
Note to the Designer/Architect/Engineer: These Specifications are basic minimum criteria to be met in preparing the final project specifications for this section, which is the responsibility of the Designer

York University Building Standards

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1.0 GENERAL

1.1 Scope of Work

- .1 This York University Building Standard includes, covers:
 - .1 General design principles and attributes for loading docks
 - .2 Loading dock equipment

1.2 General Design Attributes and Design Guideline Principles

- .1 At a minimum loading docks should have the following functional attributes:
 - .1 maximum slope for the surface road access to the ramp shall be not greater than 1:12
 - .2 Loading docks shall be covered
 - .3 Loading docks shall provide sufficient space for trucks of various sizes and dimension to back up enter the loading dock are in a safe manner. Sufficient turning an maneuvering space shall be in place to access the loading dock
 - .4 Loading docks shall not share a public entrance to a building
 - .5 Due to the heavy vehicular use, loading dock berth floor surface shall be fabricated from cast in place concrete, ensuring that maneuvering, turning, and parking area shall be in PCRC. (Portland Cement Reinforced Concrete)
 - .6 Loading docks shall have a minimum of two dock bays (or berths)
 - .7 At least one loading dock bay (or berth) shall be equipped with an hydraulically operated dock leveler.
 - .7 Loading dock height shall be 1,016 mm (40") above grade level
 - .8 Lighting: ***
 - .9 Loading dock bays shall be protected and equipped with edge guards and dock bumpers
 - .10 Loading docks shall be equipped with electrically operated overhead coil doors, doors shall be capable of closing completely and shall be lockable

- .11 Provisions for the management of solid waste, recyclables and composting should also be incorporated in the design and development of a loading dock. Minimum waste and recycling management requirement for loading docks include, but are not limited to:
 - .1 Where the building's occupant load and intended use is anticipated to result in the generation of significant waste and or recyclables (adequate) space shall be set aside for the installation of a waste compactor (35 cubic yard). Flooring, 3 phase electrical and space allocations should be incorporated within the planning process for the building's loading dock suitable for a waste compactor.
 - .1 Solid waste compactor size should be determined based on anticipated: four cubic yards/day for corrugated card board and two tones per day for solid waste
 - .2 A dedicated recyclables storage room that is adjacent to or in a room that is co-located to the loading dock is required. The recyclables storage room shall be capable of storing corrugated cardboard recycling gaylords, and containers for co-mingled recyclables
- .12 Loading dock height shall be sufficient to accommodate a loaded transport truck trailer
- .13 A buildings' freight elevator shall be co-located adjacent to, and with easy access to the loading dock so that service is segregated from public passenger elevators
- .14 Loading dock shall incorporate a staging area – staging area shall be located adjacent to the loading dock
- .15 Loading dock shall incorporate a dock monitor (person responsible for monitoring loading dock access) room. This room shall be located so that the dock master can clearly view the entire loading dock area and control the entrance and exit
- .16 Loading dock shall include a CCTV security camera(s) capable of accessing the entire dock area, installation of CCTV system to be in accordance with York University CCTV Systems Standard Section 28 23 13
- .17 Loading dock shall incorporate a hose bib for washing and necessary electrical outlets and connections for pressure washing equipment. Electrical service shall run to the

- loading dock to supply pressure washers, scissor lift tables and other equipment
- .18 Loading dock design shall result in a grade to flow away from loading dock and shall incorporate linear trench drain, including sediment trap
- 1.3 Sustainable Design Requirements
 - .1 Storm water management at Loading docks
 - .1 Shelter – loading docks shall be covered from rain and or snow by a roof or be part of the building. Cover will prevent
 - .2 The trucks approach to the loading dock must either be at grade or preferably sloped away from the loading dock so that water does not pool at the dock.
 - .3 Drains shall be installed to divert storm water away from the loading dock
 - .2 Carbon monoxide CO exposure and management is critically important for loading docks, particularly those that are covered. CO exposure from trucks and material handling equipment such as forklifts, presents a serious health risk to employees who work in the loading dock or have offices near the loading dock. To eliminate, or reduce the risk of CO gas exposure the following protocol must be in place at loading docks:
 - .1 Instruct truck operators to turn off their engines, no idling is permitted at loading docks. Use electric operated forklifts, and electric powered jacks.
 - .2 Carbon monoxide detectors/alarms are required in loading docks
 - .3 Where practical install an air handling system that is separate from the main building HVAC system and that provides sufficient air exchanges for safe operation of the loading dock
- 1.4 Submittals
 - .1 Product Data Sheets:
 - .1 Product Data Sheets shall be submitted for loading dock levelers, dock bumpers, dock seals, and dock shelters
 - .2 Operation and Maintenance Manual:

.1 Operating and maintenance manual shall be provided for loading dock levelers, dock bumpers, dock seals, and dock shelters

1.5 Related York University Standards

- .1 Exterior Lighting Standard Section 26 56 00
- .2 CCTV Systems Standard Section 28 23 13

1.6 Performance Standards References

- .1 National Institute of Building Sciences Whole Building Design Guide Loading Docks (latest update)
- .2 MH 30.1 Safety, Performance and Testing of Dock Leveling Devices
- .3 MHI MH 30.1 Specification for Dock Leveling Devices
- .4 NSI MH 14.1 1987 Loading Dock Levelers and Dockboards
- .5 Comply with the Ontario Building Code latest iteration and applicable amendments
- .6 Ontario Ministry of Labour
- .7 Canadian Standards Association CSA G 164-M92 (R2003) Hot Dip Galvanizing of Irregular Shaped Articles
- .8 ASTM A 153/A153M 2009 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

1.7 Maintenance Documentation

- .1 Provide relevant manufacturers' written maintenance documentation for dock levelers, dock seals and other loading dock equipment

1.8 Warranty (Standard Warranty and Extended Warranty)

- .1 Dock levelers warranty. Manufacturer's standard warranty which agrees to repair or replace dock leveler components that fail in materials or workmanship within a ten year period. Dock leveler failures include, but are not limited to the following:
 - .1 Structural failures including cracked or broken structural support members and load-bearing welds
 - .2 deck plate failures including cracked plate or permanent deformation in excess of 6 mm (1/4") between deck supports
 - .3 Hydraulic system failures including failure of hydraulic seals or cylinders

- .4 Faulty operation of operator controls, control system, or hardware
- .2 Warranty period for structural assembly shall be 10 years from date of substantial completion
- .3 Warranty shall be for unlimited usage of the dock leveler for the specified rated capacity over the term of the warranty

1.9 Handling and Storage

- .1 Store and handle dock seals and shelters in a manner to avoid damage to fabric or frame
- .2 Comply with the manufacturer's written instructions for minimum temperature and other storage requirements

2.0 PRODUCTS

2.1 General Requirements:

Materials used in this York University standard shall conform to the following standards

- .1 Steel Plates, Shapes and Bars must conform to ASTM 36/a 36M 2008 Standard Specification for Carbon Structural Steel and G40.20-04/G40.21-04 (R2009) - General Requirements for Rolled or Welded Structural Quality Steel/ Structural Quality Steel
- .2 Rolled-steel floor plate must conform to ASTM 786A 768M, rolled from steel plate complying with ASTM A 572/a 572M, Grade 55 (380)

2.2 Loading dock bumpers

- .1 Laminated tread dock bumpers: shall be fabricated from multiple, uniformly thick plies cut from fabric-reinforced rubber tires. Laminated plies under pressure on not less than two 19mm ($\frac{3}{4}$ inch) diameter, steel supporting rods that are welded at one end to 6 mm ($\frac{1}{4}$ inch) thick, structural steel end angle and secured with a nut and angle at the other end. Angles shall be fabricated with predrilled anchor holes and sized to provide not less than 25 mm (1 inch) of tread piles extending beyond the face of closure angles.
- .2 Dock bumpers shall have a minimum Shore A durometer of 80 (± 5), tensile strength of 950 to 1050 psi when tested to ASTM D2240
- .3 Minimum loading dock bumper dimensions shall be:
 - .1 Thickness: 152 mm (6 inches)

- .2 Horizontal style: 152mm (6 inches)
 - .4 Loading dock bumpers shall be anchored to the loading dock with hot-dip galvanized-steel anchor bolts, nuts, washers, bolts, sleeves, cast-in-place plates, and other anchorage devices as required to securely fasten bumpers in place and to suite installation type
 - .5 The top of the loading dock bumper shall be aligned with the top of the loading dock
 - .6 Loading dock bumpers durometers shall be easily replaceable
- 2.3 Loading dock leveler (also referred to as dock lift)
- .1 Loading dock leveler shall compensate for differences in height between truck bed and loading platform
 - .2 Loading dock lift shall be recessed, hinged-lip-type dock leveler designed for permanent installation in concrete pits preformed in the edge of the loading dock platform; of type, function, operation, capacity, size and construction indicated; and complete with controls, safety devices and accessories required. Loading dock leveler shall meet the following minimum requirements:
 - .1 Loading dock lift shall be hydraulic operated, controlled from a remotely located station
 - .2 Loading dock leveler shall have a minimum working range of 305mm (12") above and 305mm (12") below dock lip
 - .3 Loading dock leveler shall have a minimum lift capacity of 11,340 kilo (25,000 lb.) without permanent deflection or distortion
 - .4 Loading dock leveler shall be mounted to dock face on a steel embedded channel having a minimum face of 203 mm (8")
 - .5 Loading dock leveler shall meet ANSI MH 30.1
 - .6 loading dock leveler shall have a platform fabricated from not less than 6 mm (1/4") thick, non skid steel plate
 - .7 loading dock platform shall be equipped with toe guards on open sides of dock leveler
 - .8 loading dock leveler shall incorporate a hinged lip fabricated from not less than 13mm (1/2") thick, nonskid steel plate
 - .9 loading dock leveler hinge shall cover the full length of the hinge and employ piano-type hinge with heavy-

wall hinge tube and greased fittings with gussets on lip and ramp support

- .10 loading dock leveler shall incorporate a Safety Barrier Lip designed to protect material-handling equipment from accidental fall from loading platform edge of the dock leveler when the dock leveler is not in u

2.4 Foam-Pad Dock Seals

- .1 General; dock seals consisting of fabric-covered foam pads designed to compress (100 to 125 mm) under pressure of truck body to form an airtight seal at jambs and head of loading dock openings; of type, size appropriate for the specific project application
- .2 Construction: Consisting of single-or-double ply, coated, fabric-covered, urethane-foam core with supporting frame. Fabricate jamb and head pads of same depth and size of opening width
- .3 Pressure treated wood support frame: factory painted, with galvanized steel mounting hardware.
- .4 Steel Support Frame; Steel channel frame of manufacturer's standard weight, shape, and finish, with steel mounting hardware
- .5 Cover Fabric: Vinyl-coated nylon or polyester with minimum total weight of 1356 gm/sq m (40 oz./sq. yd)
- .4 Glide Strips: 102 mm (4 inch) wide, coated, nylon guide strips on jamb pads
- .5 Pleated Protectors: Protectors on face of jamb pads of overlapping layers of coated fabric attached to base fabric
- .6 Door opening size to be determined and indicated in drawings
- .7 Shall be equipped with a stationary head pad 610 mm (24 inches) high and same depth as jamb pads; sized for opening width
- .8 Jamb Pads: shall be square having a nominal size of 305 mm wide and sized for the opening heights

2.5 Convex Mirrors

- .1 Wide angle plexiglass/acrylic mirrors shall be installed at strategic locations within loading docks to permit safe and secure handling (loading and unloading) and transportation of goods.

- .2 Convex mirrors shall be installed using adjustable arm and swivel assembly
- .3 Convex mirrors shall offer distortion free reflections

2.6 CCTV Camera

- .1 General: A CCTV camera or multiple cameras shall be installed in loading docks interior that permit a clear and unobstructed view of the loading dock area. CCTV camera(s) shall be connected to the York University Security Control for active monitoring and recording. Please refer to York University Building Standard Section 28 23 13

2.7 Lighting

2.8 Steel Finishes

- .1 Galvanizing: hot dip galvanize components as indicated to comply with the following:
Canadian Standards Association CSA G 164-M92 (R2003) for iron and steel loading dock equipment
- .2 ASTM A 153/A153M 2009 for iron and steel hardware for loading dock equipment
Galvanized steel and steel finish: shall receive a standard two-coat baked –on finish consisting of primer coat and thermosetting topcoat in manufacturer’s standard colour immediately after cleaning and pre-treating

3.0 EXECUTION

3.1 General Requirements

- .1 Examination:
 - .1 Examine areas and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of loading dock equipment
 - .2 Examine walls and floors of pits for suitable conditions where recessed loading dock equipment is to be installed. Pits shall be plumb and square and properly sloped for drainage from back to front of loading dock
 - .3 Proceed with installation only after unsatisfactory conditions have been corrected

- .2 Preparation
 - .1 Coordinate size and location of loading dock equipment indicated to be attached to or recessed into concrete or masonry, and furnish anchoring devices with templates, diagrams and instructions for their installation
 - .2 Set curb angles in concrete edges of dock-leveler recessed pits with tops flush with loading platform. Fit exposed connections together to form hairline joints
 - .3 set curb angles in concrete edges of truck-leveler recessed pits with tops flush with driveway. Fit exposed connections together to form hairline joints
 - .4 embedded channel to be used in all new construction buildings. Where a loading dock is being renovated in an existing building, without embedded channel pre-existing, a top transition plate will be used
- .3 Installations
 - .1 Install loading dock equipment, including accessories as required and in accordance with manufacturer's specifications
 - .2 Recessed Dock Levelers: attach dock truck-levelers securely to loading dock platform, flush with adjacent dock surfaces and square to recessed pit
 - .3 Installation:
 - .1 Install on prepared dock ace in accordance with dock lever's manufacturers instructions
 - .2 set square and level; anchor securely flush to dock; shim where needed to keep flush; full perimeter weld EOD and bumpers to embed channel
 - .3 adjust installed unit for operation as specified by manufacturer
 - .4 Attach dock bumpers to face of loading dock in a manner that complies with the requirements indicated for spacing, arrangement, and position relative to top of platform and anchorage
 - .5 Plug weld anchor holes in contact with steel inserts and fillet weld at other locations
 - .6 Attach dock seals support frames securely to building structure in proper relation to openings, dock bumpers, and dock leveler to ensure an effective seal of dock-shelter curtains with sides and top of truck body when trucks are positioned against dock

- bumpers
- .4 Adjusting
 - .1 Adjust all loading dock equipment to function smoothly, safely and in accordance with manufacturers specifications
 - .2 Test dock levelers for vertical travel and ensure that it operates within the manufacturer's specified range
 - .3 Inspect and repair any exposed finishes such that exposed finishes are seamless and consistent with factory finishes

3.2 Coordination

- .1 Coordinate installation of loading dock equipment with York University's Project Coordinator, CSBO Maintenance Department, Security Services and other relevant university departments.

End of Section