

Section 07100
ISO-FLEX® DECKWATER PROTECTION SYSTEM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions, apply to this section.

Note to Specifier: Include only those items which are applicable to a specific project.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Concrete curing, finishing, jointing and repair affect this section.

1.03 QUALITY ASSURANCE

- A. Work under this section shall be performed by the manufacturer or an applicator approved by the manufacturer, both having a minimum of five continuous years of experience in this type of work. The manufacturer shall evidence in writing that the applicator designated to perform the work is qualified to install the specified systems.
- B. Prequalification of bidders: Submit proposed subcontractors to the specifier for approval prior to bid. Qualification criteria shall include compliance with 1.03-A above. Specifier retains the right to reject any applicator or manufacturer submitted.
- C. A site inspection shall be made by the approved applicator prior to commencing installation of the system for purposes of reviewing related conditions affecting performance requirements of this specification.
- D. All products described in this section must be used with adequate ventilation and personal protection. Refer to the Material Safety Data Sheet which accompanies each product shipment for detailed health and safety information prior to use.

1.04 SUBMITTALS

- A. A detailed statement describing the deck water protection system to be installed, as well as the installation methods to be employed, shall be submitted for approval prior to installation. Literature, details, samples, shop drawings, warranties, etc., shall be included in the submittal as requested.
- B. Manufacturer's written acceptance and approval of the intended system applicator is required.

PART 2 - PRODUCTS

2.01 MATERIALS

Materials approved for usage shall be complete systems of compatible materials and are listed herein:

Note to Specifier: Include only those items pertinent to a specific project.

A. PROTECTIVE CONCRETE SEALER SYSTEM

Acceptable concrete sealers are listed below. Application rates and solids content shall be in accordance with certified test results on the NCHRP 244 test series to be submitted prior to construction for approval. Acceptable materials shall meet the following NCHRP 244 performance criteria:

Four Inch Cube Tests: 75% effective in reducing water absorption when compared to an untreated control sample.

Southern Exposure Tests: 90% effective in reducing chloride ion content when compared to an untreated control sample.

1. The following material is approved for usage under this section:

"Iso-Flex 618 Silane Sealer" by Master Builders, Inc., 23700 Chagrin Blvd., Cleveland, Ohio 44122-5554 (216/831-5500).

B. ELASTOMERIC TRAFFIC DECK COATING

1. Traffic deck coating systems specified herein shall be complete systems of compatible materials. Components of systems shall include a base membrane, a traffic topping and all sealants, primers, flashings, aggregates and miscellaneous materials as required by the manufacturer to complete the system.

2. The following materials are approved for usage under this section:

- a. "Iso-Flex 750U" Polyurethane Elastomeric Traffic Deck Coating System by Master Builders, Inc., 23700 Chagrin Blvd., Cleveland, Ohio 44122-5554 (216/831-5500).

Use the following 750U systems as appropriate:

750U - LVT for pedestrian and light vehicular traffic (parking stalls).

750U - MVT for medium vehicular traffic (drive lanes slope less than 6%).

750U - HVT for heavy vehicular traffic (drive lanes greater 6% slope, entry, exit & turn zones).

- b. "Iso-Flex 750U-HL" Polyurethane Elastomeric Traffic Deck Coating System by Master Builders, Inc., 23700 Chagrin Blvd., Cleveland, Ohio 44122-5554 (216/831-5500).

Use the following 750U-HL systems as appropriate:

750U-HL - MVT for special surface applications.

750U-HL - HVT for high wear areas.

- c. "Iso-Flex 750EU" Polyurethane / Epoxy Elastomeric Traffic Deck Coating System by Master Builders, Inc., 23700 Chagrin Blvd., Cleveland, Ohio 44122-5554 (216/831-5500).

Use the following 750EU systems as appropriate:

750EU - LMD for special surface applications.

750EU - HD for high wear areas.

Note to Specifier: 750EU and 750U differ significantly in appearance due to the much higher aggregate loadings in the 750EU topcoats. The 750U system is recommended for most applications and is sometimes supplemented with 750EU - HD in limited high wear areas such as entry and exit ramps in excess of 6% slope. 750U-HL has similar aggregate loading to 750EU and is recommended in lieu of 750EU where conditions require a urethane wearing surface.

C. SLAB AND DECK CONTROL JOINT SEALANT SYSTEM

1. Sealants specified under this section shall be a complete system of compatible materials designed to produce traffic-bearing control joint seals as detailed in the drawings. Primers, backer rods and related miscellaneous materials shall be used as recommended by the manufacturer.
2. All materials specified herein shall be unmodified polyurethanes containing no adulterants and shall meet the standards defined in federal specification ASTM C920, Type M or S, Class 25, self-leveling and non-sag sealants.
3. The following materials are approved for usage under this section:

"Iso-Flex 880 GB" (self-leveling) and "Iso-Flex 881" (non-sag) polyurethane sealants by Master Builders, Inc., 23700 Chagrin Blvd., Cleveland, Ohio 44122-5554 (216/831-5500).

Note to Specifier: The products listed herein have similar physical properties and are used interchangeably depending on the nature of specific joint conditions within a project.

D. STRUCTURAL EXPANSION JOINT SEALING SYSTEM

1. The expansion joint sealing system shall be a complete system of compatible materials designed to produce traffic bearing expansion joint seals as detailed on the drawings.
2. The following system is used as detailed on the drawings and is approved for usage under this section:

"Iso-Flex Factory Molded Textured Expansion Joint Sealing Systems" by Master Builders, Inc., 23700 Chagrin Blvd., Cleveland, Ohio 44122-5554 (216/831-5500).
3. Approved factory molded urethane expansion joint sealing systems shall meet the following requirements:
 - a. The textured urethane expansion joint seal shall be factory molded off site, in the sealant manufacturer's facility. No exceptions to this requirement will be considered.
 - b. The seal shall have low modulus, high elongation properties (Durometer, Shore A: 30 ± 5).

- c. Seal edges shall be abraded by power wire brushing in the factory prior to shipping.
 - d. The system shall include the use of polymeric nosings consisting of a hard, polymeric compound designed to adhere the seal into place and protect against concrete edge spalling. The compound shall be a two-component polymer designed for rapid cure with higher durometer than the factory molded seal.
4. Nosings, traffic plates, blockout fillers, bond breakers, primers and miscellaneous materials required for installation shall be recommended by the system manufacturer.

2.02 ALTERNATE SYSTEMS

- A. Proposed alternate systems must be submitted for approval two weeks prior to the bid date and show evidence of meeting the design criteria described herein as well as a performance history of a minimum of five years on similar projects.

PART 3 - EXECUTION

3.01 GENERAL

- A. All work shall be installed in strict accordance with system manufacturer's recommendations employing trained installers utilizing proper tools and equipment and working under the direct supervision of a technically competent and experienced supervisor.
- B. All surfaces related to work under this section shall be inspected by the approved applicator prior to commencing work. Any conditions discovered which render the substrate unsuitable shall be reported and satisfactorily corrected prior to installation of the specified system.
- C. Coordinate and verify that related work items meet the following requirements:
- 1. All surfaces shall be clean, dry and of sound substrate at time of application. Surfaces shall be provided free of voids, ridges and sharp projections.
 - 2. Concrete surface finishes shall be subject to approval of the approved applicator.
 - 3. Concrete surfaces shall be water cured or cured with a compatible curing compound as recommended by the manufacturer.
 - 4. Concrete surfaces shall have cured for an acceptable period as recommended by the system manufacturer for the various components of the applicable system.
- D. Environmental Conditions
- 1. System application shall be at temperatures as recommended by the system manufacturer.
 - 2. The deck surface shall be dry at time of application according to ASTM D4263, Standard Test Method for Indicating Moisture in Concrete.
 - 3. Provide adequate ventilation in accordance with system manufacturer's recommendations during installation of the deck water protection system.
- E. Protect all work areas from traffic until fully cured.

3.02 PROTECTIVE CONCRETE SEALER SYSTEM

- A. Clean surfaces to be treated in accordance with the system manufacturer's recommendations. Acceptable methods include sweeping, blowing, vacuuming, pressure washing, water blasting, acid etching, sand blasting, or shot blasting as required to remove all laitance and surface contaminants to insure proper penetration and/or adhesion of the sealer.

- B. Seal all joints prior to general surface treatment.
- C. Select and install a test section prior to general application to verify installation procedures, adhesion, penetration and condition of the finished surface.
- D. Concrete sealer shall be applied in accordance with system manufacturer's recommendation at the same rates and solids contents as tested against the criteria established in NCHRP 244.
- E. Materials shall be applied by pressure sprayer, spray bar or roller.

3.03 ELASTOMERIC TRAFFIC DECK COATING SYSTEM

- A. All traffic deck coatings are to be applied to clean, dry, sound substrates. Shotblasting is required to remove all laitance and other surface contaminants to insure proper adhesion of the traffic deck coating. In areas where shotblasting is not feasible, consult the system manufacturer for other methods of surface preparation.
- B. Select and install a test area prior to general application to establish procedures, verify adhesion and acceptable appearance.
- C. Seal all underlying joints prior to general application.
- D. All cracks on concrete surfaces to receive deck coating materials showing evidence of movement and/or leakage shall be pretreated in accordance with system manufacturer's recommendations prior to general application.
- E. Other detailing work including sealing around drains, penetrations, curb, column and wall bases, etc., shall be accomplished in accordance with system manufacturer's recommendations prior to general application.
- F. Provide a grid system marked on the deck surface to designate the area for which a container of material must be evenly applied to obtain the desired average dry mil film thickness. A wet mil gauge shall also be used to randomly verify that mil thickness at application is consistent with system manufacturer's recommendations.
- G. Broadcast clean, dry silica aggregate into the topcoats/intermediate coats to provide a skid resistant surface as recommended by system manufacturer.
- H. Application shall be by squeegee, roller and power sprayer.
- I. Install the Elastomeric Traffic Deck Coatings in accordance with the minimum average dry mil film thickness defined below. Install the various systems as detailed on the drawings.

ISO-FLEX 750 ELASTOMERIC TRAFFIC DECK COATING SYSTEMS

Suggested Average Dry Film Mil Thickness

System 750U — Urethane Base Coat, Urethane Topcoats

	<u>Base Coat</u>	<u>Topcoat</u>	<u>2nd Topcoat</u>	<u>Total Dry Mills</u> (excluding aggregate)
LVT Pedestrian and light vehicular traffic (parking stalls)	25-30	15	—	40-45
MVT Medium vehicular traffic (drive lanes less than 6% slope)	30	15	—	45
HVT Heavy vehicular traffic (drive lanes more than 6% slope)	30	15	15	60

System 750U-HL — Urethane Base Coat, Urethane Intermediate Coat, Urethane Lock Coat

	<u>Base Coat</u>	<u>Intermediate Coat</u>	<u>Lock Coat</u>	<u>Total Dry Mills</u> (excluding aggregate)
HL-MVT Pedestrian, light and medium vehicular traffic	25	15	10	50
HL-HVT Heavy vehicular traffic	25	20	10	55

System 750EU — Urethane Base Coat, Epoxy Topcoats

	<u>Base Coat</u>	<u>Topcoat</u>	<u>2nd Topcoat</u>	<u>Lock Coat</u>	<u>Total Dry Mills</u> (excluding aggregate)
LMD Pedestrian, light and medium vehicular traffic	25	8	—	10	43
HD Heavy vehicular traffic	25	8	22	10	65

Note to Specifier: The suggested average dry film mil thickness listed on the chart above represents the minimum acceptable average coverage. Specific project conditions such as surface profile, traffic count, aggregate distribution, etc. may require greater thickness to provide satisfactory performance. Consultation with applicator is recommended.

3.04 SLAB AND DECK CONTROL JOINT SEALANT SYSTEM

- A. All sealants are to be applied to clean, dry, sound substrates. Follow system manufacturers recommendations for cleaning and preparation of joints. Tooled control joints provided by the Goldblatt Groover #06-314-M7 shall be prepared by grinding with an abrasive wheel prior to sealing.
- B. Select and install a test section prior to general application to verify adhesion and acceptable appearance.
- C. Backer rods, bond breakers and primers shall be used in accordance with system manufacturer's recommendations.

- D. Care shall be taken to completely fill joints without overflowing the joint or smearing adjacent surfaces.
- E. Exposed joints shall be filled with sealant and tooled to a slightly recessed configuration to avoid direct contact with wheel traffic.

3.05 STRUCTURAL EXPANSION JOINT SEALING SYSTEM

Note to Specifier: Select only those systems which are pertinent to a specific project.

- A. Installation of the Factory Molded Textured Expansion Joint Seal
 - 1. Bed and affix the traffic plate on one side of the joint and allow it to move on the other side by placing a bond breaker over the bedding on the free side.
 - 2. Place and adhere the factory molded seal in the joint recess in accordance with procedures recommended by the system manufacturer, taking care to make the surface flush with the riding surface of the adjacent deck.

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