



Animal Guard Products

Insulated Conductor and Bracket Covers BCI and CCI Series

Data Sheet

1.0 Product Description

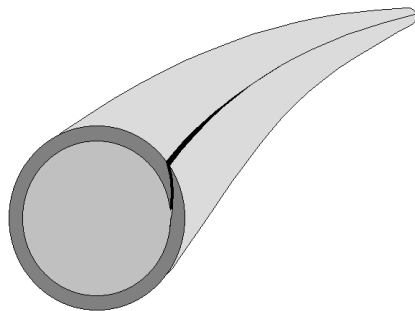
The 3M BCI and CCI Series Animal Protection Products are extruded silicone rubber products that are designed for field installation over bare conductors and metal mounting brackets. These covers provide a layer of electrical insulation for phase-to-phase and phase-to-ground protection from bird contact. They are cut to length in the field for a proper fit. The silicone rubber material provides for electrical insulation, UV resistance and tracking resistance. These products are designed to provide protection for both equipment and birds.

The BCI Bracket Cover is designed to fit industry standard cross-arm mounting brackets, such as the 3M MB-1 (Ref. NEMA B). The snap on U-shape is easy to install under field conditions. The cover protects a grounded mounting bracket from being shorted to close by energized equipment.

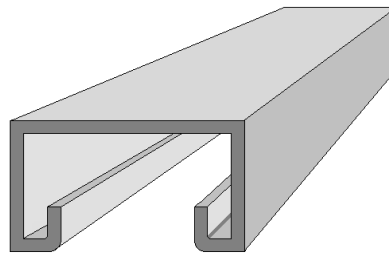
The CCI series Conductor Covers are designed to insulate bare aerial conductors from adjacent phases and grounded equipment. The covers are made with a full-length longitudinal bias cut to provide an increased creepage distance between the conductor and the outer surface of the cover, and to allow for easy slip-on installation. The covers are offered in one thickness size for covering both 15 kV and 25 kV rated conductors. The products are available in ACSR conductor sizes from 4 AWG to 1000 kcmil.

1.1 Features:

- **Silicone Rubber**
 - Excellent UV resistance
 - Excellent arc resistance
 - Excellent ozone resistance
 - Good dielectric strength
 - Good cold weather installation
 - Good conformability
 - Charcoal grey color



**CCI Series
Conductor Covers**



**BCI
Bracket Cover**

- Longitudinal Bias Cut (CCI series)

- Increased creepage distance
- Easy field installation
- No special installation tools

- U-shaped Channel Construction (BCI)

- Easy, snap on installation
- Fits common mounting brackets
- No special installation tools

2.0 Applications

To provide an over-wrap layer of electrical insulation as an animal or bird guard for cross-arm mounting brackets and 15-25 kV overhead conductors:

- CCI Series Conductor Covers

- For ACSR conductors
- For ACSR, 4 AWG - 1000 kcmil
- For covering 15 and 25 kV rated conductors

- BCI Bracket Cover Insulation

- For standard cross-arm mounting brackets (e.g. 3M MB-1)

3.0 Data: Physical & Electrical

Silicone Rubber

3.1 Physical Properties

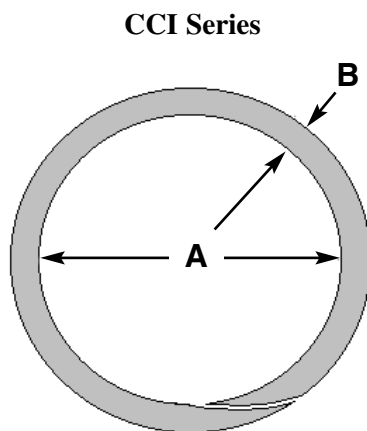
| Test Method | Typical Value* |
|----------------------|----------------|
| * Color | Charcoal |
| Hardness, Shore 'A' | 60±5 |
| ASTM D -2240 | |
| Tensile Strength | 800 p.s.i |
| ASTM -D-412 | |
| Elongation at Break | 245% |
| ASTM- D-412 | |
| Tear Strength, ppi | 85 |
| ASTM 624 Dif B | |
| Brittle Point, °F | - 90 |
| ASTM D 746 | |
| Thermal Conductivity | 0.52 W/mK |
| ASTM C177 | |

3.2 Electrical Properties

| Test Method | Typical Value* |
|-----------------------|----------------|
| * Dielectric Strength | 450 V/mil |
| ASTM-D-149 | |

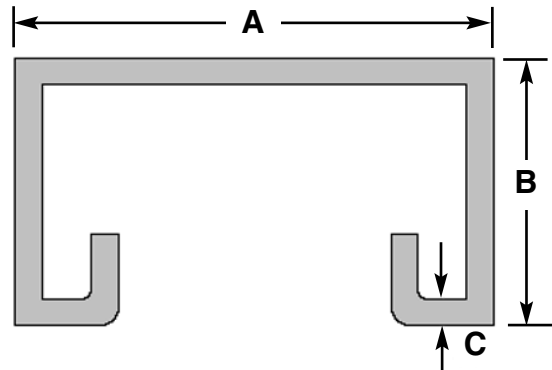
* Values are averages and are not intended for specification purposes

3.3 Typical Dimensions



| Product No. | Dimension | |
|------------------|----------------------------|-------------------|
| | A | B |
| CCI-0.250 | 0.25" (6 mm) | 0.22" (5.6 mm) |
| CCI-0.500 | 0.50" (12 mm) | 0.22" (5.6 mm) |
| CCI-0.625 | 0.625" (16 mm) | 0.22" (5.6 mm) |
| CCI-0.750 | 0.750" (19 mm) | 0.22" (5.6 mm) |
| CCI-1.000 | 1.000" (25 mm) | 0.22" (5.6 mm) |
| CCI-1.250 | 1.250" (32 mm) | 0.22" (5.6 mm) |
| CCI-1.750 | 1.750" (44.5 mm) | 0.22" (5.6 mm) |

BCI-1-200



| Product No. | Dimension | | |
|------------------|------------------|------------------|-----------------|
| | A | B | C |
| BCI-1-200 | 2.63" (67 mm) | 1.45" (37 mm) | 0.20" (5 mm) |

3.4 Product Selection Tables

CCI Series Conductor Covers

| Product No. | ACSR Conductor AWG, Kcmil |
|------------------|---------------------------|
| CCI-0.250 | up to 4 |
| CCI-0.500 | 4 to 3/0 |
| CCI-0.625 | 3/0 to 4/0 |
| CCI-0.750 | 4/0 to 397 |
| CCI-1.000 | 397 to 796 |
| CCI-1.250 | 796 to 900 |
| CCI-1.750 | > 900 |

BCI Bracket Cover Insulation

| Product No. | Maximum Bracket Dimensions | |
|-------------|----------------------------|-----------------|
| | Width | Height |
| BCI-1-200 | 2.2" (56 mm) | 1.0" (25 mm) |

4.0 Specifications

4.1 Product

(Open Specification)

When adequate phase separation is not possible, or when conductors are in close proximity to energized equipment, the aerial conductor shall be protected from direct bird contact. The protective conductor cover shall be made of silicone rubber. It shall be in the form of a sleeve with a full-length longitudinal bias cut for installation. The conductor cover shall be secured at each end with an application of silicone rubber tape.

When the cross-arm mounting bracket is in close proximity to energized equipment, it shall be protected from direct bird contact. The bracket cover shall be made of silicone rubber. The cover must be of a rectangular shape to match that of the mounting bracket, and open on the bottom with hooked edges for snap on installation.

4.2 Engineering/Architectural

(Closed Specification)

When adequate phase separation is not possible, or when conductors are in close proximity to energized equipment, the aerial conductor shall be protected from direct bird contact with 3M CCI Series Conductor Covers. The CCI Cover shall be cut to the proper length, slipped over the conductor, and secured at each end with Scotch 70 Silicone Rubber Tape.

When the cross-arm mounting bracket is in close proximity to energized equipment, it shall be protected from direct bird contact by installing a 3M BCI Bracket Cover Insulation. The BCI Cover shall be cut to the proper length, snapped onto the bracket, and secured with Scotch 70 Silicone Rubber Tape.

5.0 Installation Techniques

The BCI and CCI series animal guard products are installed simply by cutting them to the proper length, opening them up and snapping them onto the conductor or bracket. The BCI has an open bottom, with hooked edges, that is separated to fit over the bracket and snapped into position. The CCI series contains a full length longitudinal bias slit that is opened up to fit over the aerial conductor and reverse overlap.

Both the BCI and the CCI products can be secured into place by wrapping the ends with Scotch 70 Silicone Rubber tape. Outdoor rated cable ties may also be used to secure them.

6.0 Maintenance

The 3M BCI Bracket Cover and CCI Series Conductor Cover have a shelf life of 5 years, from date of manufacture, when stored under the recommended storage conditions. Store in a clean, dry location at a temperature of 70F (21C) and a relative humidity of 40 to 50 %. Normal stock rotation procedures are recommended.

7.0 Availability

The 3M BCI and CCI series of animal guard products are available from your local authorized 3M electrical distributor.

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