

## SECTION 11160 - LOADING DOCK EQUIPMENT

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Dock bumpers.
  - 2. Dock levelers.
  - 3. Dock seals.
  - 4. Metal Hoods
- B. See Division 5 Section "Metal Fabrications" for curb angles at edges of recessed pits.

#### 1.2 DEFINITIONS

- A. Operating Range: Maximum amount of travel above and below the loading dock level.
- B. Working Range: Recommended amount of travel above and below the loading dock level for which loading and unloading operations can take place.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
  - 1. Include concrete pit details showing pit dimensions, and locations for curb steel embeds.
- C. Samples: For each type of dock seal cover material indicated.
- D. Maintenance data.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
  - 1. Maintenance Proximity: Not more than four hours' normal travel time from Installer's place of business to Project site.
  - 2. Maintenance Availability: Authorized representative shall employ service technicians that are available for emergency repair service 24 hours every day, and 365 days a year.
- B. Field Verification: Authorized representative shall visit the project site and field-verify the size of dock door openings, dock leveler pits, and driveway sloping conditions prior to product

fabrication. Any deviation in openings sizes, or clearance obstructions shall be identified, and shown to the project superintendent.

- C. Dock-Leveler Standard: Comply with MH 30.1 "Safety, Performance, and Testing of Dock Leveling Devices.

## 1.5 COORDINATION

- A. Recessed Loading Dock Equipment: Coordinate size and location of pits and pit steel embeds to ensure proper clearances and operation of equipment.
- B. Dock Seals: Coordinate size and locations of seal pads and metal hoods to ensure proper clearances for installation

## 1.6 WARRANTY

- A. Special Warranty for Dock Levelers: Manufacturer's standard form in which manufacturer agrees to repair or replace dock-leveler components that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period for Structural Assembly: 5 years from date of Substantial Completion including structural failures, cracked or broken structural support members, load-bearing welds, deck plate failures, including cracked plate, or permanent deformation in excess of ¼ inch between deck supports.
  - 2. Counter-balance springs: 5 years, Hold down device: 2 years from the date of Substantial Completion.
  - 3. Warranty shall be for unlimited usage of the leveler for the specified rated capacity over the term of the warranty.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURER

- A. Poweramp; Division of Systems, Inc.
  - Contact Person: Sarah Kramlik
  - Poweramp Inc.
  - W194N 11481 McCormick Dr.
  - P.O. Box 3009
  - Germantown, WI 53022
  - Off: 800-643-5424 Ext. 7317
  - Fax: 262-255-4199
  - [sarahkramlik@docksystemsinc.com](mailto:sarahkramlik@docksystemsinc.com)
  - 1. Dock Bumpers:
    - a. Poweramp; Division of Systems, Inc.
  - 1. Recessed Dock Levelers:

- a. Poweramp; Division of Systems, Inc.
2. Dock Seals:
  - a. Poweramp; Division of Systems, Inc.
3. Metal Hood:
  - a. Poweramp; Division of Systems, Inc.

## 2.2 DOCK BUMPERS

- A. Laminated Vertical Tread Bumpers: Provide units of size indicated, fabricated from multiple plies cut from fabric-reinforced rubber tires to a uniform thickness of 6 inches by 10 inches wide by 20 inches high. Laminate plies under pressure on 3/4-inch diameter steel supporting rods that are welded and bolted to 1/4-inch-thick structural steel angle closures with predrilled anchor holes. Size angles to provide not less than 1 inch of tread plies extending beyond the face of the closure angles.
  1. Coordinate the thickness with the thickness of the dock seal and that the seals are not compressed more than 4".
- B. Anchorage Devices: Provide anchor bolts, nuts, washers, bolts, sleeves, cast-in-plate and other anchorage devices as required to fasten bumpers securely in place and suit installation type indicated. Provide hot-dip galvanize anchorage components.

## 2.3 RECESSED DOCK LEVELERS

- A. General: Recessed, hinged-lip-type dock levelers designed for permanent installation in concrete pits preformed in the edge of loading platform; of type, function, operation, capacity, size, and construction indicated; and complete with controls, safety devices, and accessories required.
- B. Type: Recessed, hinged-lip-type designed for permanent installation in concrete pits, preformed in the edge of loading platform.
  1. New Store Construction Dimensions: 6'-6" wide by 8 feet long
  2. Existing Store Renovation Dimensions: 6'-6" wide by 8 feet long (Verify field conditions).
- C. Function: Dock levelers shall compensate for differences in height between the truck bed and the loading platform in the following manner:
  1. Vertical Travel: Minimum working range shall be 12 inches above and 12 inches below the adjoining platform level for dock leveler ramps. Provide an operating range above the platform level of sufficient height to enable the lip to extend and clear the truck bed before contact.

2. Automatic Vertical Compensation: Floating travel of the ramp with lip extended and resting on the truck bed shall compensate automatically for upward or downward movement of the truck bed during loading and unloading.
  3. Automatic Lateral Compensation: Tilting of the ramp with lip extended and resting on the truck bed shall compensate automatically for canted truck beds of up to 4 inches over the width of the ramp.
  4. Lip Operation: Provide the manufacturer's standard mechanism that automatically extends and supports the hinged lip on the ramp edge with the lip resting on the truck bed over the dock leveler's working range, allows the lip to yield under impact of the incoming truck, and automatically retracts the lip when the truck departs.
    - a. Length of Lip Extension: Not less than 20 inches from ramp edge and not less than 16 inches in front of the dock bumpers.
- D. Mechanical Operating System: Provide spring-operated raising and walk-down lowering of the unloaded ramp. Equip units with an upward-biased-spring counterbalancing mechanism controlled by a hold-down device. Raise ramp to the top limit of the operating range by operating the recessed control handle in the ramp to disengage the hold-down device. Lower the ramp below platform level with the lip retracted by operating the auxiliary, recessed, control handle to release support legs.
- E. Rated Capacity: Provide dock levelers capable of supporting a total gross load indicated below without permanent deflection or distortion, as determined by actual tests complying with the requirements of MH30.1 for rated capacity.
- F. Safety Devices: Provide the manufacturer's standard and optional safety devices as follows:
1. Toe Guards: Equip open sides of rising ramp over the entire upper operating range with metal toe guards mounted flush with ramp edges and projecting below ramp. Toe guards shall be welded, not bolted, to leveler platform.
  2. Cross-Traffic Support: Provide manufacturer's standard method of supporting ramp at platform level in stored position with lip retracted. Provide a means to release supports to allow ramp to descend below platform level.
  3. Free-Fall Protection: Equip mechanical dock levelers with manufacturer's standard protection system to limit free fall of loaded ramps with front edge supported by the truck bed. Mechanical Dock Leveler shall 3 position safety stops.
- G. Construction: Fabricate the dock leveler frame from structural and formed steel shapes. Fabricate platform, including the hinged lip, from non-skid steel plate. Fabricate the entire assembly to withstand deformation during both operating and stored phases of service. Chamfer lip edge to minimize obstructing wheels of material-handling vehicles. Include two dock bumpers attached to the frame
1. Clean-Pit Frame: Provide leveler framing designed to support leveler at sides of pit, with no side-to-side supports at front and back of pit floor.

- H. Finish and Color: Galvanized finish. Manufacturer's standard paint applied to factory-assembled and tested dock levelers before shipping. Paint toe guards yellow to comply with ANSI Z535.1.
- I. Accessories:
  - 1. Night Locks: Provide the manufacturer's standard means to prevent extending the lip and lowering the ramp when overhead doors are locked.
  - 1. Side and rear weather seals shall be brush type.

## 2.4 DOCK SEALS

- A. General: Provide the manufacturer's standard dock seals consisting of fabric-covered foam pads designed to compress under pressure of the truck body to form an air-tight seal at the jambs and head of loading dock openings.
- B. Size of Jamb Pads: Provide jamb pads not less than 12 inches wide and 12 inches deep, sized to suit opening height.
  - 1. Reinforcing: Inside surface of both side panels shall be reinforced full length with weight 40 oz./sq.yd. Hypalon coated nylon.
- C. Size and Type of Head Pad: Provide head pad of the same depth as jamb pads, sized to suit opening width, and as follows:
  - 1. Type: Provide stationary head pads.
    - a. Height: Not less than 18 inches.
- D. Construction: Provide the manufacturer's standard construction consisting of single- or double-ply, coated, fabric-covered, urethane-foam core with supporting frame.
  - 1. Cover Fabric: Vinyl-coated nylon or polyester cover fabric with total minimum weight of 40 oz. per sq. yd.
  - 2. Fabric Color: Black.
  - 3. Guide Strips: 4-inch-wide, coated, nylon guide strips on jamb pads. Color shall be yellow.
  - 4. Pleated Protectors: Provide protectors of face of jamb pads of overlapping layers of coated fabric attached to base fabric.
  - 5. Treated Wood Support Frame: Select structural-grade dimension lumber according to DOC PS 20, kiln-dried, with steel mounting hardware.
- E. Unit Projection: Coordinate unit projection, and taper pads to accommodate driveway approach as indicated on site plans (3 percent grade maximum, unless otherwise noted on plans). Prior to fabrication of dock seals, field verify finished driveway approach, and taper projection of pads for any grade percentage greater than 1.

## 2.5 METAL HOODS

- A. General: Provide the manufacturer's standard metal units designed to form a self-contained hood system complete with fasteners, supports and gutters.
- B. Shape and Size: Fabricate units to sizes and shapes indicated or required to fit door opening sizes shown.
- C. Construction: Provide materials complying with the following requirements.

1. Metal Hoods: Fabricate hoods and gutters of 16 gauge G-90 galvanized steel as is standard with the manufacturer.
2. Metal Framing: Fabricate center supports of 14 gauge G-90 galvanized steel, as is standard with the manufacturer.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

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

#### 3.2 PREPARATION

- A. General: Coordinate installation 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

#### 3.3 INSTALLATION

- A. General: Comply with manufacturer's detailed written instructions for installing loading dock equipment. Install loading dock equipment, including accessories as required for a complete installation
- B. Examine curb angles, 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.
- C. Dock Bumpers: Attach dock bumpers to the structure in a manner that complies with requirements indicated for spacing, arrangement, and position relative to top of platform and anchorage.
  1. Bolted Attachment: Attach dock bumpers to preset anchor bolts embedded in concrete or to cast-in-place inserts or threaded studs welded to embedded steel plates or angles. If preset anchor bolts, cast-in-place inserts, or threaded studs welded to embedded plates or angles are not provided, attach dock bumpers by drilling and anchoring with expansion anchors and bolts.
- D. Dock Levelers:

1. Attach leveler securely to loading platform construction according to manufacturer's written instructions, flush with adjacent dock surfaces and square to recessed pit.
  2. Recessed Dock Levelers: Coordinate forming recessed pit for dock levelers to ensure that recess is adequate to accommodate leveler in proper relation to loading platform.
- E. Dock Seals: Attach supporting frames securely to building structure in proper relation to openings, dock bumpers, and dock levelers to ensure compression of dock seals when trucks are positioned against dock bumpers.
- F. Metal Hoods: Securely attach metal hoods to the building structure in proper relationship to openings, in accordance with hood manufacturer's recommendations.
- G. Adjust dock levelers for proper, safe, efficient operation.
- H. Test dock levelers for vertical travel within operating range indicated.

### 3.4 CLEANING AND PROTECTING

- A. Restore marred, abraded surfaces to their original condition.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure loading dock equipment is without damage or deterioration at the time of Substantial Completion

### 3.5 DEMONSTRATION

- A. Startup Services: Engage a factory-authorized service representative to perform startup services and to train Owner's maintenance personnel as specified below:
1. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
  2. Train Owner's maintenance personnel on procedures and schedules related to startup and shutdown, troubleshooting, servicing, and preventive maintenance.
  3. Review data in maintenance manuals. Refer to Division 1 Section "Contract Closeout".
  4. Schedule training with Owner, through Contract Manager, with at least seven days advance notice

END OF SECTION 11160

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