

1. GENERAL

1.1 Product Data

- .1 Submit product data in accordance with Division 1 and Division 16.

1.2 Related Work

- .1 Refer to Division 16.

1.3 Inspection

- .1 Provide adequate notice to the Contract Administrator so that all cable installations can be inspected prior to connecting equipment.

1.4 Standards

- .1 All wire and cable shall be CSA approved.

2. PRODUCTS

2.1 Twisted Pair Shielded Cables (TPSH)

- .1 TPSH shall be constructed as follows:
 - .1 2 copper conductors, stranded, minimum #18 AWG, PVC insulated, twisted in nominal intervals of 50 mm.
 - .2 insulated for 600V, 90° C.
 - .3 100% coverage aluminum foil or tape shield.
 - .4 separate bare stranded copper drain wire, minimum #18 AWG.
 - .5 overall flame retardant PVC jacket to CSA-C22.2.
 - .6 the entire cable assembly to be suitable for pulling in conduit or laying in cable tray.
 - .7 Shaw Type 1751-CSA or Beldon equivalent.
- .2 Where multiconductor TPSH cables are called for, each pair shall be individually shielded, continuous number coded, and the cable assembly shall have an overall shield and overall flame retardant PVC jacket.

2.2 RTD And Multi Conductor Shielded Cable

- .1 RTD cables shall be CSA approved and shall be constructed as follows:
 - .1 3 or more copper conductors, stranded, minimum #18 AWG.

- .2 PVC insulated for 600V.
- .3 100% coverage aluminum foil or tape shield.
- .4 separate bare stranded copper drain wire.
- .5 overall flame retardant PVC jacket to CAS-C22.2

2.3 Teck Cables

- .1 As per Division 16.

2.4 Wire

- .1 As per Division 16.

3. EXECUTION

3.1 Analog Signals

- .1 Use TPSH cable for all low level analog signals such as 4-20 mA, 1-5 VDC, 0-10 VDC, pulse type circuits 24 VDC and under, and other signals of a similar nature.
- .2 Use RTD cable for connections between RTDs and transmitters or control system RTD inputs.

3.2 Digital Signals

- .1 Use TPSH cable for all low level input (24V and below) and output signals to the control system.
- .2 Use Teck cable or wire and conduit for power to instruments, for 120V signals other than those mentioned above and as otherwise indicated on the drawings. Use stranded wire and cable to supply power to instruments.

3.3 Installation

- .1 Install instrumentation cables in conduit systems or in cable trays. Use a minimum of 300 mm length of liquid tight flexible conduit to connect the field sensors to the conduit.
- .2 Where non-armoured instrumentation cables are installed in cable trays, provide barriers in the tray to separate instrumentation cables from power cables.
- .3 At each end of the run leave sufficient cable length for termination.
- .4 Do not make splices in any of the instrumentation cable runs. Where splices are required, obtain approval from the Contract Administrator prior to installing the cable. Do not splice cables to gas detection heads.

- .5 Where splices are necessary in instrumentation cables other than coaxial cables, perform such splices on terminal blocks in terminal boxes. Keep splices in instrumentation cable to a minimum and separated physically from power circuits. Cable shields shall be terminated on insulated terminals and carried through to the extent of the cable.
- .6 Where splices are made to coaxial cables, use standard coaxial cable connectors
- .7 Ground cable shields at one end only. Unless otherwise specified, ground the shields at the marshalling panel.
- .8 Protect all conductors against moisture during and after installation.

3.4 Conductor Terminations

- .1 All equipment supplied shall be equipped with terminal blocks to accept conductor connections.
- .2 Instrumentation conductors, where terminated at equipment terminals other than clamping type terminal blocks, shall be equipped with Burndy-YAE-2 or STA-KON, self-insulated, locking type terminators, sized as required to fit conductors and screw terminals.

3.5 Testing

- .1 Test all conductors for opens, shorts, or grounds. Resistance values shall not be less than those recommended by the cable manufacturer.

3.6 Identification

- .1 Identify all instrumentation cables.
- .2 Identify each conductor with wire numbers using a machine printed heat shrink wire marker, similar to Raychem TMS or equivalent.

END OF SECTION