

Part 1 General

1.1 REFERENCE STANDARDS

- .1 CSA Group
 - .1 C22.2 No. 0.3, Test Methods for Electrical Wires and Cables.
 - .2 CSA-C22.2 No. 38, Thermoset-Insulated Wires and Cables.
 - .3 CSA-C22.2 No. 131, Type TECK 90 Cable.
 - .4 CSA-C22.2 No. 174, Cables and Cable Glands for Use in Hazardous Locations.
 - .5 CSA-C22.2 No. 239, Control and Instrumentation Cables.

1.2 PRODUCT DATA

- .1 Provide product data in accordance with Section 01 33 00 - Submittal Procedures.

1.3 QUALIFICATIONS

- .1 Utilize only personnel experienced in the installation, splicing, and terminations of medium-voltage voltage cable for all medium-voltage cable work.
- .2 Provide, upon request, the qualifications of the proposed personnel.

Part 2 Products

2.1 TECK 90 (HVTECK) CABLE, MEDIUM-VOLTAGE

- .1 Cable and connectors to:
 - .1 CSA 22.2 No. 131.
 - .2 CSA C22.2 No. 2556 & No. 0.3 Wire and Cable Test Methods.
 - .3 CSA C68.10:20 Shielded power cable for commercial and industrial applications, 5-46 kV
 - .4 CSA SUN RES - for Sunlight Resistant rating.
 - .5 CSA LTGG [-40°C] - as per C68.10 - for Cold Bend and Impact rating
 - .6 FT4
- .2 Cable marking:
 - .1 TECK90 / HVTECK.
- .3 Conductors:
 - .1 Grounding conductor: copper.
 - .2 Circuit conductors: copper, size as indicated.
- .4 Insulation:
 - .1 Tree-Retardant Cross-linked polyethylene (TRXLPE).
 - .2 Voltage Rating: 8 kV (100%)

- .5 Insulation Shield:
 - .1 Semi-conducting thermosetting layer.
 - .2 Helically applied copper tape.
- .6 Inner jacket:
 - .1 Polyvinyl chloride material.
- .7 Armour:
 - .1 Interlocking aluminum.
- .8 Overall jacket:
 - .1 Thermoplastic polyvinyl chloride.
 - .2 FT4 rated.
 - .3 Sunlight resistant.

2.2 TECK 90 CABLE, MEDIUM-VOLTAGE, SPLICE KITS

- .1 General
 - .1 Splice kits to be utilized for cable repairs.
 - .2 Splices of conductors not permitted.
- .2 Cable and connectors to:
 - .1 CSA 22.2 No. 131.
- .3 Voltage Rating: 8 kV or 15 kV
- .4 Suitable for use with a tape shield.
- .5 Approved manufacturers:
 - .1 Raychem;
 - .2 3M; or
 - .3 Approved equal in accordance with B7.

2.3 TECK 90 CABLE, MEDIUM-VOLTAGE, TERMINATIONS

- .1 Cable and connectors to:
 - .1 CSA 22.2 No. 131.
- .2 Voltage Rating: 8 kV or 15 kV, as applicable
- .3 Suitable for use with a tape shield.
- .4 Type: Heat shrink or cold shrink
- .5 Size appropriately sized for the conductor and insulation dimensions.
- .6 Approved manufacturers:
 - .1 3M QT-III;
 - .2 Raychem HVT-Z;
 - .3 Approved equal in accordance with B7.

2.4 ARMoured CABLE FITTINGS (GLANDS)

- .1 Approvals: CSA
- .2 Body material: aluminum
- .3 Type: watertight, suitable for the application.
- .4 Accessories: locknut and grounding bushing.
- .5 Sized: As required for the applicable cable.
- .6 Approved products:
 - .1 ABB (TnB) Star Tech or Star Tech Extreme series.
 - .2 Approved equal in accordance with B7.

2.5 Cable Fastenings

- .1 Two-hole aluminum or stainless-steel straps for cables larger than 50 mm.

Part 3 Execution

3.1 GENERAL MEDIUM VOLTAGE CABLE INSTALLATION

- .1 Do not splice cables. A continuous length is required for all feeds.
- .2 Install in accordance with manufacturer's recommendations, observing requirements for minimum bending radius and pulling tensions.
- .3 Lay cable in cable trays in accordance with Section 26 05 36 - Cable Trays for Electrical Systems.
- .4 Maintain cable spacing a minimum of one cable diameter apart; unless otherwise indicated on the drawings or specifications.
- .5 Ensure that parallel cables are routed along the same path, with appropriate spacing. Parallel cables should be of similar length.
- .6 Support armoured cables utilizing appropriate metal clamps for the application.
- .7 Support single-phase conductors appropriately using non-metallic supports within the transformer or switchgear.
- .8 Cable Colour Coding:
 - .1 To Section 26 05 00 - Common Work Results for Electrical.
- .9 Installations in Category 1 Locations
 - .1 Install the cable with a minimum of 12 mm space from the supporting surface.
 - .2 Install every joint and cable connectors to be water-tight.
 - .3 Install grounding and bonding conductors to be protected from corrosion.

3.2 CABLE RE-INSTALLATION

- .1 Replace all cable glands / fittings on all re-installed cables.

3.3 INSTALLATION OF ARMoured CABLE FITTINGS

- .1 Install fittings in accordance with manufacturer's instructions.
- .2 Provide bonding for grounding bushings with a conductor sized as per the bonding conductor size for the cable being terminated.
- .3 For all fittings connected to the stainless steel roof, provide an additional seal around the cable gland to prevent water from contacting the joint between the aluminum cable fitting and the stainless steel roof enclosure. The seal shall be UV resistant and have a minimum service life of ten (10) years.

3.4 IDENTIFICATION

- .1 Install cable tags on all cables.
- .2 Install wire tags on all switched and control wiring, or on any wiring where the cable tag together with the wire phase color does not simply identify the wires.

3.5 TESTING

- .1 Test all existing power conductors prior to removal in accordance with 26 08 05 – Electrical Commissioning.
- .2 Test all medium voltage conductors 10 AWG and larger in accordance with 26 08 05 – Electrical Commissioning.

END OF SECTION