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**DIVISION 9 Finishes - SECTION 09 65 00 Resilient Flooring  
Fortitude Calendered Rubber with Vulcanized Composition Rubber Base Layer**

## **PART 1.0- GENERAL**

### 1.1 SUMMARY

- A. The work of this section includes:
  - 1. Fortitude Plus – Calendered sheet rubber fusion bonded to a Vulcanized Composition Rubber Base Layer
  - 2. Fortitude SB – Calendered sheet rubber fusion bonded to Vulcanized Composition Rubber Base Layer
- 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) and EN (European Standards):
  - 1. See – Part 2.0 PROPRIETARY MANUFACTURER/PRODUCTS below
- C. 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 premium Calendered rubber fusion bonded to a Vulcanized Composition Rubber Base Layer, 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. 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 3.5 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. 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 5 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.
  1. Quantity: Furnish quantity of resilient flooring units equal to [specify %] of amount installed.
  2. 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 MANUFACTURER: Amarco Products

- A. Address: 5 Powder Horn Drive, Warren, NJ, 07059; Telephone: (866) 688-6287,  
(732)-302-1122; Fax (732)-302-1120; Email: [info@amarcoproducts.com](mailto:info@amarcoproducts.com)

### 2.2 PROPRIETARY PRODUCT(S)

- A. Amarco Fortitude flooring rolls for indoor applications
  1. **Fortitude Plus** rolls with an 8mm base layer and a 2.5 Calendered rubber surface layer
  2. **Fortitude SB** rolls with an 8mm base layer and a 2.5 Calendered rubber surface layer

## 2.1.1 Fortitude Plus Rolls

<b>Fortitude Plus Rolls</b>		
<b>8mm Base layer / 2.5 mm Calendered Rubber Surface Layer</b>		
Made from a formulation of high-quality post-consumer vulcanized composition rubber granules encapsulated in a wear and water-resistant elastomeric network with a fusion bonded Calendered Rubber Surface Layer		
Performance Criteria	Test Method	Typical Results
Slip Resistance / Coef. of Friction	ASTM D-2047	>0.8
Chemical Resistance	ASTM F-925	Good, no change
Abrasion Resistance	ASTM D3389 / EN 649	Pass
Resistance to Heat	ASTM F-1514	Pass
Flammability - "Pill Test"	ASTM D2859	Pass
Static Load Limit @ 250 psi	ASTM F-970	0.009 inches
Impact / Energy Abatement (5 kg mass)	Deltec Field tester	23.6%
Energy Restitution	Deltec Field tester	52.5%
Vertical Deformation	Deltec Field tester	1.9mm
g-max	Clegg	182
VOC's / CA 01350	ASTM D-5116	Pass
Impact Insulation Class (IIC)	ASTM E-492	59
Airborne Sound Transmission (STC)	ASTM E-90	55
Delta IIC (floor coverings)	ASTM E-2179	26
Noise Reduction Coefficient (NRC)	ASTM C-423 (floor finishes)	0.15
Roll Dimensions	Manufacturer	Thickness: 10.5mm Width: 48 in. / (1.22 M)
Standard Tolerances	Manufacturer	Thickness: ± 0.8 mm Width: +3/4" - 0" Length: +1% - 0"

## 2.1.2 Fortitude SB Rolls

<b>Fortitude SB Rolls</b>		
<b>8mm Base layer / 2.5 mm Calendered Rubber Surface Layer</b>		
Made from a formulation of high-quality post-consumer vulcanized composition rubber granules encapsulated in a wear and water-resistant elastomeric network with a fusion bonded Calendered Rubber Surface Layer		
Performance Criteria	Test Method	Typical Results
Slip Resistance / Coef. of Friction	ASTM D-2047	>0.8
Chemical Resistance	ASTM F-925	Good, no change
Abrasion Resistance	ASTM D3389 / EN 649	Pass
Resistance to Heat	ASTM F-1514	Pass
Flammability - "Pill Test"	ASTM D2859	Pass
Static Load Limit @ 250 psi	ASTM F-970	0.007 inches
Impact / Energy Abatement (5 kg mass)	Deltec Field tester	17.8%
Energy Restitution	Deltec Field tester	59.0%
Vertical Deformation	Deltec Field tester	1.4mm
g-max	Clegg	262
VOC's / FloorScore / CHPS / CA 01350	ASTM D-5116	Pass
Impact Insulation Class (IIC)	ASTM E-492	55
Airborne Sound Transmission (STC)	ASTM E-90	53
Delta IIC (floor coverings)	ASTM E-2179	23
Noise Reduction Coefficient (NRC)	ASTM C-423 (floor finishes)	0.05
Roll Dimensions	Manufacturer	Thickness: 10.5mm Width: 48 in. / (1.22 M)
Standard Tolerances	Manufacturer	Thickness: ± 0.8 mm Width: +3/4" - 0" Length: +1% - 0"

## 2.2 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted

## 2.3 RELATED MATERIALS

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

## 2.4 SOURCE QUALITY

- C. Source Quality: Obtain Vinyl Composition Rubber-backed Calendered 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-backed Calendered Rubber resilient flooring: Comply with manufacturer's technical manual for installation and maintenance procedures for flooring product.
- 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 visit 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 finish surfaces from damage during construction.

### 3.8 SCHEDULES

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

**END OF SECTION**