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 1, 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.
Unions, Sealing Fittings, Flexible Couplings, Elbows, Drain/Breather, Close-Up Plugs:

Expansionproof

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
- 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
- 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 Hubs
- 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
- 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.
- EXKL—female end fitting with union at one end and a female end fitting with a removable male nipple at the other end.

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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/EYDF and EYDM Seals: stainless steel or aluminum.
- EYS, EYF/EYM, and EYSF/EYDM Seals: stainless steel or aluminum.
- ESUF/ESUM: malleable iron.
- EYD and EYS Seals: Grayloy®-iron.
- EXGJH and EXKL 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) chromate, 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/EYSF and ESUF/ESUM, EYF/EYM, EYDM and EYD/EYS of malleable iron and Grayloy®-iron have triplecoat—(1) zinc electroplate, (2) chromate, and (3) epoxy powder coat, of Almag 35 aluminum have epoxy powder coat.
- Sealing Hubs—ES of malleable iron have a triplecoat—(1) zinc electroplate, (2) chromate, and (3) epoxy powder coat.
- Flexible Couplings—EXGJH and EXKL natural finish.
- Close-up Plugs—PLG of malleable iron have a triplecoat—(1) zinc electroplate, (2) chromate, and (3) epoxy powder coat; of aluminum have natural finish.
- Bell Reducers—BR of malleable iron have a triplecoat—(1) zinc electroplate, (2) chromate, 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 triplecoat—(1) zinc electroplate, (2) chromate, 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.

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Effective September, 2005
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**

**Damming and Pouring: Vertical 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.

Sec. 501-5(a)(1) permits explosion-proof unions, couplings, elbows, and Appleton ER Conduit Outlet Bodies between seal and apparatus 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.
Sealing Fittings: EYS and ESU; Explosionproof, Dust-Ignitionproof, Raintight
UNILETS® for use with Threaded Metal Conduit

### EYS Vertical Conduit Seals (25% fill)

<table>
<thead>
<tr>
<th>Size (Inches)</th>
<th>Turning Radius† (Inches)</th>
<th>Cement Req’d Ozs.</th>
<th>Kwiko® A Aluminum</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>1.81 (4.5)</td>
<td>2 (56.7)</td>
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<td>EYSF-50</td>
</tr>
<tr>
<td>3/4</td>
<td>2.25 (5.7)</td>
<td>3 (85.1)</td>
<td></td>
<td>EYSF-75</td>
</tr>
<tr>
<td>1</td>
<td>2.38 (6.0)</td>
<td>5 (141.7)</td>
<td></td>
<td>EYSF-100</td>
</tr>
<tr>
<td>1-1/4</td>
<td>2.94 (7.5)</td>
<td>11 (311.8)</td>
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<td>EYSF-125</td>
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<td>1-1/2</td>
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<td>2</td>
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<tr>
<td>4</td>
<td>6.50 (16.5)</td>
<td>92 (2608.2)</td>
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<td>EYSF-400</td>
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<table>
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<tr>
<th>Male/Female (Removable Male Nipple)</th>
<th>Turning Radius† (Inches)</th>
<th>Cement Req’d Ozs.</th>
<th>Catalog Number</th>
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</thead>
<tbody>
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<td>1/2</td>
<td>1.81 (4.5)</td>
<td>2 (56.7)</td>
<td>EYSM-50</td>
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<td>2.25 (5.7)</td>
<td>3 (85.1)</td>
<td>EYSM-75</td>
</tr>
<tr>
<td>1</td>
<td>2.38 (6.0)</td>
<td>5 (141.7)</td>
<td>EYSM-100</td>
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</tbody>
</table>

### ESU Vertical and Horizontal Conduit Seals (25% fill)

<table>
<thead>
<tr>
<th>Size (Inches)</th>
<th>Turning Radius† (Inches)</th>
<th>Cement Req’d Ozs.</th>
<th>Kwiko® A Aluminum</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>1.25 (3.2)</td>
<td>4 (113.4)</td>
<td></td>
<td>ESUF-50</td>
</tr>
<tr>
<td>3/4</td>
<td>1.25 (3.2)</td>
<td>4 (113.4)</td>
<td></td>
<td>ESUF-75</td>
</tr>
<tr>
<td>1</td>
<td>1.38 (3.5)</td>
<td>5 (141.7)</td>
<td></td>
<td>ESUF-100</td>
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<table>
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<tr>
<th>Male/Female (Removable Male Nipple)</th>
<th>Turning Radius† (Inches)</th>
<th>Cement Req’d Ozs.</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>1.25 (3.2)</td>
<td>4 (113.4)</td>
<td>ESUM-50</td>
</tr>
<tr>
<td>3/4</td>
<td>1.25 (3.2)</td>
<td>4 (113.4)</td>
<td>ESUM-75</td>
</tr>
<tr>
<td>1</td>
<td>1.38 (3.5)</td>
<td>5 (141.7)</td>
<td>ESUM-100</td>
</tr>
</tbody>
</table>

† Turning radius with cover or plug removed.
‡ 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.
* U.L. Listed for use with Appleton “Kwiko® A” and Crouse-Hinds “Chico® A” cement.