

**Part 1 General****1.1 Summary**

- .1 Unless otherwise indicated, follow the standards below when specifying window coverings. These standards are not intended to restrict or replace professional judgment.

**1.2 Design Requirements**

- .1 General – A University-wide standard for window coverings does not exist. Window covering is determined for each building individually, and is based on exterior and interior appearance, environment, existing window coverings in adjacent areas, use and maintenance considerations.
- .2 Aesthetics – The base standards for new buildings on both exterior and interior appearance. When designing remodelling projects within an existing building, consider using the same type of window coverings as existing adjacent areas.
- .3 Environment – Consider requirements for protecting areas from the glare and heat of the sun. Also consider the environmental conditions in which the coverings will perform, such as exposure to chemicals, humidity, dirt or grease. Review flame retarding properties of window coverings for compliance with codes and condition of use.
- .4 Use – Operating mechanisms of window coverings need to be robust and be able to withstand frequent usage. Consider requirements for safe usage and universal accessibility.
- .5 Installation – The University requires that a qualified dealer purchase and install blinds or shades composed of parts from the same manufacturer (single-source responsibility for both supplier and manufacturer) and labelled as to manufacturer and brand name. This is to assist in repair or replacement either by a qualified dealer or by Building Services.

**1.3 Guarantee**

- .1 All work under this section shall be guaranteed for a period of five (5) years from the date of substantial completion of the work.

**Part 2 Products****2.1 Sustainable Performance Requirements**

- .1 Products must be sourced following the hierarchy of sustainable performance requirements outlined in 01 60 00 – Product Requirements.

**2.2 Horizontal (Venetian) Blinds**

- .1 Specify horizontal blinds only for small retrofit projects to match existing adjacent window coverings.
- .2 Shall be 25mm wide, aluminum with baked enamel finish as “Precious Metal” by Hunter Douglas or approved equivalent.

## 2.3 Manual Roller Shades

- .1 Specify manual roller shades for exterior windows with screen fabrics adapted to the usage and sun exposure of the room.
- .2 Certain laboratories may require complete room-darkening conditions, depending on the type of experimentation taking place. Specify roller shades with blackout screen fabrics when such needs are identified during design. **Special attention on south and west orientations: make sure there is enough ventilation between the glazing and the blind (at high temperature, the glass can break)**
- .3 System components:
  - .1 Compliant with SOR/2019-97 – Canada Consumer Product Safety Act, Corded Window Coverings Regulations.
  - .2 Cordless adjustment-free operating mechanism that is to be symmetrical for left- or right-hand installation (50-lb. test), comprised of multi-banded steel springs that create the pressure necessary to keep the shade in the desired position.
  - .3 All plastic components to be made of glass reinforced polyester thermopolymer (PBT) conforming to military specification MIL M-24519.
  - .4 Brackets are to be constructed of 1,8 mm thick painted or nickel-plated, C1008/1010 cold rolled steel.
  - .5 Painted brackets are finished with high quality baked enamel coating.
  - .6 End plug bracket shall have a lock down retainer device. Brackets are reversible for left- or right-hand installation.
  - .7 Extruded aluminium tube, alloy 6063-T5, of a diameter required to support shade fabric without excessive deflection.
  - .8 No adhesive tape or rivet will be accepted to attach the shade.
  - .9 A fabric attachment spline will be slid in the tube groove, preventing shade detachment.
  - .10 A portion of the tube under the groove shall be reinforced allowing for flush insertion of the spline.
  - .11 For blackout only, specify aluminum side channel extrusions to help eliminate light leaks at the sides, and sill angle to eliminate light leaks at the bottom of the window sill.
- .4 Screen fabric:
  - .1 Meet the following classifications for fabrics:
    - .1 Fire resistance: National Fire Protection Association (NFPA) ([www.nfpa.org](http://www.nfpa.org)) 701 (2004) - Standard Methods of Fire Tests for Flame Propagation Vertical Burn Test or CAN/ULC Small Scale Vertical Burn Requirements.
    - .2 Flame Retardant Regulations, California Code of Regulations, Title 19, Section 1237 (Fire Resistance) for interior fabrics.
  - .2 PVC-free, recyclable, GREENGUARD certified, lead free, and anti-microbial
  - .3 Openness factor as required by the function and orientation of the room.
  - .4 Light color is preferred. Must match with shade colors of existing adjacent areas.
  - .5 Preferred product:
    - .1 Retrofit or small renovation projects:
      - .1 Basketweave Eco2 or GreenScreen Evolve by Lutron or approved equivalent.

- .2 New construction or renovation projects affecting entire façades:
  - .1 GreenScreen Evolve by Lutron or approved equivalent.
- .3 Blackout:
  - .1 Avila by Lutron, TexOpaque Eco 6300 by Altex, or approved equivalent.

## 2.4 Motorized Roller Shades

- .1 Specify motorized roller shades for classrooms equipped with Lutron lighting control system.
- .2 System control description:
  - .1 Electrical equipment must meet CSA standards and UL homologation.
  - .2 Ultra-quiet, precision-controlled electronic drive unit housed inside roller tube, controlling shade movement. Maximum 44 dBA measured 3 feet from electronic drive unit. No audible clicks when motor starts or stops.
  - .3 Operate independently, without use of external group controllers.
  - .4 Control shade speed for tracking within plus or minus 0.0625 inch throughout entire travel.
  - .5 Include 10-year power failure memory for preset stops, open and close limits, shade grouping and subgrouping, and system configuration.
  - .6 Systems with multiple electronic drive units electronically synchronized to start, stop, and move in unison.
  - .7 One-touch control of shades by means of keypad and lighting control.
  - .8 Capable of stopping within accuracy of 0.125 inch at any point between open and close limits.
  - .9 Open and close limits programmable from electronic drive unit, lighting control, wall-mounted keypad, or handheld remote control.
  - .10 Electronic drive units, keypads, and lighting controls contain microprocessors, allowing high level programming from any source.
- .3 System components:
  - .1 Brackets to provide symmetrical light gaps of 0.75 inch on each side of shade.
  - .2 Roller shade leveling adjustment allowing leveling adjustment while roller shades are mounted to brackets.
  - .3 Allow side-to-side adjustment up to 0.375 inch on each side while shade is mounted to bracket.
  - .4 Projection adjustment up to 0.50 inch.
  - .5 Provide universal mounting brackets for wall, ceiling, and jamb mounting.
  - .6 Shade Tube: Fabric connected to tube using double-sided adhesive strip with minimum of one turn of fabric on roller before working section of fabric starts.
  - .7 Bottom bar:
    - .1 End cap color coordinated with fabric selection.
    - .2 Contain spline groove at top to receive and secure fabric.
    - .3 Half wrap, with fabric wrapped around interior room side of bottom bar.
    - .4 Exposed size in anodized aluminum finish, or color to coordinate with mullions.
    - .5 Provide slot at bottom with wool-pile light seal when blackout is required.
  - .8 Wall mounted controls:

- .1 Low voltage keypads with faceplates attached without visible means of attachments, product color to match NEMA WD1, with backlit buttons.
- .2 Type: TBD with client, to include master raise/lower button
- .9 Preferred product:
  - .1 Lutron Sivoia QS or equivalent 100% compatible with lighting control interface specified for the project.
- .4 Screen fabric:
  - .1 Meet the following classifications for fabrics:
    - .1 Fire resistance: National Fire Protection Association (NFPA) ([www.nfpa.org](http://www.nfpa.org)) 701 (2004) - Standard Methods of Fire Tests for Flame Propagation Vertical Burn Test or CAN/ULC Small Scale Vertical Burn Requirements.
    - .2 Flame Retardant Regulations, California Code of Regulations, Title 19, Section 1237 (Fire Resistance) for interior fabrics.
  - .2 PVC-free, recyclable, GREENGUARD certified, lead free, and anti-microbial
  - .3 Openness factor as required by the function and orientation of the room.
  - .4 Light color is preferred. Must match with shade colors of existing adjacent areas.
  - .5 Preferred product:
    - .1 Retrofit or small renovation projects:
      - .1 Basketweave Eco2 or GreenScreen Evolve by Lutron or approved equivalent.
    - .2 New construction or renovation projects affecting entire façades:
      - .1 GreenScreen Evolve by Lutron or approved equivalent.

### Part 3 Related Technical Sections

The technical sections of the McGill Building Design and Technical Standards should be consulted with the current document, most notably (but not limited to) the following:

Section Number	Title of Section
Special Building Areas	Classrooms. General
Special Building Areas	Classrooms
06 10 00	Rough Carpentry
26 00 00	Électricité

**END OF SECTION**