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DIVISION 9 - SECTION 09 65 00

ECOsurfaces™ ECOrx 3.2 + 12mm Recycled Rubber Commercial Flooring Patent No. 9,096,045 B2

PART 1.0- GENERAL

1.1 SUMMARY

- A. The work of this section includes:
 - 1. Recycled rubber resilient sheet laminated flooring
 - 2. Recycled rubber resilient interlocking tile laminated flooring
 - 3. Adhesives
- B. Related Sections: Section(s) related to this section include:

Specifier Note: the following CSI sections of the project manual are a guide to what is the essential information needed to determine the acceptability of the site conditions and details of the installation of ECOrx 3.2 + 12mm product by Ecore. The Specifier may choose to include other sections deemed necessary.

- 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 the 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 F970 Standard Test Method for Static Load Limit
 - 2. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as measured by the James Machine
 - 3. ASTM E2129 Standard Practice for Data Collection for Sustainability Assessment of Building Products
 - 4. ASTM D5116 Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products
 - 5. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
 - 6. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
 - 7. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes
- C. Collaborative of High Performance Schools (CHPS) Section 01350
 - 1. Low-emitting materials criteria for use in a typical classroom
- D. South Coast Air Quality Management District (SCAQMD) Rule #1168

1. VOC standards for adhesive and sealant applications
- E. 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 laminated flooring, which has been manufactured and installed to maintain performance criteria stated by manufacturer without defects, damage, or failure.

1.4 SUBMITTALS

Specifier Note: The following are typical submittals. The Specifier may choose to include other submittals deemed necessary.

- 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 term] years commencing in 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 recycled rubber 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: Ecore International™

- A. Address: 715 Fountain Ave., Lancaster, PA 17601; Telephone: (800) 322-1923, (717) 295-3400; Fax: (717) 295-3414; Email: info@ecoreintl.com

2.2 DISTRIBUTOR: Ecore Commercial Flooring

- A. Address: 119 South Tree Drive, Lancaster, PA 17603; Telephone: (877) 258-0843, (717) 299-5035; Fax: (717) 394-1937; Email: info@ecorecommercialflooring.com

2.3 PROPRIETARY PRODUCT(S)

- A. ECOsurfaces™ Recycled rubber resilient laminated flooring, Adhesives and Sealants manufactured by Ecore for indoor/outdoor commercial applications.
1. ECOrx™ 3.2 + 12mm recycled rubber fusion bonded resilient roll flooring
 2. ECOrx 3.2 + 12mm recycled rubber fusion bonded resilient interlocking tile flooring
 3. E-Grip™ III a single-component, zero-VOC, urethane, adhesive

2.3.1 ECOrx™ 3.2 + 12mm Recycled Rubber Fusion Bonded Resilient Roll Flooring

- | | |
|---|--|
| A. Product Name: | The laminated, dual-layer rubber surface furnished under this specification shall be Ecore's ECOsurfaces ECOrx 3.2 + 12mm Recycled Rubber Flooring. |
| B. Material: | Made from 100% recycled SBR (Styrene-Butadiene Rubber) tire rubber, with bright reprocessed ColorMill™ EPDM color flecks. Material surface shall contain ECOguard, water based protective polyurethane clear coat. |
| C. Sheet Dimension: | ECOrx 3.2 + 12mm laminated rolled rubber surface will have an overall thickness of 5/8"(1/8" [3.2 mm] surface wear layer over 1/2" [12mm] base) in 4' by 50' [1.2 m by 15.24 m] Standard 4' by custom lengths not to exceed 100 lineal feet. |
| D. Sheet Weight: | 2.4 lb/ft ² [11.7 kg/m ²] |
| E. Sheet Standard Tolerances: | Roll width: +3/4" - 0"
Roll length: +1% - 0"
Thickness: ± 0.7 mm |
| F. Colors: | Specify color from manufacturer's standard colors, custom colors, or special logo/graphic inlays. |
| G. Tensile Strength (ASTM D412): | 75 lb/in ² min |
| H. Flexibility (ASTM F137): | Pass 1/2" mandrel |
| I. Static Load Limit (ASTM F970): | 125 lb/in ² < 0.010 in. |
| J. Coefficient of Friction: (ASTM D2047) (wear layer) | > 0.6 |
| K. Chemical Resistance: (ASTM F925) (wear layer) | 5% Acetic Acid: no change
70% Isopropyl Alcohol: no change
5% Sodium Hydroxide: no change
5% Hydrochloric Acid: no change
5% Ammonia: no change
Bleach: no change
5% Phenol: no change
Sulfuric Acid: no change |

- L. Sustainability (ASTM E2129): data collected
- M. VOC Washington State IAQ Test: pass
(ASTM D5116)
- N. CHPS/CA 01350 (ASTM D5116): pass

2.3.2 ECOrx™ 3.2 + 12mm Recycled Rubber Fusion Bonded Interlocking Tile Flooring

- A. Product Name: The laminated, dual-layer rubber surface furnished under this specification shall be Ecore's **ECOrx 3.2 + 12mm** Recycled Rubber Interlocking Tile Flooring.
- B. Material: Made from 100% recycled SBR (Styrene-Butadiene Rubber) tire rubber, with bright reprocessed ColorMill™ EPDM color flecks. Material surface shall contain ECOguard, water based protective polyurethane clear coat.
- C. Tile Dimension: ECOrx 3.2 + 12mm laminated rolled rubber surface will have an overall thickness of 5/8" (1/8" [3.2 mm] surface wear layer over 1/2" [12mm] base) 24" x 24"
- D. Tile Weight: 2.4 lb/ft² [11.7 kg/m²]
- E. Sheet Tile Tolerances
Tile width: ±0.5%
Tile thickness: ± 0.7 mm
- F. Colors: Specify color from manufacturer's standard colors, custom colors, or special logo/graphic inlays.
- G. Tensile Strength (ASTM D412): 75 lb/in² min
- H. Flexibility (ASTM F137): Pass 1/2" mandrel
- I. Static Load Limit (ASTM F970): 125 lb/in² < 0.010 in.
- J. Coefficient of Friction: > 0.6
(ASTM D2047)
- K. Chemical Resistance:
(ASTM F925)
(wear layer)
5% Acetic Acid: no change
70% Isopropyl Alcohol: no change
5% Sodium Hydroxide: no change
5% Hydrochloric Acid: no change
5% Ammonia: no change
Bleach: no change
5% Phenol: no change
Sulfuric Acid: no change
- L. Sustainability (ASTM E2129): data collected
- M. VOC Washington State IAQ Test: pass
(ASTM D5116)
- N. CHPS/CA 01350 (ASTM D5116): pass

2.3.3 E-Grip™ III one-component urethane adhesive

- A. Product Name: The one-part urethane adhesive under this specification shall be ECORE's ECOsurfaces **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-28 lbs 10.1 oz cartridges
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: (ASTM F1869)	Maximum 5.5 lbs per 1,000 sq. ft. in 24 hrs.
K. Relative Humidity (RH) Test (ASTM F2170)	Maximum 85%
L. Flashpoint:	> 500° F
M. Shelf Life:	12 months
N. Working Time:	30-40 minutes
O. Trowel:	1/16" square notched trowel ⁽¹⁾
P. Coverage Rate:	95 ft ² per gallon (1/16" square notched trowel)
Q. SCAQMD Rule #1168	0 lb./gal. calculated

⁽¹⁾ For indoor installation on concrete or plywood subfloors only.

2.4 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

2.5 RELATED MATERIALS

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

2.6 SOURCE QUALITY

- A. Source Quality: Obtain recycled rubber resilient laminated 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. Recycled Rubber Flooring Installation: Comply with Manufacturers Technical Manual for installation procedures and techniques for ECO_{rx} recycled rubber resilient laminated 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 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