SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Contract description.

B. Work by Owner.

C. Contractor's use of site.

D. Work sequence.

E. Owner occupancy.

F. Specification Conventions.

1.2 CONTRACT DESCRIPTION

A. Work of the Project includes:

The complete removal of the exiting finish floor materials and marking by means necessary for the acceptable installation requirements of the new floor coating.

Repair of all of the spalled concrete and the cracks in the existing concrete for the acceptable installation requirements of the new floor coating.

Complete removal and replacement of joint materials throughout the room.

Miscellaneous floor repairs and repairs/painting to trench drain assembly.

Provide new floor coating. See Alternate for floor colors.

B. Regulated material: None.

C. Work of the Contract is identified in the Bid Section of the specifications.

1.3 WORK BY OWNER

A. The Owner will award a contract for the project commencing on the date established in the post-bid conference.

B. Owner will remove and retain possession of the following items before start of work:
1. The fire department will vacate all vehicles, equipment and devices.

1.4 CONTRACTOR'S USE OF SITE

A. Access to Site: Shall be instructed by the Owner.

B. Emergency Building Exits During Construction: Shall be coordinated with the approval by the Owner.

C. Construction Operations: Shall be instructed by the Owner.

D. Time Restrictions for Performing Interior Work: Shall be instructed by the Owner.

E. Utility Outages and Shutdown: Shall be coordinated with the approval by the Owner.

1.5 WORK SEQUENCE

A. Construct Work to accommodate Owner's occupancy requirements during construction period, coordinate construction schedule and operations with the Owner/Architect.

1.6 OWNER OCCUPANCY

A. The Owner will occupy the premises during the entire period of construction.

B. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.

C. Contractor to comply with the Town noise ordinance. With the agreement by the Town, the building may be opened and or closed outside of the scheduled/posted hours. Contractor is reminded that the building will remain in operation and will work with the Fire Department and Longmeadow representative to minimize disruption and to coincide with operations.

1.7 SPECIFICATION CONVENTIONS

A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words “shall be” are included by inference where a colon (:) is used within sentences or phrases.

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordination and project conditions.

B. Preconstruction meeting.

C. Progress meetings.

D. Cutting and patching.

E. Special procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

C. Coordinate space requirements, supports, and installation of electrical Work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.

E. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.3 PRECONSTRUCTION MEETING

A. Architect/Engineer will schedule meeting after Notice of Award.

B. Attendance Required: Owner, Architect/Engineer, and Contractor.

C. Agenda:
   1. Submission of executed bonds and insurance certificates.

2. Distribution of Contract Documents.
3. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule.
4. Designation of personnel representing parties in Contract, Owner, and Architect/Engineer.
5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
6. Scheduling.

D. Contractor shall record minutes and distribute copies within two days after meeting to participants, with copy to Architect/Engineer, Owner, and those affected by decisions made.

1.4 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.

B. Attendance Required: Job superintendent, major subcontractors and suppliers, Owner, Architect/Engineer, as appropriate to agenda topics for each meeting.

C. Contractor shall record minutes and distribute copies within two days after meeting to participants, with copy to Architect/Engineer, Owner, and those affected by decisions made.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 CUTTING AND PATCHING

A. Employ skilled and experienced installer to perform cutting and patching.

B. Execute cutting, fitting, and patching to complete Work.

C. Execute work by methods to avoid damage to other Work, and to provide proper surfaces to receive patching and finishing.

D. Restore Work with new products in accordance with requirements of Contract Documents.

E. Maintain integrity of construction; completely seal voids.

F. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.

G. Identify hazardous substances or conditions exposed during the Work to Architect/Engineer for decision or remedy.

3.2 SPECIAL PROCEDURES

A. Materials: As specified in product sections; match existing with new products and salvaged products for patching and extending work.

B. Employ skilled and experienced installer to perform alteration work.

C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

E. Remove debris and abandoned items from area and from concealed spaces.

F. Prepare surface and remove surface finishes to permit installation of new work and finishes.

G. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to original condition.

H. Refinish existing visible surfaces to remain in renovated rooms and spaces, to renewed condition for each material, with neat transition to adjacent finishes.

I. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

J. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Architect/Engineer for review.

K. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

L. Finish surfaces as specified in individual product sections.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittal procedures.

B. Construction progress schedules.

C. Product data.

D. Shop drawings.

E. Samples.

F. Certificates.

G. Manufacturer's instructions.

1.2 SUBMITTAL PROCEDURES

A. Transmit each submittal with separate transmittal identifying the product.

B. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal.

C. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.

D. Schedule submittals to expedite Project, and deliver to Architect/Engineer. Coordinate submission of related items.

E. For each submittal for Architect/Engineer review, allow one (1) week excluding delivery time to and from Contractor.

F. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.

G. Allow space on submittals for Contractor and Architect/Engineer review stamps.

H. When revised for resubmission, identify changes made since previous submission.

I. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

J. Submittals not requested will not be recognized or processed.

K. Provide Architect with Contractor's overnight delivery account number so that Architect may return reviewed submittal by overnight service.

1.3 CONSTRUCTION PROGRESS SCHEDULES

A. Submit preliminary outline Schedules within (10) ten days after date of established in Notice to Proceed for coordination with Owner's requirements. After review, submit detailed schedules within (10) ten days modified to accommodate revisions recommended by Architect/Engineer and by Owner.

B. Submit revised Progress Schedules every (2) weeks.

C. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers, and other concerned parties.

D. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

1.4 PRODUCT DATA

A. Product Data: Submit to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit number of copies Contractor requires, plus two copies Architect/Engineer will retain.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

E. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.5 SHOP DRAWINGS

A. Shop Drawings: Submit to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
   1. Include signed and sealed calculations to support design.

2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
3. Make revisions and provide additional information when required by authorities having jurisdiction.

C. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

D. See Drawings for additional requirements, photograph.

1.6 SAMPLES

A. Samples: Submit to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Samples For Selection as Specified in Product Sections:
1. Submit to Architect/Engineer for aesthetic, color, or finish selection.
2. Submit samples of finishes from full range of manufacturers' standard colors, textures, and patterns for Architect/Engineer selection.

C. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

D. Include identification on each sample, with full Project information.

E. Submit number of samples specified in individual specification sections; Architect/Engineer will retain (2) two samples.

F. Reviewed samples which may be used in the Work are indicated in individual specification sections.

1.7 CERTIFICATES

A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Architect/Engineer, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect/Engineer.

1.8 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, to Architect/Engineer for delivery to Owner in quantities specified for Product Data.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

E. Product substitution procedures.

F. Equipment electrical characteristics and components.

1.2 PRODUCTS

A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.

C. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

E. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

A. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBSTITUTION PROCEDURES

A. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.

B. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

C. Substitution Submittal Procedure:
1. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Closeout procedures.

B. Final cleaning.

C. Protecting installed construction.

D. Project record documents.

E. Spare parts and maintenance products.

F. Maintenance service.

1.2 CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer's review.

B. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.3 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Clean interior surfaces exposed to view and; remove temporary labels.

C. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.

D. Remove waste and surplus materials, rubbish, and construction facilities from the project area.

1.4 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Protect finished floors from traffic, dirt, wear, damage, or movement of heavy objects.

1.5 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed Shop Drawings, Product Data, and Samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and modifications.

F. Record / Shop Drawings: Legibly mark each item to record actual construction including:
   1. Field changes of dimension and detail.
   2. Details not on original Contract drawings.

G. Submit documents to Architect/Engineer with claim for final Application for Payment.

1.6 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.

B. Deliver to and place in location as directed by Owner; obtain receipt prior to final payment.

1.7 MAINTENANCE SERVICE

A. Furnish service and maintenance of all components installed for (1) one year from date of Substantial Completion.

B. Examine system components at frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by manufacturer of original component.

END OF SECTION

SECTION 02 41 19

SELECTIVE STRUCTURE DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Demolishing designated building equipment and fixtures.
2. Demolishing designated construction.
3. Cutting and alterations for completion of the Work.
4. Removing designated items for reuse and Owner's retention.
5. Protecting items designated to remain.
6. Removing demolished materials.

1.2 SUBMITTALS

A. Section 01 33 00 – Submittal Procedures: Requirements for submittals.

B. Demolition Schedule: Indicate overall schedule and interruptions required for utility and building services.

C. Shop Drawings:
1. Indicate demolition and removal sequence.

1.3 CLOSEOUT SUBMITTALS

A. Section 01 70 00 – Execution of Closeout Requirements: Requirements for submittals.

1.4 QUALITY ASSURANCE

A. Conform to applicable code for demolition work, dust control, products requiring electrical disconnection and re-connection.

B. Conform to applicable code for procedures when hazardous or contaminated materials are discovered.

C. Obtain required permits from authorities having jurisdiction.

D. Perform Work in accordance with State, and Municipality standard.

1.5 PRE-INSTALLATION MEETINGS

A. Convene minimum one week prior to commencing work of this section.

1.6 SEQUENCING

A. Section 01 10 00 – Summary: Requirements for sequencing.

B. Contractor shall sequence activities to expedite the Work.

C. Owner will conduct salvage operations before demolition begins to remove materials Owner chooses to retain.

1.7 SCHEDULING

A. Section 01 33 00 – Submittal Procedures: Requirements for scheduling.

B. Cooperate with the Owner in scheduling noisy, dusty and odor producing operations and waste removal that may impact Owners operation and occupancy in adjoining spaces.
1. It may/will be necessary to perform Work on Saturdays and Sundays.

C. Coordinate utility and building service interruptions with Owner.
1. Do not disable or disrupt building fire or life safety systems without three (3) days prior written notice to Owner.
2. Schedule tie-ins to existing systems to minimize disruption.
3. Coordinate Work to ensure fire alarms, smoke detectors, emergency lighting, exit signs and other life safety systems remain in full operation in occupied areas.

1.8 PROJECT CONDITIONS

A. Conduct demolition to minimize interference with adjacent and occupied building areas.

B. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

A. Notify affected utility companies before starting work and comply with their requirements.

B. Mark location and termination of utilities.

C. Erect, and maintain temporary barriers and security devices at work locations, including warning signs and lights, and similar measures, for protection of the Owner, and existing improvements indicated to remain.

D. Seal all openings and provide ventilation to prevent odors passing into the occupied spaces of the building.

3.2 SALVAGE REQUIREMENTS

A. Coordinate with Owner to identify building components and equipment required to be removed and delivered to Owner.

B. Tag components and equipment Owner designates for salvage.

C. Protect designated salvage items from demolition operations until items can be removed.

D. Carefully remove building components and equipment indicated to be salvaged.

E. Disassemble as required to permit removal from building.

F. Package small and loose parts to avoid loss.

G. Mark equipment and packaged parts to permit identification and consolidation of components of each salvaged item.

H. Prepare assembly instructions consistent with disassembled parts. Package assembly instructions in protective envelope and securely attach to each disassembled salvaged item.

I. Deliver salvaged items to Owner. Obtain signed receipt from Owner.

3.3 DEMOLITION

A. Conduct demolition to minimize interference with adjacent and occupied building areas.

B. Maintain protected egress from and access to adjacent existing buildings at all times.

C. Disconnect and remove designated utilities within demolition areas.

D. Cap and identify abandoned utilities at termination points when utility is not completely removed. Annotate Record Drawings indicating location and type of service for capped utilities remaining after demolition.

E. Demolish in orderly and careful manner. Protect existing improvements.

F. Carefully remove building components indicated to be reused.
   1. Disassemble components as required to permit removal.
   2. Package small and loose parts to avoid loss.
   3. Mark components and packaged parts to permit reinstallation.
   4. Store components, protected from construction operations, until reinstalled.

G. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.

H. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

I. Remove temporary Work.

J. Protect all materials and equipment remaining.

END OF SECTION

SECTION 09 67 23

RESINOUS FLOORING

PART 1 – GENERAL: (SHOP FLOOR EPOXY BROADCAST FLOORING WITH URETHANE TOPCOAT)

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the following:

1. Resinous flooring system as shown on the drawings and in schedules.

B. Related sections include the following:

1. Section 01 33 00 Submittal Procedures
2. Section 01 70 Execution and Closeout Requirements

1.3 SYSTEM DESCRIPTION

A. The work shall consist of preparation of the substrate, the furnishing and application of an epoxy based multi roller applied flooring system with flintshot quartz aggregate and urethane topcoat. The system shall have the color and texture as specified by the Owner with a nominal thickness of 1/8 inch. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations. Note that a two-color pattern is to be done for boxed areas around vehicles for a second color for the surrounding area.

B. Cove base (4 inches) to be applied where noted on plans and per manufacturers standard details unless otherwise noted.

1.4 SUBMITTALS

A. Product Data: Latest edition of Manufacturer's literature including performance data and installation procedures.

B. Manufacturer’s Material Safety Data Sheet (MSDS) for each product being used.

C. Samples: A 3 x 3 inch square sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system subject to normal tolerances.

1.5 QUALITY ASSURANCE

A. The Manufacturer shall have a minimum of 10 years experience in the production, sales, and technical support of epoxy and urethane industrial flooring and related materials.

B. The Manufacturer shall have a minimum of 10 completed apparatus bay projects in State of Connecticut.

C. The Applicator shall have experience in installation of the flooring system as confirmed by the manufacturer in all phases of surface preparation and application of the product specified.

D. No requests for substitutions shall be considered that would change the generic type of the specified System.

E. System shall be in compliance with requirements of United States Department of Agriculture (USDA), Food, Drug Administration (FDA), and local Health Department.

F. System shall be in compliance with the Indoor Air Quality requirements of California section 01350 as verified by a qualified independent testing laboratory.

F. A pre-installation conference shall be held between Applicator, General Contractor and the Owner to review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.
G. Flooring system shall meet LEED v4 requirement for Environmental Product Declaration(EPD) and Healthcare Product Declaration(HPD). Testing must be validated by independent 3rd party testing.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping

1. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number.

B. Storage and Protection

1. The Applicator shall be provided with a storage area for all components. The area shall be between 60 F and 90 F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
2. Copies of Safety Data Sheets (SDS) for all components shall be kept on site for review by the Engineer or other personnel.

C. Waste Disposal

1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.

1.7 PROJECT CONDITIONS

A. Site Requirements

1. Application may proceed while air, material and substrate temperatures are between 60 F and 90 F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
2. The relative humidity in the specific location of the application shall be less than 85 % and the surface temperature shall be at least 5 F above the dew point.
3. The Applicator shall ensure that adequate ventilation is available for the work area.
4. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.

B. Conditions of new concrete to be coated with epoxy material.

1. Concrete shall be moisture cured for a minimum of 7 days and have fully cured a minimum of twenty
eight days in accordance with ACI-308 prior to the application of the coating system pending moisture
tests.
2. Concrete shall have a flat rubbed finish, float or light steel trowel finish (a hard steel trowel finish is neither necessary or desirable).
3. Sealers and curing agents should not to be used.
4. Concrete surfaces on grade shall have been constructed with a vapor barrier to protect against the effects of vapor transmission and possible delamination of the system.

C. Safety Requirements

1. All open flames and spark-producing equipment shall be removed from the work area prior to commencement of application.
2. "No Smoking" signs shall be posted at the entrances to the work area.
3. The Owner shall be responsible for the removal of foodstuffs from the work area.
4. Non-related personnel in the work area shall be kept to a minimum.

1.8 WARRANTY

A. Dur-A-Flex, Inc. warrants that material shipped to buyers at the time of shipment substantially free from material defects and will perform substantially to Dur-A-Flex, Inc. published literature if used in accordance with the latest prescribed procedures and prior to the expiration date.
B. Dur-A-Flex, Inc. liability with respect to this warranty is strictly limited to the value of the material purchase.

PART 2 – PRODUCTS

2.1 FLOORING (Basis Of Design)

A. Dur-A-Flex, Inc, Shop Floor, Epoxy-Based seamless flooring system.

1. System Materials:
   a. Primer: Dur-A-Flex, Inc, Dur-A-Glaze WB resin and hardener.
   b. Broadcast and Grout Coat: Dur-A-Flex, Inc, Shop Floor resin and hardener.
   c. The aggregate shall be Dur-A-Flex, Inc. Flintshot quartz aggregate.
   d. Topcoat: Dur-A-Flex, Inc. Armor Top resin, hardener and duragrip.
   e. Line striping: Dur-A-Flex, Inc. Dur-A-Gard resin and hardener with superstick additive.

2. Patch Materials
   a. Shallow Fill and Patching: Use Dur-A-Flex, Inc. Dur-A-Glaze # 4 Cove-Rez.
   b. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Flex, Inc. Dur-A-Crete.

2.2 MANUFACTURER

A. Basis of Design: Dur-A-Flex, Inc., 95 Goodwin Street, East Hartford, CT 06108, Phone: (860) 528-9838, Fax: (860) 528-2802
B. Manufacturer of Approved System shall be single source and made in the USA.

2.3 PRODUCT REQUIREMENTS

A. Primer	Dur-A-Glaze #4 WB
1. Percent Solids	56 %
2. VOC	2 g/L
3. Bond Strength to Concrete ASTM D 4541	550 psi, substrates fails
4. Hardness, ASTM D 3363	3H
5. Elongation, ASTM D 2370	9 %
6. Flexibility (1/4: Cylindrical mandrel), ASTM D 1737	Pass
7. Impact Resistance, MIL D-2794	>160
6. Abrasion Resistance ASTM D 4060, CS 17 wheel, 1,000 g Load	30 mg loss

B.	Broadcasts and Grout Coat		Dur-A-Glaze Shop Floor	
1.	VOC		7.9 g/L	
2.	Compressive Strength, ASTM D 695		17,500 psi	
3.	Tensile Strength, ASTM D 638		4,000 psi	
4.	Flexural Strength, ASTM D 790		6,250 psi	
5.	Flexural Modulus of Elasticity, ASTM D 790		6.2×10^5	
6.	Abrasion Resistance, ASTM D 4060			
	C-10 Wheel, 1,000 gm load, 1,000 cycles		24 mg loss	
7.	Flame Spread/NFPA-101, ASTM E 84		Class A	
8.	Flammability, ASTM D 635		Self Extinguishing	
9.	Indentation, MIL D-3134		0.025 Max	
10.	Impact Resistance MIL D-3134		Pass	
11.	Water Absorption. MIL D-24613		0.04%	
C.	Topcoat		Armor Top	
1.	Percent Solids		95 %	
2.	VOC		0 g/L	
3.	Tensile Strength, ASTM D 2370		7,000 psi	
4.	Adhesion, ASTM 4541		Substrate Failure	
5.	Hardness, ASTM D 3363		4H	
6.	60^0 Gloss ASTM D 523		70	
7.	Abrasion Resistance, ASTM D4060	Gloss	Satin	
	CS 17 wheel (1,000 g load) 1,000 cycles	10	12	mg loss
8.	Pot Life, 70 F, 50% RH		2 Hours	
9.	Full Chemical Resistance		7 days	

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting flooring performance.

1. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

3.2 PREPARATION

A. General

1. New and existing concrete surfaces shall be free of oil, grease, curing compounds, loose particles, moss,
algae growth, laitance, friable matter, dirt, and bituminous products.
2. Moisture Testing: Perform tests recommended by manufacturer and as follows.

. a. Perform relative humidity test using is situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75% relative humidity level measurement.
b. If the relative humidity exceeds 75% then Dur-A-Flex, Inc Dur-A-Glaze MVP Primer moisture mitigation system must be installed prior to resinous flooring installation. Slab-on grade substrates without a vapor barrier may also require the moisture mitigation system. The MVP Primer is an additional cost over the WB Primer. Flooring contractor to supply the cost to change to MVP Primer at time of bid if it is determined it is required after completing moisture tests above.

3. There shall be no visible moisture present on the surface at the time of application of the system. Compressed oil-free air and/or a light passing of a propane torch may be used to dry the substrate.
4. Mechanical surface preparation
   a. Shot blast all surfaces to receive flooring system with a mobile steel shot, dust recycling machine (Blastrac or equal). All surface and embedded accumulations of paint, toppings hardened concrete layers, laitance, power trowel finishes and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a minimum profile of CSP 3-4 as described by the International Concrete Repair Institute. All existing epoxy coatings must be removed from apparatus bay area.
   b. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
   c. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 1/4 inch
   key cut shall be made to properly seat the system, providing a smooth transition between areas. The
   detail cut shall also apply to drain perimeters and expansion joint edges.
   d. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.
5. At spalled or worn areas, mechanically remove loose or delaminated concrete to a sound concrete and patch per manufactures recommendations.

3.3 APPLICATION

A. General

1. The system shall be applied in seven distinct steps as listed below:
   a. Substrate preparation
   b. Priming
   c. First broadcast coat application with first aggregate broadcast
   d. Second broadcast coat with second aggregate broadcast
   e. Grout coat application, sand floor (if required)
   f. Topcoat application, urethane
   g. Line Striping
   h. Joint Sealants

2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
4. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

B. Primer

1. The primer shall consist of a liquid resin and hardener that is mixed at the ratio of 1 parts resin to 4 part hardener per the manufacturer's instructions.
2. The primer shall be applied by flat squeegee and back rolled at the rate of 200-250 sf/gal to yield a dry film thickness of 4 mils.

C. Broadcast Coat
   1. The broadcast coat shall be applied as a double broadcast system as specified by the Architect.
   2. The broadcast coat shall be comprised of two components, a resin, and hardener as supplied by the Manufacturer and mixed in the ratio of 2 parts resin to 1 part hardener.
   3. The resin shall be added to the hardener and thoroughly mixed by suitably approved mechanical means.
   4. The broadcast coat shall be applied over horizontal surfaces using "v" notched squeegee and back rolled at the rate of 90-100 sf/gal.
   5. Quartz aggregate shall be broadcast to excess into the wet material at the rate of 0.5 lbs/sf.
   6. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.
   7. Apply a second coat of resin with a coverage rate of 90-100 sf/gal and broadcast aggregate to excess at the rate of 0.5 lbs/sf.
   8. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.

D. Grout Coat
   1. The grout coat shall be comprised of liquid components, combined at a ratio of 2 parts resin to 1 part hardener by volume and shall be thoroughly blended by mechanical means such as a high speed paddle mixer.
   2. The grout coat shall be squeegee applied with a coverage rate of 100 sf/gal (flintshot) .
   3. The grout coat will be back rolled and cross rolled to provide a uniform texture and finish.

E. Topcoat (Urethane)

   1. The topcoat of Armor Top shall be roller applied at the rate of 500 sf/gal to yield a dry film thickness of 3 mils.
   2. The topcoat shall be comprised of a liquid resin, hardener and duragrip that is mixed per the manufacturer's instructions.
   3. Apply 4 inch wide yellow line striping in epoxy with superstick additive
   4. The finished floor will have a nominal thickness of 1/8 inch.

F. Joints

   1. Saw-Cut all construction joints lines and apply Polyurea Joint sealant that is a minimum of ½" in depth and ¼" in width. Apply urethane joint sealant along perimeter walls inside of apparatus bays

3.4 FIELD QUALITY CONTROL

A. Tests, Inspection

   1. The following tests shall be conducted by the Applicator:
      a. Temperature
         1. Air, substrate temperatures and, if applicable, dew point.
      b. Coverage Rates
         1. Rates for all layers shall be monitored by checking quantity of material used against the area covered.

3.5 CLEANING AND PROTECTION

A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.
B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.

END OF SECTION