.1 General Requirements

.1 In general, wiring to be used at the University of Victoria shall be:

.1 Typically use insulated 98% conductivity copper conductor wiring enclosed in EMT (steel) conduit for the general wiring systems unless otherwise indicated.

.2 Aluminium conductors are not desirable. Upon special permission from FMEL they may only permitted for feeder conductors larger than 3/0 AWG.

.3 Obtain approval of FMEL for the usage of any Teck wiring. Where permitted, Teck wiring up to 750 system volts to be PVC jacketed armoured cable, multi-copper conductor type Teck90 1000 volt having a PVC jacket with FT-4 flame spread rating.

.4 Flexible armoured AC90 cabling (BX) shall not be used for the general wiring system other than final drops to recessed light fixtures in concealed locations. Drops to receptacle outlets is not permitted. AC90 is permitted in tight spaces such as millwork and lab benches.

.5 All control wiring except HVAC controls as specified in Mechanical Divisions is to be provided by the Electrical Contractor. This includes low voltage control wiring for motorized blinds and shades, to owner supplied equipment, to door access and security, to assistive hearing system, to audio-visual (AV) equipment.

.2 Wire and Cable General

.1 Conductors: stranded for 10 AWG and larger. Minimum size #12 AWG, copper.

.2 Insulation to be 600 volt RW90XLPE (X link) for the general building wiring in conduit.

.3 Use RWU90XLPE for underground installations.

.4 Site services sub-circuits, including site lighting, to be minimum #10 AWG for power and #12 for controls. Increase wiring size for lengthy and/or loaded circuits so that system will not exceed the maximum voltage drop as recommended by the Canadian Electrical Code CSA 22.1.

.5 Main feeders to be conduit and copper insulated wiring unless otherwise noted on drawings. Provide ground wiring for all conduits below slabs. Increase conduit size as required.

.6 Armoured AC90 cable may only be utilized for recessed tee bar luminaire drops from ceiling mounted outlet boxes. "Tite Bite" connectors and their counterparts of other manufacturers shall not be used. Use anti-short connectors. Cable from luminaire to luminaire is not permitted. Allow nominally 900mm [3'] extra cable looped and supported in the ceiling space to permit fixture relocations of one tile space.

.7 TBS90 #14 AWG stranded shall be used in all switchgear assemblies. Current transformer secondary wiring shall be #12 AWG stranded. Current transformer leads shall incorporate ring type tongues for termination purposes.

.8 Conductors to be colour-coded. Conductors No.10 gauge and smaller shall have colour impregnated into insulation at time of manufacture. Conductors size No.8 gauge and larger may be colour-coded with adhesive colour coding tape, but only black insulated conductors shall be employed in this case, except for neutrals which shall be white wherever possible. Where colour-coding tape is utilized, it shall be applied for a minimum of 50 mm at terminations, junctions and pullboxes and condulet fittings. Conductors not to be painted.

.3 Teck Cable

.1 Teck cable may be used in special situations such as feeds to motors and equipment. For all other uses, obtain permission from UVic. Cables shall be chemically cross-linked thermosetting polyethylene rated type RW90, 600 V with inner jacket of polyvinyl chloride material. The armour shall be interlocking aluminum. The outer jacket shall be low-acid-

gas-emitting fire-retardant PVC rated for low temperature, black. Connectors shall be watertight approved for TECK cable.

.4 Armoured Cables

.1 The use of insulated copper AC90 cable with interlocking aluminum sheathing is permitted for drops to luminaires, not exceeding 3m in length and in difficult confined spaces and millwork.

.5 Armoured Fire Alarm Cable

.1 The use of flexible armoured fire alarm cable from junction box to ceiling mounted fire alarm device is permitted. Use SECUREX® II cable, fire rated to CSA FT4 requirements. Cable shall be armoured with interlocked aluminum tape armour. Cable armour shall be colour coded “red”. This type of cable may also be used for renovations projects where conduit installation is difficult.

.6 Wire Installation

.1 Install wiring as follows:

.1 All wires are to be pulled in together in a common raceway, using liberal amounts of approved lubricant.

.2 All power circuits connected to isolated ground type receptacles are to have individual separate neutral c/w insulated bonding conductor.

.3 No combining of circuits onto common neutral will be permitted. Use 2 pole or 3 pole breakers for combined circuits, no connector clips will be allowed.

.4 All dimmer circuits are to have individual neutral conductors for each circuit.

.5 Group all circuit conductors with their respective neutral conductor and provide identification of circuit number on conductors at all junction boxes.

.6 Group all cables wherever possible on channels.

.7 For all control cabling, ground control cable shield.

.8 Installation of conduit in concrete slabs in NOT permitted unless specifically approved in written by addendum during tender stage. All conduit shall be surface mounted under floor slabs.

END OF SECTION