OHIO TURNPIKE AND
INFRASTRUCTURE COMMISSION

ADDENDUM NO. 1
ISSUED MAY 8, 2020

PROJECT NO. 58-20-01

NEW MAINLINE TOLL PLAZA FACILITY
UTILITY BUILDINGS, TOLL BOOTHS & CANOPIES
MILEPOST 49
LUCAS COUNTY, OHIO

ATTENTION OF BIDDERS IS DIRECTED TO:
ANSWERS TO QUESTIONS RECEIVED THROUGH 2:00 P.M. ON MAY 8, 2020

MODIFICATIONS TO THE CONTRACT DOCUMENTS

Specifications: 074123.23 and 075419
-AND-
Approved Equals: 087100 and 102113.7

Issued by the Ohio Turnpike and Infrastructure Commission through Jennifer L. Stueber, Esq., General Counsel.

May 8, 2020

Jennifer L. Stueber, Esq., Date
General Counsel

ANSWERS TO QUESTIONS RECEIVED THROUGH 2:00 P.M. ON MAY 8, 2020:

Q#1 Will you be needing currency and coin counters for this project?

A#1 No.

Q#2 Do I find the bid items and project manual on the Ohio turnpike website?

A#2 Contract Documents are available by registering for a free vendor account and logging into Bid Express® (https://www.bidexpress.com). The Contract Documents may also be reviewed for bidding purposes without charge during business hours at the following locations:

Builders Exchange	Construction Journal
9555 Rockside Rd, Ste. 300	7261 Engle Rd, Suite 101
Valley View, Ohio 44125	Cleveland, Ohio 44130

Q#3 This site is more for contractors...would we be able to bid the generator separately or would we have to go through the GC?

A#3 This Project will be contracted though a single General Contractor. The generator shall be included in the single General Contractor's Bid.

Q#4 Is there a specification for the canopies?

A#4 Yes, the toll booth canopies are a site-built structure of many components covered in the Specifications that include but are not limited to Sections: 051200 Structural Steel Framing, 053100 Steel Decking, 054000 Cold Formed Framing, 074213.23 Metal Composite Material Metal Panels, and 075419 Polyvinyl-Chloride (PVC) Roofing.

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Q#5 I would like a clarification on the fuel tank capacity for the generator on this project. In Specification Section 263213.14, Section 2.5.F.2, the specification calls for 133% of the planned run time. I saw nowhere else in the specification does it state what the planned run time is. Can this be clarified?

A#5 The tank capacity is provided in Key Note 1 on Plan Sheet 154 of 202 (E104).

Q#6 Are they asking for any noise mitigation?

A#6 No.

Q#7 If we are a Security Integrator who will bid the access control and the CCTV under SP, do we submit this as a standalone or do we need to [partner with an Electrical Contractor or general Contractor for submittal as the directions say "Electrical/Telecommunications" unit is one LUMP.

A#7 This Project will be contracted though a single General Contractor. All items shall be included in the single General Contractor's Bid.

Q#8 **We have been asked to provide the composite metal wall paneling on the New Mainline Toll Plaza Facility project. In my review of the specifications it appears as though there is only one listed approved composite metal wall panel fabricator. I have attached the provided substitution request form along with our test summary, specifications, and work experience. Please let me know if there is any other information needed for approval.**

A#8 Specification Section 074213.23 - METAL COMPOSITE MATERIAL WALL PANELS of the Specifications has been revised to clarify the fabricator's qualifications. The revised Specification Section 074213.23 is included as part of this Addendum No. 1.

Q#9 On the drawings it is noted that the insulation to be installed directly over the deck, in the specs 075419. 2.5 A, calls for a substrate board. Is a substrate board required?

A#9 This Addendum No.1 removes the substrate board in Specification Section 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING. The revised Specification Section 075419 is included as part of this Addendum No. 1.

Q#10 What is the starting thickness for tapered insulation on the 2 canopy's and on the Bridge roof?

A#10 The minimum thickness for the insulation board is 1/4" as specified in Specification Section 075419.

Q#11 On the roof drawing page A305 detail 3 (Bridge) and a few other details where there is a metal deck it does not mention a cover board with the notes. On all plywood decks it does note a cover board. The spec number 075419 2.7 D calls for a cover board. Is a cover board required over metal decks?

A#11 A substrate board is not required on the metal deck. A cover board shall be provided with all roofing systems and is to be installed over the top layer of roof insulation before application of the roof membrane. See the response to Q#9 for additional information.

Q#12 If there is no cover board on the metal deck roofs is all insulation be mechanically fastened?

A#12 The first layer of insulation shall be mechanically fastened directly to the metal deck. Subsequent layers shall be adhered in accordance with the Specifications. See the responses to Q#9 and Q#11 for additional information.

Q#13 I see there is a spec for the roller shades but I am not seeing any callouts for them on the drawings. Are they wanting shades at all the windows excluding the bridge?

A#13 No, roller shades shall only be provided and installed in Office 1-10 and Break 1-8.

Q#14 Will plumbing fixtures that are equal to the basis of design be accepted?

A#14 All proposed equals shall be submitted in accordance with the Instructions to Bidders, IB Article 2.5 PROPOSED EQUALS. Please submit all proposed equal requests via email to: Procurement Manager: purchasing@ohioturnpike.org

Q#15 When I saw that our door hardware products were not listed as acceptable for the Milepost 49 Toll Plaza project. I've prepared submissions to include our Stanley Commercial QDC 100 door closers and Dorma M9000 mortise locks; my submissions contain complete CSI Substitution Request forms, product information (ratings and certifications have been highlighted), and warranties.

A#15 The proposed approved equals have been reviewed and the approval/disapproval action is included in the APPROVED EQUALS CHART below.

Q#16 Is there a written spec available for access control and cctv systems?

A#16 No, the access control and CCTV equipment will be provided and installed by others. Conduit, junction boxes, and cabling shall be provided and installed in this Contract unless noted otherwise on the plans. All cabling shall be tested.

Q#17 Who is providing & installing cabling and conduit?

A#17 Conduit, junction boxes, and cabling shall be provided and installed as part of this Contract unless noted otherwise on the plans. All cabling shall be tested.

Q#18 How will the 4 gates tie in to the S2 Access Control? With readers/who will supply? I know the other turnpike gates at the service plazas use the EZ pass reader infrastructure

A#18 The Toll Collection System (TCS) equipment will be provided and installed by the TCS Integrator. The TCS Integrator will terminate and re-test all cabling that are to connect to the TCS equipment. The gates, conduits, cables, and single arm overhead sign support will be provided and installed under this Contract. All cabling shall be tested.

Q#19 What VMS is spec'd? Milestone? What is the VMS spec in terms of server build? VM? Retention time?

A#19 General Note 1 on Plan Sheet 189 of 202 (I108) states the Cameras and Com Room equipment shall be provided and installed by others. Conduit, junction boxes, and cabling for the future CCTV system shall be provided and installed as part of this Contract unless noted otherwise on the plans. All cabling shall be tested.

Q#20 What kind of resolution is needed on cameras? Huge costs difference between 2mp and 4k

A#20 Cameras are not part of this Contract.

Q#21 No preferred manufacturers were noted in the pre-fabricated toll booths specification 133423. Does the Turnpike Commission have any preferred vendors for fabrication of the toll booths?

A#21 No, the Commission does not have a preferred manufacture. However, the A.P. O'Horo Company, 3130 Belmont Avenue, Youngstown, Ohio, 44504, (330) 759-9317 manufactured a pair of toll booths on a recent project.

Q#22 Specification 011000 item 1.05.5.C wants us to coordinate with the Commission and its propane & Tank Supplier for installation of the propane tank. Who is the Commission's propane supplier?

A#22 The current propane supplier is Ferrellgas, L.P. of Norwalk, Ohio.

Q#23 Drawing E110 – keynote 2 indicates that fixtures K and the LED signs are circuited to the toll booth panels. The northern canopy lighting plan shows these as being circuited to panel CP1. Which is correct?

A#23 The Commission will respond to this question in Addendum No. 2.

Q#24 Drawing E110 – Please confirm that there aren't any LED signs on the Eastbound / Southern canopy.

A#24 Correct, there are no LED signs on the Eastbound/South side canopy.

Q#25 Is there an electrical lane drawing? I don't see any details of gate controllers, axle lights, flashing pylon lights, etc.

A#25 The Commission will respond to this question in Addendum No. 2.

Q#26 Drawings I118 and I119 seems to show typical control wiring possibilities for the booths and lanes. Which are applicable to this project?

A#26 The Commission will respond to this question in Addendum No. 2.

Q#27 Is drawing I117 applicable to this project? It conflicts with E102/E103.

A#27 The Commission will respond to this question in Addendum No. 2.

Q#28 Does Transcope mount the LED signs, or do we do that and they provide terminations?

A#28 The Commission will respond to this question in Addendum No. 2.

Q#29 Please provide detail on the "conduit support bridges" described in notes 4 and 5 on E110. They sound simple enough but they are a steel connection between two freestanding units.

A#29 The Commission will respond to this question in Addendum No. 2.

Q#30 Is open fire alarm cable above suspended ceilings acceptable?

A#30 Yes, open fire alarm cable is acceptable above suspended ceilings. All exposed or non-accessible locations shall be installed in conduit.

Q#31 Drawing E116 shows a meter socket coming off the transformer. Please confirm that this is what will be required. I would typically expect to see a CT cabinet required. If it is, please indicate where you want that located. Either on a rack by the transformer, or on the side of the building behind MCB1.

A#31 The Commission will respond to this question in Addendum No. 2.

Q#32 Who is providing the camera poles shown on I113?

A#32 The camera pole, foundation and all the details shown on Plan Sheet 194 of 202 (I113) are to be provided and installed in this Contract.

Q#33 Who is providing the single arm overhead sign supports that are shown on drawing E131?

A#33 The single arm overhead sign support and foundation is included in this Contract.

Q#34 Drawing I102 points at cameras 51/52 and indicates "10' on roof of pedestrian bridge". Is this supposed to be some type of structure that is elevated 10' above the bridge, or are these cameras going to be installed in an accessible location on the side? If it is a structure, is it coming with the prefabricated bridge? Is the camera system supplier providing it, or is the 53-12-01 contract supplying it?

A#34 The Commission will respond to this question in Addendum No. 2.

Q#35 Who provides the access control system and what is the scope?

A#35 See the response to Q#16.

Q#36 Drawings I102/I103 – Gate G-3 shows a card reader, Gate G-1 does not. Is this correct or will access to these be via the antenna system?

A#36 The Commission will respond to this question in Addendum No. 2.

Q#37 The schedule on I108 indicates cameras 20, 21, 22, 23 to view the gates. These do not show up on I102/I103. Where are these and are they on their own poles?

A#37 The Commission will respond to this question in Addendum No. 2.

Q#38 I114 makes reference to the signing plan for some conduits running to the entry trusses. I115 appears to provide details associated with the signing. I116 shows truss mounted LED signs. G009 doesn't show any truss mounted signs. I'm having a hard time figuring out what details are project specific and what are generic. There are a lot of contradictions relating to the signing. Is there a drawing we should be referencing that takes precedence, or will these be updated with project specific details?

A#38 The Commission will respond to this question in Addendum No. 2.

Q#39 I116 shows leaving canopy LED signs. Are these part of the project? They're not shown anywhere else. This drawing doesn't show any entering canopy LED signs that are shown elsewhere.

A#39 The Commission will respond to this question in Addendum No. 2.

Q#40 Are there canopy mounted scanners on this project? If so, is there a conduit riser?

A#40 The Commission will respond to this question in Addendum No. 2.

Q#41 Are there any responsibilities beyond stubbing conduits into the (3) above grade com enclosures shown on E102/E103? Is all conduit and wire from those enclosures to the trusses by the TCS vendor?

A#41 The Commission will respond to this question in Addendum No. 2.

Q#42 Specification Section 13 34 23 – Prefabricated toll booths- does OTIC have a list of approved manufacturers/vendors for this product?

A#42 See the response to Q# 21.

Q#43 Plan sheet 9/202 shows LED Signs on top of toll booths with cross-hatching defining these as "Toll System Integrator" Contract items. Will OTIC provide additional information as to what is covered under the separate "Toll System Integrator" Contract as well as what the timeframe of that contract will be and its coordination with this contract?

A#43 The Commission will respond to this question in Addendum No. 2.

Q#44 We respectfully submit for your consideration a request to approve products as an accepted substitute on ML Toll Plaza Facility at MP 49.0 (19-898951); please find substitution request form attached. With over 30 years of experience, Scranton Products is the industry leader in plastic (HDPE) bathroom partitions and lockers. Constructed from premium, American-made solid plastic, our products resist dents, scratches, corrosion, graffiti and mildew.

A#44 The proposed approved equals have been reviewed and the approval/disapproval action is included in the APPROVED EQUALS CHART below.

APPROVED EQUALS CHART:
The following are modifications to the Approved Equals Chart for this Project with the issuance of Addendum No. 1:

COMPANY NAME	PRODUCT	SPECIFICATION	APPROVAL
Scranton Products	Hiney Hiders Partitions	102113.17	Approved
Scranton Products	Duralife Lockers	105113	Not Approved
Stanley Commercial Hardware	Door Closer	087100	Approved
Stanley Commercial Hardware	Locks	087100	Approved

Changes to the Specifications: Deletions are shown with strikethrough text.
Changes / Additions are shown with bold italicized text.

Changes to the Drawings: Additions and deletions are indicated with a cloud and revision triangle thus:

Receipt of Addendum No. 1
Project No. 58-20-01 is hereby acknowledged:

(Firm Name) _____

(Signature) _____

(Printed Name) _____

(Date) _____

BIDDERS MUST RETURN THE ABOVE ACKNOWLEDGEMENT OF RECEIPT OF ADDENDUM NO. 1 WITH THEIR BID.

SECTION 074213.23 - METAL COMPOSITE MATERIAL WALL PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Aluminum composite wall panels and accessories.
   a. Dry joint rain screen system with recessed reveal.
2. Subframing system.
3. Sealants.

B. Related Requirements:

1. Section 070500 “Common Work Results for Thermal and Moisture Protection.”
2. Section 076200 “Sheet Metal Flashing and Trim.”
3. Section 079200 “Joint Sealants.”

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site. Refer to Section 070500 “Common Work Results for Thermal and Moisture Protection.”

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Shop Drawings:

1. Include fabrication and installation layouts of metal composite material panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment assembly, trim, flashings, closures, and accessories; and special details.
2. Accessories: Include details of the flashing, trim and anchorage, at a scale of not less than 1-1/2 inches per 12 inches (1:10).

C. Samples for Initial Selection: For each type of metal composite material panel indicated with factory-applied color finishes.

1. Include similar Samples of trim and accessories involving color selection.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.

1. Metal Composite Material Panels: 12 inches (305 mm) long by actual panel width. Include fasteners, closures, and other metal composite material panel accessories.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Test Reports: For each product, tests performed by a qualified testing agency.

C. Field quality-control reports.

D. Sample Warranties: For special warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal composite material panels to include in maintenance manuals.

B. Executed Warranty.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. Fabricator Qualifications: An entity that has specialized in the fabrication of metal composite material wall panel systems of the type and extent required for this project for not less than five (5) years with a record of successful in-service performance and is approved by the original panel manufacturer.

C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Build mockup of typical metal composite material panel assembly, including corner, soffits, supports, attachments, and accessories.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, metal composite material panels, and other manufactured items so as not to be damaged or deformed. Package metal composite material panels for protection during transportation and handling.

B. Unload, store, and erect metal composite material panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal composite material panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal composite material panels to ensure dryness, with positive slope for drainage of water. Do not store metal composite material panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Retain strippable protective covering on metal composite material panels during installation.

1.8 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal composite material panels to be performed according to manufacturers' written instructions and warranty requirements.

1.9 COORDINATION

A. Coordinate metal composite material panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.10 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal composite material panel systems that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including rupturing, cracking, or puncturing.
b. Deterioration of metals and other materials beyond normal weathering.

2. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal composite material panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units when tested according to ASTM D2244.

b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.

c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Periods:

a. Fluoropolymer Finish: 20 years from date of Substantial Completion.

b. Anodized Finish: 10 years from the date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Alpolic

B. Alucobond

C. Reynobond

2.2 ACCEPTABLE FABRICATORS

A. Basis of Design: Royal Architectural Fabrication, Inc. (440-582-0400)
   1. Royaltech 3000 Panel System

B. ***Refer to Fabricator Qualifications specified in Quality Assurance article for approved fabricator requirements.***

2.3 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal composite material panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E330:

   1. Wind Loads: As indicated on Drawings.
   2. Other Design Loads: As indicated on Drawings.
   3. Deflection Limits: For wind loads, no greater than 1/240 of the span.

B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E283 at the following test-pressure difference:

   1. Test-Pressure Difference: 1.57 lbf/sq. ft. (75 Pa).

C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E331 at the following test-pressure difference:

   1. Test-Pressure Difference: 2.86 lbf/sq. ft. (137 Pa).

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

   1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

E. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

   1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

F. Fire Propagation Characteristics: Metal composite material wall panel system passes NFPA 285 testing.

2.4 METAL COMPOSITE MATERIAL WALL PANELS

A. Metal Composite Material Wall Panel Systems: Provide factory-formed and -assembled, metal composite material wall panels fabricated from two metal facings that are bonded to a solid,

extruded thermoplastic core; formed into profile for installation method indicated. Include attachment assembly components, panel stiffeners, and accessories required for weathertight system.

B. Aluminum-Faced Composite Wall Panels: Formed with 0.020-inch- (0.50-mm-) thick, coil-coated aluminum sheet facings.

1. Panel Thickness: 0.157 inch (4 mm) unless otherwise indicated on Drawings.
2. Core: Fire retardant.
3. Exterior Finish: Three-coat fluoropolymer.

a. Color: Custom color as determined by the Architect.

C. Attachment Assembly: Rainscreen system formed from extruded aluminum.

2.5 METAL SUBFRAMING SYSTEMS

A. Provide manufacturer's standard sections as required for support and alignment of metal composite material panel system.

B. ASTM C645, cold-formed, metallic-coated steel sheet ASTM A653/A653M, G90 (Z275 hot-dip galvanized) coating designation or ASTM A792/A792M, Class AZ50 (Class AZM150) aluminum-zinc-alloy coating designation unless otherwise indicated.

2.6 MISCELLANEOUS MATERIALS

A. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal composite material panels unless otherwise indicated.

B. Flashing and Trim: Provide flashing and trim formed from same material as metal composite material panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, endwalls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent metal composite material panels.

C. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal composite material panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.

D. Panel Sealants: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal composite material panels and remain weathertight; and as recommended in writing by metal composite material panel manufacturer.

2.7 FABRICATION

A. General: Fabricate and finish metal composite material panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance

requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. Fabricate metal composite material panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

C. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
3. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
4. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.
5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
6. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.

    a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal wall panel manufacturer for application but not less than thickness of metal being secured.

2.8 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Where indicated on the Drawings, provide the following types of finishes:

1. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written recommendations.

    a. Color and Gloss: Custom color as determined by the Architect.

2. Anodized Finishes:

a. Clear Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

b. Color Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal composite material panel supports, and other conditions affecting performance of the Work.

1. Examine wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by metal composite material wall panel manufacturer.
2. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal composite material wall panel manufacturer.

    a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Examine roughing-in for components and assemblies penetrating metal composite material panels to verify actual locations of penetrations relative to seam locations of metal composite material panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal composite material panel manufacturer's written recommendations.

3.3 METAL COMPOSITE MATERIAL PANEL INSTALLATION

A. General: Install metal composite material panels according to manufacturer's written instructions in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to supports unless otherwise indicated. Anchor metal composite material panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal composite material panels.
2. Flash and seal metal composite material panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal composite material panels are installed.
3. Install screw fasteners in predrilled holes.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal composite material panel work proceeds.

6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
7. Align bottoms of metal composite material panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
8. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Aluminum Panel Fasteners: Aluminum or stainless-steel fasteners.

C. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal composite material panel manufacturer.

D. Attachment Assembly, General: Install attachment assembly required to support metal composite material wall panels and to provide a complete weathertight wall system, including subgirts, perimeter extrusions, tracks, drainage channels, panel clips, and anchor channels.

1. Include attachment to supports, panel-to-panel joinery, panel-to-dissimilar-material joinery, and panel-system joint seals.

E. Installation: Attach metal composite material wall panels to supports at locations, spacings, and with fasteners recommended by manufacturer to achieve performance requirements specified.

1. Rainscreen Systems: Do not apply sealants to joints unless otherwise indicated.

F. Rainscreen-Principle Installation: Install using manufacturer's standard assembly with vertical channel that provides support and secondary drainage assembly, draining at base of wall. Notch vertical channel to receive support pins. Install vertical channels supported by channel brackets or adjuster angles and at locations, spacings, and with fasteners recommended by manufacturer. Attach metal composite material wall panels by inserting horizontal support pins into notches in vertical channels and into flanges of panels. Leave horizontal and vertical joints with open reveal.

1. Install wall panels to allow individual panels to be installed and removed without disturbing adjacent panels.
2. Do not apply sealants to joints unless otherwise indicated.

G. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal composite material panel assembly including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal composite material panel manufacturer; or, if not indicated, provide types recommended in writing by metal composite material panel manufacturer.

H. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners

where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

1. Install exposed flashing and trim that is without buckling and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (605 mm) of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

3.4 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align metal composite material wall panel units within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m), non-accumulative, on level, plumb, and location lines as indicated, and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect completed metal composite material wall panel installation, including accessories.

B. Metal composite material wall panels will be considered defective if they do not pass test and inspections.

C. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.

D. Prepare test and inspection reports.

3.6 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal composite material panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal composite material panel installation, clean finished surfaces as recommended by metal composite material panel manufacturer. Maintain in a clean condition during construction.

B. After metal composite material panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

C. Replace metal composite material panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074213.23

SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Adhered polyvinyl chloride (PVC) roofing system.
2. ~~*Substrate board.*~~
3. Roof insulation.
4. Cover board.
5. Walkways.

B. Related Requirements:

1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking; and for wood-based, structural-use roof deck panels.
2. Section 070500 “Common Work Results for Thermal and Moisture Protection.”
3. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
4. Section 077100 "Roof Specialties" for roof edge flashings.
5. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
6. Section 133423 “Prefabricated Toll Booths.”
7. Division 22 requirements for roof drains.

1.2 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D1079 and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Construction Manager, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.

5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:

1. Layout and thickness of insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation thickness and slopes.
5. Roof plan showing orientation of steel roof deck and orientation of roof membrane, fastening spacings, and patterns for mechanically fastened roofing system.
6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
7. Tie-in with air barrier.

C. Samples for Verification: For the following products:

1. Roof membrane and flashing, of color required.
2. Walkway pads, of color required.

D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Manufacturer Certificates:

1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

a. Submit evidence of compliance with performance requirements.

2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

C. Product Test Reports: For roof membrane and insulation, tests performed by independent qualified testing agency indicating compliance with specified requirements.

D. Evaluation Reports: For components of roofing system, from ICC-ES.

E. Field Test Reports:

1. Concrete internal relative humidity test reports.
2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

F. Field quality-control reports.

G. Sample Warranties: For manufacturer's special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.10 WARRANTY

A. Special Weathertight, Edge-to-Edge, No-Dollar-Limit Warranty: Manufacturer agrees to repair or replace components of roofing system as installed that fail in materials or workmanship within specified warranty period.

1. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, cover boards, substrate board, and other components of roofing system.

2. Warranty Period: 20 years from Date of Substantial Completion.

3. Warranty is without dollar limitation for the entire warranty period.

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, flashings and roof edge components (Specified in other Sections) and walkway products, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Carlisle Syntec

B. Johns Manville

C. Firestone Building Products

D. GAF

E. Durolast, Inc.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings shall remain watertight.

1. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

C. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.

1. Fire/Windstorm Classification: Class 1A-90.
2. Hail-Resistance Rating: SH.

D. ENERGY STAR Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.

E. Exterior Fire-Test Exposure: ASTM E108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

F. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.3 POLYVINYL CHLORIDE (PVC) ROOFING

A. PVC Sheet: ASTM D4434/D4434M, Type III, fabric reinforced.
1. Thickness: 60 mils (1.5 mm).
2. Exposed Face Color: Gray.

B. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.

2.4 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.

1. Adhesives and Sealants: Comply with VOC limits of authorities having jurisdiction.

B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.

C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

D. Bonding Adhesive: Manufacturer's standard.

E. Low-Rise, Urethane Adhesive: Roof system manufacturer's standard spray-applied, low-rise, two-component urethane adhesive formulated for compatibility and use with membrane roofing.

F. Slip Sheet: Manufacturer's standard, of thickness required for application.

G. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.

H. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick (25 mm wide by 1.3 mm thick), pre-punched.

I. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.

J. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

~~2.5 SUBSTRATE BOARDS~~

~~A. Substrate Board: ASTM C1177/C1177M, glass mat, water-resistant gypsum substrate or ASTM C1278/C1278M, fiber-reinforced gypsum board.~~

~~1. Thickness: 1/2 inch (13 mm).~~
~~2. Surface Finish: Factory primed.~~

~~B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate board to roof deck.~~

2.6 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by roof membrane manufacturer, approved for use in FM Approvals' RoofNav-listed roof assemblies.

B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 2, Grade 2, glass-fiber mat facer on both major surfaces.
1. Compressive Strength: 20 psi (138 kPa).

2. Size: 48 by 48 inches (1219 by 1219 mm).
3. Thickness:
   a. Base Layer: 1-1/2 inches (38 mm).
   b. Upper Layer: 3 inches (76 mm).

C. Tapered Insulation: Provide factory-tapered insulation boards.
1. Material: Match roof insulation.
2. Minimum Thickness: 1/4 inch (6.35 mm).
3. Slope:
   a. Roof Field: 1/4 inch per foot (1:48) unless otherwise indicated on Drawings.
   b. Saddles and Crickets: 1/2 inch per foot (1:24) unless otherwise indicated on Drawings.

2.7 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.

C. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:

1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.

D. Cover Board: ASTM C1177/C1177M, glass-mat, water-resistant gypsum board or ASTM C1278/C1278M fiber-reinforced gypsum board.
1. Thickness: 1/2 inch (13 mm).
2. Surface Finish: Factory primed.

2.8 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads, approximately 3/16 inch (5 mm) thick and acceptable to roofing system manufacturer.

1. Size: Approximately 36 by 60 inches (914 by 1524 mm).
2. Color: Contrasting with roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."
4. ~~Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.~~
5. ~~Verify that concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity is not more than [**75**] <**Insert number**> percent, or as recommended by roofing system manufacturer, when tested according to ASTM F2170.~~

    a. ~~Test Frequency: One test probe per each [**1000 sq. ft. (93 sq. m)**] <**Insert area**>, or portion thereof,~~of roof deck, with no fewer than three test probes.
    b. ~~Submit test reports within 24 hours of performing tests.~~

6. ~~Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.~~
7. ~~Verify that joints in precast concrete roof decks have been grouted flush with top of concrete.~~
8. ~~Verify that minimum curing period recommended by roofing system manufacturer for lightweight insulating concrete roof decks has passed.~~
9. ~~Verify that any damaged sections of cementitious wood-fiber decks have been repaired or replaced.~~
10. ~~Verify that adjacent cementitious wood-fiber panels are vertically aligned to within 1/8 inch (3.2 mm) at top surface.)~~

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Perform fastener-pullout tests according to roof system manufacturer's written instructions.

1. Submit test result within 24 hours of performing tests.

    a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

3.3 INSTALLATION OF ROOFING, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition and to not void warranty for existing roofing system.

D. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified under Section 072726 "Fluid-Applied Membrane Air Barriers."

~~3.4 INSTALLATION OF SUBSTRATE BOARD~~ ***OMITTED***

~~A. Install substrate board with long joints in continuous straight lines, with end joints staggered not less than 24 inches (610 mm) in adjacent rows.~~

~~1. At steel roof decks, install substrate board at right angle to flutes of deck.~~

~~a. Locate end joints over crests of steel roof deck.~~

~~2. Tightly butt substrate boards together.~~
~~3. Cut substrate board to fit tight around penetrations and projections, and to fit tight to intersecting sloping roof decks.~~
~~4. Fasten substrate board to top flanges of steel deck according to recommendations in FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification.~~
~~5. Fasten substrate board to top flanges of steel deck to resist uplift pressure at corners, perimeter, and field of roof according to roofing system manufacturers' written instructions.~~
~~6. Loosely lay substrate board over roof deck.~~

3.5 INSTALLATION OF INSULATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Installation Over Metal Decking:
1. Install base layer of insulation with joints staggered not less than 24 inches (610 mm) in adjacent rows, end joints staggered not less than 12 inches (305 mm) in adjacent rows, and with long joints continuous at right angle to flutes of decking.

a. Locate end joints centered over top flanges of decking.
b. Where installing composite and non-composite insulation in two or more layers, install non-composite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).
    1) Trim insulation so that water flow is unrestricted.
f. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
g. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
h. Loosely lay base layer of insulation units over substrate.
i. Mechanically attach base layer of insulation[and substrate board] using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.
    1) Fasten insulation according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.
    2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.
    a. Staggered end joints within each layer not less than 24 inches (610 mm) in adjacent rows.
    b. Install with long joints continuous and with end joints staggered not less than 12 inches (305 mm) in adjacent rows.
    c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
    e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).
    f. Trim insulation so that water flow is unrestricted.
    g. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
    h. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
    i. Loosely lay each layer of insulation units over substrate.
    j. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:
        1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

3.6 INSTALLATION OF COVER BOARDS

A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction.

1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
2. At internal roof drains, conform to slope of drain sump.

    a. Trim cover board so that water flow is unrestricted.

3. Cut and fit cover board tight to nailers, projections, and penetrations.
4. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

    a. Set cover board in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F (14 deg C) of equiviscous temperature.
    b. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
    c. Set cover board in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

B. Install slip sheet over cover board and immediately beneath roof membrane.

3.7 INSTALLATION OF ADHERED ROOFING

A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.

B. Unroll membrane roof membrane and allow to relax before installing.

C. Start installation of roofing in presence of roofing system manufacturer's technical personnel.

D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

E. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.

F. Hot Roofing Asphalt: Apply a solid mopping of hot roofing asphalt to substrate at temperature and rate required by manufacturer, and install fabric-backed roofing. Do not apply to splice area of roof membrane.

G. Fabric-Backed Roof Membrane Adhesive: Apply to substrate at rate required by manufacturer, and install fabric-backed roof membrane.

H. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeters.

I. Apply roof membrane with side laps shingled with slope of roof deck where possible.

J. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement.
1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
2. Apply lap sealant and seal exposed edges of roofing terminations.
3. Apply a continuous bead of in-seam sealant before closing splice if required by roofing system manufacturer.

K. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape.
1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
2. Apply lap sealant and seal exposed edges of roofing terminations.

L. Factory-Applied Seam Tape Installation: Clean and prime surface to receive tape.
1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
2. Apply lap sealant and seal exposed edges of roofing terminations.

M. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

N. Spread sealant or mastic bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

O. Adhere protection sheet over roof membrane at locations indicated.

3.8 INSTALLATION OF BASE FLASHING

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.9 INSTALLATION OF WALKWAYS

A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.
   1. Install flexible walkways at the following locations:
      a. Perimeter of each rooftop unit.
      b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
      c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
      d. Top and bottom of each roof access ladder.
      e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
      f. Locations indicated on Drawings.
      g. As required by roof membrane manufacturer's warranty requirements.
   2. Provide 6-inch (76-mm) clearance between adjoining pads.
   3. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.10 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.

B. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

C. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.11 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.12 ROOFING INSTALLER'S WARRANTY

A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
   1. Owner:.
   2. Address:
   3. Building Name/Type:
   4. Address:
   5. Area of Work:
   6. Acceptance Date: _____.
   7. Warranty Period:
   8. Expiration Date: _____.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

   1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:

      a. lightning;
      b. peak gust wind speed exceeding 72 mph;
      c. fire;
      d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
      e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
      f. vapor condensation on bottom of roofing; and
      g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.

   2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
   3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
   4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this

Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

END OF SECTION 075419

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Stage)

Project:	ML Toll Plaza Facility at MP 49.0 (19-898951)	Substitution Request Number:	SubReq-09660
	BEREA, OH	From:	Courtney Damore, Scranton Products
To:	Victoria Kullik, Ohio Turnpike Commission	Date:	05/07/2020
	victoria.kullik@ohioturnpike.org, 440-234-2081	A/E Project Number:	
Re:	Phenolic Core Toilet Compartments	Contract For:	Ohio Turnpike Commission

Specification Title: Phenolic Core Toilet Compartments
Description: Acceptable Manufacturers

Section: 102113.17 Page: 1
Article/Paragraph: 2.1

Proposed Substitution: Hiny Hiders Solid Plastic

Manufacturer: Scranton Products Address: scrantonproducts.com Phone: 570-348-0997

Trade Name: Scranton Hiny Hiders Solid Plastic Model No.: N/A

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.

Submitted by: Courtney Damore

Signed by: Courtney Damore

Firm: Scranton Products

Address: 801 E. Corey Street
Scranton, Pennsylvania 18504

Telephone: (570) 348-0997 ext. 8032, courtney.damore@azekco.com

A/E' s REVIEW AND ACTION

- [x] Substitution approved - Make submittals in accordance with Specification Substitution Procedures.
- [ ] Substitution approved as noted - Make submittals in accordance with Specification Substitution Procedures.
- [ ] Substitution rejected - Use specified materials.
- [ ] Substitution Request received too late - Use specified materials.

Signed by: Mike Murphy, Architect, PRIME AE Group, Inc. **Date:** 05/08/2020

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ ____

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Stage)

Project:	ML Toll Plaza Facility at MP 49.0 (19-898951)	Substitution Request Number:	SubReq-09661
	BEREA, OH	From:	Courtney Damore, Scranton Products
To:	Victoria Kullik, Ohio Turnpike Commission	Date:	05/07/2020
	victoria.kullik@ohioturnpike.org, 440-234-2081	A/E Project Number:	
Re:	Metal Lockers	Contract For:	Ohio Turnpike Commission

Specification Title: Metal Lockers
Description: Knocked-Down Wardrobe Lockers
Section: 105113 Page: 2
Article/Paragraph: 2.3

Proposed Substitution: Duralife Lockers
Manufacturer: Scranton Products Address: scrantonproducts.com Phone: 570-348-0997
Trade Name: Scranton Duralife Lockers Model No.: N/A

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.

Submitted by: Courtney Damore
Signed by: Courtney Damore
Firm: Scranton Products
Address: 801 E. Corey Street
Scranton, Pennsylvania 18504
Telephone: (570) 348-0997 ext. 8032, courtney.damore@azekco.com

A/E' s REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Substitution Procedures.

☐ Substitution approved as noted - Make submittals in accordance with Specification Substitution Procedures.

☒ Substitution rejected - Use specified materials.

☐ Substitution Request received too late - Use specified materials.

Signed by: Mike Murphy, Architect, PRIME AE Group, Inc. **Date:** 05/08/2020

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ ____

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Stage)

Project:	ML Toll Plaza Facility at MP 49.0 (19-898951)	Substitution Request Number:	SubReq-09661
	BEREA, OH	From:	Courtney Damore, Scranton Products
To:	Victoria Kullik, Ohio Turnpike Commission	Date:	05/07/2020
	victoria.kullik@ohioturnpike.org, 440-234-2081	A/E Project Number:	
Re:	Metal Lockers	Contract For:	Ohio Turnpike Commission

Specification Title: Metal Lockers
Description: Knocked-Down Wardrobe Lockers
Section: 105113 Page: 2
Article/Paragraph: 2.3

Proposed Substitution: Duralife Lockers
Manufacturer: Scranton Products Address: scrantonproducts.com Phone: 570-348-0997
Trade Name: Scranton Duralife Lockers Model No.: N/A

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.

Submitted by: Courtney Damore
Signed by: Courtney Damore
Firm: Scranton Products
Address: 801 E. Corey Street
Scranton, Pennsylvania 18504
Telephone: (570) 348-0997 ext. 8032, courtney.damore@azekco.com

A/E' s REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Substitution Procedures.

☐ Substitution approved as noted - Make submittals in accordance with Specification Substitution Procedures.

☒ Substitution rejected - Use specified materials.

☐ Substitution Request received too late - Use specified materials.

Signed by: Mike Murphy, Architect, PRIME AE Group, Inc. **Date:** 05/08/2020

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ ____

Knowledge for Creating and Sustaining the Built Environment

SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

Project: MP 49 Mainline Toll Plaza
Ohio Turnpike Commission

To: Michael Murphy; Prime AE
Kevin Golick, Victoria Kullik; OTIC Procurement

Re: Substitution Request- Door Closers

Substitution Request Number:

From: Anthony NeCastro, dormakaba

Date: 5/06/2020

A/E Project Number:

Contract For: Door Hardware

Specification Title: Division 08 Doors and Windows

Description: Door Hardware

Section: 087100 Page: 5

Article/Paragraph: 2.1.F

Proposed Substitution: Stanley Commercial Hardware

Manufacturer dormakaba USA, Inc. Address: 6161 E. 75th St., Indianapolis, IN Phone: 1-800-711-6814

Trade Name: Stanley Commercial Hardware Model No.: QDC 100 Series

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: Anthony NeCastro

Signed by: Anthony NeCastro

Firm: dormakaba USA, Inc.

Address: 6161 E. 75th Street
Indianapolis, IN 46250

Telephone: 216-645-4933

A/E's REVIEW AND ACTION

- [x] Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
- [ ] Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
- [ ] Substitution rejected - Use specified materials.
- [ ] Substitution Request received too late - Use specified materials.

Signed by: Mike Murphy, Architect

Date: 05082020

Supporting Data Attached: [ ] Drawings [ ] Product Data [ ] Samples [ ] Tests [ ] Reports [ ] _____

Door Closers

Substitution Request

Stanley Commercial Hardware: Door Closers

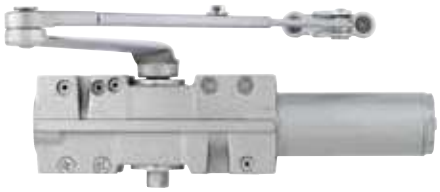
QDC 100 Series: Grade 1 Extra Heavy-Duty Door Closers

Performance Features

- Fully adjustable from 1 - 6 allowing for maximum flexibility.
- All-weather fluid ensures optimal operational performance in multiple climate conditions.
- Delayed action and backcheck are standard in the same door closer body.

Certifications

- ANSI/BHMA A156.4 Series – Grade 1
- ANSI A117.1 Accessibility Code (ADA Compliant)
- UL/cUL listed (3 hour) for self closing
- UL10C Positive Pressure Rated
- UL10B Pressure Rated



QDC111

Rounded Plastic Cover (R)
(Ships Standard)

Metal Cover (M)
(Left hand shown)

Product Specifications

- Handing – All QDC100 Series Closers are non-handed (QDC116 arms & metal covers are handed).
- Cast-iron closer body.
- All-weather fluid.
- Stacked valves prevent oil leaks from screws being backed out too far.
- Cover – metal and plastic covers available.
- Arms & brackets – Tri-pack standard, additional arms optional.
- Arm material – Heat-treated carbon steel.
- Springs – High-impact hand-drawn steel wires.
- Pinions – Heat-treated chrome molybdenum steel.
- Cylinder construction – Heat-treated free-cutting carbon steel.
- Fasteners – Wood and machine screws standard; sex nuts and self-reaming, self-tapping screws shipped standard.
- Door weights & sizes:

		Door Width Ranges	
Size	Applicable Door Weight	Interior	Exterior
1	33 – 55 LBS (15 – 30 Kg)	32" (0.81m)	28" (0.71m)
2	56 – 99 LBS (30 – 45 Kg)	36" (0.91m)	32" (0.81m)
3	99 – 143 LBS (45 – 65 Kg)	42" (1.07m)	36" (0.91m)
4	143 – 187 LBS (65 – 85 Kg)	48" (1.22m)	42" (1.07m)
5	187 – 264 LBS (85 – 120 Kg)	54" (1.37m)	48" (1.22m)
6*	264 – 330 LBS (120 – 150 Kg)	58" (1.47m)	54" (1.32m)

*50% spring power adjustment over size 6.

Warranty

- Lifetime Mechanical and 3-year finish

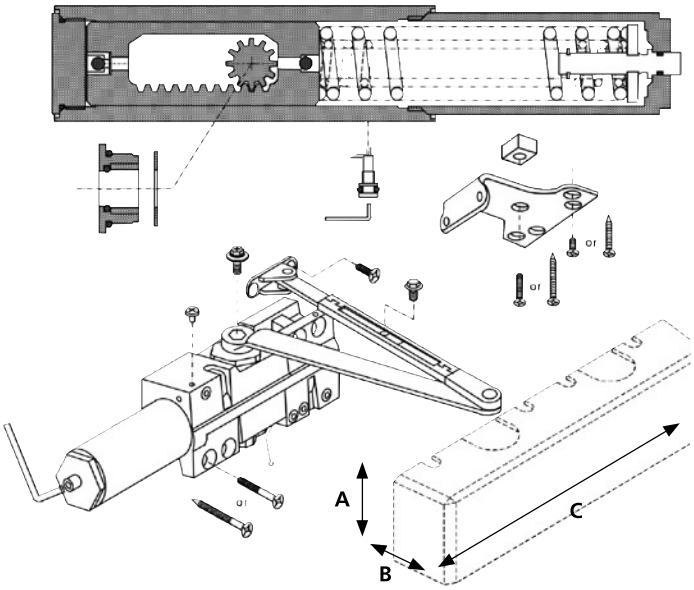
Door Closer Functions

Series	Description
QDC111	Tri-Pack Arm
QDC112	Tri-Pack Arm with Hold-Open
QDC113	Extra Duty Arm with Compression Stop
QDC114	Extra Duty Arm with Hold-Open and Compression Stop
QDC115	Extra Duty Arm
QDC116	Extra Duty Arm with Hold-Open (handed)
QDC117	Extra Duty Arm with Stop
QDC118	Extra Duty Arm with Hold-Open and Stop
QDC119	Extra Duty Arm with Spring Stop
QDC120	Extra Duty Arm with Hold Open and Spring Stop

Finishes

BHMA	Description
689	Painted Aluminum
690	Painted Dark Bronze
696	Painted Satin Brass

QDC 100 Series: Grade 1 Extra Heavy-Duty Door Closers



Dimensions		
A	B	C
3.50"	2.25"	12.1875"
88.90mm	57.15mm	309.56mm

Model/Series	Functions	Case Qty
QDC111	Tri-Pack Arm	3
QDC112	Tri-Pack Arm with Hold-Open	1
QDC113	Extra Duty Arm with Compression Stop	1
QDC114	Extra Duty Arm with Hold-Open and Compression Stop	1
QDC115	Extra Duty Arm	1
QDC116	Extra Duty Arm with Hold-Open (handed)	1
QDC117	Extra Duty Arm with Stop	1
QDC118	Extra Duty Arm with Hold-Open and Stop	1
QDC119	Extra Duty Arm with Spring Stop	1
QDC120	Extra Duty Arm with Hold Open and Spring Stop	1

Order with Closer		Description	Service Part #
		Sex nuts (Qty 4) (specify finish)	8Q00097
		Self-reaming, self-tapping screws (specify finish)	8Q00547
	M	QDC100 Series Metal Cover - RH	8Q01140
	M	QDC100 Series Metal Cover - LH	8Q01141

How to Order
QDC 100 Series: Grade 1 Extra Heavy-Duty Door Closers

Example

If you ordered: QDC111R 689 BF RH

You would get: Grade 1 Extra Duty Door Closer – Full Adjustable (Sized 1-6), Tri-Pack Arm, Rounded Plastic Cover, Barrier Free, Painted Aluminum Finish

11	Tri-Pack Arm
12	Tri-Pack Arm with Hold-Open
13	Extra Duty Arm with Compression Stop
14	Extra Duty Arm with Hold-Open and Compression Stop
15	Extra Duty Arm
16	Extra Duty Arm with Hold-Open
17	Extra Duty Arm with Stop
18	Extra Duty Arm with Hold-Open and Stop
19	Extra Duty Arm with Spring Stop
20	Extra Duty Arm with Hold Open and Spring Stop

689	Painted Aluminum
690	Painted Dark Bronze
696	Painted Satin Brass

QDC 116 HEDA Arm and Metal Cover Only	
LH	Left Hand
RH	Right Hand

Base Part Number					
Series	Function	Trim	Finish	Options	Handing
QDC1	**11**	**R**	**689**	**BF**	

QDC1xx	Grade 1 Extra Heavy-Duty Architectural

R	Full-Size Rounded Plastic Cover
M	Full-Size Metal Cover

BF	Barrier Free

QDC 200 Series: Grade 1 Heavy-Duty Door Closers

Performance Features

- Fully adjustable from 1 - 6 allowing for maximum flexibility.
- Delayed action and backcheck are standard in the same door closer body.
- All-weather fluid ensures optimal operational performance in multiple climate conditions.

Certifications

- ANSI/BHMA A156.4 Series – Grade 1
- ANSI A117.1 Accessibility Code (ADA Compliant)
- UL/cUL listed (3 hour) for self-closing doors without hold open
- UL10C Positive Pressure Rated
- UL10B Pressure Rated

Product Specifications

- Handing – All QDC200 Series Closers are non-handed.
- Material – Cast aluminum closer body.
- All-weather fluid.
- Cover – Slim-line plastic cover standard. Full, architectural plastic cover also available.
- Arms & brackets – Tri-pack standard (regular, top jamb, parallel configurations). Hold open and dead stop arms also available.
- Arm material – Heat-treated carbon steel.
- Springs – High-impact hand-drawn steel wires.
- Pinions – Heat-treated chrome molybdenum steel.
- Cylinder construction – Heat-treated free-cutting carbon steel.
- Fasteners – Wood and machine screws standard; sex nuts and self-reaming, self-tapping screws shipped standard.
- Door weights & sizes:

		Door Width Ranges	
Size	Applicable Door Weight	Interior	Exterior
1	33 – 55 LBS (15 – 30 Kg)	32" (0.81m)	28" (0.71m)
2	56 – 99 LBS (30 – 45 Kg)	36" (0.91m)	32" (0.81m)
3	99 – 143 LBS (45 – 65 Kg)	42" (1.07m)	36" (0.91m)
4	143 – 187 LBS (65 – 85 Kg)	48" (1.22m)	42" (1.07m)
5	187 – 264 LBS (85 – 120 Kg)	54" (1.37m)	48" (1.22m)
6	264 – 330 LBS (120 – 150 Kg)	58" (1.47m)	54" (1.32m)

Warranty

- Lifetime Mechanical and 3-year finish

Tri-Pack Arm

Tri-Pack Arm with Hold-Open

Heavy Duty Arm with Compression Stop

Heavy Duty Arm with Hold-Open and Compression Stop

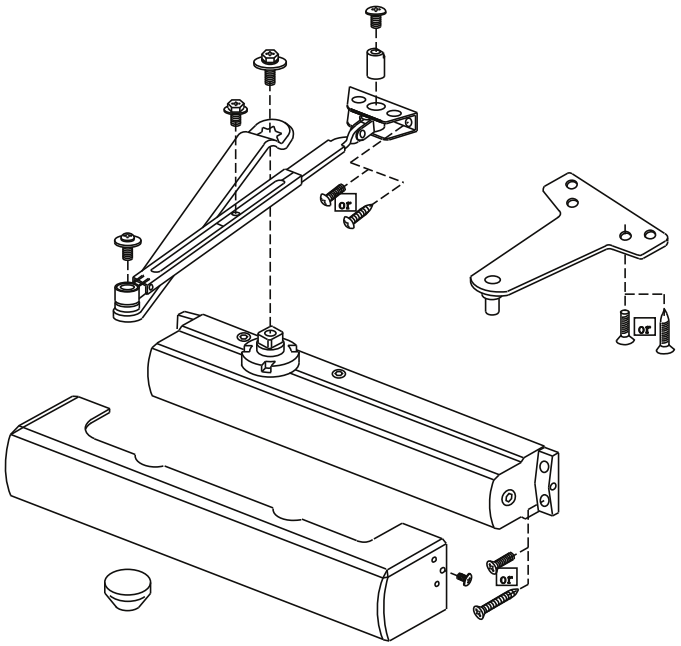
Door Closer Functions

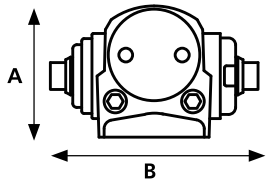
Series	Description
QDC211	Tri-Pack Arm
QDC212	Tri-Pack Arm with Hold-Open
QDC213	Heavy Duty Arm with Compression Stop
QDC214	Heavy Duty Arm with Hold-Open and Compression Stop

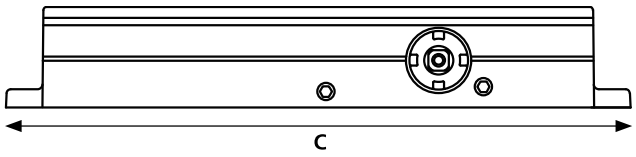
Finishes

BHMA	Description
689	Painted Aluminum
690	Painted Dark Bronze
696	Painted Satin Brass

How to Order
QDC 200 Series: Grade 1 Heavy-Duty Door Closers







DIMENSIONS		
A	B	C
2.05"	3.18"	12"
52.20mm	80.70mm	305mm

Model/Series	Functions	Qty
QDC211	Tri-Pack Arm	6
QDC212	Tri-Pack Arm with Hold-Open	6
QDC213	Heavy Duty Arm with Compression Stop	3
QDC214	Heavy Duty Arm with Hold-Open and Compression Stop	3

Order with Closer		Description	Service Part #
	F	Full-size cover (specify finish)	8Q00094
	S	Slim-line cover (specify finish)	8Q00096
		Sex nuts (Qty 4) (specify finish)	8Q00097
		Self-reaming, self-tapping screws (Qty 8) (specify finish)	8Q00436

How to Order
QDC 200 Series: Grade 1 Heavy-Duty Door Closers

Example

If you ordered: QDC211 F 689

You would get: Grade 1 Heavy-Duty Slim-Line Non-Hold Open Door Closer – Full Adjustable (Sized 1-6), Tri-Packed Arms with both Delayed Action & Backcheck Standard, full-size cover, Painted Aluminum finish.

11	Tri-Pack Arm
12	Tri-Pack Arm with Hold-Open
13	Heavy Duty Arm with Compression Stop
14	Heavy Duty Arm with Hold-Open and Compression Stop

689	Painted Aluminum
690	Painted Dark Bronze
696	Painted Brass

Base Part Number

Series	Function	Trim	Finish
QDC2	**11**	**F**	**689**

QDC2xx	Grade 1 Heavy-Duty Architectural

F	Full-Size Cover
S	Slim-Line Cover

WARRANTY

What is Covered: Stanley Security Solutions, Inc. ("Stanley") warrants that the Products manufactured by Stanley, identified below, and sold under its trade name "**STANLEY COMMERCIAL HARDWARE**" are free of defects in materials and workmanship as outlined below. The sole and exclusive liability of Stanley under this warranty is limited to the repair or replacement of any Product or component part covered by the warranty at the sole discretion of Stanley.

Who is Covered: This warranty is extended only to Stanley's distributors of Products and the end user who purchases Products for purposes other than resale (collectively, "Purchaser").

Hardware Warranty Period:

QCL Cylindrical Lock, QTL Tubular Lock, QMS/QME/QML Mortise Lock, QCI Inter connected Lock, QDB Auxiliary Deadbolt, QDC Door Closers, QED Exit Devices, QET/QRT Exit Trim, and QRM Mullions shall have the following warranty periods:

- **Mechanical products** warranty term shall be limited lifetime for a period of the useful life of the building in which the products are originally installed.
- **Electrical products** shall be warranted for one (1) year from the date of sale.

6CS and 7CS products shall have the following warranty period:

- Three (3) years from the date of sale.

Finishes shall be warranted for three (3) years from the date of sale excluding US10B/613 "Oil Rubbed Bronze" finish.

Warranty Claims: Any Products believed to be defective as covered by this warranty may not be returned without prior written Returned Materials Authorization (RMA) from Stanley Product Support (800) 392-5209 covering specific items and quantities within thirty (30) days from the discovery of the alleged defect(s). Stanley will inform the purchaser where to ship said Product(s), shipping charges prepaid by you, for examination. In the event such examination reveals a defect covered by this warranty; Stanley will, at its sole option, repair or replace the Product, and return it or its replacement to the purchaser, with charges only for shipping.

Exclusions: This warranty specifically excludes, and Stanley shall not be held responsible for the following:

a) COSTS ASSOCIATED WITH INSTALLING, REMOVING OR REINSTALLATION OF THE PRODUCT.
b) Damage caused by Product malfunction or failure attributable to acts of God.
c) Improper use or installation.
d) Poor or no maintenance.
e) Work performed by someone other than an Authorized Stanley technician.
f) Failure to follow Stanley's operating instructions or environmental specifications.
g) Incorrect application, modification, vandalism, erosion or corrosion, shipping and/or handling, improper storage, accident, misuse, abuse or any other cause not within the control of Stanley.
h) This warranty is void if any modification is made to the warranty product, regardless of whether the modification causes or contributes to the alleged defect. All modifications are made at the risk and expense of the party making the modifications.
i) Stanley shall not be liable for any repairs, replacements, or adjustments to the product or any costs of labor performed by the Purchaser or others without Stanley's prior written approval.
j) Stanley provides no warranty or guarantee that its cores and/or cylinders will function properly or be mechanically compatible with products not manufactured by Stanley.
k) Scratches, abrasion, deterioration due to the use of paints, solvents and other chemicals.
l) The US10B/613 finish is considered to be a living finish that will change over time with use and age and is expressly excluded from this warranty. The finish changes that occur are indicative of normal wear and tear and reflect the essence of a living finish. The finish changes are not considered manufacturing defects and are not covered by this warranty.

Third Party Warranty: Except as otherwise provided above, Stanley makes no warranty, express or implied, with regard to third party hardware or software and expressly disclaims the implied warranties or conditions of merchantability or merchantable quality, fitness for a particular purpose, title, infringement and those arising by statute or otherwise in law. Customer's sole recourse for warranty claims is with the manufacturer of the Product. However, Stanley agrees to pass through any third party warranty that Stanley receives from the manufacturer of the Products to Purchaser. The extent of any third party warranty details, terms and conditions, remedies and procedures may be expressly stated on, or packaged with, or otherwise accompanying the Products.

LIMITATION OF WARRANTIES: THIS WARRANTY IS GIVEN EXPRESSLY AND IN PLACE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, REPRESENTATIONS, OR WARRANTIES NOT SPECIFIED HEREIN.

STANLEY SHALL NOT, IN ANY EVENT, BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, SPECIAL OR PUNITIVE DAMAGES SUFFERED BY PURCHASER OR ANYONE CLAIMING BY, THROUGH OR UNDER PURCHASER, AS A RESULT OF THE CONDITION OF THIS PRODUCT, OR ANY PART OR PORTION THEREOF.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR PROHIBIT THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION AND EXCLUSIONS MAY NOT APPLY IN YOUR STATE.

THIS WARRANTY IS GOVERNED BY THE LAW OF THE STATE OF INDIANA WITHOUT REGARD TO ITS CONFLICTS OF LAW PRINCIPLES. STANLEY AND PURCHASER AGREE THAT THE UNITED NATIONS CONVENTION ON CONTRACTS FOR THE INTERNATIONAL SALE OF GOODS SHALL NOT APPLY TO SALE OF THE PRODUCTS COVERED BY THIS WARRANTY.

Rev. Date October 2015

Knowledge for Creating and Sustaining the Built Environment

SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

Project: MP 49 Mainline Toll Plaza
Ohio Turnpike Commission

To: Michael Murphy; Prime AE
Kevin Golick, Victoria Kullik; OTIC Procurement

Re: Substitution Request- Locks

Substitution Request Number:

From: Anthony NeCastro, dormakaba

Date: 5/06/2020

A/E Project Number:

Contract For: Door Hardware

Specification Title: Division 08 Doors and Windows

Description: Door Hardware

Section: 087100 Page: 4

Article/Paragraph: 2.1.B

Proposed Substitution: Dorma mortise locks

Manufacturer dormakaba USA, Inc. Address: 6161 E. 75th St., Indianapolis, IN Phone: 1-800-711-6814

Trade Name: Dorma Model No.: M9000 Series

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: Anthony NeCastro

Signed by: Anthony NeCastro

Firm: dormakaba USA, Inc.

Address: 6161 E. 75th Street
Indianapolis, IN 46250

Telephone: 216-645-4933

A/E's REVIEW AND ACTION

- [x] Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
- [ ] Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
- [ ] Substitution rejected - Use specified materials.
- [ ] Substitution Request received too late - Use specified materials.

Signed by: Mike Murphy, Architect

Date: 05082020

Supporting Data Attached: [ ] Drawings [ ] Product Data [ ] Samples [ ] Tests [ ] Reports [ ] _____

dormakaba

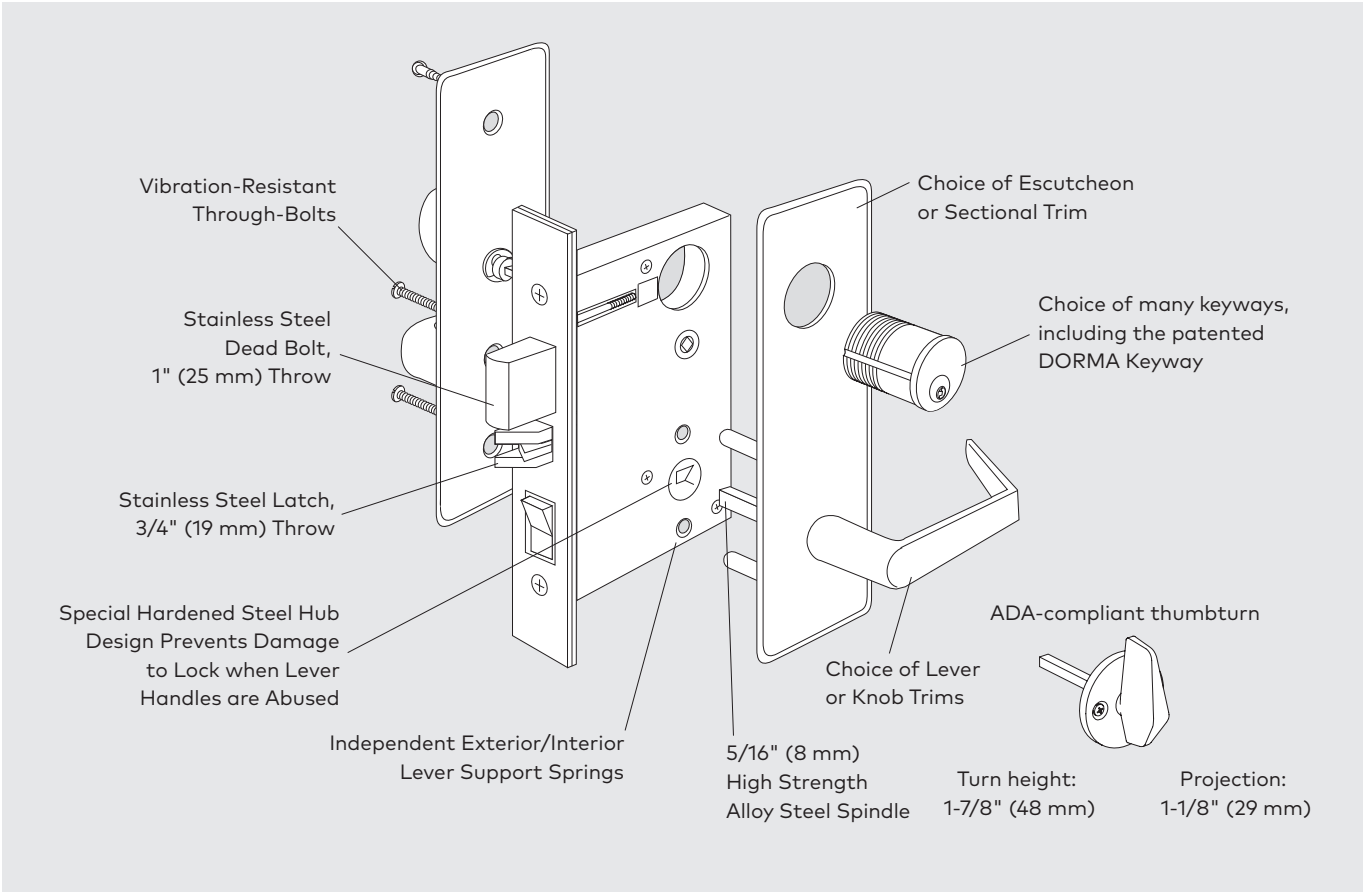
Substitution Request

M9000 Series Grade 1 Mortise Locksets

Grade 1 Heavy-Duty Mortise Locksets

DORMA USA quality and environmental management systems in Reamstown/Leola, PA and Steeleville, IL are certified to ISO 9001:2008 and ISO 14001:2004.

M9000 Series



Exceptional security, enhanced aesthetics, and rugged dependability.

These premium performance locksets are built with a heavy-duty mortise chassis for all applications where ANSI/BHMA A156.13 Grade 1 products are required. To meet the aesthetic needs of your project, these versatile locks are available in a range of lever and knob trim designs and finishes.

Features

- M9000 Series mortise locks feature advanced design concepts for extreme reliability and are manufactured with the finest materials for exceptional durability.
- M9000 locks provide a wide variety of functions and the most popular finishes.
- Special, high-strength springs and a positive stop eliminate unsightly sagging levers.
- Select components are manufactured with high-strength steel or stainless steel, providing an extremely strong, highly durable lock.
- Trims utilize 5/16" (8 mm) high-strength alloy steel spindles for extra durability.
- Levers, knobs, roses, and escutcheons are manufactured from brass, bronze, or stainless steel.
- All levers—solid cast/forged brass or stainless.
- All roses—wrought brass or stainless.
- Escutcheons—
  H: cast/forged brass or stainless.
  M: wrought brass or stainless.

Recommended Applications

Schools and Universities
Hotels
Apartments
Hospitals and Nursing Homes
Churches
Municipal Buildings
Airports
Retail Complexes
Offices
Warehouses

Technical Details

- Standard door thickness 1-3/4"–2-1/4".
- 2-3/4" backset.
- Stainless steel dead bolt for strength, durability, and saw resistance.
- Security spacer between inside and outside lever hubs in lock case protects lock from unauthorized entry and vandalism.
- Steel lock case and internal components provide additional strength.
- Pivoting face plate allows lock case to fit flat face, standard bevel, and reverse bevel door applications.
- Full length interlocking face plate supports both the latch and dead bolts against forced entry.
- Chassis can be easily handed in the field.
- All trim through-bolted through the lock case for positive alignment.
- Universal non-handed curve lip strike for all functions.
- Premium PVD (physical vapor deposition) finishes for consistent durable color.
- Accepts standard and interchangeable core cylinders.

Certification/ Compliance

- Certified to A156.13 Series 1000, operational and security Grade 1.
- Meets A117.1 accessibility code and ADA requirements for barrier-free accessibility.
- UL listed 3 hour fire rated. Locks are listed for A label and lesser class doors.
- Hurricane code approved to Miami-Dade County Florida acceptance No. 15-0630.04 and 15-0630.05.
- Meets California State Reference Code (formerly title 19, California State Fire Marshall standard). All levers with returns, return to within 1/2" (13 mm) of door face.

Cylinders & Keying

- Unless otherwise specified, cylinders will be provided in SC keyway with two (2) nickel silver keys.
- Optional patented key system available.

Warranty

For details, refer to **Limited Warranty** on our website at go.dormakaba.com/Terms-DA

Finishes

- Brass: 605 PVD (Bright) or 606 PVD (Satin)
- Bronze: 612 PVD (Satin) or 613 PVD (Dark Oxidized Satin)
- Nickel: 619 PVD (Satin)
- Chrome: 625 (Bright) or 626 (Satin)
- Stainless: 630 (Satin)
- Black: 622 PVD (Satin)

Antimicrobial Protected Coating Specify **AM**.

Special Finish Notes

ANSI/BHMA A156.18 standards describe 613 Dark Oxidized Satin Bronze finish as a category B finish. B category finishes, "do not match from one alloy or form of material to the next and from one manufacturer to the next." The 613 finish may vary between manufacturers' products and models.

In some instances, for customer convenience, the most appropriate BHMA finish symbols are used to indicate similarity of appearance, regardless of base metal or finishing process. Finishes of latches, strikes, cylinders/cores, and visible mounting screws, though similar in appearance, may differ from the finish of the trim. Finish designations in the 600 numbers are the BHMA (Builders Hardware Manufacturers Association) industry standard.

Security Screws

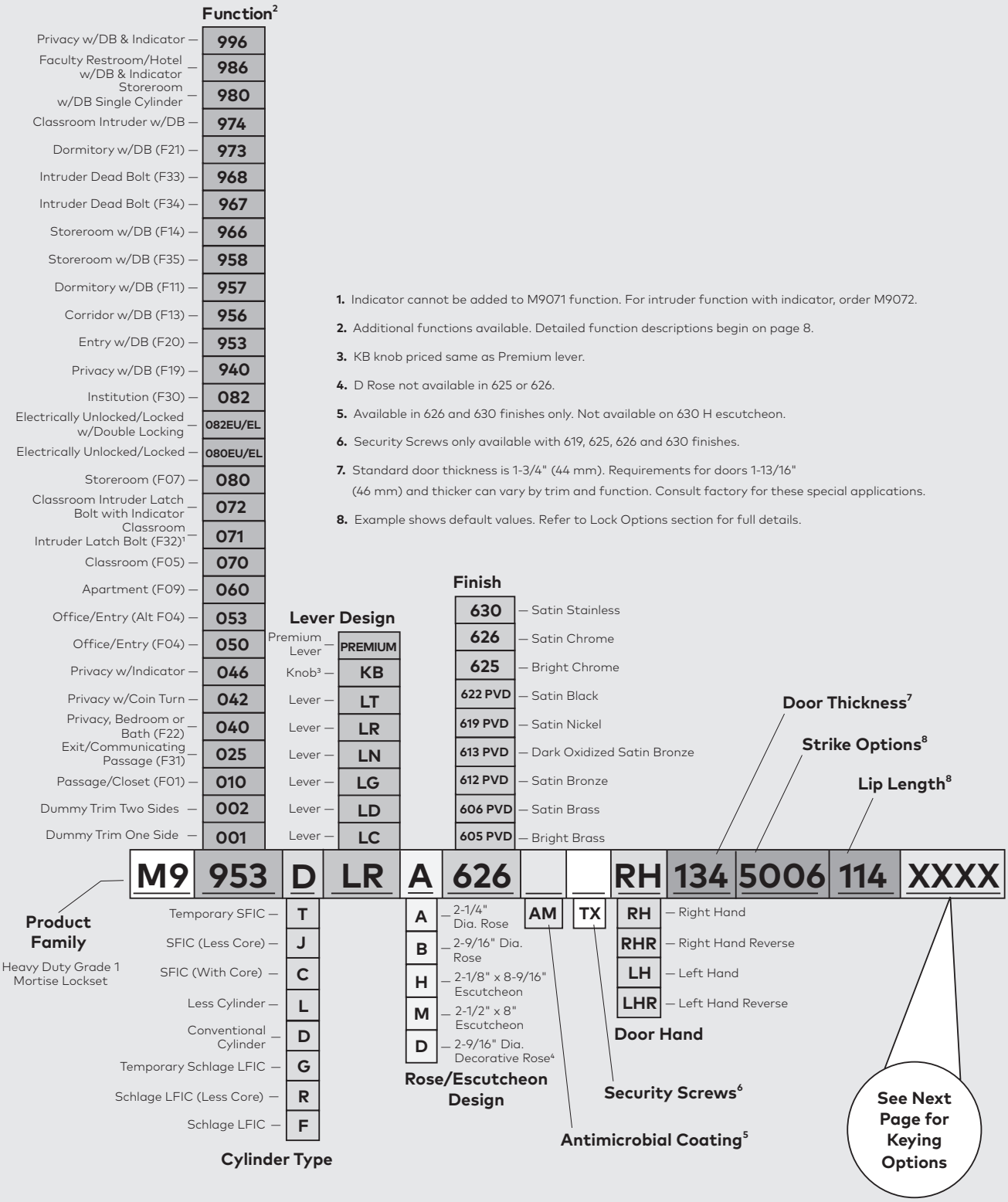
Torx® tamper-resistant screws are available for all exposed screws. Specify **TX**.

LT Lever with H Escutcheon

LR Lever with B Rose

KB Knob with B Rose

How to order M9000 Series locks



1. Indicator cannot be added to M9071 function. For intruder function with indicator, order M9072.
2. Additional functions available. Detailed function descriptions begin on page 8.
3. KB knob priced same as Premium lever.
4. D Rose not available in 625 or 626.
5. Available in 626 and 630 finishes only. Not available on 630 H escutcheon.
6. Security Screws only available with 619, 625, 626 and 630 finishes.
7. Standard door thickness is 1-3/4" (44 mm). Requirements for doors 1-13/16" (46 mm) and thicker can vary by trim and function. Consult factory for these special applications.
8. Example shows default values. Refer to Lock Options section for full details.

How to order Keyways

Standard Keyways

Keying

- 0BIT — 0-Bitted
- CMK — Construction Master Keyed
- MKD — Master Keyed
- NSK — Keyed Alike, Sets of 3 or More
- KA2 — Keyed Alike, Sets of 2
- KD — Keyed Different

SC KD

- SC — Schlage C
- SE — Schlage E
- D100 — DORMA SKC

- AA — Arrow A
- CA — Corbin 60
- CB — Corbin 67
- CC — Corbin 77
- CD — Corbin 59A1
- CE — CorbinRusswin L4
- RA — Russwin 981
- RB — Russwin D1
- GA — Sargent LA
- SF — Schlage F
- YA — Yale 8
- YG — Yale GA

Retrofit Keyways Available 0-Bitted Only

Keyway

IC Keyways

Keying

- TMP — Temporary Construction Core
- MKD — Combinated (Master Keyed)

BA MKD

- BA — Best A
- BB — Best B
- BC — Best C
- BD — Best D
- BE — Best E
- BF — Best F
- BG — Best G
- BH — Best H
- BJ — Best J
- BK — Best K
- BL — Best L
- BM — Best M
- BQ — Best Q
- TB — Best TB
- D100 — DORMA SKC (7-pin Core only)

Specify Color If Required to Match Existing Project

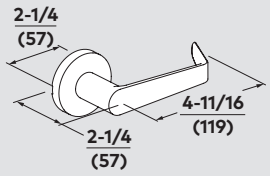
- BLK — Black Construction Core
- BLU — Blue Construction Core
- GRN — Green Construction Core

Keyway

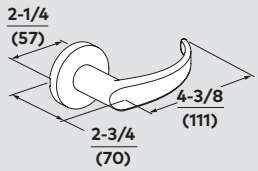
Trim Options

Lever Options — Standard

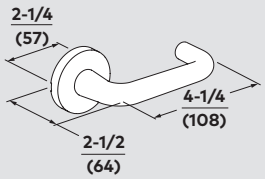
LR



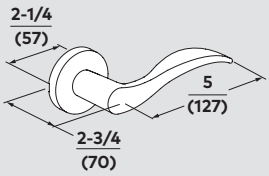
LC



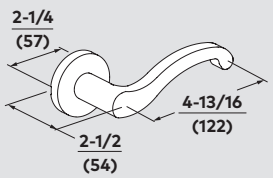
LT



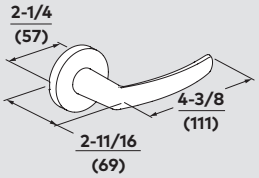
LV



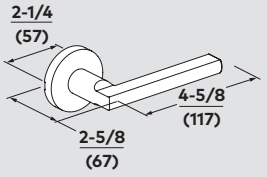
LF



LG

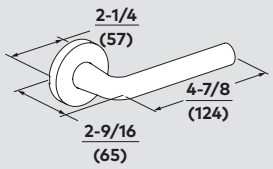


L118

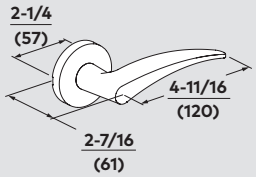


Lever Options — Premium

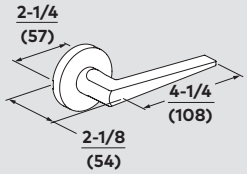
LA



LD



LN



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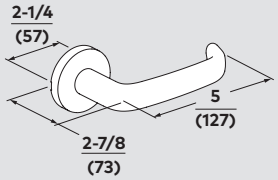
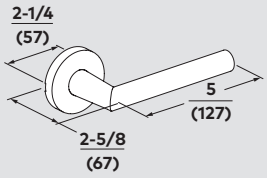
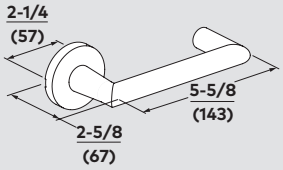


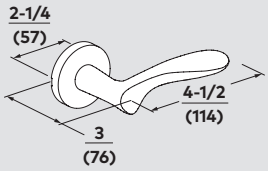
L110



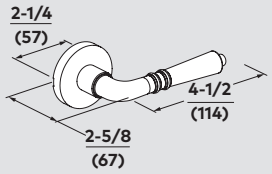
L112



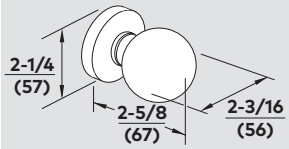
L114



L117

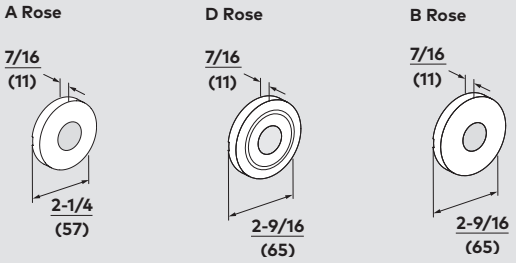


KB



Trim Styles
All Finishes

Wrought Roses

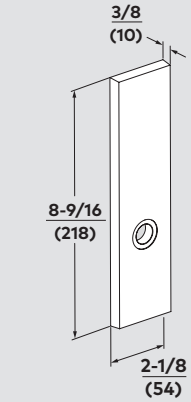


D Rose not available in 625/626 finishes.

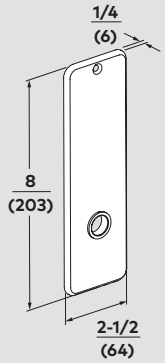
NOTE: Levers with returns return to within 1/2" (13 mm) of the door face.

Escutcheons

H — Cast or Forged

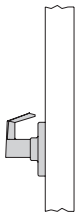
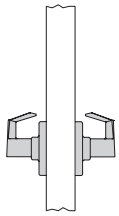
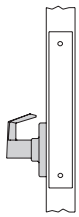
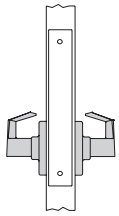
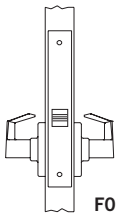
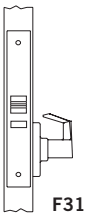


M — Wrought

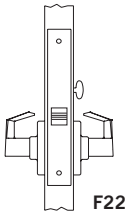
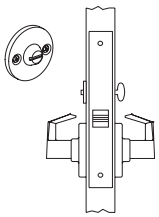
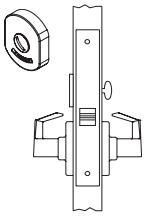
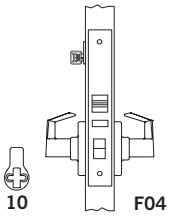
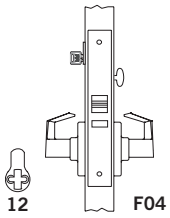
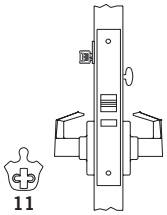
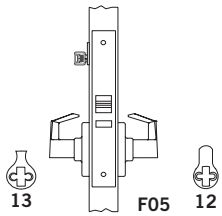


Functions

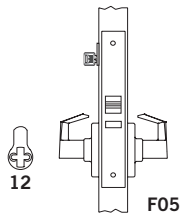
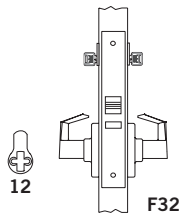
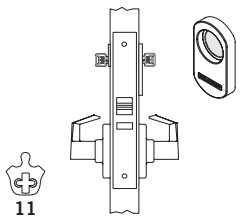
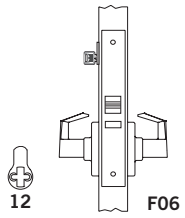
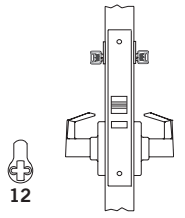
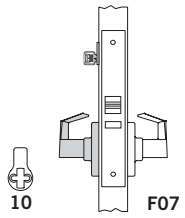
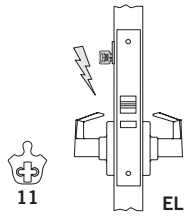
Functions to match any competitor lock

Function	Series	Outside/Inside	Description
Dummy Trim One Side	M9001		• Used as pull or matching trim on pairs of doors.
Dummy Trim Two Sides	M9002		• Used as pull or matching trim on pairs of doors.
Dummy Trim One Side	M9003 (w/lockcase)		• Used as pull or matching trim on pairs of doors. • Trim always rigid.
Dummy Trim Two Sides	M9004 (w/lockcase)		• Used as pull or matching trim on pairs of doors. • Trim always rigid.
Passage/Closet	M9010	 F01	• Latch bolt operated by trim either side. **NOTE:** Available with Request to Exit (RX), Latch Monitoring (LM) or both.
Exit/Communicating Passage	M9025	 F31	• Latch bolt operated by trim either side. • Blank trim or no outside trim. • Auxiliary latch deadlocks latch bolt. **NOTE:** Available with Request to Exit (RX), Latch Monitoring (LM) or both.

 Indicates rigid lever.

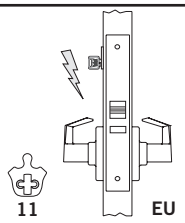
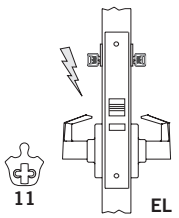
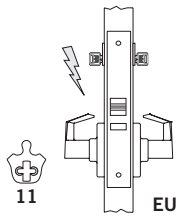
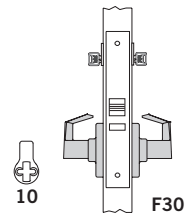
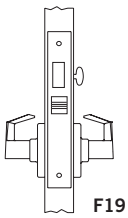
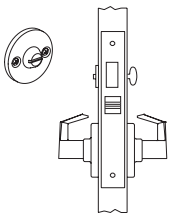
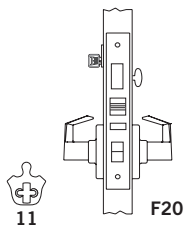
Function	Series	Outside/Inside	Description
Privacy, Bedroom or Bath	M9040	 F22	• Latch bolt operated by trim either side, except when outside trim locked by inside turn. • When locked, outside trim unlocked by inside trim, by closing door, by rotating inside turn, or by emergency release.
Privacy with Coin Turn Outside	M9042		• Latch bolt operated by trim either side, except when outside trim locked by inside turn or coin turn outside. • When locked, outside trim unlocked by inside trim, by closing door, by rotating inside turn, or by rotating coin turn outside.
Privacy with Indicator	M9046		• Latch bolt operated by trim either side, except when outside trim locked by inside turn. • When locked, outside trim unlocked by inside trim, by rotating inside turn, or by coin turn outside. • When outside trim is locked, "OCCUPIED" message is displayed. • Latch bolt deadlocked when outside trim is locked.
Office/Entry	M9050	 10 F04	• Latch bolt operated by trim either side, except when outside trim locked by stopworks. • When outside trim locked, latch bolt retracted by key outside or operated by inside trim. • Auxiliary latch deadlocks latch bolt. **NOTE:** Available with Request to Exit (RX), Latch Monitoring (LM) or both.
Office/Entry	M9053	 12 F04	• Latch bolt operated by trim either side, except when outside trim locked by key outside or by inside turn • When outside trim locked, latch bolt retracted by key outside or by inside trim. • Outside trim remains locked until inside turn rotated to unlocked position or unlocked by key. • Auxiliary latch deadlocks latch bolt when door locked. **NOTE:** Available with Latch Monitoring (LM).
Office/Entry with Automatic Unlocking	M9056	 11	• Latch bolt operated by trim either side, except when outside trimlocked by key outside or by inside turn. • When outside trim locked, latch bolt retracted by key outside or by inside trim. • Outside trim unlocked by key outside or by inside turn. • Rotating inside trim simultaneously retracts latch bolt and unlocks outside trim. • Auxiliary latch deadlocks latch bolt when door locked.
Apartment	M9060	 13 F05 12	• Latch bolt operated by trim either side, except when outside trim locked by key inside. • When outside trim locked, latch bolt retracted by key outside or by inside trim. • Auxiliary latch deadlocks latch bolt.

 Indicates rigid lever.

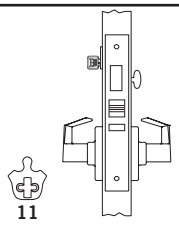
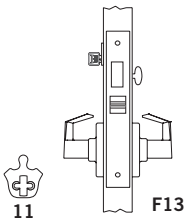
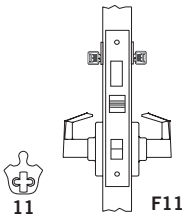
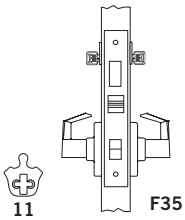
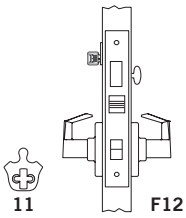
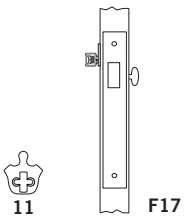
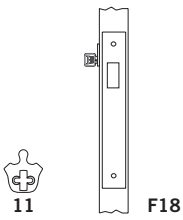
Function	Series	Outside/Inside	Description
Classroom	M9070		• Latch bolt operated by trim either side, except when outside trim locked by key outside. • When outside trim locked, latch bolt operated by inside trim • Auxiliary latch deadlocks latch bolt. **NOTE:** Available with Latch Monitoring (LM).
Classroom Intruder Latch Bolt	M9071		• Latch bolt operated by trim either side, except when outside trim locked by key either side. • When outside trim locked, latch bolt operated by key either side or by operating inside trim. • Auxiliary latch deadlocks latch bolt. **NOTE:** Available with Latch Monitoring (LM).
Classroom Intruder with Indicator	M9072		• Latch bolt operated by trim either side, except when outside trim locked by key either side. • Key inside or outside locks outside trim. • When outside trim locked, latch bolt operated by inside trim. • Auxiliary latch deadlocks latch bolt. • When outside trim locked, LOCKED message displayed inside. • When outside trim unlocked, UNLOCKED displayed inside.
Holdback	M9076		• Latch bolt operated by trim either side, except when outside trim locked by key outside. • Latch bolt can be locked in a retracted position by key. • When outside trim locked, latch bolt operated by key outside or trim inside, unless latch bolt locked in retracted position. • Auxiliary latch deadlocks latch bolt. **NOTE:** Not approved for use on UL fire listed applications.
Holdback Double Cylinder	M9077		• Latch bolt operated by trim either side, except when outside trim locked by key either side. • Latch bolt can be locked in a retracted position by key. • When outside trim locked, latch bolt operated by key outside or trim inside, unless latch bolt locked in retracted position. • Auxiliary latch deadlocks latch bolt. **NOTE:** Not approved for use on UL fire listed applications.
Storeroom	M9080		• Latch bolt retracted by key outside or operated by inside trim. • Outside trim always rigid. . Auxiliary latch deadlocks latch bolt. **NOTE:** Available with Request to Exit (RX), Latch Monitoring (LM) or both.
Electrically Locked Fail Safe	M9080EL		• Outside trim locked when power is on. • Outside trim unlocked when power is interrupted. • Latch by key outside. • Inside trim always unlocked. • Auxiliary latch deadlocks latch bolt. **NOTE:** Available with Request to Exit (RX), Latch Monitoring (LM) or both.

 Indicates rigid lever.

CAUTION: Double cylinder locks on residences and any door in any structure which is used for egress are a life safety hazard in times of emergency and their use is not recommended. Installation should be in accordance with existing local codes only.

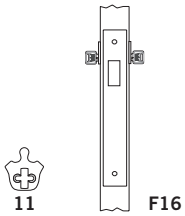
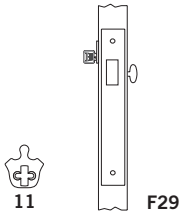
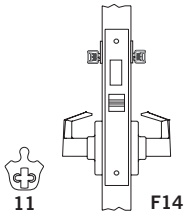
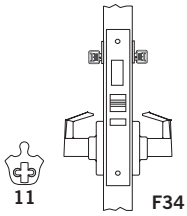
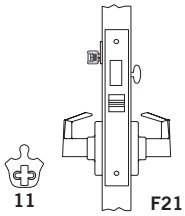
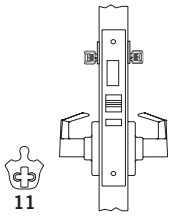
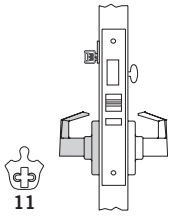
Function	Series	Outside/Inside	Description
Electrically Unlocked Fail Secure	M9080EU		• Outside trim unlocked when power is on. • Outside trim locked when power is interrupted. • Latch by key outside. . Inside trim always unlocked. • Auxiliary latch deadlocks latch bolt. **NOTE:** Available with Request to Exit (RX), Latch Monitoring (LM) or both.
Electrically Locked Fail Safe with Double Locking	M9082EL		• Outside and inside trim locked when power is on. • Outside and inside trim unlocked when power is interrupted. • Latch by key either side. • Auxiliary latch deadlocks latch bolt. **NOTE:** Available with Request to Exit (RX) or Latch Monitoring (LM).
Electrically Unlocked Fail Secure with Double Locking	M9082EU		• Outside and inside trim unlocked when power is on. • Outside and inside trim locked when power is interrupted. • Latch by key either side. • Auxiliary latch deadlocks latch bolt. **NOTE:** Available with Request to Exit (RX) or Latch Monitoring (LM).
Institution	M9082		• Latch bolt operated by key either side. • Auxiliary latch deadlocks latch bolt. • Trim both sides always rigid. **NOTE:** Available with Latch Monitoring (LM).
Privacy with Dead Bolt	M9940		• Latch bolt operated by trim either side, except when projected dead bolt locks outside trim and deadlocks latch. • Dead bolt operated by turn inside. • Dead bolt operated by emergency release outside. • Inside trim operates both bolts simultaneously and unlocks outside trim.
Privacy with Dead Bolt and Coin Turn Outside	M9942		• Latch bolt operated by trim either side, except when projected dead bolt locks outside trim and deadlocks latch. • Dead bolt operated by turn inside or coin turn outside. • Rotating outside coin turn retracts dead bolt and unlocks outside trim. • Inside trim operates both bolts simultaneously and unlocks outside trim.
Entry with Dead Bolt	M9953		• Latch bolt operated by trim either side, except when outside locked by stopworks. • Dead bolt operated by key outside or turn inside. • Key operates both dead bolt and latch bolt. • Inside lever operates both bolts; outside trim remains locked. • Latch bolt deadlocked when outside lever locked, or dead bolt projected. • When dead bolt retracted, outside trim unlocked by stopworks.

 Indicates rigid lever.

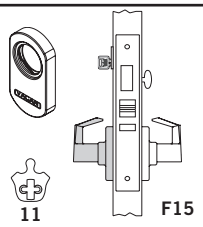
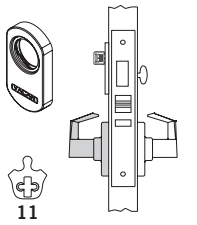
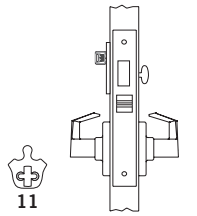
Function	Series	Outside/Inside	Description
Security Entrance	M9954	 11	• Latchbolt operated by trim either side, except when outside trim locked by key outside or turn inside. • Dead bolt operated by key outside, turn inside and retracted by inside lever. • Key outside retracts deadbolt only — not latch. • Inside lever operates both bolts; outside trim remains locked until unlocked by key outside. • Deadlocking latch bolt.
Corridor with Dead Bolt	M9956	 11 F13	• Latch bolt operated by trim either side, except when projected dead bolt locks outside trim and deadlocks latch. • Dead bolt and latch retracted by key outside. • Dead bolt projected by turn inside or key outside. • Inside trim operates both bolts and unlocks outside trim.
Dormitory with Dead Bolt	M9957	 11 F11	• Latch bolt operated by trim either side, except when outside trim locked either by stopworks or projected dead bolt. • Dead bolt operated by key either side. • Dead bolt deadlocks latch bolt. • Inside trim operates both bolts simultaneously; outside trim remains locked.
Storeroom with Dead Bolt	M9958	 11 F35	• Latch bolt operated by trim either side, except when outside trim locked by stopworks. • Dead bolt operated by key either side. • Latch bolt operated by inside lever.
Dormitory/Exit with Dead Bolt	M9959	 11 F12	• Latch bolt operated by trim either side, except when outside trim locked either by stopworks or projected dead bolt. • Dead bolt operated by key outside or turn inside. • Dead bolt deadlocks latch bolt. • Inside trim operates both bolts simultaneously; outside trim remains locked.
Cylinder × Turn Dead Bolt (only)	M9960	 11 F17	• Dead bolt operated by key outside or by turn inside.
Cylinder × Blank Dead Bolt (only)	M9961	 11 F18	• Dead bolt operated by key outside only.

 Indicates rigid lever.

CAUTION: Double cylinder locks on residences and any door in any structure which is used for egress are a life safety hazard in times of emergency and their use is not recommended. Installation should be in accordance with existing local codes only.

Function	Series	Outside/Inside	Description
Cylinder × Cylinder Dead Bolt (only)	M9962	 11 F16	• Dead bolt operated by key either side.
Classroom Dead Bolt (only)	M9963	 11 F29	• Dead bolt operated by key outside. • Turn inside retracts but does not project dead bolt.
Storeroom with Dead Bolt	M9966	 11 F14	• Latch bolt operated by trim either side. • Dead bolt operated by key either side.
Intruder Dead Bolt	M9967	 11 F34	• Latch bolt operated by trim either side, except when outside trim locked by key either side. • Dead bolt operated by key either side. • Inside trim operates both bolts and unlocks outside trim. • Latch bolt deadlocked when dead bolt thrown.
Dormitory with Dead Bolt	M9973	 11 F21	• Latch bolt operated by trim either side. • Dead bolt operated by key outside or by turn inside.
Classroom Intruder with Dead Bolt	M9974	 11	• Latch bolt operated by trim either side, except when outside trim locked by projection of dead bolt. • Dead bolt projected or retracted by key either side. • Inside trim operates both bolts simultaneously; outside trim remains locked. • Key either side unlocks outside trim allowing latch bolt to be retracted by trim. • Auxiliary latch deadlocks latch bolt.
Storeroom with Dead Bolt	M9980	 11	• Latch bolt operated by key outside or by trim inside. • Outside trim always rigid. • Dead bolt projected by key outside or by turn inside. • Inside trim operates both bolts simultaneously. • Auxiliary latch or dead bolt deadlocks latch bolt.

 Indicates rigid lever.

Function	Series	Outside/Inside	Description
Faculty Restroom/ Hotel with Dead Bolt	M9985		• Latch bolt operated by key outside or trim inside. • Outside trim always rigid. • Latch bolt retracted by key outside. • Dead bolt projected by turn inside, and all keys, except emergency key, are shut out. • Inside trim operates both bolts simultaneously. • Auxiliary latch or dead bolt deadlocks latch bolt.
Faculty Restroom/Hotel with Dead Bolt and Indicator	M9986		• Latch bolt operated by key outside or trim inside. • Outside trim always rigid. • Latch bolt retracted by key outside. • Dead bolt projected by turn inside, and all keys, except emergency key, are shut out. • Inside trim operates both bolts simultaneously. • Auxiliary latch or dead bolt deadlocks latch bolt. • Indicator message reads OCCUPIED/VACANT or SECURED/UNSECURED.
Privacy with Dead Bolt and Indicator	M9996		• Latch bolt operated by trim either side. • Dead bolt operated by key outside (key required in the event of an emergency) or by turn inside. • Projecting dead bolt locks outside trim, deadlocks latch, and displays OCCUPIED message. • Inside trim operates both bolts simultaneously and unlocks outside trim. • Optional message SECURED/UNSECURED included.

 Indicates rigid lever.

Electromechanical Options

Electromechanical Functions
- Electrically locked (fail safe).
- Electrically unlocked (fail secure).

Electrical Requirements forSolenoid Functions
Voltage: 24 VDC regulated, filtered.
Current: 0.21 A. UL and CUL listed for use on fire doors.
- Solenoids are rated for continuous duty.
- Repeated operation at voltage exceeding +/–10% is not recommended.

Monitoring Options
Single pole double throw (SPDT) type C switches, rated 2 A @ 30 VDC

RX — Request-to-exit signaling switch.
- A single switch mounted internally in the lock body that provides independent monitoring of inside lever rotation.
- Available on the following functions: M9010, M9025, M9050, M9080, M9080EL, M9080EU, M9082EL, M9082EU.

When ordering specify **RX**.
Example: M9010RX.

LM — Latch bolt monitor.
- A single switch mounted internally in the lock body signaling latch bolt position.
- Available on the following functions: M9010, M9025, M9050, M9053, M9070, M9071, M9080, M9082, M9080EL, M9080EU, M9082EL, M9082EU.

When ordering specify **LM**.
Example: M9080EULM.

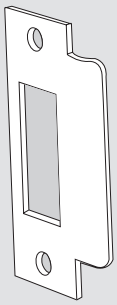
RX and LM monitoring available on the following functions: M9010, M9025, M9050, M9080, M9080EL, M9080EU.
When ordering specify **RX LM**.
Example: M9010RXLM.

NOTE:
Opening the lock case or the replacement of the solenoid or switches in the field by non-authorized personnel voids UL label and lock warranty.

Lock Options

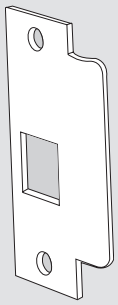
Lever Options — Premium

Standard



5006 — ANSI 1-1/4" × 4-7/8" curved lip strike. 1-1/4" lip length. Default non-handed strike for all M9000 Series lock functions. Strikes are available in the following lip lengths: 7/8", 1-1/2", 1-3/4", 2", and 2-1/4". Includes dust box.

Optional



5007 — ANSI 1-1/4" × 4-7/8" curved lip strike. 1-1/4" lip length. Optional handed strike for the following non-dead bolt functions: M9010, 9040, 9042, 9046, 9050, 9053, 9056, 9070, 9076, 9080, 9080EL/EU, 9060, 9071, 9077, 9082, 9082EL/EU.
Includes dust box.

NOTE: Not approved for use on UL fire listed applications.

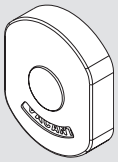
Tactile Warning (Knurling)

Grooved or knurled levers available on LR, LT and LG designs only. All other lever and knob designs available with abrasive coating only.

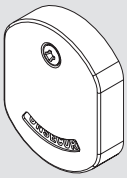
Occupancy Indicators

Occupancy indicators for M9000 Series with sectional trim are available for dead bolt applications where door status confirmation is required. Available keyed or non-keyed and can be used outside, inside, or on both sides of door. Emergency override on non-keyed available.

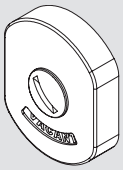
79019 — Indicator for rose trim used with cylinder, reading OCCUPIED/VACANT or SECURED/UNSECURED. Both readings supplied.



79020 — Indicator for rose trim used without cylinder, emergency access, reading OCCUPIED/VACANT



79021 — Indicator for rose trim used without cylinder, reading SECURED/UNSECURED. No emergency access. Used on inside of door with 79019 on outside.



79022 — Indicator with cointurn for rose trim used without cylinder, reading OCCUPIED/VACANT.

NOTES:

- Occupancy indicators are for use on 1-3/4"–2-1/8" thick doors. Consult factory for thicker door applications.
- Indicators will work on the following functions but may have unexpected operation on lock sets that remain locked when the dead bolt is retracted: M9046, 9056, 9940, 9942, 9953, 9956, 9957, 9959, 9960, 9961, 9962, 9966, 9967, 9968, 9973, 9974, 9980, 9985, 9986, 9996.
- Specify Finish. Example: 79019 626.

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Limited Warranty Policy

(Effective August 26, 2019)

For projects located in the United States and Canada, all products sold are warranted to be free from defects in workmanship and materials for the periods listed in the table below, from the date of manufacture. THIS COMPRISES SELLER'S SOLE AND EXCLUSIVE WARRANTY AND IS MADE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, WRITTEN OR ORAL, EXPRESSED OR IMPLIED, STATUTORY OR OTHERWISE CONCERNING THE PRODUCTS, AND ALL OTHER WARRANTIES, AND SELLER SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTIBILITY OR FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF IMPLIED WARRANTIES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO THE BUYER HEREUNDER.

Limited warranty period (years) by product (from date of manufacture)		Mechanical	Electrical
Door Controls	TS93, 8900, 8600, 7400, 7300, BTS75V, BTS80	25	N/A
	U1500	10	N/A
	ITS, RTS	5	N/A
	EMR, EMF, 1800, GSR	25	2
	EMB, EM, EAC, ED900	2	2
	LM, 900, 700	2	N/A
Exit Devices	9000	10	2
	8000	5	2
Mullions		2	2
Mechanical Locks	M9000, D900, C800, D800	10	2
	CL/CK700, J300, DB600	5	N/A
	C500, T900	3	N/A
	C300	1	N/A
	SKC Keys	Lifetime	N/A
Electronic Locks	InSync, SAM RF	1*	1*
	E-Plex/Powerplex	3	3
Sliding Systems	MUTO	2	N/A
All other products not listed		2	1

*Term begins at start of installation

For projects located outside the United States or Canada, the limited warranty period for all products is 1 year from the date of manufacture. dormakaba regional businesses located outside the United States or Canada may offer different warranty periods. "United States and Canada" is defined as the several states of the United States, the District of Columbia, the commonwealths, territories and possessions of the United States and the provinces and territories of Canada.

None of the warranties set forth herein shall extend to any products or parts thereof that have been subjected to improper installation, lack of, or improper, maintenance, improper storage, shipping and handling, ordinary wear and tear, misuse, neglect, accident, unauthorized service, use of unauthorized parts, or performance of repairs, modifications or attachment to other products outside of Seller's plant. These warranties shall neither extend to nor cover any labor charges for replacement of products or parts, adjustments, or repairs, or any other work, which costs shall be the sole responsibility of Buyer. These warranties are extended only to Seller's distributors of products and the first user who purchases products for purposes other than resale (collectively, "Buyer").

Buyer's sole and exclusive remedy against Seller for any claim, whether in contract, tort or otherwise, arising out of, or resulting from the purchase or use of the products shall be limited to the repair or replacement of any product or part thereof, which is proved to be other than as warranted, or, at the sole option of Seller, to the issuance of a credit in an amount not to exceed the cost of the repair or replacement. In no event shall Seller be liable to Buyer or any other party for, and Buyer waives, any and all other losses or damages of whatsoever nature, including, without limitation, incidental, special, direct, indirect, collateral, punitive or consequential damages, including, without limitation, loss of profits, or loss of use damages or downtime costs. Seller shall not be responsible or liable for any damage or loss resulting from the operation or performance of any other product or any systems in which Seller's product is incorporated. If a product is claimed to be other than as warranted, Seller, upon notice promptly given, will either examine the goods at Buyer's site or issue shipping instructions for return of product to the Seller (transportation costs prepaid by Buyer and all cost associated with the removal and reinstallation of such product to be the sole responsibility of Buyer).

Any representations, warranties or promises inconsistent with, or in addition to, the warranties contained herein are unauthorized and shall not be binding upon Seller. Because Seller has no control over the conditions under which its products are used, Seller specifically does not warrant the adequacy or sufficiency of any advice or recommendations given to Buyer. Nor does Seller warrant that every Seller product complies with every code, standard or regulation in every community except as specifically stated in a published Seller catalog or in writing signed by an officer of Seller. Seller shall not be bound by the terms of any agreements between a Buyer and third parties.