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**Part 1           General****1.1           RELATED SECTIONS**

- .1   Section 01 00 10 – General Instructions.
- .2   Section 26 05 00 - Common Work Results for Electrical.

**1.2           REFERENCES**

- .1   Canadian Standards Association, (CSA International)
  - .1   CSA C22.2 No. 214-08, Communications Cables. (Bi-National Standard, with UL 444).
  - .2   CSA-C22.2 No. 232-2009, Optical Fiber Cables.
  - .3   CSA T568.1-05(R2010), Commercial Building Telecommunications Cabling Standard - Part 1: General Requirements.
- .2   International Electrotechnical Commission (IEC)
  - .1   ISO/IEC 11801:2002, Information technology – Generic Cabling for Customer Premises.
  - .2   IEC 60793-1-21 Ed. 1.0:2001, Optical Fibres – Part 1-21: Measurement Methods and Test Procedures – Coating geometry.
  - .3   IEC 60793-2-10 Ed. 3.0 B:2007, Optical Fibres – Part 2-10: Product Specifications – Sectional Specification For Category A1 Multimode Fibres.
- .3   Telecommunications Industry Association (TIA)/Electronic Industries Alliance (EIA).
  - .1   TIA/EIA 455-204-2000, FOTP-204 Measurement of Bandwidth on Multimode Fiber.
  - .2   TIA/EIA 492-2000, Specifications for Optical Waveguide Fibers (Includes all current TIA-492 & TIA/EIA-492 Standards).
  - .3   TIA 568-C.1-2009, Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements.
  - .4   TIA 568-C.3-2008, Optical Fiber Cabling Components Standard.
  - .5   TIA TSB-140-2004, (Telecommunications Systems Bulletin) - Additional Guidelines for Field-Testing Length, Loss and Polarity of Optical Fiber Cabling Systems.
  - .6   TIA 598-2005, Optical Fiber Cable Color Coding.

**1.3           DEFINITIONS**

- .1   Refer to TIA 598, Annex A for definitions of terms: optical-fiber interconnect, distribution, and breakout cables.

**1.4           SYSTEM DESCRIPTION**

- .1   Optical fibre cables installed between buildings.

**1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 00 10 – General Instructions.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal all packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Divert unused metal and wiring materials from landfill to metal recycling facility as approved by Departmental Representative.
- .5 Fold up metal banding, flatten and place in designated area for recycling.

**Part 2 Products****2.1 OPTICAL FIBRE CABLE (OFC)**

- .1 Two(2) pair loose buffer tube 62.5/125 micrometre multi-mode graded index fibre: to CSA T568.

- .2 Design and Performance Specifications

Optical Fiber	62.5/125 $\mu\text{m}$
Durability	500 mating cycles, <0.20 dB change
Tensile Strength	>25 lbs with <0.20 dB change
Thermal Cycling	-40° to +80° C., <0.30 dB change
Operating Temperature	-40° to +80° C.
High Temperature	80° C. For 96 Hrs. <0.3 dB change
Humidity	60° C. @ 95% RH. 96 Hrs. <0.3 dB change
Vibration (Mated pair)	10-55 Hz, 1.5mm P to P < 0.3dB change
Intermatability	Compliant with TIA 604-2
Insertion Loss	Based on 62.5/125 $\mu\text{m}$ fiber @850 nm

- .3 Fibre Specification

The fibre will be 62.5/125 $\mu\text{m}$  and meet the attributes outlined in the following detailed specifications:

- .1 TIA/EIA 492
- .2 IEC 60793-2-10 Ed. 3.0 Type A1B fibre
- .3 ISO/IEC 11801 Type OM1 fibre

The fibre must provide the following Effective Modal Bandwidth (EMB) at 850 nm of larger than or equal to 385 MHz.km (EMB => 385 MHz.km). This shall be ensured by standardized laser bandwidth test procedures (Restricted Mode Launch Bandwidth (RML BW) measurement method described in TIA/EIA 455-204 and IEC 60793-1-21.) Each fibre shall be directly measure for laser performance without sampling.

The fibre shall support the following link lengths for the data rates indicated, where performance is assured by the bandwidth measurements described above: 1 Gb/s over 500m at 850 nm.

The fibre shall be manufactured by the Outside Vapour Deposition (OVD) process.  
Cable Construction must be FT-6 rated PVC for outdoor use.

**Part 3 Execution**

**3.1 INSTALLATION OF HORIZONTAL DISTRIBUTION CABLES**

- .1 Install cables in accordance with Manufacturer's recommendations.

**3.2 FIELD QUALITY CONTROL**

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Test optical fibre cables for:
  - .1 End-to-end loss at 850 nm.

**END OF SECTION**