SPEC NOTE: This specification includes materials and installation procedures for the application of Durex® HD Mechanical Room Floor Treatment System, a high performance fluid applied system consisting of Durex® Uraflex 360, an elastomeric polyurethane waterproofing membrane, Durex® Uraflex 361 a durable polyurethane intermediate coat and Durex® Epoxy Gard Pro, an abrasion resistant epoxy top coat. Durex® HD Mechanical Room Floor Treatment System is ideally suited to protect concrete floors subject to heavy load traffic in machine, mechanical and service rooms. This specification should be adapted to suit the requirements of individual projects. It is prepared in CSC-NMS three part format and should be included as a separate section under Division 9 – Finishes.

**PART 1 GENERAL**

**1.1 GENERAL REQUIREMENTS**

.1 All conditions of the contract and Division 1, General Requirements apply to this section.

 .2 Work shall meet applicable codes and standards, manufacturer’s recommendations and good building practice.

.3 System Description

.1 Provide labour, materials and equipment necessary for the placement of the fluid applied floor treatment system as specified and shown on the drawings.

.2 Prepare concrete surfaces, treat cracks and joints, patch voids and install the fluid applied floor treatment system to manufacturer’s recommended material thickness.

.3 Work to include preparation, patching and membrane application at vertical surface upturns conditions including columns, walls, cast-in-place curbs, islands and pipe penetrations.

**1.2 COORDINATION**

.1 Ensure the Work of this section is coordinated with the Work of related sections.

**1.3 RELATED SECTIONS**

.1 Cast-In-Place Concrete Section 03 30 00

.2 Sealants Section 07 92 00

**1.4 REFERENCES**

### .1 ASTM D 7232 Standard Test Method for Rapid Determination of the Nonvolatile Content of Coatings by Loss in Weight.

### .2 ASTM D 3960 Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings

.3 ASTM D 333 Standard Guide for Clear and Pigmented Lacquers

.4 ASTM D 2196 Standard Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational Viscometer

.5 ASTM D 5178 Standard Test Method for Mar Resistance of Organic Coatings

.6 ASTM D 638 Standard Test Method for Tensile Properties of Plastics

.7 ASTM D 624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

.8 ASTM D 412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension

.9 ASTM D 522 Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings

.10 ASTM D 2240 Standard Test Method for Rubber Property—Durometer Hardness

.11 ASTM D 543 Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents

 **1.5 SUBMITTALS**

.1 Product Data

.1 Submit published specifications and individual component technical data sheets to show compliance to the intent of the design specifications and installation instructions.

.2 Samples

.1 Prior to application of mock-up, submit duplicate 150mm x 200mm (6" x 8") representative colour samples of finish coat and texture.

.2 Maintain an approved sample at the project site.

**1.6 QUALITY ASSURANCE**

.1 Qualifications

.1 Work of this Trade shall be executed by a qualified applicators approved by Durabond Technical Coatings Ltd. Applicators shall have a minimum of 5 years of proven satisfactory experience in this type of work, having proper equipment and skilled personnel.

.2 Work of this Trade shall include minimum two (2) qualified applicators be present at any one time when applying the fluid applied floor treatment coating systems.

**1.7 DELIVERY, STORAGE, HANDLING & PROTECTION**

.1 Deliver all required materials to the job site in original unopened containers with all identifying labels and markers clearly visible and intact. Upon delivery inspect materials for damages and advise manufacturer in writing.

.2 Store and protect materials in a dry, vented, waterproof location, stacked off the ground, out of direct sunlight and other detrimental conditions. Store liquid materials at ambient temperatures above 5 degrees C and below 35 degrees C. Protect materials from freezing.

**1.8 WARRANTY**

.1 The warranty period stipulated in the General Conditions of the Contract shall be extended as follows:

.1 Durabond Technical Coatings Ltd. shall provide a two (2) year product warranty from the date of Substantial Completion against product defects.

**PART 2 PRODUCTS**

**2.1 MANUFACTURER**

 .1 Components and membrane materials must be obtained as a single-source from the materials manufacturer to ensure total system compatibility and integrity.

 .2 Fluid Applied Floor Treatment Manufacturer:

 **Durabond Technical Coatings** **Ltd**

55 Underwriters Road

Scarborough, ON M1R 3B4

Tel: 1-877 387 2266

 Web Site: [www.durabond.com](http://www.durabond.com)

**2.2 COLOURS**

 .1 Colours to be selected or approved by the Architect [Consultant] based on colour chips supplied to Contractor.

**2.3 FLOOR TREATMENT AND WATERPROOFING SYSTEM**

.1 Base Coat Waterproofing Membrane shall be Durex® Uraflex 360 Elastomeric Traffic Bearing Polyurethane Waterproofing Membrane manufactured by Durabond, a liquid applied two-component, 100% solids, solvent-free, high solids elastomeric polyurethane waterproofing membrane formulated for concrete surfaces in fluid applied floor treatment coating applications. It adheres to directly to concrete and wood surfaces to form a highly effective elastomeric waterproofing membrane.

.2 Abrasion Resistant Intermediate Coat shall be Durex® Uraflex 361 Elastomeric Polyurethane Traffic Bearing Topcoat manufactured by Durabond, a liquid applied two-component, solvent-free, high solids elastomeric polyurethane topcoat specially formulated for traffic bearing applications, designed to adhere to Durex® Uraflex 360 Elastomeric Polyurethane Waterproofing Membrane to form a waterproof traffic bearing coating.

.3 Abrasion Resistant Topcoat shall be Durex® Epoxy Gard Pro manufactured by Durabond, a liquid applied two component water based epoxy coating for horizontal and vertical applications.

.4 Aggregate shall be clean graded silica sand supplied by Durabond.

.5 Concrete repair material for cracks, voids and holes shall be Durex® Dur-A-Patch 100 with Durex® Dur-A-Patch Liquid Additive manufactured by Durabond, a two component non-shrink repair mortar used for the repair of concrete. Reinforcement mesh shall be Durex® Reinforced Fiberglass Mesh, a fiberglass woven mesh treated with an alkali-resistant macromolecule latex and polyurethane crack sealant supplied by Durabond.

**PART 3 EXECUTION**

**3.1 EXAMINATION PROJECT/SITE CONDITIONS**

.1 Examination

.1 The substrate surface shall be free of dirt, dust debris and other foreign materials such as oil, dust, old paint, moisture, crumbling material, or loose joints, voids and projections that will adversely affect the execution and quality of work.

.2 Do not start work until unsatisfactory conditions have been corrected.

.3 Commencement of work shall indicate acceptance of substrate conditions.

.2 Climatic Conditions

.1 Do not proceed with applications of fluid applied floor treatment coatings at ambient air temperatures below 5 degrees C without prior approval by Consultant, or above 35 degrees C.

.2 Avoid applying fluid applied floor treatment coatings on surfaces during periods where the surfaces are exposed to directly sun, or on surfaces where condensation has or will form due to presence of high humidity and lack of proper ventilation.

.3 In cold temperature conditions provide temporary enclosures and heat over the exterior work area. Heat and maintain the area to achieve an ambient air temperature for the application of materials, and provide heat for a minimum of 24 hours after application of coatings.

**3.2 SURFACE PREPARATION**

.1 All surfaces to be coated must be free of dirt, oils or any other contaminants the may prevent the proper adhesion of the liquid applied floor coating.

.2 Prepare concrete substrate by mechanical shot blasting or mechanically abrade to remove dirt, loose coatings and other contaminants detrimental to the permanent bond of specified coating.

.3 Prepare upturns, corners, surface protrusions and other areas not accessible with shot blasting equipment using sandblasting equipment or grinding equipment.

.4 Treat cracks, voids and bug holes with suitable patching material as recommended by floor treatment coating manufacturer.

.5 Grind down surface irregularities within 1.5 mm (1/16 inch) of acceptable tolerance.

.6 Sweep decks clean of debris and standing water.

.7 Isolate all drains, expansion joints, surface protrusions and termination seams with a saw cut.

**3.3 INSPECTION**

.1 Inspect prepared surfaces to ensure the complete removal of laitance, dust, moisture, oil, existing traffic lines and other contaminants that will adversely affect the execution and quality of work.

.2 Inspect prepared surfaces to ensure treatment of holes, cracks and surface irregularities are complete.

.3 Report deficiencies in writing to Consultant [General Contractor].

**3.4 PROTECTION OF WORK AREA**

.1 Prior to start of applications isolate and protect the work area from pedestrian or vehicular traffic and/or other trades.

.2 Protect adjacent surfaces from splash and/or spillage.

.3 Maintain protection of work area and applied coatings against detrimental weather conditions, blowing debris, floor treatment and/or other events that will adversely affect adhesion or the performance of the coatings for three to seven days after completion and/or the coating is properly cured and dry.

**3.5 APPLICATION OF POLYURETHANE WATERPROOFING BASE COAT**

.1 Carefully organize the work with sufficient tradesmen to complete an entire section at natural break points. Avoid stop and start lines within any one section. Mix materials in accordance with manufacturers published technical data sheets.

.2 Treat static cracks up to 1.5 mm (1/16 inch) with application of base coat waterproofing membrane and allow to dry.

.3 Treat static cracks greater than 1.5 mm (1/16 inch) and less than 3 mm (1/4 inch) with polyurethane sealant and reinforce mesh.

.4 Correct concrete repairs with crack repair materials and allow to dry.

.5 Apply polyurethane waterproofing base coat with a 13 mm phenolic core roller or squeegee at a uniform thickness of 30 mils WFT. Use a wet film thickness gauge to measure and monitor material thickness. Allow waterproofing membrane to cure for at least 8 hours prior to application of top coat.

**3.6 APPLICATION OF POLYURETHANE INTERMEDIATE COAT**

.1 Carefully organize the work with sufficient tradesmen to complete an entire section at natural break points. Avoid stop and start lines within any one section. Mix materials in accordance with manufacturers published technical data sheets.

.2 Intermediate coat must be applied within 24 hours of application of waterproofing base coat. Consult with Durabond Technical Services for information.

.3 Apply polyurethane intermediate coat at a uniform thickness of 15-25 wet mils using a 13 mm phenolic core roller or notched squeegee over cured base coat. Use wet film thickness gauge to measure and monitor material thickness.

.4 Anti-Slip Surfaces

.i Broadcast #24 mesh silica sand or aluminum oxide aggregate evenly over the surface into wet top coat at a rate of approximately 2-5 lb per 100 sq.

.ii Allow the sand/coating matrix to settle, self-level and encapsulate the aggregate into the coating, back roll the surface for a smooth, consistent finish.

**3.7 APPLICATION OF EPOXY TOP COAT**

.1 Carefully organize the work with sufficient tradesmen to complete an entire section at natural break points. Avoid stop and start lines within any one section. Mix materials in accordance with manufacturers published technical data sheets.

.2 Top coat must be applied within 24 hours of application of intermediate coat. Consult with Durabond Technical Services for information.

.3 Apply two coats of epoxy top coat at a uniform thickness of 3-5 wet mils each using a 13 mm phenolic core roller over cured base coat. Use wet film thickness gauge to measure and monitor material thickness.

.4 Anti-Slip Surfaces

.i Broadcast #32 mesh silica sand or aluminum oxide aggregate evenly over the surface into wet top coat at a rate of approximately 2-5 lb per 100 sq.

.ii Allow the sand/coating matrix to settle, self-level and encapsulate the aggregate into the coating, back roll the surface for a smooth, consistent finish.

**3.8 CLEANING**

.1 Wash all tools and equipment immediately with mineral Xylene or solvent-based cleaner. Allow any unused product to harden in container and discard according to local regulations.

**3.9 Protection of Work**

.1 Maintain a dust-free environment for the duration of work and until coating has fully cured.

.2 Erect suitable barriers to prevent through floor treatment or other trades from entering working area during installation of coating and protect adjacent surfaces from damage.

.3 Do not proceed with application of materials immediately prior to, during, or immediately after inclement conditions, nor if adverse weather is anticipated within 24 hours after application.

.4 Do not apply finish coat in areas where dust is being generated.

.5 Protect applied coating from rapid evaporation during dry and hot weather. Consult Durabond Technical Services for recommendations should adverse conditions exist.

END OF SECTION