



DIVISION 9 Finishes - SECTION 09 65 66 Resilient Athletic Flooring
Dura-Flex™ Rebound Vinyl Composition Rubber Back Sheet Vinyl

PART 1.0- GENERAL

1.1 SUMMARY

- A. The work of this section includes:
 - 1. Dura-Flex™ Rebound – Vinyl Composition Rubber back sheet vinyl
 - 2. Welding Rod
 - 3. Adhesives
- 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 F970 Standard Test Method for Static Load Limit
 - 2. ASTM F1303-99 Standard Test Method for Resistance to Chemicals of Resilient Flooring
 - 3. ASTM F1514 Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change.
 - 4. ASTM F1515 Standard Test Method for Measuring Light Stability of Resilient Flooring by Color Change.
 - 5. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as measured by the James Machine.
 - 6. ASTM E648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
 - 7. ASTM F2199 Standard Test Method for Determining Dimensional Stability of Resilient Floor Tile after Exposure to Heat.
 - 8. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers – Tension
 - 9. ASTM F137 Standard Test Method for Flexibility of Resilient Flooring Materials with Cylindrical Mandrel Apparatus
 - 10. ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
 - 11. ASTM F2753 Standard test method for dynamic rolling load.
 - 12. ASTM F2772 Standard Specification for Athletic Performance Properties of Indoor Sports Floors Systems. Includes ASTM F2569, ASTM F2117, ASTM F2157, and ASTM E303.

13. ASTM E2129 Standard Practice for Data Collection for Sustainability Assessment of Building Products.
14. ASTM D5116 Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products
15. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
16. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

C. European Committee for Standardization (EN)

1. EN649 / EN ISO 10582 Resilient Floor Coverings Heterogeneous polyvinyl chloride floor coverings – Specification for Abrasion Resistance.

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 vinyl composition rubber back sheet vinyl 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: 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 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.
 - 3. Cleaning: Furnish flooring manufacturer's neutral cleaner for initial cleaning and maintenance of finished floor surface.

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: Kiefer USA

- A. Address: 2910 Falling Waters Blvd, Lindenhurst, IL 60046; Telephone: (800) 322-5448, Fax: (847) 245-8590; Email: info@kieferusa.com

2.2 PROPRIETARY PRODUCT(S)

- A. Flooring and adhesives by Kiefer USA for athletic applications.
 - 1. Dura-Flex™ Rebound vinyl composition rubber back resilient sheet vinyl flooring and accessories.
 - 2. E-Grip™ III a single-component, zero-VOC, urethane adhesive

2.3.1 E-Grip™ III one-component urethane adhesive

- A. Product Name: The one-part urethane adhesive under this specification shall be **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 moisture cured urethane
- D. Weight: 4 gallon pail-56 lbs, 2 gallon pail-28 lbs, 10.1 oz cartridges
- E. Color: medium grey
- F. VOC Content: 0 lb/gal calculated
- G. Freeze/Thaw: stable
- H. Application Temperature: 40° F - 100° F
- I. Relative Humidity (RH) Test: Maximum 85% (ASTM F2170)
- J. Flashpoint: > 500° F
- K. Shelf Life: 12 months
- L. Working Time: 30-40 minutes
- M. Trowel: 1/16" x 1/16" x 1/16" square notch
- N. Coverage Rate: 95 ft² / gal. – 1/16" x 1/16" x 1/16"
- O. SCAQMD Rule #1168: 0 lb./gal. calculated

2.3.2 Dura-Flex™ Rebound - Vulcanized Composition Rubber Back Vinyl [Sheet] Flooring

Kiefer USA Dura-Flex™ Rebound With itstru-5 Technology

5mm - 6015H Underlayment / 2mm Surface Wear Layer

Made from a formulation of high quality post consumer Vulcanized Composition Rubber granules encapsulated in a wear and water-resistant elastomeric network fusion bonded to a heterogeneous vinyl wear layer with a urethane topcoat

Performance Criteria	Test Method	Typical Result
Flexibility ¼" mandrel	ASTM F 137	Pass
Thermal Conductivity	ASTM C 518	0.6 Btu in./h ft² F
Static Load Limit	ASTM F 970 @ 250PSI	Pass
Coefficient of Friction	ASTM D 2047	>0.6
Chemical Resistance	ASTM F-1303-99	Excellent
Abrasion Resistance	EN 649 / ISO 10582	Group T / Type 1
Dimensional Stability	ASTM F-2199	±0.40%
Behavior to Fire	ASTM E-648	Class I
Resistance to Light	ASTM F-1515	Pass
Resistance to Heat	ASTM F-1514	Pass
Dynamic Rolling Load	ASTM F-2753	10,000 cycles: No Damage, No Change
Vertical Ball Rebound	ASTM F-2772	(Pass) Average > or = 95.5%
Vertical Deformation	ASTM F-2772	(Pass) Average < or = 0.72mm
Force Reduction	ASTM F-2772	(Pass) Average > or = 12.6%
Surface Effect Slip Resistance	ASTM F-2772	(Pass)
Sheet Dimension	Manufacturer	Standard Rolls Nominal 6ft Width 35 LF std length; 45LF max length
Standard Tolerance Width	Manufacturer	Width: +3/4" -0"
Standard Tolerance Length	Manufacturer	Length: +1% - 0%
Standard Tolerance Thickness	Manufacturer	Thickness: ±.4 mm
Standard Sheet Weight	Manufacturer	1.26 lb/ft² [6130 g/m²]

2.3.3 Weld Rod

- | | |
|------------------|---|
| A. Product Name: | Welding rod under this specification shall be Dura-Flex™ Rebound distributed by Kiefer USA. |
| B. Material: | Vinyl |
| C. Colors: | Specify color from Dura-Flex™ Rebound standard colors. |
| D. Dimensions: | Standard lengths of 328 LF [100 M] by 3mm in thickness.
Custom lengths not available. |
| E. Spool Weight: | 11.02 lbs (5 kg) |

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 Vinyl Composition Rubber Back 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. Rubber Back Vinyl Flooring Installation: Comply with Kiefer USA Dura-Flex™ Rebound Technical Manual for installation procedures and techniques.
- 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.

Specifier Note: Retain article below to suit project requirements. Article may be used to describe specific criteria requirements of similar products or equipment.

3.8 SCHEDULES

Specifier Note: Retain paragraph below to suit project requirements. Reference a schedule or include a schedule as an attachment, which indicates where to locate products and equipment.

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

END OF SECTION