

DIVISION 9 - SECTION 09 60 00.11

Iso-Step® Re-bonded Recycled Rubber Impact Sound Insulation
Patent No. RE 41,945**PART 1.0- GENERAL**

1.1 SUMMARY

- A. The work of this section includes:
 - 1. Types of re-bonded recycled rubber Impact Sound Insulation
 - 2. Adhesives
- B. Related Sections: Section(s) related to this section include:
 - 1. Concrete Substrate
 - 2. Plywood Substrate
 - 3. Tile
 - 4. Carpeting
 - 5. Noise Control and Vibration Isolation

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 D5116 Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products
 - 2. ASTM C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester
 - 3. ASTM E492 Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine
 - 4. ASTM E1007 Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structures
 - 5. ASTM E2179 Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors
 - 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.

8. ASTM D5116 (CHPS/CA 01350)
- C. South Coast Air Quality Management District (SCAQMD) Rule #1168
 1. VOC standards for adhesive and sealant applications
- 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. 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: Manufacturer's specifications, catalog cuts, and other items needed to demonstrate compliance with the specified requirements. Also the manufacturer's recommended installation procedures, which, when approved by the architect, will become the basis for accepting or rejecting actual installation procedures used on the work.
- 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

- G. Closeout Submittals: Submit the following:
 - 1. 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 approving application method.
- B. Regulatory Requirements [specify applicable requirements of regulatory agencies]
- C. Mock-Ups: Install at project site a job mock-up, using acceptable products and manufacturer-approved installation methods. Comply with workmanship standard. Comply with Division 1 Quality Control (Mock-Up Requirements) Section.
 - 1. Mock-Up Size: As determined by acoustical consultant
 - 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.
- D. 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.
- E. 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, and 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.
1. The recommendations for applications and installation are based on our extensive experience and on current technological practice. Our liability and responsibility in the event of damages is limited to the extent defined in our general terms and conditions and is not in any way increased by the above recommendations or by advice given by our sales representatives or applications engineering staff.
 2. Acoustical Solutions warrants products against defects in material and workmanship and that Iso-Step® shall meet all published specifications and shall perform effectively. Acoustical Solutions warrants that Iso-Step® Floor Underlayment during the warranty period shall not harden, become brittle, chip, crack, tear, or exhibit any signs of excessive deterioration except for normal wear and tear. All other warranties including implied warranties for a particular purpose are expressly excluded. The sole remedy against the seller will be the replacement or repair of the defective goods, or at seller's option, credit may be issued, not exceeding the selling price of the defective goods.

1.9 MAINTENANCE

- A. Extra Materials: Deliver to owner extra materials from same production run as products are 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 re-bonded recycled rubber Impact Sound Insulation units as requested on purchase order.
 2. Delivery, Storage and Protection: Comply with owner's requirements for delivery, storage, and protection of extra materials.

PART 2.0 – PROPRIETARY MANUFACTURER/PRODUCTS

2.1 Supplier: Acoustical Solutions

- A. Address: 2420 Grenoble Road; Telephone: (800) 782-5742, (804) 346-8350;
Web: <https://acousticalsolutions.com>

2.2 PROPRIETARY PRODUCT(S)

- A. Iso-Step® Rubber Impact Sound Insulation and Accessories supplied by Acoustical Solutions.
1. Iso-Step® Floor Underlayment Re-bonded Recycled Rubber [sheet] Underlayment
 2. Iso-Step® Polyethylene Foam Perimeter Isolation Strip
 3. E-Grip III, a one-component polyurethane adhesive
 4. E-Grip Evolve, a high-performance acrylic adhesive for Iso-Step®, LVT, and sheet vinyl

2.3. 1 **Iso-Step® Re-bonded Recycled Rubber [sheet] Impact Sound Insulation Underlayment**

- A. Product Name: The re-bonded rubber underlayment furnished under this specification shall be Acoustical Solutions **Iso-Step® Floor Underlayment**.

- B. Material: Made from a formulation of high quality, post-consumer recycled rubber granules, encapsulated in a wear and water-resistant elastomeric network with multiple colored reprocessed ColorMill EPDM. Iso-Step® Floor Underlayment is a flat, resilient underlayment that is used directly under a variety of floor finishes, yielding exceptional results for impact sound insulation and protecting ceramic tile, porcelain, and stone from substrate cracks.
- C. Patent No. US RE 41,945
- D. Sheet Dimension: Iso-Step® rolled rubber underlayment will have an overall thickness of _____ (specify: 1/8" [2 mm] standard in 4' by 75' [1.2 m by 22.9 m] roll size or 1/4" [5 mm] standard in 4' by 30' [1.2 m by 9.1 m] roll size or 3/8" [10 mm] standard in 4' by 15' [1.2 m by 4.6 m] roll size or 1/2" [12 mm] standard in 4' by 15' [1.2 m by 4.6 m] roll size).
- E. Sheet Weight: **2mm**-0.40 lb/ft² [1.9 kg/m²], **5mm**-0.80 lb/ft² [4.0 kg/m²], **10mm**-1.7 lb/ft² [8.0 kg/m²], **12mm**-2.0 lb/ft² [9.6 kg/m²]
- F. Sheet Standard Tolerances: Roll width: + 3/4" - 0", Roll length: +1% - 0", Thickness: ± 0.3 mm
- G. Impact Insulation Class **Laboratory** (ASTM E492): Specified floor-ceiling assembly must be tested in a fully accredited laboratory, compliant with the international accreditation standard (ISO/IEC 17025) and comply with ASTM standards.
- H. Impact Insulation Class **Field** (ASTM E1007): Floor-ceiling assembly must meet requirement as stated by building code and/or acoustical consultant.
- I. ASTM E2179: Shall be LAB tested over a 6" concrete slab with tile and no ceiling assembly.
- J. Shall be ICC-ES certified
- K. Shall be UL listed
- L. VOC Washington State IAQ Test (ASTM D5116): pass

2.3.2 Iso-Step® Polyethylene Foam Perimeter Isolation Strip

- A. Product Name: The single-ply white polyethylene foam perimeter isolation strip under this specification shall be Acoustical Solutions **Iso-Step® Perimeter Isolation Strip**.
- B. Material: Made from white polyethylene foam, Iso-Step® Perimeter Isolation Strip is a flat, resilient strip that is used around the perimeter wall, so no hard surface (floor covering) touches any hard vertical surface (protrusion or wall).
- C. Sheet Dimension: Iso-Step® rolled perimeter isolation strip will have an overall thickness of 15/64" [6mm] in 2 1/2" by 50' [64mm by 1,5240mm] roll size.
- D. Sheet Weight: 0.035 lb/ft² [0.171 kg/m²]

2.3.3 E-Grip III one-component polyurethane adhesive

- A. Product Name: The one-part urethane adhesive under this specification shall be **E-Grip III** one-component polyurethane adhesive.
- B. Material: E-Grip III is a one-component polyurethane 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 polyurethane
- D. Adhesive Cure System: Moisture cured
- E. Weight: 4 gallon pail-56 lbs., 2 gallon pail-28 lbs.
- F. Color: Medium grey
- G. VOC Content: 0 Calculated
- H. Freeze/Thaw: Stable
- I. Application Temperature: 40° F - 100° F
- J. Relative Humidity Test (ASTM F2170): Maximum 85%
- K. Calcium Chloride Test (ASTM F1869): Maximum 5.5 lbs./1,000 sq. ft. in 24 hrs.
- L. Flashpoint: >500° F
- M. Shelf Life: 12 months
- N. Working Time: 30-40 minutes
- O. Trowel: 1/16" square notched trowel coverage, approximately 95 square foot per gallon
1/16"x1/32"x5/64 U notched trowel coverage, approximately 120 square foot per gallon
- P. SCAQMD Rule #1168: 0 calculated
- Q. CHPS/CA 01350 (ASTM D5116): pass

(1) For indoor installation on concrete or plywood subfloors only. See QT Installation Manual for instructions.

2.3. 4 **E-Grip Evolve**

- A. Product Name: The adhesive under this specification shall be **E-Grip Evolve**, a high- performance, wet set, vinyl acrylic polymer.
- B. Material: E-Grip Evolve is a high-performance, wet set adhesive, designed for use with Iso-Step® sound control underlayment, LVT, and sheet vinyl.
- C. Adhesive Type: Vinyl Acrylic Polymer
- D. Weight: 38 pounds per 4 gallon pail
- E. Color: Off-White

- F. VOC Content: 0.28 pounds per gallon (34 g/l)
- G. Freeze/Thaw: Protect from freezing. Freeze/Thaw stable up to 5 cycles at 0°F (-18°C)
- H. Application Temperature: Substrate temperature 50°F-90°F (10°C-32°C)
- I. Relative Humidity Test (ASTM F2170): Maximum 80% RH diminishing
- J. Calcium Chloride Test (ASTM F1869): Maximum MVER of 5 pounds diminishing
- K. Flashpoint: >212° F (100°C)
- L. Shelf Life: 24 months when stored at 73°F (23°C)
- M. Working Time: 15-45 minutes dependent upon application. See technical manual.
- N. Trowel: 1/16" square notched trowel coverage, approximately 100-125 square foot per gallon
1/32"x1/16"x1/32" U notched trowel coverage, approximately 100-200 square foot per gallon
Coverage rates are estimates and vary depending on the application.
- O. CRI Green Label Plus: Certified

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 re-bonded recycled rubber impact sound insulation materials from a single manufacturer.

PART 3.0 - EXECUTION

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: Surfaces shall be prepared in accordance with ANSI standards.

3.4 ERECTION/INSTALLATION/APPLICATION/CONSTRUCTION

- A. Re-bonded Recycled Rubber Impact Sound Insulation: Comply with the Iso-Step® Technical Manual for procedures and techniques for re-bonded recycled rubber Impact Sound Insulation installation.
- B. Related Products Installation: Refer to other sections listed in Related Sections paragraph herein for related products installation.
- C. Installation should not begin until all other trades are finished in the area.
- D. Areas to receive the re-bonded recycled rubber Impact Sound Insulation should be weather tight and maintained at a minimum uniform temperature of 65°F (18°C) for 48 hours before, during, and after the installation.

3.5 FIELD QUALITY REQUIREMENTS

- A. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations in accordance with manufacturer's instructions.
- B. Field Tests should be performed by an independent acoustical laboratory accredited by the U.S. Department of Commerce, National Institute of Standards and Technology under the National Voluntary Laboratory Accreditation Program for the specified test procedure.
- C. The cost for all field acoustical testing, corrective work associated with the installation of the re-bonded recycled rubber Impact Sound Insulation, and flooring to meet the minimum requirements, shall be borne by the flooring contractor(s).

3.6 CLEANING

- A. 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