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**DIVISION 9 Finishes: SECTION 09 65 66 Resilient Athletic Flooring
Ecore Athletic RageTurf dBTile – Vulcanized Composition Rubber Molded Tiles**

PART 1.0 – GENERAL

1.1 SUMMARY

A. The work of this section includes:

1. Ecore Athletic RageTurf dBTile Vulcanized Composition Rubber Molded Tiles
2. Quad Blok Connectors

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 D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers – Tension
2. ASTM F147 Standard Test Method for Flexibility of Non-Metallic Gasket Materials
3. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
4. ASTM D2240 Standard Test Method for Rubber Property—Durometer Hardness
5. ASTM E492 Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine
6. ASTM E2179 Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors
7. ASTM E2129 Standard Practice for Data Collection for Sustainability Assessment of Building Products
8. ASTM D297 Standard Practice for Rubber Products – Chemical Analysis

C. Collaborative of High Performance Schools (CHPS) Section 01350

1. Low-emitting materials criteria for use in a typical classroom

D. Leadership in Energy and Environmental Design - LEED®

1. International Organization for Standardization® document, ISO 14021 – Provides guidance on the terminology, symbols, testing, and verification methodologies that an organization should use for self-declaration of the environmental aspects of its products and services.

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.
- B. LEED: Provide documentation of how the requirements for credit will be met.
 1. List of proposed materials with recycled content. Indicated 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 3.5 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.
 - a. Certificate: When requested, submit certificate, indicating qualification.
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. Repetitive statements should be avoided.

- 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: (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 on Date of Substantial Completion.

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.

- Quantity: Furnish quantity of recycled rubber flooring units equal to (specify %) of amount installed.
- Delivery, Storage, and Protection: Comply with owner's requirements for delivery, storage, and protection of extra materials.
- Cleaning: Furnish flooring manufacture's neutral cleaner for initial cleaning and maintenance of the finished floor surface.

PART 2.0 – PROPRIETARY MANUFACTURER/PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add protect 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 MANUFACTURER: Ecore

- A. Address: 715 Fountain Ave., Lancaster, PA 17601; Telephone: (866) 795-2732; (717) 295-3400; Fax (717) 295-3414; Email: info@ecoreathletic.com

2.2 PROPRIETARY PRODUCT(S)

- A. Ecore Athletic RageTurf dBTile Vulcanized Composition Rubber Molded Tiles
B. Ecore Athletic Quad Blok Connector

2.2.1 Ecore Athletic RageTurf dBTile Vulcanized Composition Rubber Molded Tiles

Ecore Athletic RageTurf dBTile Vulcanized Composition Rubber Molded Tile with a Polyethylene Turf Wear Layer		
2-1/2" tile configuration with cylindrical support feet that provide maximum resiliency and water drainage		
Performance Criteria	Test Method	Result
Tile Dimensions	Manufacturer	24" x 24" x 2-1/2"
Tile Weight	Manufacturer	25.2 lbs/ tile / 11.43 kg/ tile
Standard Tolerances	Manufacturer	Length, width & thickness: ± 1/8"
Slip Resistance / Coef. of Friction	ASTM D2047	0.87
Force Reduction / Impact/ Energy Abatement	Deltec Field test, 5 kg mass	71.3%
Energy Restitution	Deltec Field test	39.8%
Vertical Deformation	Deltec Field test	8.5 mm
g-max	Clegg	43
Flammability	ASTM D2859 Pill Test	Pass
Delta IIC	ASTM E2179	35
IIC	ASTM E492	71

2.2.2 Quad Blok 8" x 8" Connection System

Quad Blok 8" x 8" x 11/16" (17mm) Connection System Vulcanized Composition Rubber granules encapsulated in a wear and water-resistant elastomeric network, made from 100% post-consumer Vulcanized Composition Rubber		
Dimensions	Manufacturer	8" x 8" x 11/16" (20.3 cm x 20.3 cm x 17mm)
Weight	Manufacturer	0.70 lbs. each
Density	ASTM D297	46 lbs. / cu. Ft. minimum
Tensile Strength	ASTM D412, Die C	116 psi. minimum
Elongation	ASTM D412, Die C	74% minimum
Compression		15% @ 50 psi; 28% @ 100 psi; 45% @ 200 psi
Shore A Hardness	ASTM D2240	50 + /- 5 points
Tear Strength	ASTM D624, DIE C	30 PPI
Flexibility	ASTM F147	0 -1 Factor
Compression Set B	ASTM D395	26% (25% deflection, 22 hours, 158° F
Compression Set- Foam	ASTM D395	19% (50% deflection, 22 hours, 158° F

2.3 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

2.4 RELATED MATERIALS

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

2.5 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 Ecore Athletic Installation Manual for installation procedures and techniques for Smash Tiles - 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 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.

3.06 PROTECTION

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

3.07 SCHEDULES

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

END OF SECTION