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**DIVISION 9 Finishes: SECTION 09 65 66 Resilient Athletic Flooring
Speckled S Rolls and Tiles – Recycled Rubber Flooring**

PART 1.0- GENERAL

1.1 SUMMARY

A. The work of this section includes:

1. Speckled S Rolls
2. Puzzle Tiles
3. Adhesives

B. Related Sections: Section(s) related to this section include:

1. Concrete Substrate: Division 3 Concrete Section(s).
2. Plywood Substrate: Division 6.

1.2 REFERENCES

A. Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title, or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. American Society for Testing and Materials (ASTM):

1. ASTM C423 Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
2. ASTM C518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
3. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers – Tension.
4. ASTM D2047 Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as measured by the James Machine.
5. ASTM E413 Classification for Rating Sound Insulation.
6. ASTM E492 Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine.
7. ASTM F137 Test Method for Flexibility of Resilient Flooring Materials.
8. ASTM F710 Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring.
9. ASTM F925 Test Method for Resistance to Chemicals of Resilient Flooring.
10. ASTM F970 Test Method for Static Load Limit.
11. ASTM F2772 Standard Specification for Athletic Performance Properties of Indoor Sports Floors.

12. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
13. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

1.3 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide recycled rubber resilient flooring, which has been manufactured and installed to maintain performance criteria stated by manufacturer without defects, damage, or failure.

1.4 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
 1. LEED: Provide documentation of how the requirements for credit will be met.
 1. List of proposed materials with recycled content. Indicate pre-consumer and post-consumer content.
 2. Product data and certification letter indicating percentage of recycled content for both pre-consumer and post-consumer content.
 3. Recycled content is defined in accordance with the International Organization for Standardization document, ISO 14021 Environmental labels and declarations.
 - a. Post-consumer material - waste materials diverted from the waste stream after consumer or commercial use.
 - b. Pre-consumer material - materials diverted from the waste stream during the manufacturing process. Excluded are regrind, rework, and scrap.
- C. Product Data: Submit product data, including manufacturer's guide specifications product sheet, for specified products.
- D. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, accessories, finish colors, patterns, and textures.
- E. Samples: Submit selection and verification samples for finishes, colors, and textures.
- F. Quality Assurance Submittals: Submit the following:
 1. Certificates: If required, certification of performance characteristics specified in this document shall be provided by the manufacturer.
 2. Manufacturer's Instructions: Manufacturer's installation instructions.

Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article herein. Retain or delete as applicable.
 3. Manufacturer's Field Reports: Manufacturer's field reports specified herein.
- G. Closeout Submittals: Submit the following:
 1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operational Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.
 2. Warranty: Warranty documents specified herein.

1.5 QUALITY ASSURANCE

A. Qualifications:

1. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
2. Manufacturer's Qualifications: Manufacturer capable of providing field service representation during construction and approving application method.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of Contract and Division 1 Regulatory Requirements Section. Regulatory Requirements: [specify applicable requirements of regulatory agencies].

- B. Mock-Ups: Install at project site a job mock-up using acceptable products and manufacturer-approved installation methods. Obtain Owner and Architect's acceptance of finish color, texture and pattern, and workmanship standard. Comply with Division 1 Quality Control (Mock-Up Requirements) Section.
 1. Mock-Up Size: [specify mock-up size].
 2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
 3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.
- C. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.
- D. Pre-installation Testing: Conduct pre-installation testing as follows: [specify substrate testing; consult with flooring manufacturer].

1.6 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirements Sections.
- 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 at temperature and humidity conditions recommended by manufacturer and protect from exposure to harmful weather conditions.

1.7 PROJECT CONDITIONS

- A. Temperature Requirements: Maintain air temperature in spaces where products will be installed for time period before, during, and after installation as recommended by manufacturer.
- B. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

1.8 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights owner may have under Contract Documents.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements.

1. Warranty Period: [Specify term.] years commencing in Date of Substantial Completion in accordance with manufactures published warranty.

1.9 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.

Specifier Note: Revise paragraph below, specifying size and percentage as required for project.

1. Quantity: Furnish quantity of recycled rubber flooring units equal to [Specify %.] of amount installed.
2. Cleaning: Furnish manufactures neutral cleaner for initial cleaning and maintenance of finished floor surface.
3. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage, and protection of extra materials.

PART 2.0 - PROPRIETARY MANUFACTURER/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.

2.1 Speckled S Rolls and Puzzle Tile – Recycled Rubber Flooring

- A. Manufacturer: Ecore

1. Contact: P.O. Box 989, Lancaster, PA 17608-0989 (715 Fountain Ave., Lancaster, PA 17601); Telephone: (866) 795-2732, (717) 295-3400; Fax: (717) 295-3414.

- B. Distributor: Centaur Floor Systems, LLC

1. Contact: 963 North San Marcos Rd, Santa Barbara CA, 93111; Telephone: (800) 536-9007; Fax: (805) 957-0125; Email: info@centaurfloors.com

- C. Proprietary Product(s): Speckled S Rolls and Puzzle Tile, manufactured by Ecore, for fitness.

1. Speckled S Rolls and Puzzle Tile - recycled rubber resilient [sheet] [tile] flooring
2. E-Grip III™ one-component polyurethane adhesive

- C. Speckled S Fitness Flooring:

1. Roll Dimension [48" x 8 mm standard]; [48" x 6 mm special]; [48" x 9mm special].
 - a. Roll Weight [1.72 lb/ft² (8.39 kg/m²); [1.29 lb/ft² (6.30 kg/m²); [1.95 lb/ft² (9.51 kg/m²)].
 - b. Roll Length: [Specify roll length].

- c. Standard Tolerances
 1. Roll Width +3/4" -0"
 2. Roll Length +1% -0"
 3. Thickness +.3 mm -.3 mm
2. Interlocking Tile Dimension [23" x 23" Standard] [Specify thickness 8mm]
 - a. Tile Weight [8mm 1.72 lb/ft² (8.39 kg/m²)]
 - b. Standard Thickness Tolerance +.3mm -.3mm
3. Colors: [Specify color from manufacturer's standard color selection.]
4. Product Testing:
 - a. Tensile Strength, lb/in² (ASTM D412): 200 min.
 - b. Flexibility, 1/4-inch mandrel (ASTM F137): pass.
 - c. Static Load, 1000 lb/in² (ASTM F970): less than 0.020 in.
 - d. Coefficient of Friction (ASTM 2047): greater than 0.9.
 - e. Chemical Resistance (ASTM F925):
 1. 5% Acetic Acid: No Change
 2. 70% Isopropyl Alcohol: No Change
 3. 5% Sodium Hydroxide: No Change
 4. 5% Hydrochloric Acid: No Change
 5. 5% Ammonia: No Change
 6. Bleach: No Change
 7. 5% Phenol: No Change
 8. Sulfuric Acid: No Change
 - f. Ambient Noise Reduction, Sabin/ft² (ASTM C423): 0.10.
 - g. Thermal Conductivity, BTU-in/hr-ft²-°F (ASTM C518): approximately 0.406.
 - h. Impact Insulation Class (ASTM E492): 45 minimum.
 - i. Sound Transmission Coefficient (ASTM 413): 45 minimum.
 - j. Force Reduction (ASTM F2569 / EN14808): Class 1
 - k. Ball Rebound (EN 12235): Pass

D. E-Grip III one-component polyurethane adhesive

- A. Product Name: One-part urethane adhesive under this specification shall be Ecore's E-Grip III one-component urethane adhesive.
- B. Material: E-Grip III is a one-component urethane moisture cured, non-sag permanently elastic adhesive that has excellent adhesion to elastomers, concrete, and wood and is engineered for indoor and outdoor applications.
- C. Adhesive Type: One-component urethane
- D. Adhesive Cure System: Moisture cured
- E. Weight: 4 gallon pail-56 lbs, 2 gallon pail-28lbs, 10.1 oz cartridge
- F. Color: Medium grey
- G. VOC Content: 0 lb/gal calculated
- H. Freeze/Thaw: Stable
- I. Application Temperature: 40° F - 100° F
- J. Calcium Chloride Test: Maximum 5.5 lbs per 1,000 sq. ft. in 24 hrs.
(ASTM F1869)
- K. Relative Humidity (RH) Test: Maximum 85%
(ASTM F2170)
- L. Flashpoint: > 500° F
- M. Shelf Life: 12 months
- N. Working Time: 30-40 minutes
- O. Trowel: 1/16" x 1/16" x 1/16" square notch
1/8" x 1/8" x 1/8" square notch
- P. Coverage Rate: 95 ft² / gal. – 1/16" x 1/16" x 1/16"
60 ft² / gal. – 1/8" x 1/8" x 1/8"
- Q. SCAQMD Rule #1168 0 lb./gal. calculated

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

2.03 RELATED MATERIALS

- A. Related Materials: Refer to other sections listed in Related Sections paragraph herein for related materials.

2.04 SOURCE QUALITY

- A. Source Quality: Obtain recycled rubber resilient flooring materials from a single manufacturer.

PART 3.0 – EXECUTION

Specifier Note: Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions, and product carton instructions for installation.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

3.03 PREPARATION

- A. Surface Preparation: [Specify applicable product preparation requirements.]

Specifier Note: Coordinate article below with manufacturer's recommended installation details and requirements.

3.04 ERECTION / INSTALLATION / APPLICATION / CONSTRUCTION

- A. Recycled Rubber Flooring Installation: Comply with Manufacturer Installation Manual for installation procedures and techniques Speckled S Rolls and Puzzle Tile - recycled rubber resilient flooring installation.
- B. Finish Color/Textures/Patterns: [Specify installation finishes coordinated with finishes specified in Part 2 Products.]
- C. Related Products Installation: Refer to other sections listed in Related Sections paragraph herein for related products installation.

3.05 FIELD QUALITY REQUIREMENTS

Specifier Note: Edit paragraph below. Establish number and duration of periodic site visits with owner and manufacturer, and specify below. Consult with manufacturer for services required. Coordinate paragraph below with Division 1 Quality Assurance Section and Part 1 Quality Assurance Submittals herein. Delete if manufacturer's field service not required.

- A. Manufacturer's Field Services: Upon owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

- 1. Site Visits: [Specify number and duration of periodic site visits.]

3.06 CLEANING

- A. Cleaning: 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 debris.

3.07 PROTECTION

- A. Protection: Protect installed product and finished surfaces from damage during construction.

3.08 SCHEDULES

- A. Schedules: [Specify reference to applicable schedules.]

END OF SECTION