ARCHITECTURAL SPECIFICATIONS GUIDELINES
RUBBER FLOORING TILES – INDOOR APPLICATIONS
SPORT MAT FLOORING

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 C501 Standard Test Method for Relative Resistance to Wear of Rubber Tile by the Taber Abraser
4. ASTM D2047 Standard Test Method for Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine
5. ASTM D2240 Standard Test Method for Rubber Property-Durometer Hardness
6. ASTM D3676 Standard Specification for Density Rubber Cellular Cushion Used for Carpet or Rug Underlay
7. ASTM D395B Standard Test Methods for Rubber Property-Compression Set
8. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Eastover's –Tension
9. ASTM D5116 Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products. (V.O.C.)
10. ASTM E492 Standard Test Method for Impact Sound Transmission
11. ASTM E648-97 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

12. ASTM F137-03 Standard Test Method for Flexibility of Resilient Flooring Materials with Cylindrical Mandrel Apparatus
13. ASTM F150 Standard Test Method for Electrical Resistance of Conductive and Static Dissipative Resilient Flooring
14. ASTM F1914-98 Standard Test Method for Short-Term Indentation and Residual indentation of Resilient Floor Covering
15. ASTM F925-97 Standard Test Method for Resistance to Chemicals of Resilient Flooring
16. ASTM F970-87 Standard Test Method for Static Load Limit
17. ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
18. Phillips Roll Chair Test Method for Numeric Rating of Surface Structure
19. Federal Standard 101B/NFPA 99 12-4.1.3.8 –Static Decay Test Method 4046
20. 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 recycled rubber flooring indicating full range of color and pattern variation.

D. Verification Samples: For each finish product specified, two 6" x 6" sets of each type and colors of recycled rubber 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, and precautions against cleaning materials and methods detrimental to finishes and performance.
2. Documentation of warranty specified herein.

F. Flame Spread Certification: Submit manufacturer's certification that resilient flooring furnished for areas indicated to comply with required flame spread rating has been tested and meets or exceeds indicated or required standard.

G. MSDS: Submit manufacturer's Material Safety Data Sheets for specified adhesives/sealers

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Minimum two years experience and completed at least three projects of similar magnitude, material and complexity. Upon request, provide project references including contact names and telephone numbers for three projects.

B. Provide recycled rubber flooring products manufactured by a Canadian firm with a minimum of 20 years experience in the fabrication of such products, and of types equivalent to those specified.

C.Provide recycled rubber 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.

D. Provide products with a minimum of 10 Year Limited Manufacturer's Warranty

1.6 DELIVERY, STORAGE & PROTECTION

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

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

C. Storage and Protection: Carefully handle all materials and store protected from exposure to harmful weather and at temperature conditions recommended by the manufacturer. Remove pallet banding if long term storage is required, but leave 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 prior to installation. See manufacturer's installation guidelines for details on proper acclimation procedures. Longer acclimation may be required if product has been stored for extended time periods.

1.7 PROJECT CONDITIONS

A. Environmental Requirements/Conditions: In accordance with 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 Maintain 68F/20C degrees and less than 85F/30C continuously prior to, during and after installation, but for not less than 48 hours prior to and during, and for not less than 48 hours after installation. The flooring material shall be conditioned in the same manner prior to installation.

B. Close spaces to traffic during rubber flooring installation and for a period of time after installation as recommended in writing by the manufacturer.

C. Install rubber flooring materials and accessories after all other finishing 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 flooring material before these items are to be installed.

E. Concrete substrates should not exceed 80 percent RH and/or 5 lbs. X 24 hrs. X 1000 sf. moisture vapor emissions rate tested in accordance to ASTM F 2170 and ASTM F 1869.

1.8 WARRANTY

A. Warranty Period: Manufacturer's standard 10 Year Warranty against manufacturing defects.

1.9 EXTRA MATERIALS

A. Deliver to owner extra material of each tile type and color in the same manufactured lot, in quantities not less than 2% of total area installed for each product. Delivery, storage and protection of extra materials shall comply with manufacturers standard requirements.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Dinoflex Group LP which is located at 5590-46th Avenue SE, Salmon Arm, BC Canada; Toll Free Tel: 1-877-713-1899; Fax: 1- 800-305-2109. Email: info@dinoflex.com.; Web: www.dinoflex.com.

B. Substitutions not permitted.

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

2.2 RESILIENT/RECYCLED RUBBER FLOORING TILES

A. Material shall be a non-vulcanized, non-laminated tile product with homogeneous color, composed of post-consumer recycled SBR (styrene butadiene rubber) combined with low odour EPDM (ethylene propylene diene monomer) rubber granules, bound with a proprietary slow-cured MDI water-based polymer. (Essential for superior elasticity and long term durability.)

B. All tiles shall be produced in block form (not cut from rolled material) sliced and precision cut using computerized numerically controlled (CNC) water-based equipment. Thickness tolerance is a maximum of +/- 0.5mm. (Interlocking tiles must be fully reversible.)

C. All Recycled Rubber 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: 4mm, 6mm, 8mm, 10mm, and 12mm

F. Color(s) of speckle shall be ***(Enter specified selection)***

1. Choose from manufacturers list of colors

G. Percentage of EPDM color speckle shall be ***(Enter specified selection, if custom color)***

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

A) STANDARD COLORS: 100% black, 10%, 30%, 50% EPDM speckle, 2-color combinations, Metro Line, Granite Flex Line, & Décor Collection.

TEST PROCEDURE	DESCRIPTION	ACHIEVED VALUES *(Subject to nominal variation)*
AATCC 134-06	Electrostatic Propensity	POS 1.6 KV
ASTM C501	Taber Abrasion (H-22)	0.8% wt. Loss
ASTM D2047	Static Coefficient of Friction (James Machine method)	Dry 1.04, Wet 1.05
ASTM D2240	Hardness Shore A Durometer	64 Indentation hardness
ASTM D3676	Density Foam Test Summary	66.0 lbs/cu. ft.
ASTM D395B	Compression Set Under Force	96.3% recovered
ASTM D412	Tensile Strength	290.2 lbs/sq. in.
ASTM E492	Impact Sound Transmission	4mm IIC 57/6mm IIC 59
ASTM D5116	Material Emissions – VOC	Pass
ASTM E648	Critical Radiant Flux	Call Dinoflex for results
ASTM F137	Flexibility	6mm Mandrel PASSES
ASTM F150 (NFPA 99)	Electrical Resistance – Burroughs	
	- Surface to Surface	1010 ohms average
	- Surface to Ground	1010 ohms average
ASTM F1914-98	Short Term Indentation	.025 inch (6.0%) Loss
ASTM F1914-98	Residual Indentation	.007 inch (1.7%) Loss
ASTM F970-87	Static Load	.000 inch (0.0%) residual compression
ASTM F925-97	Chemical Resistance	
	• 5% acetic acid	No change
	• 70% isopropyl alcohol	No change
	• Mineral oil	No change
	• 5% sodium hydroxide	No change
	• 5% hydrochloric acid	No change
	• 5% ammonia	No change
	• Bleach	No change
	• 5% phenol	No change
	• Gasoline	No change
	• Kerosene	Slight
	• Sulphuric acid	No change
	• Olive Oil	No change
ASTM G21	Mold Growth on Surface	No Mildew after 14 days
Other Tests:	Phillips Roll Chair Test	Structure – no change
CA 01350	VOC Emissions – Section 01350	Pass

B) STONE LINE: Earth Stone group and Sea Stone group

TEST PROCEDURE	DESCRIPTION	ACHIEVED VALUES (Subject to nominal variation)
ASTM D2047	Static Coefficient of Friction (James Machine method)	Dry .81, Wet .90
ASTM D2240	Hardness Shore A Durometer	62 Indentation hardness
ASTM D3676	Density Foam Test Summary	77.7 lbs/cu. ft.
ASTM D395B	Compression Set Under Force	95.3% recovered
ASTM D412	Tensile Strength	292.2 lbs/sq. in.
ASTM D5116	Material Emissions – VOC	Pass
ASTM F137	Flexibility	6mm Mandrel PASSES
ASTM E648	Critical Radiant Flux	Call Dinoflex for results
ASTM F150 (NFPA 99)	Electrical Resistance – Burroughs	
	- Surface to Surface	1011 ohms average
	- Surface to Ground	1011 ohms average
ASTM F970-87	Static Load	.030 inch (7.3%) residual compression
ASTM F925-97	Chemical Resistance	
	• 5% acetic acid	No change

	• 70% isopropyl alcohol	No change
	• Mineral oil	No change
	• 5% sodium hydroxide	No change
	• 5% hydrochloric acid	No change
	• 5% ammonia	No change
	• Bleach	No change
	• 5% phenol	No change
	• Gasoline	No change
	• Kerosene	No change
	• Sulphuric acid	No change
	• Olive Oil	No change
ASTM G21	Mold Growth on Surface	No Mildew after 28 days
CA 01350	VOC Emissions – Section 01350	Pass

C) ELITE LINE: Sunset Red, Mediterranean Blue, Gibraltar Grey, Tropical Green, Sahara Beige, Tuscany Grey.

TEST PROCEDURE	DESCRIPTION	ACHIEVED VALUES (Subject to nominal variation)
ASTM C501	Taber Abrasion (H-22)	4.0% wt. Loss
ASTM C423	Sound Absorption/NRC	4mm/6mm 0.05
ASTM D2047	Static Coefficient of Friction (James Machine method)	Dry .85, Wet 1.01
ASTM D2240	Hardness Shore A Durometer	59 Indentation hardness
ASTM D3676	Density Foam Test Summary	78.3 lbs/cu. ft.
ASTM D395B	Compression Set Under Force	94.7% recovered
ASTM D412	Tensile Strength	186.1 lbs/sq. in.
ASTM E492	Impact Sound Transmission	4mm IIC 57/6mm IIC 59
ASTM E648	Critical Radiant Flux	Call Dinoflex for results
ASTM F137	Flexibility	6mm Mandrel PASSES
ASTM F150 (NFPA 99)	Electrical Resistance – Burroughs	
	- Surface to Surface	1011 ohms average
	- Surface to Ground	1011 ohms average
ASTM F970-87	Static Load	.042 inch (10.6%) residual Compression
ASTM G21	Mold Growth on Surface	No Mildew after 28 days
CA 01350	VOC Emissions – Section 01350	Pass

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

2.3 LOGOS AND ACCESSORIES

A. RECYCLED RUBBER LOGO TILES

(Use this section if custom logo products are specified)

1. Provide custom-manufactured recycled rubber flooring tiles, as manufactured by Dinoflex Group Limited Partnership as follows:

   a. Material shall be a non-vulcanized, non-laminated tile product with homogeneous color, composed of post-consumer recycled SBR (styrene butadiene rubber) combined with low odour EPDM (ethylene propylene diene monomer) rubber granules, bound with a proprietary slow-cured MDI water-based polymer. (Essential for superior elasticity and long term durability.)

   b. All tiles shall be produced in block form (not cut from rolled material) sliced and precision cut using computerized numerically controlled (CNC) water-based equipment. Thickness tolerance is a maximum of +/- 0.5mm. (Interlocking tiles must be fully reversible.)

   c. All Recycled Rubber 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. Design, pattern, image, logo or text, percentage of speckle or shade of color(s), edge type, size and thickness shall be as indicated on the Drawings and as per approved manufacturer's shop drawings.

e. Physical properties shall conform to the minimum requirements of Dinoflex Rubber Flooring Tiles, as specified above.

B. ADHESIVES and SEALERS ***(Use this section for square cut edge finish)***

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

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

   Chemrex Sealer/Primer to reduce vapor emissions over allowable levels

2. Bostik Green Fusion, one-component urethane, volatile organic compound (VOC) compliant

C. Portland based cementitious base leveler. Gypsum based not acceptable

PART 3 EXECUTION

3.1 EXAMINATION

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

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

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

D. The installation of the rubber flooring shall not begin until the work of all other trades has been completed, particularly wet and overhead trades; sheet rock work, sanding and painting.

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

3.2 PREPARATION

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

B. Ensure that 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 to the Owner and installer a minimum of 30 days prior to the scheduled resilient flooring installation the following substrate conditions. All substrate testing shall be documented and submitted to the Architect and Owner before commencement of the flooring installation.

1. Verify that substrates are dry, free of debris, and that all curing compounds, sealers, and hardeners have properly cured.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
4. Moisture Testing: Perform tests recommended by manufacturer and as follows. Proceed with installation only after substrates pass testing

3.3 INSTALLATION of RECYCLED RUBBER FLOORING TILES

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

B. Install all products in accordance with the manufacturer's Installation Guidelines.

3.4 CLEANING

A. If installers have left any adhesive residue on the rubber flooring, contact Dinoflex to determine possible solutions for removal. Do not use mineral spirits to clean adhesive of the tiles.

B. Initial Cleaning: After completion of installation and before acceptance by Owner, perform the cleaning operations as prescribed in the manufacturer's Installation/Maintenance Guidelines.

3.5 PROTECTION

A. Protect the installed surface from damage resulting 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 which cannot be satisfactorily repaired.

C. If recommended for this project, apply recommended sealer following manufacturer's guidelines.

3.6 MAINTENANCE

A. Comply with 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 to specify and describe Dinoflex products as part of the written Specifications component of Construction Contract Documents.

The data contained in this document is accurate as of the date of publication. Updates and revisions may have been made since this date. If verification is needed that this data is still current, please contact Dinoflex at (250) 832-7780.