ARCHITECTURAL SPECIFICATIONS GUIDELINES
COATED RUBBER FLOORING TILES – INDOOR APPLICATIONS
Armor-X

Section 09 65 19
Resilient Tile Flooring

Section 09 62 00
Athletic Tile Flooring

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Resilient tile flooring and accessories.

1.2 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete.
B. Section 06 10 00 - Rough Carpentry.
C. Section 07 26 00 - Vapor Retarders.
D. Section 09 62 00 – Athletic Flooring
E. Section 09 65 16 - Resilient Sheet Rubber Flooring.
F. Section 09 65 13 - Resilient Base and Accessories:

1.3 REFERENCES

A. ASTM International (ASTM) and others as noted:

1. AATTC 134-06 Standard for Electrostatic Propensity of Carpets
2. ASTM C423 Standard Test Method for Sound Absorption, Noise Reduction Coefficient
3. ASTM D2047 Standard Test Method for Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine
4. ASTM D3676 Standard Specification for Density Rubber Cellular Cushion Used for Carpet or Rug Underlay
5. ASTM D395B Standard Test Methods for Rubber Property-Compression Set
6. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Eastover's –Tension
7. ASTM D5116 Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products. (V.O.C.)
8. ASTM E492 Standard Test Method for Impact Sound Transmission
9. ASTM E648-97 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
10. ASTM F137-03 Standard Test Method for Flexibility of Resilient Flooring Materials with Cylindrical Mandrel Apparatus

11. ASTM F150 Standard Test Method for Electrical Resistance of Conductive and Static Dissipative Resilient Flooring

12. ASTM F1914-98 Standard Test Method for Short-Term Indentation and Residual Indentation of Resilient Floor Covering

13. ASTM F925-97 Standard Test Method for Resistance to Chemicals of Resilient Flooring

14. ASTM F970-87 Standard Test Method for Static Load Limit

15. ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

16. Federal Standard 101B/NFPA 99 12-4.1.3.8 –Static Decay Test Method 4046

17. California Specification 01350 (CHPS Compliant for VOC Emissions) -Emission tests are performed following California Dept. of Health Services Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, CA/DHS/EHLRB/R-174, 07/15/04 (http://www.cal-iaq.org/VOC/Section01350_7_15_2004_FINAL_PLUS_ADDENDUM-2004-01.pdf)

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements

B. Product Data: Provide detailed data on each product to be used, including but not limited to the following information as applicable:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Maintenance recommendations.

C. Selection Samples: For each color specified, two sets of each type and color of ARMOR-X flooring indicate the full color and pattern variation range.

D. Verification Samples: For each finish product specified, two 4" x 6" sets of each type and colors of ARMOR-X flooring, indicating color and pattern of actual product, including variations, as proof of application compliance.

E. Closeout Submittals: Submit three copies of the following:
   1. Maintenance and operation data includes methods for maintaining installed products, precautions against cleaning materials, and methods that are detrimental to finishes and performance.
   2. Documentation of warranty specified herein.

F. SDS: Submit manufacturer's Safety Data Sheets for specified adhesives/sealers.

1.5 QUALITY ASSURANCE

G. Installer Qualifications: Minimum of two years' experience and completion of at least three projects of similar magnitude, material, and complexity. Provide project references, including contact names and telephone numbers for three projects.

H. Provide Armor-X flooring products manufactured by a Canadian firm with a minimum of 35 years of experience fabricating products and types equivalent to those specified.

I. Provide Armor-X flooring products that are FloorScore® certified under the criteria developed by the Resilient Floor Covering Institute (RFCI) and certified by Scientific Certification Systems (SCS), Inc.

J. Provide products with a minimum of 5 5-Year Limited Manufacturer's Warranty

1.6 DELIVERY, STORAGE & PROTECTION

A. Delivery: Deliver materials in the manufacturer's original, unopened, undamaged wrapping and/or containers with identification labels intact, clearly marking edge type, thickness, and shade of color(s).

B. Inspection: Inspect all deliveries to ensure undamaged goods and accurate product type, thickness, edge type, and color. Contact the manufacturer immediately if the product is damaged or inconsistent with the order specifications.

C. Storage and Protection: Carefully handle all materials and store them protected from exposure to harmful weather and temperature conditions recommended by the manufacturer. Remove pallet banding if long-term storage is required, leaving other packaging intact until acclimation is to be started.

D. Flooring material and adhesive (if required) shall be acclimated to the installation area for a minimum of 24 hours before installation. See the manufacturer's installation guidelines for details on proper acclimation procedures. Longer acclimation may be required if the product has been stored for extended periods.

1.7 PROJECT CONDITIONS

A. Environmental Requirements/Conditions: Per manufacturer's recommendations. Areas to receive flooring shall be clean, level, dry, fully enclosed, weather tight with the permanent HVAC set at a uniform temperature of at least 68F/20C degrees and less than 85F/30C continuously before, during and after installation, but for not less than 48 hours before and during, and not less than 48 hours after installation. The flooring materials shall be conditioned in the same manner before installation.

B. Close spaces to traffic during and after rubber flooring installation, as recommended in writing by the manufacturer.

C. Install Armor-X flooring materials and accessories after all other finished operations, including painting, have been completed.

D. Where demountable partitions and other items are indicated for installation on top of sheet

resilient flooring material, install the flooring before these items are installed.

E. Concrete substrates should not exceed 90 percent RH and/or 5 lbs. X 24 hrs. X 1000 sf. moisture vapor emissions rate tested according to ASTM F2170 and ASTM F1869.

1.8 WARRANTY

A. Warranty Period: Manufacturer's standard 5-Year Warranty against manufacturing defects.

1.9 EXTRA MATERIALS

A. Deliver extra material of each tile type and color to the owner in the same manufactured lot, in quantities not less than 5% of the total area installed for each product. Delivery, storage, and protection of extra materials shall comply with the manufacturer's standard requirements.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Dinoflex Group LP, located at 5590-46th Avenue SE, Salmon Arm, BC, Canada; Toll Free Tel: 1-877-713-1899; Email: sales@dinoflex.com.; Web: www.dinoflex.

B. Substitutions are not permitted.

C. Requests for equals will be considered in accordance with the provisions of Section 01 60 00 - Product Requirements

2.2 RESILIENT/RECYCLED RUBBER FLOORING TILES

A. Material shall be a dual-layer tile product with a homogeneous color top layer, composed of a two-part high-pressure applied polyurethane coating. The backing layer comprises non-vulcanized post-consumer recycled SBR (styrene butadiene rubber) combined with the manufacturer's pre- and post-consumer recycled regrind bound with a proprietary slow-cured MDI water-based polymer. The colored top layer is to be directly sprayed onto the backing layer.

B. All tiles shall be produced in block form (not cut from rolled material), sliced, sprayed with polyurethane top layer, and precision cut using computerized numerically controlled (CNC) water-based equipment. Armor-X tiles will be sanded on the underside to create a thickness tolerance of +/-.25mm. Thickness tolerance is a maximum of +/- 0.25mm.

D. All Armor-X Tiles shall be FloorScore(R) certified under the criteria developed by the Resilient Floor Covering Institute (RFCI) and certified by Scientific Certification Systems (SCS), Inc. Registration # SCS-FS-02144. (Dinoflex Group LP)

D. Edge finish and product size shall be *(Enter specified selection)*

1. Square (38" x 38")
2. Interlocking (37" x 37")
3. Custom-cut size to be specified

E. Thickness shall be *(Enter specified selection)*

1. Choose from: 6mm (2+4). 8mm (2+6), 10mm (2+8) or 12mm (2+10)

F. Color(s) of topping shall be *(Enter specified selection)*
   1. Choose from the manufacturer's list of colors

G. Physical properties shall conform to the requirements of the following minimum criteria:

Description	Test Method	High Impact Backing	WalkSoft Backing
Anti-Fatigue Compression Deflection Comparison			20 lbs/square inch. Deflection: 0.036 inch 40 lbs/square inch. Deflection: 0.056 inch
Static Propensity	AATCC 134		Maximum Average Voltage = POS 0.7 KV
Compression Set @ 25%		-7.60%	
Breaking Load / Elongation / Tensile	ASTM D412	Breaking Load: 87.80 lbs Elongation: 138.65% Tensile: 501.7 lbs/sq inch	Breaking Load: 50.18 lbs Elongation: 214.77% Tensile: 354.6 lbs/sq. inch
Static Coefficient of Friction	ASTM D2047	Dry: 0.97	Dry: 0.97
Density	ASTM D3676		53.8 lbs/ft^3
Abrasion Resistance	ASTM D4060	Weight Loss: 0.56 grams (0.86%)	Weight Loss: 0.56 grams (0.86%)
Sound Transmission	ASTM E492		IIC: 60
Critical Radiant Flux (with fire retardant)	ASTM E648	0.52 watts/square cm	
Flexibility	ASTM F137	Passes 6 mm Mandrel	Passes 15 mm Mandrel
Electrical Resistance (Surface to Ground)	ASTM F150		5.3 x 10^9 Ohms (average)
Electrical Resistance (Surface to Surface)	ASTM F150		1.9 x 10^{10} Ohms (average)
Chemical Resistance (5 min)	ASTM F925		Slight Change to 5% Phenol
Chemical Resistance (24-hour)	ASTM F925		Slight Change to 5% Phenol
Static Load (@ 250 lbs)	ASTM F970	Residual Compression: 0.001 inch	Residual Compression: 0.002 inch
Short Term and Residual Indentation (@ 140 lbs)	ASTM F1914	-0.012 inch (3.74%)	-0.005 inch (1.87%)
Vertical Rebound	ASTM F2117		88%

Copies of test reports and additional product information are available upon request

2.3 ACCESSORIES

A. ADHESIVES *(Use this section for square cut edge finish)*

Provide adhesives according to the manufacturer's recommendations and installation guidelines for the specific substrate, and use only one of the following adhesives approved by the manufacturer:

1. DinoGrip Adhesive, one-component urethane, volatile organic compound (VOC) compliant.

2. Chemrex CX-941 Adhesive, one-component urethane, volatile organic compound (VOC) compliant.

B. Portland-based cementitious base leveler or Gypsum base.

PART 3 EXECUTION

3.1 EXAMINATION

A. Inspect the floor to be installed immediately upon arriving at the job site; perform a moisture test.

B. Do not begin installation until substrates have been adequately prepared.

C. If substrate preparation is the responsibility of another installer, notify the Architect of unsatisfactory preparation before proceeding.

D. The installation of the Armor-X flooring shall not begin until the work of all other trades has been completed, particularly wet and overhead trades, sheetrock work, sanding, and painting.

E. Areas to receive flooring shall be adequately lit during all phases of the installation process.

3.2 PREPARATION

A. Ensure the substrate is dry, clean, and free of depression, raised areas, or other defects that might telegraph through installed flooring.

B. Ensure that the concrete or plywood substrate is flat and uniformly sloped. Allowable variations in substrate levels are +/- 1/8" in 10'-0" and 1/4" total maximum variation from levels shown.

C. Concrete Substrates: The Contractor shall verify the following substrate conditions with the Owner and installer a minimum of 30 days before the scheduled Armor-X flooring installation. All substrate testing shall be documented and submitted to the Architect and Owner before the flooring installation commences.

1. Verify that substrates are dry, debris-free, and that all curing compounds, sealers, and hardeners have properly cured.

2. Remove substrate coatings and other substances incompatible with adhesives and containing

3. soap, wax, oil, or silicone, using mechanical methods recommended by the manufacturer. Do not use solvents.

4. Alkalinity and Adhesion Testing: Perform the tests the manufacturer recommends. Proceed with installation only after the substrates pass testing.

5. Moisture Testing: Perform tests recommended by the manufacturer and as follows. Proceed with installation only after substrates pass testing

3.3 INSTALLATION of Armor-X FLOORING TILES

A. Do not proceed with floor surface installation until all applicable site work has been completed, including substrate preparation, painting, equipment installation, and other relevant work by trades affecting the installation area.

B. Install all products per the manufacturer's Installation Guidelines.

3.4 CLEANING

A. If installers have left any adhesive residue on the ARMOR-X flooring, contact Dinoflex to determine possible removal solutions.

B. Initial Cleaning: After the installation is completed and before the Owner accepts it, perform the cleaning operations as prescribed in the manufacturer's Installation/Maintenance Guidelines.

3.5 PROTECTION

A. Protect the installed surface from damage from subsequent construction activity on the site using craft paper, plastic sheet, or other appropriate means.

B. Touch-Up: Repair any minor damage to eliminate all evidence of repair. Remove and replace work that cannot be satisfactorily repaired.

3.6 MAINTENANCE

A. Comply with the manufacturer's instructions for proper cleaning and maintenance of the products.

END OF SECTION

These Architectural Specification Guidelines are intended for use by design and specification professionals as a template aid for specifying and describing Dinoflex products in the written Specifications component of Construction Contract Documents.

The data in this document is accurate as of the date of publication. Updates and revisions may have been made since then. If you need to verify that this data is still current, please get in touch with Dinoflex at (250) 832-7780.