Non-Expansion) and UNY and UNF (Expansion)

of malleable iron have triplecoat—(1) zinc electroplate, (2) dichromate, and (3) epoxy powder coat, of steel have zinc electroplate, of aluminum 1/2" thru 2" have natural finish and 2-1/2" thru 4" have epoxy powder coat.

- Sealing Fittings—EYSF/EYSM, ESUF/ESUM, EYF/EYM, EYDM and EYD/EYS of malleable iron and Grayloy®-iron have triple-coat—(1) zinc electroplate, (2) dichromate, and (3) epoxy powder coat, of Almag 35 aluminum have epoxy powder coat.

- Sealing Hubs—ES of malleable iron have a triple-coat—(1) zinc electroplate, (2) dichromate, and (3) epoxy powder coat.

- Flexible Couplings—EXGJH and EXLK natural finish.

- Close-up Plugs—PLG of malleable iron have a triple-coat—(1) zinc electroplate, (2) dichromate, and (3) epoxy powder coat; steel have zinc electroplate; aluminum have natural finish.

- Bell Reducers—BR of malleable iron have a triple-coat—(1) zinc electroplate, (2) dichromate, and (3) epoxy powder coat; aluminum have natural finish.

- Elbows—EL are malleable iron and have zinc electroplate; UNA are malleable iron and have a triple-coat—(1) zinc electroplate, (2) dichromate, and (3) epoxy powder coat.

- Combination Drain/Breathers—ECDB are passivated stainless steel and have a natural finish.

Options

- For ES Sealing Hubs, add suffix BLSG for sealing gaskets and locknuts (provide a water and oil-tight connection).

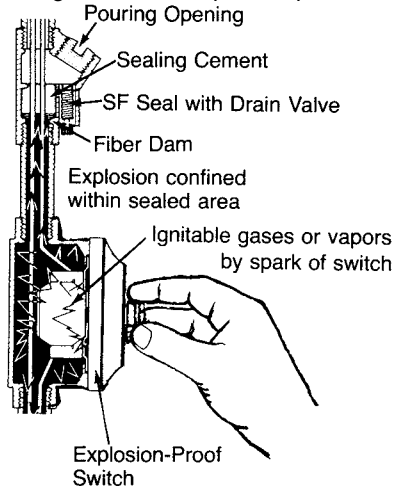
Compliances

- UL Standard 886
- Appleton malleable iron products conform to ASTM A47-77, Grade 32510. which has the following properties: tensile strength, 50,000 psi; yield, 32,000 psi; and elongation, 10%.
- Appleton aluminum products are produced from a high strength copper-free (4/10 or 1% max.) alloy.
- Class I, Div. 1 & 2 and Class II, Div. 1 & 2, if installed as follows: Unions, Elbows, Plugs, Flex. Couplings—NEC 501-4 (a)(b); Seals—NEC 501-5 (a)(b)(c)(d)(e) and NEC 502-5; Drains—NEC 501-5(f).

NEC Sec. 501-5 Highlights on Sealing Fitting Requirements

Class I, Div. 1 and 2.

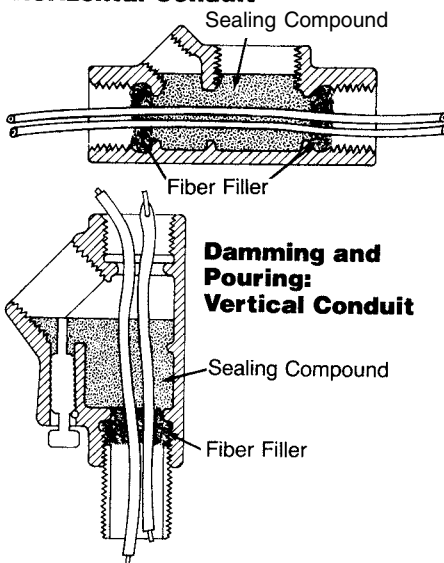
Sealing fittings prevent passage of gases, vapors or flames from one portion of a conduit system to another. They also restrict large amounts of ignitable gases or vapors from accumulating to confine explosive pressure.



Appleton sealing fittings are suitable for Class I and II locations.

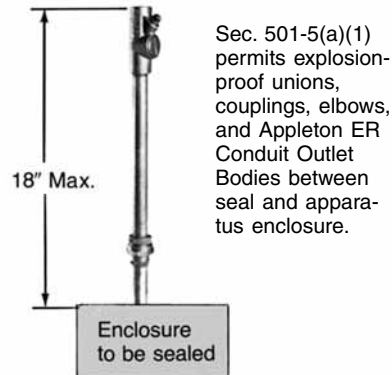
EYS, SF and EYD are for sealing vertical conduit. EY and ESU are for sealing vertical and horizontal conduit. SF and EYD also have drain valves.

Damming and Pouring: Horizontal Conduit



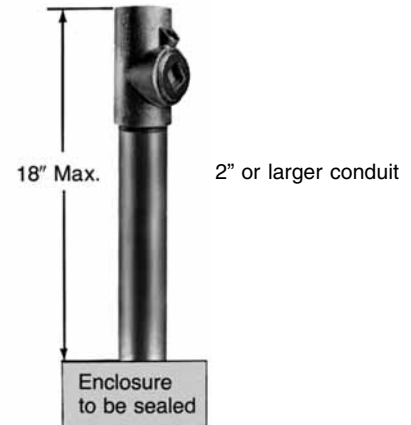
Class I, Div. 1 and 2

Seals must be placed in each conduit within 18" of a device that may produce arcs, sparks, or high temperatures.



Class I, Div. 1 and 2

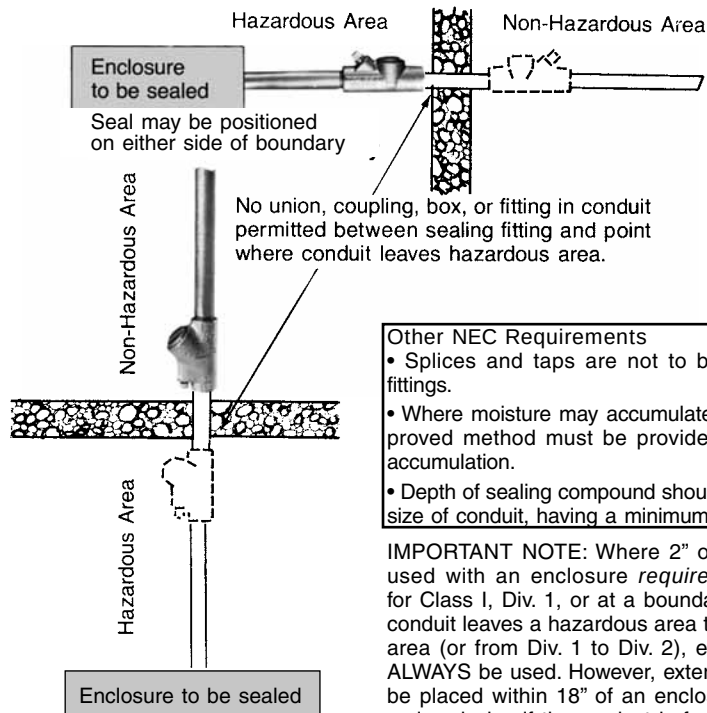
Where 2" or larger conduit enters enclosure, fitting housing terminals, splices or taps, seals are required within 18" or such enclosure.



Class I, Div. 1 and 2

Sealing fittings must be installed at boundary between a hazardous and non-hazardous area.*

* Sealing fitting must also be installed at boundary between a Class I, Div. 1 area and a Class I, Div. 2 area.



Other NEC Requirements

- Splices and taps are not to be used in sealing fittings.
- Where moisture may accumulate in system, an approved method must be provided to remove such accumulation.
- Depth of sealing compound should be equal to trade size of conduit, having a minimum thickness of 5/8".

IMPORTANT NOTE: Where 2" or larger conduit is used with an enclosure *required* to be approved for Class I, Div. 1, or at a boundary where any size conduit leaves a hazardous area to a non-hazardous area (or from Div. 1 to Div. 2), external seals must ALWAYS be used. However, external seals need not be placed within 18" of an enclosure containing an arcing device if the product is factory sealed for the specific Class and Group.

Class I, Div. 1 and 2
Groups A,B,C,D
Class II, Div. 1 and 2
Groups E,F,G
Class III

Sealing Fittings: EYS and ESU; Explosionproof, Dust - Ignitionproof, Raintight UNILETS® for use with Threaded Metal Conduit

	Size (Inches)	Turning Radius† Inches (cm)	Kwiko® A Cement Req'd Ozs. (Grams)		Catalog Number Malleable Iron*	Almag 35* Aluminum
EYS Vertical Conduit Seals (25% fill)‡						
 1/2"—3"	Female					
	1/2	1.81 (4.5)	2	(56.7)	EYSF-50♦	EYSF-50AL
	3/4	2.25 (5.7)	3	(85.1)	EYSF-75♦	EYSF-75AL
	1	2.38 (6.0)	5	(141.7)	EYSF-100♦	EYSF-100AL
	1-1/4	2.94 (7.5)	11	(311.8)	EYSF-125	
	1-1/2	3.50 (8.9)	19	(538.6)	EYSF-150	
	2	4.13 (10.5)	31	(878.8)	EYSF-200	
	2-1/2	4.75 (12.1)	46	(1304.1)	EYSF-250	
	3	5.63 (14.3)	82	(2324.7)	EYSF-300	
	4	6.50 (16.5)	92	(2608.2)	EYSF-400	
 1/2"—1"	Male/Female (Removable Male Nipple)					
	1/2	1.81 (4.5)	2	(56.7)	EYSM-50♦	EYSM-50AL
	3/4	2.25 (5.7)	3	(85.1)	EYSM-75♦	EYSM-75AL
	1	2.38 (6.0)	5	(141.7)	EYSM-100♦	EYSM-100AL
ESU Vertical and Horizontal Conduit Seals (25% fill)‡						
 1/2"—1"	Female					
	1/2	1.25 (3.2)	4	(113.4)	ESUF-50	
	3/4	1.25 (3.2)	4	(113.4)	ESUF-75	
	1	1.38 (3.5)	5	(141.7)	ESUF-100	
 1/2"—1"	Male/Female (Removable Male Nipple)					
	1/2	1.25 (3.2)	4	(113.4)	ESUM-50	
	3/4	1.25 (3.2)	4	(113.4)	ESUM-75	
	1	1.38 (3.5)	5	(141.7)	ESUM-100	

‡ Per Nec 501-5(c)(6) seals in Class I, Division 1 and 2 must be limited to conductor fill of 25% of cross sectional area of a rigid metal conduit of the same trade size unless approved for higher percentage fill. See 40% fill seals on page I-9.

♦ Indicated items in the shaded area which are suitable for Class I, Groups A,B,C and D; Class II, Groups E,F,G; and Class III.

* U.L. Listed for use with Appleton "Kwiko® A" and Crouse-Hinds "Chico® A" cement.

† Turning radius with cover or plug removed.