

CHO-FOIL® & CHO-FAB™ Shielding Tapes

CHO-FOIL EMI Shielding Tape with Conductive Adhesive (Copper, Aluminum or Tinned Copper)



Chomerics' CHO-FOIL tapes are an economical EMI shielding solution for a variety of commercial uses. The tapes are available in copper, aluminum, or tinned copper foil backed with Chomerics' highly conductive pressure-sensitive adhesive*. Typical properties are shown in Table 1 on the next page, and reliability data appears in Table

4 on page 148. CHO-FOIL copper tape is available with a non-conductive adhesive for applications requiring surface conductivity only. An embossed version of CHO-FOIL copper tape is also available, for a more attractive appearance up to 6 inches (152 mm) wide. Standard length rolls and die-cut custom shapes can be ordered.

CHO-FAB EMI Shielding Fabric Tape with Conductive Adhesive



CHO-FAB tape is a corrosion resistant nickel-plated cloth coated with Chomerics' highly conductive pressure-sensitive adhesive*. CHO-FAB tape is extremely strong and lightweight, and has excellent conformability/wrapability to enhance shielding performance and appearance. Use of corrosion resistant nickel-plated cloth and Chomerics' superior metal-particle-filled conductive adhesive technology produces a tape used in a wide variety of EMI shielding and grounding applications. Typical properties are shown in Table 1 on the next page.

Chofab is available in standard (CFT) and rip-stop (CRS) nylon fabric forms. Both fabrics use nickel / silver plating to provide excellent electrical and corrosion resistance properties.

Typical Applications for CHO-FOIL and CHO-FAB EMI Shielding Tapes

- Provide a low impedance connection between a braided cable shield and the metal connector backshell in molded cables. An effective EMI shielded assembly can be achieved without soldering the tape to the braid or backshell
- EMI radiation measurement troubleshooting, using CHO-FOIL tape to shield ventilation slots or seam gaps
- Provide electrical continuity in seams of EMI shielded rooms and electronic enclosures
- Supply electrical contact to surfaces that can't be soldered to, such as conductive plastic or aluminum
- EMI shield for cables by wrapping the tape around the cable. An overlap is recommended
- ESD shielding
- Provide corrosion-resistant ground contact points
- Fabric tape available where weight and flexibility are important, such as for wrapping cables

Ordering Procedure

Refer to Tables 2 and 3. All CHO-FOIL and CHO-FAB tapes are available in standard 36 yard (32.9 m) rolls or die-cut custom configurations. Call Chomerics' Applications Engineering Department for assistance with a custom configuration.

* Recognized Under the Component Program of Underwriters Laboratories, Inc.

Table 1

| PROPERTIES | | | | | | | | | |
|---|----------------|---|--------------------------|------------------|-------------------------|------------------------------------|------------------|---------------------------|---------------------------|
| Property | Test Method | Typical Values | | | | | | | |
| Part Number Prefix | — | CCH | CCE | CCJ | CCK | CCD | CAD | CFT | CRS |
| Foil/Fabric Type | — | 1 oz. RA Copper | 1 oz. Embossed RA Copper | Aluminum | 1 oz. Tin-Plated Copper | 1 oz. RA Copper | Aluminum | Nickel-Plated Fabric | Nickel-Plated Fabric |
| Foil/Fabric Thickness, mils (mm) | — | 1.4 (0.0356) | 1.4 (0.0356) | 2 (0.0508) | 1.6 (0.0406) | 1.4 (0.0356) | 2 (0.0508) | 5 (0.127) | 4 (0.1016) |
| Adhesive Type | — | Electrically Conductive, Pressure-Sensitive Acrylic | | | | | | | |
| Adhesive Thickness, mils (mm) | — | 1.5 (0.0381) | | | | 2 sides: 1.5 each (0.0381 each) | | 1.5 (0.0381) | 1.5 (0.0381) |
| Total Thickness, mils (mm) | — | 2.9 (0.0737) | 4* (0.1102) | 3.5 (0.0889) | 3.1 (0.0787) | 4.4 (0.1118) | 5 (0.127) | 6.5 (0.165) | 5.5 (0.1397) |
| Temperature Range, °F (°C) | — | -40 to 400 (-40 to 205) | | | | | | -40 to 180 (-40 to 82) | -40 to 180 (-40 to 82) |
| Electrical Resistance, ohms/in ² (ohms/cm ²) | MIL-STD-202C | <0.003 (<0.0005) | <0.003 (<0.0005) | <0.010 (<0.0016) | <0.003 (<0.0005) | <0.010 (<0.0016) | <0.010 (<0.0016) | <0.100 (<0.016) | <0.100 (<0.016) |
| Flame Resistance | UL Subject 510 | PASS | MEETS | PASS | PASS | MEETS | MEETS | N/A | N/A |
| Adhesion to Aluminum oz./inch [ppi] (N/m) | ASTM D1000 | >40 [2.5] (438) | | | | | | | |

*Embossing adds 1.1 mil

Table 2

| PART NUMBER | TAPE DESCRIPTION |
|-----------------------|---|
| CCH – 36 – 101 – ZZZZ | Copper foil, conductive adhesive version |
| CCE – 36 – 101 – ZZZZ | Copper foil, conductive adhesive, embossed |
| CCJ – 36 – 201 – ZZZZ | Aluminum foil, conductive adhesive |
| CCK – 36 – 101 – ZZZZ | Tin-plated copper foil, conductive adhesive |
| CCD – 36 – 101 – ZZZZ | Copper foil, conductive adhesive 2 sides |
| CAD – 36 – 201 – ZZZZ | Aluminum foil, conductive adhesive 2 sides |
| CFT – 36 – 101 – ZZZZ | Nickel-plated fabric, conductive adhesive |

Table 3

| TAPE WIDTH CODES (ZZZZ) inch (mm) | | | | | | | | | |
|-----------------------------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|-------------|-------------|
| 0050 | 0100 | 0150 | 0200 | 0300 | 0400 | 0600 | 0800 | 1200 | 2400 |
| 0.5 (12.7) | 1.0 (25.4) | 1.5 (38.1) | 2.0 (50.8) | 3.0 (76.2) | 4.0 (102) | 6.0 (152) | 8.0 (203) | 12 (305) | 24 (610) |

Custom widths available up to 24 inches (61 cm)

Slit rolls are available through Chomerics' authorized distributors.

Please consult Chomerics' Applications Engineering Department for assistance with a custom application involving a need for material in other than slit roll form.

continued

NOTE: The following table represents actual experimental test data taken according to Chomerics internal test procedures. This data differs from Table 1 due to differences in test methods.

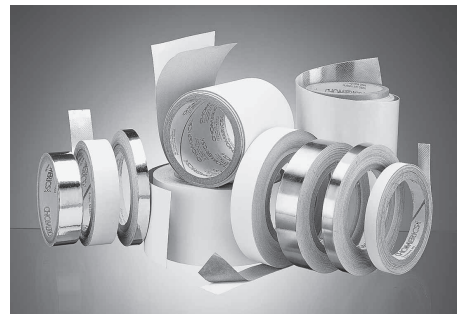
Table 4

| RELIABILITY DATA | | | | | | | | | |
|---|------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Test | Test Method | CCH | CCE | CCJ | CCK | CCD | CAD | CFT | CRS |
| Initial Surface Resistivity (SR) (milliohms)* | CHO-TP-57*** | <2 | <2 | <2 | <2 | N/A | N/A | <100 | <100 |
| Initial Through Resistivity (TR) (milliohms)* | CHO-TP-57*** | <3 | <3 | <35 | <2 | <15**** | <100**** | <100 | <100 |
| Initial Peel Strength in oz./inch [ppi] (N/m) ** | ASTM D1000 | 44.8 [2.8] (490) | 44.8 [2.8] (490) | 51.2 [3.2] (560) | 46.4 [2.9] (508) | 48 [3] (525) | 70.4 [4.4] (710) | 44.8 [2.8] (490) | 44.8 [2.8] (490) |
| Initial Taber Abrasion Surface Resistivity (SR) (milliohms) | CHO-TP-57*** | <6 | <3 | <6 | <9 | N/A | N/A | <100 | <100 |
| Heat Aging 185°F (85°C)/ 168 hrs. | SR (milliohms)* | <10 | <2 | <20 | <2 | N/A | N/A | <100 | <100 |
| | TR (milliohms)* | <16 | <3 | <22 | <2 | <7**** | <60**** | <150 | <150 |
| | Peel, oz./in. [ppi] (N/m) ** | 57.6 [3.6] (630) | 62.4 [3.9] (683) | 76.8 [8] (840) | 67.2 [4.2] (735) | 73.6 [4.6] (805) | 78.4 [4.8] (840) | 59.2 [3.7] (648) | 59.2 [3.7] (648) |
| Heat Aging 250°F (121°C)/ 168 hrs. | SR (milliohms)* | <10 | <3 | <20 | <2 | N/A | N/A | <100 | <100 |
| | TR (milliohms)* | <70 | <3 | <23 | <2 | <3**** | <10**** | <150 | <150 |
| | Peel, oz./in. [ppi] (N/m) ** | 57.6 [3.6] (630) | 59.2 [3.7] (648) | 75.2 [4.7] (823) | 51.2 [3.2] (560) | 70.4 [4.4] (770) | 84.8 [5.3] (928) | 43.2 [2.7] (473) | 43.2 [2.7] (473) |
| Heat Aging with Humidity 95% RH/ 185°F (85°C)/ | SR (milliohms)* | N/A | N/A | N/A | <2 | N/A | N/A | <100 | <100 |
| | TR (milliohms)* | N/A | N/A | N/A | <2 | <115**** | <150**** | <150 | <150 |
| | Peel, oz./in. [ppi] (N/m) ** | N/A | N/A | N/A | 78.4 [4.9] (858) | 78.4 [4.9] (858) | 84.8 [5.3] (928) | 46.4 [2.9] (508) | 46.4 [2.9] (508) |
| Salt fog corrosion/ 168 hrs. | SR (milliohms)* | N/A | N/A | N/A | <2 | N/A | N/A | <100 | <100 |
| | TR (milliohms)* | N/A | N/A | N/A | <2 | <275**** | <600**** | <1000 | <1000 |
| | Peel, oz./in. [ppi] (N/m) ** | N/A | N/A | N/A | 76.8 [4.8] (840) | 62.4 [3.9] (683) | 80 [5] (875) | 33.6 [2.1] (368) | 33.6 [2.1] (368) |
| Taber abrasion 500 gramweight, CS-10 wheel, 500 cycles | SR (milliohms)* | <3 | <5 | <2 | <6 | N/A | N/A | <175 | <175 |

N/A = Not Applicable

- * All measurements of surface resistivity and through resistivity made at ambient temperature with tapes mounted on tinned copper substrate, except for taber abrasion where a plastic substrate was used.
- ** 90° peel strength tests were done on an Instron at 2 inches per minute with tapes on a 2024 aluminum substrate.
- *** CHO-TP-57 available from Chomerics on request.
- **** Through resistivity measurement of double sided adhesive tapes done with tapes flanged between 2024 aluminum substrates.

*Contact our Applications
Engineering Department to
discuss your requirements.*



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