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**DIVISION 9 Finishes: SECTION 09 65 66 Resilient Athletic Flooring
Rolls and Interlocking Tiles – Vulcanized Composition Rubber Flooring**

PART 1.0- GENERAL

1.1 SUMMARY

- A. The work of this section includes:
 - 1. Elements Rolls
 - 2. Elements Interlocking Tiles
- 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. See Part 2.0 PROPRIETARY MANUFACTURER/PRODUCTS below

1.3 SYSTEM DESCRIPTION

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

1.4 SUBMITTALS

- B. 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 rubber 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. Vulcanized Composition 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 manufacturer's 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 vulcanized composition rubber flooring units equal to [Specify %.] of amount installed.
2. Cleaning: Furnish manufacturer's 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 Elements Rolls and Interlocking Tiles – Vulcanized Composition Rubber Flooring

- A. Manufacturer: Amarco Products
 1. 5 Powder Horn Drive, Warren, NJ 07059; Telephone: (866) 688-6287, (732) 302-1122; Fax: (732) 302-1120.
- B. Proprietary Product(s): Elements Rolls, Tiles, and Interlocking Tiles
 1. Elements Rolls and Interlocking Tiles - Vulcanized Composition rubber resilient [sheet] [tile] flooring

Elements Rolls and Interlocking Tiles		
Made from a formulation of high-quality post-consumer vulcanized composition rubber granules encapsulated in a wear and water-resistant elastomeric network.		
Performance Criteria	Test Method	Result
Tensile Strength	ASTM D412	>200 PSI, min
Flexibility ¼" mandrel	ASTM F137	Pass
Thermal Resistance "R"	ASTM C518	0.10 F-ft ² -h/Btu
Static Load Limit	ASTM F970 @ 400 PSI	< 0.005 in.
Slip Resistance / Coefficient of Friction	ASTM D2047	> 0.9
VOCs / FloorScore / CHPS / CA 01350	ASTM D5116	Certified
Color Stability	ASTM F1515	Good
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
Abrasion Resistance	ASTM D3389 / EN 649	<1g, 100 cycles
Flammability – Pill Test	ASTM D2859	Pass
Vertical Deflection / Deformation	ASTM F2772	0.7 mm
Surface Effect Slip Resistance	ASTM F2772	Pass
Ball Rebound	ASTM F2772	99.7%
Force Reduction	ASTM F2772	12.6%
Ambient Noise Reduction, Sabin/ft ²	ASTM C423	0.10
Impact Insulation Class	ASTM E492	53 minimum
Delta IIC	ASTM E2179	22
Force Reduction	Deltec	10.4%
Energy Restitution	Deltec	71.9%
Sound Transmission Coefficient	ASTM E90	54 Minimum
Roll Dimensions	Manufacturer	4' wide x 25 LF min./ 1.22M x 7.62M Specify: [48" x 8 mm standard], [48" x 6 mm custom] or [48" x 9 mm custom]
Standard Roll Tolerance Width	Manufacturer	+3/4" – 0" / +19mm – 0mm
Standard Roll Tolerance Length	Manufacturer	+ 1% - 0"
Standard Roll Tolerance Thickness	Manufacturer	+/- 0.3 mm
Interlocking Tile Dimensions	Manufacturer	23" x 23" x 8mm
Standard Interlocking Tile Tolerance length / Width	Manufacturer	± 0.5%
Standard Interlocking Tile Tolerance Thickness	Manufacturer	± 0.3mm

2.2 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

2.3 RELATED MATERIALS

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

2.4 SOURCE QUALITY

- A. Source Quality: Obtain Vulcanized Composition 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.

3.1 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.

3.2 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.

3.3 PREPARATION

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

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

3.4 ERECTION / INSTALLATION / APPLICATION / CONSTRUCTION

- A. Vulcanized Composition Rubber Flooring Installation: Comply with Amarco Products Installation Manual for installation procedures and techniques for Basic Rolls and Interlocking Tiles - Vulcanized Composition 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.

3.5 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.]

3.6 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.

3.7 PROTECTION

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

3.8 SCHEDULES

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

END OF SECTION