

Thin-wall heat-shrinkable tubing

CPO Series



2:1 Shrink ratio

Thin-wall tubing, non-lined

- Flame-retardant, cross-linked polyolefin
- Continuous operating temperature: -55 °C to 135 °C
- Shrink temperature of 120 °C

- Meets UL and CSA standards; MIL-DTL-23053/ 5 Class 1 and 2; AMS 3636 and 3637; DEF STAN 59-97, Issue 3, Type 2a
- Shelf life 5 years from date of manufacture
- UV rated (ASTM G53)

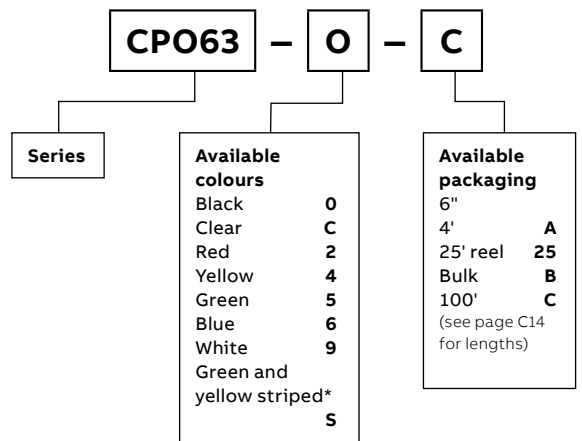
Thin-wall heat-shrinkable tubing

| Cat. no.* | Min. expanded I.D. (in.) | Max. recovered I.D. (in.) | Nom. recovered wall thickness (in.) | Code cable size (AWG) or kcmil |
|--------------|--------------------------|---------------------------|-------------------------------------|--------------------------------|
| CPO63-_-_- | 0.06 | 0.03 | 0.02 | - |
| CPO93-_-_- | 0.09 | 0.05 | 0.02 | - |
| CPO125-_-_- | 0.13 | 0.06 | 0.02 | #24-#30 |
| CPO187-_-_- | 0.18 | 0.09 | 0.02 | #14-#22 |
| CPO250-_-_- | 0.25 | 0.13 | 0.03 | #10-#16 |
| CPO375-_-_- | 0.38 | 0.19 | 0.03 | #6-#12 |
| CPO500-_-_- | 0.50 | 0.25 | 0.03 | #1-#6 |
| CPO750-_-_- | 0.75 | 0.38 | 0.03 | 4/0-#2 |
| CPO1000-_-_- | 1.00 | 0.50 | 0.04 | 350-2/0 |
| CPO1250-_-_- | 1.25 | 0.625 | 0.04 | 1/0-350 |
| CPO1500-_-_- | 1.50 | 0.75 | 0.04 | 2/0-500 |
| CPO2000-_-_- | 2.00 | 1.00 | 0.045 | 250-1,000 |

*See catalogue construction to complete.
 UL Recognized and CSA Certified. (NOTE: Clear material not UL Recognized).
 When ordering standard package, order by package not feet.
 Larger diameters available upon special request; contact your regional sales office.
 Order multiple for 4' sticks is 25 sticks.
 Order multiple for reels is 1 reel.

| Series | Bulk length (ft) | Series | Bulk reel length (ft) |
|-------------------|------------------|---------------------|-----------------------|
| CPO63 = 1/16 in. | 1,000 | CPO500 = 1/2 in. | 500 |
| CPO93 = 3/32 in. | 1,000 | CPO750 = 3/4 in. | 200 |
| CPO125 = 1/8 in. | 1,000 | CPO1000 = 1 in. | 100 |
| CPO187 = 3/16 in. | 1,000 | CPO1250 = 1 1/4 in. | 100 |
| CPO250 = 1/4 in. | 500 | CPO1500 = 1 1/2 in. | 100 |
| CPO375 = 3/8 in. | 500 | CPO2000 = 2 in. | 100 |

Catalogue number construction



Final order no.
 CPO63-0-C

* Contact your regional sales office for bulk reel quantity

| Cat. no. | Min. expanded I.D. (in.) | Max. recovered I.D. (in.) | Nom. recovered wall thickness (in.) | Std. pkg. qty. |
|-------------|--------------------------|---------------------------|-------------------------------------|----------------|
| CPO63-0-6 | 0.06 | 0.03 | 0.02 | 20 |
| CPO93-0-6 | 0.09 | 0.05 | 0.02 | 20 |
| CPO125-0-6 | 0.13 | 0.06 | 0.02 | 20 |
| CPO187-0-6 | 0.19 | 0.09 | 0.02 | 20 |
| CPO250-0-6 | 0.25 | 0.13 | 0.03 | 20 |
| CPO375-0-6 | 0.38 | 0.19 | 0.03 | 20 |
| CPO500-0-6 | 0.50 | 0.25 | 0.03 | 10 |
| CPO750-0-6 | 0.75 | 0.38 | 0.03 | 10 |
| CPO1000-0-6 | 1.00 | 0.50 | 0.04 | 5 |

Order multiple is std. pkg.
 Catalogue numbers listed are black colour;
 other colours available upon request.
 Contact your regional sales office.

Thin-wall heat-shrinkable tubing



The original black version HS-KIT

- Over 37 ft. (11 m) of black polyolefin thin-wall heat-shrink tubing
- Convenient plastic kit for single storage location
- Individual 6 in. (15 cm) pieces for easy installation
- 2:1 shrink ratio
- UL recognized and CSA certified

HS-KIT thin-wall insulation kit

| Cat. no. | Description | Weight each kit | UPC code |
|----------|--|-----------------|-------------|
| HS-KIT | 37' (11 m) assorted sizes – black colour thin-wall heat-shrink tubing in plastic reusable case | 1 lb /0.45 kg | 76821093898 |

Products included in HS-KIT

| Cat. no. | Size in. (mm) | Qty./kit |
|-------------|--------------------|----------|
| CPO187-0-6 | $\frac{3}{16}$ (5) | 32 |
| CPO250-0-6 | $\frac{1}{4}$ (6) | 20 |
| CPO375-0-6 | $\frac{3}{8}$ (9) | 8 |
| CPO500-0-6 | $\frac{1}{2}$ (12) | 6 |
| CPO750-0-6 | $\frac{3}{4}$ (19) | 4 |
| CPO1000-0-6 | 1 (25) | 4 |

Thin-wall heat-shrinkable tubing

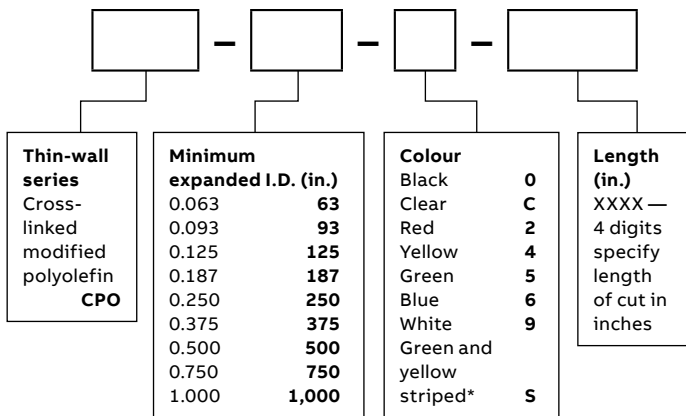


2:1 Shrink ratio
Custom order lengths for those special jobs.
Custom-cut length of bulk packaging –
Thin-wall tubing

To best meet your requirements for thin-wall heat-shrinkable tubing, ABB welcomes the opportunity to cut bulk reels of tubing. Minimum order requirement is one standard bulk reel, and

multiples thereof. See table for bulk reel length by size. Tubing cannot be cut smaller than ½ in. When ordering custom-cut lengths of tubing, order by piece, not by length. To determine the minimum number of pieces to order, simply figure how many pieces of a specific length of tubing is required to make use of a complete bulk reel.

Cut piece catalogue no. construction



Example 1

If a bulk length of tubing is 1,000 ft. and the desired length of each individual piece is 6 in., the minimum order requirement is 2,000 pieces.

Given (length of reel) 1,000
 Convert to inches by multiplying by 12 12 x 1,000
 Length of reel in inches 12,000
 Divide by desired length 2,000 ÷ 6
 Total number of 6 in. pieces in a 1,000' reel (minimum order) 2,000

Example 2

If a bulk reel of tubing is 400 ft. and the desired length of each individual piece is 2 in., the minimum order requirement is 2,400 pieces.

Given (length of reel) 400
 Convert to inches by multiplying by 12 12 x 400
 Length of reel in inches 4,800
 Divide by desired length 4,800 ÷ 2
 Total number of 2 in. pieces in a 400' reel (minimum order) 2,400

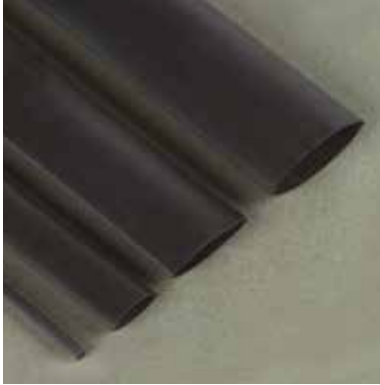
Contact your regional sales office for pricing and availability on cut pieces.

CPO Series specifications

| Property | Test method | Typical performances |
|--|-----------------------------------|---------------------------------------|
| Physical | | |
| Tensile strength | ASTM D412, ISO 37 | 2,200 psi (15.0 MPa) |
| Elongation | | 400% |
| Longitudinal change | ASTM D2671 | +1%, -10% |
| 2% Secant modulus | | 16,000 psi (110 MPa) |
| Specific gravity | ASTM D792, ISO/R1183 | 1.3 in. (colours) 0.95 in. (clear) |
| Restricted shrinkage | ASTMD2671 | No cracking |
| Elongation after heat aging (168 hrs. at 175 °C) | | 350% |
| Heat shock (4 hrs. at 250 °C) | | No cracking or flowing |
| Low temperature flexibility (4 hrs. at -55 °C) | | No cracking or splitting |
| Flammability | | Flame-retardant (except clear) |
| Electrical | | |
| Dielectric strength | ASTM D2671, IEC 243 | 600 V/mil (24 kV/mm) |
| Volume resistivity | ASTM D2671 | 1,016 ohm-cm |
| Chemical | | |
| Fluid resistance | MIL-DTL-23053/5, ISO 1817, ISO 37 | Good to excellent |
| Fungus resistance | ASTM G21 | No growth |
| Copper corrosion | ASTM D2671 | No corrosion |
| Water absorption | ASTM D570 | 0.2% |

Thin-wall heat-shrinkable tubing

CPO-A Series



3:1 Shrink ratio

Thin-wall, adhesive lined

- Adhesive lined for moisture-proof environmental seal
- High 3:1 shrink ratio for covering irregularly shaped objects
- Continuous operating temperature: -55 °C to 110 °C
- Shrink temperature: 120 °C
- UV rated (ASTM G53)

Thin-wall heat-shrinkable tubing

| Cat. no. | Min. expanded I.D. (in.) | Max. expanded I.D. (in.) | Nom. recovered wall (in.) | Code cable size (AWG) | Standard length (in.) | Std. pkg. qty. |
|--------------|--------------------------|--------------------------|---------------------------|-----------------------|-----------------------|----------------|
| CPO-A-125-48 | 0.13 | 0.02 | 0.04 | #24-#30 | 48 | 25 |
| CPO-A-187-48 | 0.18 | 0.06 | 0.05 | #14-#22 | 48 | 25 |
| CPO-A-250-48 | 0.25 | 0.08 | 0.05 | #10-#22 | 48 | 25 |
| CPO-A-375-48 | 0.38 | 0.14 | 0.05 | #6-#16 | 48 | 25 |
| CPO-A-500-48 | 0.50 | 0.19 | 0.07 | #2-#12 | 48 | 25 |
| CPO-A-750-48 | 0.75 | 0.31 | 0.07 | 3/0-#4 | 48 | 25 |

Note: Non-standard colours, sizes and lengths available subject to your regional sales office quotation.
Standard colour: Black

CPO-A Series specifications

| Property | Test method | Typical performances |
|--|-----------------------------------|----------------------------|
| Physical | | |
| Tensile strength | ASTM D412, ISO 37 | 2,200 psi (15.0 MPa) |
| Elongation | ASTM D412, ISO 37 | 400% |
| Heat shock (4 hrs. at 250 °C) | ASTM D2671 | No cracking or flowing |
| Longitudinal change | ASTM D2671 | ±5% |
| Low temperature flexibility (4 hrs. at -55 °C) | ASTM D2671 | No cracking |
| Specific gravity | ASTM D792, ISO/R1183 | 1.1 |
| 2% Secant modulus | ASTM D2671 | 1600 psi (110 MPa) |
| Heat-resistant properties (168 hrs. at 175 °C) | MIL-DTL-23053/4 | 240% |
| Flammability | ASTM D2671 | Moderately flame retardant |
| Electrical | | |
| Dielectric strength | ASTM D2671, IEC 243 | 600 V/mil (24 kV/mm) |
| Volume resistivity | ASTM D2671 | 1016 ohm-cm |
| Chemical | | |
| Fluid resistance | MIL-DTL-23053/5, ISO 1817, ISO 37 | Good to excellent |
| Fungus resistance | ASTM G21 | No growth |
| Copper corrosion | ASTM D2671 | No corrosion |
| Water absorption | ASTM D570 | 0.2% |