

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Rubber Flooring

1.02 REFERENCED DOCUMENTS

A. ASTM International:

1. F 1344 Standard Specification for Rubber Floor Tile
2. E 648 Standard Test Method for Critical Radiant Flux of Flooring Systems Using a Radiant Energy Source
3. E 662 Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
4. F 2240 Standard Test Method for Rubber Property—Durometer Hardness
5. F 925 Standard Test Method for Resistance to Chemicals of Resilient Flooring.
6. F 1514 Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change
7. F 970 Standard Test Method for Static Load Limit.
8. D 2047 Standard Test Method for Static Coefficient of Friction as Measured by the James Machine.
9. F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
10. F 1482 Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring
11. D 3389 Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform, Double-Head Abrader)
12. D 2199 Standard Test Method for Determining Dimensional Stability of Resilient Floor Tile after Exposure to Heat
13. F 386 Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces
14. F 373 Standard Test Method for Embossed Depth of Resilient Floor Coverings
15. F 2055 Standard Test Method for Size and Squareness of Resilient Floor Tile by Dial Gage Method
16. F 511 Standard Test Method for Quality of Cut (Joint Tightness) of Resilient Floor Tile
17. D-2859 Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials
18. D 1630 Standard Test Method for Rubber Property-Abrasion Resistance (Footwear Abrader)
19. C 1028 Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method
20. F 373 Standard Test Method for Embossed Depth of Resilient Floor Coverings
21. D 624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
22. D 395 Standard Test Methods for Rubber Property—Compression Set
23. D 792 Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

B. Other Referenced Documents

1. National Fire Protection Association (NFPA): NFPA 255, Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source.
2. National Fire Protection Association (NFPA) 258 Test Method for Specific Density of Smoke Generated by Solid Materials.
3. California State Title 24, Section 3306 (r)
4. California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).
5. The Collaborative for High Performance Schools (CHPS)
6. Title 16, CFR Chapter II, Subchapter D, Part 1630, Standard for the Surface Flammability of Carpets and Rugs (FF 70):

1.03 SUBMITTALS

- A. Product Data: Submit product data, including manufacturer's specification summary sheet for - specified products
- B. Shop Drawings: Submit shop drawings showing layout, finish colors, patterns and textures.
- C. Samples: Submit selection and verification samples for finishes, colors, and textures.
- D. Quality Assurance Submittals: Submit the following:
1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
 2. Manufacturer's Instructions: Manufacturer's installation and maintenance instructions.
- E. Submit the following:
1. Maintenance Data: Maintenance data for installed products in accordance with Division 1 sections. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.
 2. Warranty: Warranty documents specified herein.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installing work similar to that required for this project.

B. Regulatory Requirements

1. Fire Performance characteristics: Provide rubber floor covering with the following fire performance characteristics as determined by testing products in accordance with ASTM method (and NFPA method) indicated below by a certified testing laboratory or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - a. ASTM E 648 (NFPA 253), Critical Radiant Flux of Floor Covering Systems:
Class 1, Greater than 0.45 w/cm²
 - b. ASTM E 662 (NFPA 258), Specific Optical Density of Smoke Generated by Solid Materials:
Passes, (<450)

C. Single-Source Responsibility: Obtain rubber floor tile and manufacturer's recommended Adhesive from a single supplier.

D. Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, Manufacturer's conditions, recommended adhesive depending on product, substrate type and type of installation, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with requirements in Division 1.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Comply with requirements in Division 1.

B. Ordering: Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with Identification labels intact.

D. Storage and Protection: Store materials protected from exposure to harmful weather conditions and acclimated to site conditions at temperature and humidity conditions recommended by manufacturer.

1.06 PROJECT CONDITIONS

A. Environmental Requirements/Conditions: In accordance with manufacturer's recommendations, areas to receive rubber floor tile shall be clean, fully enclosed, weather tight with the permanent HVAC set at a uniform temperature of 65-85 degrees F for 48 hours prior to, during and thereafter installation of rubber tile. Rubber floor tile and adhesive shall be conditioned in the same manner. Rubber tile must be un-boxed at least 48 hours prior to installation in the areas in which it will be installed.

B. Existing Conditions: [Specify existing conditions affecting product use and installation]

1.07 SEQUENCING AND SCHEDULING

A. Finishing Operations: Install rubber floor tile after finishing operations, including painting and ceiling operations etc., have been completed.

1.08 WARRANTY

A. Manufacturer's Materials Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

1. Warranty Period: 1 year limited warranty commencing on Date of Substantial Completion. Notice of any defect must be made in writing to manufacturer within thirty (30) days after buyer learns of the defect.

2. Limited Wear Warranty: Limited wear warranty available depending on product type/design & type of use.

3. Do not use in, around or near commercial kitchens

1.09 MAINTENANCE

A. Extra Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals (Maintenance Materials) Section.

1. Quantity: Furnish quantity of Rubber floor tile equal to 5% of amount to be installed.

2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra materials.

B. Maintenance of finished floor covering to be conducted per Manufacturer's Maintenance Guide.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes performance characteristics, material standards, and descriptions as applicable. Use of such phrases as "Or Equal" or "Or Approved Equal," or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal, and regulatory) and assignment of responsibility for determining "Or Equal" products.

2.01 RUBBER FLOOR TILE

A. Manufacturer: Roppe Corporation

1. Contact: P.O. Box 1158 Fostoria, Ohio USA 44830-1158
Phone: (419) 435-8546 Fax: (419) 435-1056

- B. Test results:
1. ASTM F 1344: Meets all applicable test requirements (listed in section 1.02)
 2. Does not contain any of the hazardous chemicals listed in California Proposition 65
 3. Collaborative for High Performance Schools 01350 Low-Emitting Material Criteria: Pass
- C. Product Warranty: Manufacturer's one year limited warranty for manufacturing defects.
- D. Limited Wear Warranty: Limited wear warranty available depending on product type/design & type of use.
- E. Proprietary Product(s): Roppe Rubber Floor Tile
1. Styles #982 Crackle Dimensions Rubber Floor Tile:
 - a. Color (select one)
 - b. Size: 19 11/16" x 19 11/16" (50cm x 50 cm)
 - c. Nominal Thickness: 1/8" (3.175 mm)
 - d. Backing: Smooth factory sanded backing
 - e. Limited Wear warranty: Manufacturer's limited wear warranty of five years for normal commercial traffic.
 2. Style #983 Random Dimensions Rubber Tile
 - a. Color (select one)
 - b. Size: 19 11/16" x 19 11/16" (50cm x 50 cm)
 - c. Nominal Thickness: 1/8" (3.175 mm)
 - d. Backing: Smooth factory sanded backing
 - e. Limited Wear warranty: Manufacturer's limited wear warranty of five years for normal commercial traffic.
 3. Style #984 Random Dimensions Rubber Tile
 - a. Color (select one)
 - b. Size: 19 11/16" x 19 11/16" (50cm x 50 cm)
 - c. Nominal Thickness: 1/8" (3.175 mm)
 - d. Backing: Smooth factory sanded backing
 - e. Limited Wear warranty: Manufacturer's limited wear warranty of five years for normal commercial traffic.
 4. Style # 991 Slate Design
 - a. Color (select one)
 - 1.) Solid color -# [insert color number], complies with ASTM F 1344, class 1A Homogeneous solid color
 - 2.) Fiesta Tile – color# [insert color number], complies with ASTM F 1344, class 1B Homogeneous through mottled
 - 3.) SafeTcork Cork/Rubber Tile color# [insert color number], complies with ASTM F 1344, class 1B Homogeneous through mottled
 - b. Size: 19 11/16" x 19 11/16" (50cm x 50 cm)
 - c. Nominal Thickness: 1/8" (3.175 mm)
 - d. Backing: Smooth factory sanded backing
 - e. Limited Wear warranty: Manufacturer's limited wear warranty of five years for normal commercial traffic.
 5. Style # 992 Low Profile Raised Circular Design
 - a. Color (select one)
 - 1.) Solid color # [insert color number], complies with ASTM F 1344, class 1A Homogeneous solid color
 - 2.) Fiesta Tile color# [insert color number], complies with ASTM F 1344, class 1B Homogeneous through mottled
 - 3.) SafeTcork Cork/Rubber Tile color# [insert color number], complies with ASTM F 1344, class 1B Homogeneous through mottled
 - b. Size: 19 11/16" x 19 11/16" (50cm x 50 cm)
 - c. Nominal Thickness: 1/8" (3.175 mm) Tile thickness without profile: 7/64" (2.78mm): Tile thickness with profile 5/45" (2.82mm): Profile thickness: 1/100" (.254mm).
 - d. Backing: Smooth factory sanded Backing
 - e. Limited Wear warranty: Manufacturer's limited wear warranty of five years for normal commercial traffic.
 6. Style # 993 Textured Design
 - a. Color (select one)
 - 1.) Solid color # [insert color number], complies with ASTM F 1344, class 1A Homogeneous solid color.
 - 2.) Fiesta Tile # [insert color number], complies with ASTM F 1344, class 1B Homogeneous through mottled.
 - 3.) SafeTcork Cork/Rubber Tile color# [insert color number], complies with ASTM F 1344, class 1B Homogeneous through mottled.
 - 4.) Designer's Choice – see section 12
 - 5.) Spike/Skate resistant tile – see section 13
 - b. Size: 19 11/16" x 19 11/16" (50cm x 50 cm)
 - c. Nominal Thickness: 1/8" (3.175 mm)
 - d. Backing: Smooth factory sanded backing
 - e. Limited Wear warranty: Manufacturer's limited wear warranty of five years for normal commercial traffic.
 7. Style # 994 Raised Square Design
 - a. Color (select one)
 - 1.) Solid # [insert color number], complies with ASTM F 1344, class 1A Homogeneous solid color
 - 2.) Fiesta Tile # [insert color number] - complies with ASTM F 1344, class 1B Homogeneous through mottled.
 - 3.) SafeTcork Cork/Rubber Tile color# [insert color number], complies with ASTM F 1344, class 1B Homogeneous through mottled
 - b. Size: 19 11/16" x 19 11/16" (50cm x 50 cm)

- [illegible]

1. Contact: P.O. Box 1158 Fostoria, Ohio USA 44830-1158
Phone: (419) 435-8546 Fax: (419) 435-1056

B. Proprietary Products:

1. Roppe Recoil Fitness Flooring, homogeneous rubber product manufactured from Vulcanized post-industrial rubber color chips (EPDM) and vulcanized post-consumer tires, bonded with urethane binder.
2. ASTM Test results:
 - a. D-3389 (H-18 Wheels, 500 g/load, 1000 cycles) Taber Abrasion: < 0.50 grams weight loss.
 - b. C 1028 Static Coefficient of Friction (Slip Resistance): 0.88 dry.
 - c. F 373, Thickness Tolerance: +/- 0.015"
 - d. D 624 Die C, Tear Strength: 70ppi
 - e. F 137, Flexibility: Passes – 6mm Mandrel
 - f. F 1514, Resistance to Heat: Delta E: 2.24 and AATCC Gray Scale: 3.85 average.
 - g. F 925 Resistance to Chemicals: Pass. (Staining Agent List available from manufacturer)
 - h. F 970 Static Load Limit: 250 psi, (modified 400 psi).
 - i. D-2240 Hardness Shore A: 60 +/- 5
 - j. D 395 Compression Set: 12% or less.
 - k. D-792 Density PCF: 65lbs/cu/ft
 - l. Roll Material Width Tolerance: +/- "
3. Square, Interlocking Tile & Roll Nominal thickness (select one) 5/32" (4.00mm), 1/4" (6.00mm), 3/8" (9.00mm), 1/2" (12.00mm)
4. Nominal Size (select one)
 - a. Rolls: 48" (1.22m) x 49.5 feet (15.09m)
 - b. Square edge tile: 36" x 36" (914.4mm x 914.4mm)
 - c. Inter-locking tile (measured from outside tabs) 36" x 36" (914.4mm x 914.4mm)
5. Color: Manufacturer's standard colors, custom colors & percentage of EPDM color content as selected by architect.
6. Product Warranty: Manufacturer's three year limited warranty for manufacturing defects.

2.03 RECYCLED RUBBER TIRE FLOOR TILE

- A. Manufacturer: Roppe Corporation
 1. Contact: P.O. Box 1158 Fostoria, Ohio USA 44830-1158
Phone: (419) 435-8546 Fax: (419) 435-1056
- B. Test results:
 1. ASTM D 2047, Static Coefficient of Friction: > 0.80 dry.
 2. ASTM D-2859, Pill Test: Pass
 3. ASTM D-1630, Taber Abrasion: Less than .003" at 5000 cycles using H-10 wheels
 4. Title 16, CFR Chapter II, Subchapter D, Part 1630, Standard for the Surface Flammability of Carpets and Rugs (FF 70): Passes
- C. Product Warranty: Manufacturer's one year limited warranty for manufacturing defects, Lifetime delamination warranty, 10-year limited wear warranty.
- D. Nominal Sizes: 12" x 12" (304.8mm x 304.8mm) Square Tile & 12" x 30' (304.8mm x 9,140.4 mm) Rolls.
- E. Color (select one): Earthtone (# POET), Indigo (# POIN), Crimson (# POCR), Pine (# POPN)
- F. Proprietary Product(s) Roppe Rop-Cord Recycled Tire Tile (select one):
 1. Rop-Cord Vulcanized
 - a. Manufactured with approximately 95% of the components of recycled truck and bus tires.
 - b. Construction: Synthetic tire cord reinforced with a layer of fabric, vulcanized to a thin rubber backing and buffed to a non-glare tufted surface
 - c. Nominal Thickness: nominal 5/16" (7.92mm)
 2. Rop-Cord Non-Vulcanized
 - a. Manufactured with approximately 95% of the components of recycled truck and bus tires.
 - b. Construction: Synthetic tire cord reinforced with a layer of fabric, vulcanized to a thin rubber backing and buffed to a non-glare tufted surface
 - c. Nominal Thickness: nominal 3/8" (9.52 mm)

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's requirements as published in Roppe installation instructions.
- B. Adhesive (Select one):
 - 1.) [For products listed in Section 2.01 (Roppe Rubber Tile)], Roppe, 375 #435 or # 535U, as required, based on job site conditions, substrate type and planned use of finished floor.
 - 2.) [For products listed in Section 2.02 (Roppe Recoil Rubber Flooring)], Roppe # 635 - for indoor & outdoor use.
 - 3.) [For products listed in section 2.03 (Roppe Rop-Cord Tile)], (select one)
 - a. Roppe # 445 for outdoor & indoor use
 - b. Roppe # 435 for indoor use (must be used for rolling loads & lateral shear stress).

3.02 EXAMINATION

- A. Site Verification of Conditions: Confirm substrate conditions (which have been previously addressed under other sections) are acceptable for product installing in accordance with manufacturer's instructions.
- B. Material Inspection: In accordance with manufacturer's installing requirements, visually inspect materials prior to installing. Material with visual defects shall not be installed.

3.03 PREPARATION

- A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage while installing.
- B. Surface Preparation, General: Prepare substrate in accordance with manufacturer's instructions.
- C. Substrate: Prepare substrate to be free of paint, old adhesive, sealers, coatings, finishes, dirt, film-forming curing compounds, and all other substances which may affect the adhesion of floor covering to the substrate.
 - 1. Concrete Substrate: Reference Standard ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
 - a. Concrete Moisture Test: Per ASTM F 710 section 5, persons or testing agencies with experience in concrete moisture testing shall perform moisture tests on concrete regardless of its age or grade level or history of use, with a minimum of three tests for the first 1000 square feet and one additional test for each 1000 square feet or fraction thereof, per grade level. A diagram of the area showing the location and results of each test shall be dated and submitted to the architect, general contractor and/or end user. If the test results exceed the floor covering manufacturer's limits, installing shall not commence until results conform to limits.
 - b. Concrete pH Test: Perform pH tests on concrete regardless of its age or grade level or history of use. Readings below 7.0 and above 10.0 can adversely affect resilient flooring or adhesives, or both. If the test results exceed the floor covering manufacturer's limits, installing shall not commence until results conform to limits.
 - 2. Wood Substrate: Per ASTM F1482, Wood subfloor/underlayment assemblies shall be double layer construction, with a total thickness of not less than 1".
 - a. There shall be minimum 18 inches of well-ventilated air space beneath all wood subfloors. Crawl spaces shall be insulated and protected by a moisture vapor barrier.
 - b. Do not install over "sleeper" underlayment systems or wood underlayment installed over concrete.
 - c. Do not install over Lauan panels, CCA Plywood, Fire rated plywood, plywood with knots, underlayment made of pine or other soft woods, particle board, Oriented Strand Board (OSB) MasoniteTM or other hardboard underlayment, hardwood flooring, textured or cushioned flooring, treated or otherwise coated wood material or other uneven or unstable substrates. Unacceptable surfaces shall be covered using a 1/4-inch or thicker panel underlayment per section d.
 - d. Wood Underlayments: Use only plywood underlayment that is warranted by the underlayment manufacturer for use as an underlayment for sheet vinyl floor covering in commercial applications. Do not use Lauan.
 - e. Refer to Division 6 Carpentry sections for wood subfloor construction.
 - 3. Refer to manufacturer's installation instructions regarding installations over existing ceramic tile, cementitious terrazzo and metal.
 - 4. Do not install over existing floor covering nor over substrates not approved by manufacturer.

3.04 INSTALLING

- A. Refer to Roppe 10-Part Specification Sheet for rubber tile installation instructions for detailed specifications on installing Roppe Rubber Floor Tile.
- B. Finish Floor Covering Designs: As selected by Architect.
- C. Accessories: Architect shall specify manufacturers' color coordinated rubber accessories as required, including (but not limited too) Resilient wall base, stair nosing, reducers or other edgings, welding rods for heat welded seams.

3.05 FIELD QUALITY REQUIREMENTS

- A. Manufacturer's Field Services: Upon Owner's request and with minimum 72 hours notice, provide manufacturer's field service consisting of product use recommendations and periodic site visits to confirm installing of product is in accordance with manufacturer's instructions.
 - 1. Site Visits: [Specify number and duration of periodic site visits.]

3.06 CLEANING

- A. Cleaning: See Roppe maintenance instructions. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of.

- 3.07 PROTECTION
- A. Protection: Protect installed product and finish surfaces from damage during construction. Remove and Legally dispose of protective covering at time of substantial completion.
 - B. Keep foot traffic off new floor covering for first 48 hours.
 - C. Keep furniture, fixtures and rolling traffic off for first 72 hours.
 - D. No maintenance for first 72 hours.
- 3.08 INITIAL MAINTENANCE PROCEDURES
- A. General: Include in contract sum cost for initial maintenance procedures and execution by professional maintenance personnel after floor covering has been installed for three days as specified in the Roppe maintenance instructions.

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