

**USask Master Specification Directions:** The master specifications are intended to be incorporated into the Consultant's final, project specific specification package. The project specific specifications are expected to include any and all sections or portions of sections (Part 1, Part 2, Part 3) that are required to create a fully executable project specification. USask Master Specs only provide information that USask **requires** be a part of the final specification package. Components or sections not included in the Master USask Specifications may still be required for a complete, well-designed project. **It is the consultant's responsibility to ensure all specifications match USask requirements. Any deviations or revisions to any section included in the master specifications requires written consent from the USask Engineering department. The consultant is liable for any omissions, errors, or incorrect equipment or components supplied to site.**

The Master Specifications shall be used in conjunction with USask's Design Guidelines. Any conflicts shall be brought to the attention of USask Engineering staff for clarification.

## **Part 1            General**

## **Part 2            Products**

### **.1                MV Terminations**

- .1 Bushing Insert and Load Break Elbow Connectors (See also section 26 12 19)
  - .1 Must meet requirements of ANSI/IEEE Standard 386.
  - .2 200 A, 25 kV load break elbow separable connectors complete with test point and including bushing inserts. Bushing inserts required at all elbow bushing installation locations.
  - .3 Elbow connector lugs and probes to be of all copper construction.
  - .4 Acceptable products are Elastimold 274LR-WX load break elbow connectors and Elastimold 2701A4 bushing inserts or approved equivalents. Size to be to suit U of S 4/0 supplied 25 kv cable as noted in .5
  - .5 U of S supplied 25 kv cable – Prysmian 25 kV 4/0 Power cable – Class B compact, 19 strand copper with Strandseal, semi-conducting, thermosetting conductor shield 12 mils minimum point, TR-XLPE insulation, 25 kV 100%, 234 mils minimum point, 260 mils minimum average, semi-conducting, thermosetting insulation shield, 31 mils minimum point, two uncoated copper tapes intercalated with 25% overlap, black polyvinyl chloride jacket, 63 mils minimum point, 79 mils minimum average, CAN/CSA-C68.3-97, 1.86 kg/m. Approximate overall diameter – 1.3 inches. **OR** General Cable BICC Brand SQ 2007 4/0 Copper CPTTR XLPE 90 degrees Celsius, 25 kV 100% full neutral LTGG CSA FT1
- .2 Stress Cone Terminations
  - .1 Class 1, 25 kV class, 150 kV BIL.
  - .2 Acceptable manufacturer: 3M QT-III cold shrink technology.

### **.2                LV Terminations**

- .1 Compression Connectors
  - .1 CU/AL compression lugs, two hole, long barrel.

- .2 Minimum double crimp required.
- .3 Grade 5 zinc plated bolts, double washers, lock washers and nuts required.

### **.3 Associated MV Components**

Components and tools are required for the Owner's ongoing maintenance and operations.

- .1 Feed Thru Bushing
  - .1 Elastimold model 274FT or approved equivalent. Total of 3 required.
- .2 Insulated Parking Bushing
  - .1 Elastimold model 272SOP or approved equivalent. Total of 6 required.
- .3 Test Rod
  - .1 Elastimold model 370TR or approved equivalent. Total of 1 required.
- .4 Assembly Tool
  - .1 Elastimold model 200AT or approved equivalent. Total of 1 required
- .5 Grounding Elbow
  - .1 Elastimold model 3706LR or approved equivalent. Total of 3 required.
- .6 Insulated Caps
  - .1 Elastimold model 273DRG or approved equivalent. Total of 15 required.

## **Part 3 Execution**

### **.1 Connection Locations**

- .1 Mount cable elbow separable connectors and bushing inserts on H1A, H2A and H3A bushing wells at the new transformer.

### **.2 General Installation**

- .1 Ensure drain wire connections to ground are completed for all bushing inserts and elbow connectors.
- .2 All work shall be completed by a qualified journeyman electrician experienced and deemed qualified with respect to high voltage cable terminations for the specific manufacturer used in this project.
- .3 Install all cable terminations and stress cones to manufacturer's recommended procedures and as directed by the Engineer.
- .4 MV and LV cable splices are not intended in this design and will not be permitted unless approved in writing by the Consultant
- .5 Install terminations plumb and fully supported. Ensure no stresses are on terminations due to misalignment.
- .6 Ensure 25 kV terminations clearance to ground or barriers is 40 mm minimum at any point above the jacket cutback.

END OF SECTION