

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

- .1 Unless otherwise indicated, follow the standards below when specifying conveying equipment (elevators, lifts, platforms, etc.) modifications or installations. These standards are to be considered supplemental to the applicable codes and standards and are not intended to restrict or replace professional judgement.
- .2 All work impacting existing conveying equipment and its mechanical/machine room must be authorized by McGill University. Project Manager must obtain approval from the FMAS representative responsible for elevators.
- .3 All proposed modifications during Tender and Construction phases (equivalency requests, directives, or other requests for modifications to the design and infrastructure) to pre-approved conveying equipment and its mechanical/machine room must be authorized by McGill University. Project Manager must obtain approval from the FMAS representative responsible for elevators.
- .4 All work related to conveying equipment (demolition, modification, installation) must be executed by a contractor specialized in conveying equipment.

**1.2                Design Requirements**

- .1 All elevators must have a machine room (no MRL (Machine Room-Less) elevators) for the exclusive use of elevator machinery and equipments. The elevator machine room is to be equipped with a combined telephone/data jack.
- .2 Elevators located in McGill residences to be equipped with a weight control shutoff to inhibit lifting if the maximum weight (specified by manufacturer) is exceeded.
- .3 All elevators with an exterior access door are to be equipped with an airlock, offering protection against humidity, variances in temperature, and bad weather. The design of the air lock is the responsibility of the architect in charge of the project.
- .4 Ambient temperature within the elevator shaft and in the mechanical room is to be maintained year round at between 17 deg C and 28 deg C (62.5 deg F / 82.5 deg F).
- .5 Proprietary trademarks, logos or other identifying marks are not permitted.
- .6 All signage or inscriptions must use international symbols, and information must be present in both French and English.
- .7 During the Construction phase, Project Manager shall contact Facilities Call Center (FCC) to obtain the elevator identification number and provide this information to the contractor who will then produce and install the labels. All labels shall be installed and visible before substantial completion acceptance.
- .8 The elevator identification number as issued by McGill Facilities Call Center (FCC) must be visible on all equipments for that elevator such as, but not limited to, controllers, motors, pulleys,

switches, cabin control panel, each door jamb, at the designated floor (main exit floor) and at the alternate floor (secondary exit floor).

- .9 All hydraulic elevator oil tanks are to be equipped with an oil cooler. Oil temperature to be maintained between 17 degrees C and 28 degrees C (62.5 degrees F / 82.5 degrees F).
- .10 A recessed hydraulic piston elevator system is not recommended. However, a telescopic piston is acceptable and a piston powered block and tackle system with a 2:1 ratio is preferable.
- .11 In order to respect the obstacle-free course for persons with disabilities, as well as the transport and handling of stretchers, the elevator cabin design must respect the following characteristics. For lift and platform dimensions, see section 2.6 Lifts for Persons with Physical Disabilities.
  - .1 The minimum rated load in the elevator cabin will be 2500 lbs (1150 Kg)
  - .2 The minimum dimensions of the net interior of the elevator cabin shall be 2030 mm wide x 1295 mm deep with a minimum free passage of 1067 mm or the minimum dimensions of the net interior of the cabin shall be 1295 mm wide x 2030 mm deep with a minimum free passage of 915 mm. For other dimensions, depending on the access and exit configuration, follow the Building Code and CSA norm requirements, and consult the FMAS representative responsible for elevators.

## **Part 2 Products**

### **2.1 Materials**

- .1 If one or more of the following materials are replaced, it is mandatory to provide and install the new material as specified below:
- .2 Electrical and Hydraulic Powered Elevators
  - .1 Controller: "Motion Control Engineering" with the necessary hardware to connect the controller to the elevator's alarm system (1 monitor + 1 report).
  - .2 Power operation of hoist way doors and cabin doors:
    - .1 For passenger elevators with horizontally sliding type door: GAL equipment.
    - .2 For freight elevators with vertically sliding type door: Peele equipment.
  - .3 Push Buttons: "Inox" DUPAR/US918BB with Braille inscriptions.
  - .4 Door reopening devices system: Infrared beam (3 dimensional) from Memco.
- .3 Electrical Powered Elevators
  - .1 Emergency Brake: Suspension rope as per Hollister-Whitney manufacturing.
  - .2 Overhead or basement gear-driven traction machine as per Hollister-Whitney manufacturing.
  - .3 Overhead or basement gearless-traction machine as per Imperial Electric Motors.
  - .4 Electric motors as per Imperial Electric Motors.
- .4 Hydraulic Powered Elevators
  - .1 Roped-hydraulic driving machine as per ITI Hydraulik.

- .2 Hydraulic machine as per ITI Hydraulik.
- .3 Hydraulic jack assemblies as per ITI Hydraulik.
- .5 Mechanical Room
  - .1 For non-hydraulic elevators, the mechanical room doors must be equipped with a Medeco A4H lock. For hydraulic elevators, the mechanical room doors shall be the Zone Mechanical Keyway System.
  - .2 The lock on the mechanical room door (A4H or Medeco sector key) must be a storeroom function handle.
  - .3 All moving parts situated in the mechanical room must be of a distinct colour (yellow) versus the colour of non-moving parts.
  - .4 All of the power disconnect switches (controller, motors, ventilation, air conditioning, cabin lighting etc.) must be located near the entrance to the mechanical room. All power disconnect switches must be of the fuse-type. Each power disconnect switch must be properly identified. All equipment installed at the bottom of the shaft (heaters, shaft lighting ...) must be installed at least one meter (3 feet) above the floor of the shaft to limit damages in case of a flood.
  - .5 An alarm contact shall be installed in the sump pump pit. This contact shall send a signal to McGill security in the event the sump pump fails and the elevator pit fills with water.
  - .6 The return for any oil that leaks from the cylinder head for hydraulic elevators will not be returned to the main hydraulic oil tank by an auxiliary pump but will drain into a bucket in the shaft.
- .6 Keys
  - .1 Keys used for access to independent services in the elevator cabins must be 4001 keys.
  - .2 Keys used to access the elevator pits must be 4002 keys and are not to be distributed to any other but the elevator manufacturer mandated for maintenance.
  - .3 Keys used for fire services in the elevator cabs, floor lobbies and/or alarm fixtures must be 4003 keys. These keys are to be located in the fire alarm panel which is to be clearly identified as containing the series 4003 keys. Required quantity of 4003 keys is to be according to the number of elevators in the building as per CSA code B44-07 (one elevator=one key).
- .7 Emergency Phone
  - .1 Each emergency phone must have its own telephone line so security can speak directly with the people in the elevator
  - .2 The telephone cannot have a pre-recorded message that will interfere with any communication with security.
- .8 Cabin operator panels should include the cabin number and maximum weight. The Open/Close button must be next to the main level button.
- .9 The front of the command panel located in the cabin must be attached to the box with hinges (opening toward the cabin door side), not screws.

- .10 The interior wall finish of the cabin must be constructed of panels that can be easily removed and replaces in the event that they are damaged. They must be constructed in such a way that they do not interfere with access to equipment (lighting, fans, etc.).
- .11 The finish of the interior walls of the cabin must be stainless steel below the handrail and laminate in the upper part.
- .12 An inclined mirror or a full-length mirror shall be mounted on the back wall of the elevator cabin to enable a wheelchair user to execute a reverse exiting; this is required only in existing elevators that do not provide the minimum turning circle.
- .13 The flooring for elevators must be in rubber of a thickness of a minimum of 3mm, anti-slip and designed for heavy traffic.
- .14 In the upper portion of the side walls provide stainless steel light troughs with a protective grid to incorporate LED type lighting.
- .15 The ceiling of the cabin must be open, without false ceiling.

## 2.2 Protective Elevator Pads

- .1 Install hooks or knobs at top of walls (inside of cabin) in order to install protective elevator pads.
- .2 Protective elevator pads are to be of the same dimension (width x height) as inside cabin and are to be supplied by elevator manufacturer and are to be of quilted material.

## 2.3 Lighting

- .1 The lighting in the cabin and in the elevator's mechanical room must conform to McGill's Lighting Standards, section 26 50 00.
- .2 Elevator cabins to be equipped with minimum two LED lighting fixtures meeting an illumination level of 215 lux (2.15 foot-candles) measured at 750mm (30") from cabin floor.
- .3 Cabin lights are to be easily accessible for maintenance requirements.

## 2.4 Ventilation and Heating

- .1 Shall be mechanized ventilation from a dual speed fan, roof mounted outside of the elevator cabin. The three-speed control (ON-LOW-HIGH) is to be located in the locked cabin control panel.
- .2 Air supply inlet to be situated on the cabin ceiling, with exhaust outlets at floor level, permitting constant air distribution.
- .3 Elevator pits are to be fitted with appropriate heating units situated in such a way as to be protected from accidental flooding of pit.
- .4 All equipment installed at the bottom of the shaft (heaters, shaft lighting, etc.) must be installed at least 1 meter (3 feet) above the floor of the shaft to limit damages in case of a flood.

**2.5 Fire Alarm and Fire Control**

- .1 Sprinkler heads are to be upright or pendent, with a discharge coefficient rating of 5.6K and a temperature rating of 200 deg F (93 deg C).
- .2 Sprinkler heads are required at the top of the elevator shaft and are to be situated so as not to hinder maintenance operations by technicians or to impede elevator mechanisms.
- .3 Sprinkler heads are required in the elevator pit and are to be situated so the low point drainage is directed to the exterior of the pit
- .4 No purging or operating valves are permitted in the elevator shaft.
- .5 An alarm contact shall be installed in the sump pump pit. This contact shall send a signal to McGill security in the event that the sump pump fails and the elevator pit fills with water.

**2.6 Lifts for Persons with Physical Disabilities**

- .1 Ensure that the models of new lifts for persons with disabilities are included on the list of acceptable lifts approved by the RBQ.
- .2 Cables for tractor-driven cabled equipment must be manufactured by Aircor Military.
- .3 Main floor cut-off key switch to be keyed to 4004 (on/off) shall be installed to allow restricted access use when needed.
- .4 For closed-shaft models, the controller must be manufactured by JRT.
- .5 Door locks must be manufactured by GAL or Prud'homme.
- .6 The flooring for closed-shaft lifts must be in rubber of a thickness of a minimum of 3mm, anti-slip and designed for heavy traffic.
- .7 A sign must be installed at the main level, in both French and English, indicating that the lift is for "use by persons with disabilities only" ("Usage pour les personnes en situation d'handicap uniquement").
- .8 It is recommended that doors leading to the landing of the lift for persons with physical disabilities be equipped with power door operators, in particular if other doors in the building along the barrier-free path of travel leading to the lift are already equipped with power door operators.
- .9 In order to respect the obstacle-free course for persons with disabilities, the minimum dimensions of the platform will be 800 mm wide x 1525 mm long or 1200 mm wide x 1300 mm long. These dimensions correspond to the transport of a person with disabilities and with a helper. For other dimensions, depending on the access and exit configuration, follow the Building Code and CSA norm requirements, and consult the FMAS representative responsible for elevators.

**END OF SECTION**