CABLEGUARD™ ELASTOMERIC WRAP

Standard Specification

Section 1 – General

The material covered by this specification shall be an elastomeric cable wrap that 1.) is colorfast without applying paint, 2.) is applied in a spirally wound manner over the bridge cable with a 50 percent overlap creating the appearance of a smooth finish, 3.) is heated in place to fuse the seams of the overlapped wrap and to shrink the wrap snug against the underlying cable, 4.) is applied under tension with an automatic wrapping device as described in Section 3, and 5.) incorporates a mechanical seal of the type described in Section 2 at each cable band. The elastomeric cable wrap system that is covered by this specification is the subject of a patent issued in the U.S. and various foreign countries. The material covered by this specification can be acquired from The D. S. Brown Company, 300 E. Cherry Street, North Baltimore, Ohio, 45872 (telephone: 419/257-3561, fax: 419/257-2200).

Section 2 - Materials and Physical Properties

Elastomeric Wrap

The wrap is based on a cross-linking chlorosulfonated polyethylene polymer. Wrap systems based on thermoplastic materials, polychloroprene polymers, or other natural or synthetic polymers or plastics will not be allowed.

The wrap shall be a three-ply laminated construction. The required thickness of the wrap is 45 mils, ±3 mils, so that after applying the wrap on the bridge cable at a 50 percent overlap, its total thickness is approximately 90 mils.

Physical Properties – Wrap

Membrane Breaking Strength (ASTM D-751)	110 pounds
Membrane Elongation @ Break % (ASTM D-751)	120% minimum
Tear Propagation (ASTM D-751 tongue tear)	15 pounds
Bonded Seam Strength, Shear (ASTMD-751 2” min)	140 pounds
Bonded Seam Strength, Peel	30 pounds
Hydrostatic Resistance (ASTM D-751)	80 psi
Puncture Resistance (FTMS 101B method 2031)	70 pounds
Low temperature bend (ASTM D-2136 @ -40C)	No cracks
Ozone resistance (ASTM 1149)	No cracks
Shore A Hardness (ASTM D-2240)	85 ±5

Mechanical Seal (Suspension Bridge Installations)

The wedge seal at each cable band shall be extruded from a non-staining compound using polychloroprene (neoprene) as the sole polymer. The wedge seal shall be designed with two grooves on its upper surface to accept clamping straps. The wedge seal shall also be serrated on its lower surface to prevent slippage of the wedge.

Physical Properties – Wedge Seal

Tensile strength (ASTM D-412)	1,500 psi min.
Elongation (ASTM D-412)	300% min.
Hardness Durometer A (D-2240 modified)	55 $\pm$ 5

The clamping straps shall be stainless steel. A minimum of two clamping straps will be used on each wedge seal. The straps shall be a minimum of 0.025 inches (0.60 mm) thick and 0.375 inches (9.50 mm) wide.

As an extra precaution against water intrusion, a bead of Sika 11FC caulk or equivalent shall be applied against the cable band immediately prior to sliding the wedge seal snug against the cable band.

Section 3 – Installation

The elastomeric cable wrap shall be applied by an automatic wrapping device applying enough tension to slightly stretch the wrap. The wrapping device shall be capable of maintaining a constant angle of application.

Within 24 hours of wrapping the cable, the elastomeric wrap shall be heated to achieve fusion of the overlapped seams and shrinkage of the wrap against the underlying cable. The heating shall be with an electric blanket with a minimum capacity of 5 watts per square inch, capable of generating and sustaining temperatures of at least 280° F. Clamping devices that are integrally incorporated in the blanket shall keep the blanket in intimate contact with the elastomeric wrap at all points on the surface of the cable. Blanket temperature shall be maintained by the use of a controller in conjunction with a thermocouple which is integral to the blanket. An experienced technician who is employed by the manufacturer shall assist the installation crew during the start up of the wrapping and heating process.

Section 4 – Experience

In order to be considered on this project, alternate wrap systems must demonstrate a minimum of four installations on bridges in this country, with each installation being in service for a minimum of one year.

Section 5 – Payment

Payment for the elastomeric cable wrap shall be lump-sum and shall include the wrap itself and all incidental materials necessary for the installation including neoprene wedge, stainless steel clamps, automatic wrapping device, heating blanket and miscellaneous materials.