

DIVISION 9 Finishes - SECTION 09624 Synthetic Athletic Flooring

PART 1.0- GENERAL

1.1 DESCRIPTION

- A. Includes:
 - 1. The complete installation of Kiefer ActivePlay Athletic Flooring™
- B. Related Sections: Section(s) related to this section include:
 - 1. Concrete Substrate: Section 03____
 - a. The General Contractor shall furnish and install the concrete slab steel troweled smooth, but not slick nor burnished. Slick and/or burnished slabs shall be rejected as unacceptable and will require diamond grinding by the General Contractor.
 - b. The concrete slab shall be within 1/8" in ten foot when checked with a straight edge. High spots are to be ground level, and low spots filled with an approved Portland based floor patching compound.
 - c. FF and FL numbers are not recognized, nor will be used as a basis for levelness.
 - d. **Under no condition shall concrete sealers and/or curing compounds be applied to the concrete surface or in the concrete mix.**
 - 2. Concrete moisture vapor emission and PH testing - SECTION 01450
 - a. Moisture vapor emissions shall not exceed 95% when tested in accordance with ASTM F2170.
 - b. Concrete pH level shall not exceed 11 when checked in accordance with ASTM F710.
 - 3. Membrane Waterproofing - Section 07____
 - a. Concrete slabs shall be placed over a water vapor retardant membrane following ASTM E1745 – 17.
 - 4. Game Standard Inserts - Section 11____

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM F970 Standard Test Method for Static Load Limit.
 - 2. ASTM F2753 Standard Test Method for Dynamic Rolling Load.
 - 3. ASTM F1303-99 Standard Test Method for Resistance to Chemicals of Resilient Flooring.
 - 4. ASTM F1514 Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change.
 - 5. ASTM F1515 Standard Test Method for Measuring Light Stability of Resilient Flooring by Color Change.
 - 6. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as measured by the James Machine.
 - 7. ASTM E648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
 - 8. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers – Tension.

9. ASTM F2772 Standard Specification for Athletic Performance Properties of Indoor Sports Floors Systems. Includes ASTM F2569, ASTM F2117, ASTM F2157, and ASTM E303.
10. ASTM D5116 Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products.
11. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
12. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in-situ Probes.

1.3 SUBMITTALS

1. Submit Kiefer ActivePlay specification sheets.
2. Submit two samples of specified system illustrating wood pattern and color.
3. Maintenance Instructions - Upon completion of floor installation, send to owners' representative and/or individuals responsible for the upkeep of the building the appropriate Maintenance Guide.
4. The maintenance instructions must be strictly adhered to maintain the Kiefer warranty. Any variations, deviations or substitutions must be approved in writing by Kiefer USA.
5. Submit one copy of the current installation instructions as published by Kiefer USA.
6. Submit verification indicating installer (Floor Contractor) is trained and approved by Kiefer USA.

1.4 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer's Qualifications:
 - a. ISO 9001:2015 Certified.
 - b. ISO 14001:2015 Certified.
 - c. At least ten years active experience in the manufacture of indoor resilient athletic flooring.
 - d. A provider of comprehensive installer training.
2. Installer Qualifications:
 - a. The complete installation of the flooring system, as described in these specifications, shall be carried out by an experienced installer (Flooring Contractor), and the work shall be performed in strict accordance with current Kiefer USA installation instructions.
 - b. The Installer (Flooring Contractor) shall be trained and approved in writing by Kiefer USA.
 - c. The Installer (Flooring Contractor) shall be liable for all matters related to the installation for a period of one (1) year after acceptance.

1.5 DELIVERY, STORAGE & HANDLING

- #### A.
- Deliver materials in Kiefer original, unopened, undamaged containers with identification labels intact.

- B. Store material protected from exposure to harmful weather conditions upright on a clean, dry, flat surface protected from possible damage.
- C. Storage area ambient condition shall be between 55 degrees and 85 degrees F.

1.6 PROJECT CONDITIONS

- A. The installation shall not be initiated until all other trades have completed in the specified area, including but not limited to the following: goals, scoreboards, masonry, painting, and overhead mechanical trades.
- B. The building shall be enclosed and weather tight with permanent windows and lockable doors.
- C. Permanent heat, light and ventilation shall be operating with controls during and after installation.
- D. Subfloors shall be clean, dry and free from dirt, dust, oil, grease, paint, alkali, **concrete curing agents, hardening and parting compounds**, old adhesive residue or other foreign materials.
- E. Moderate room temperature between 65°F and 80°F, and relative humidity under 50% shall be maintained for one week prior to, during, and for one week after the installation has been completed.
- F. All installation areas shall be closed to all trades and foot traffic during the installation and for one week after completion to allow for drying and curing of adhesives and gameline paint.
- G. When tested per ASTM F2170 Standard Test for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes the Concrete substrate shall not exceed 95% RH and the PH when checked in accordance of ASTM F710 shall not exceed 11.
- H. The concrete slab must be within 1/8" when checked with a 10' straight edge.

1.7 ENVIRONMENTAL LIMITATIONS

- A. Adhere to all SDS requirements for materials employed in the workplace.
- B. Protect all persons from exposure to materials at all times.

1.8 WARRANTY

- A. This warranty does not cover floor damage caused (wholly or in part) by fire, winds, floods, moisture migration from any source, either from above, below, or from perimeter. This includes but is not limited to water vapor transmission through the substrate, failure of vapor barrier, unfavorable atmospheric conditions or chemical action. Nor does it apply to damage caused by normal wear, failure to follow the Kiefer maintenance guide, misuse, abuse, negligent or intentional misconduct, aging, faulty building construction, concrete slab movement, faulty or unsuitable subsurface or site preparation, settlement of the building walls or faulty installation of the Kiefer flooring systems.
- B. Kiefer USA hereby warrants the **ActivePlay Sports Vinyl™** material to be free from manufacturing defects for a period of two (2) years. This warranty is in lieu of all other warranties, expressed or implied including but not limited to, any warranty of merchantability or fitness for a particular purpose, and of any other obligations on that of Kiefer. In the event of breach of warranty, the liability of Kiefer shall be limited to replacing the **ActivePlay Sports Vinyl** material and any components supplied by Kiefer that are proven to be defective in manufacturing. Under no condition shall it include any other damages, either direct or consequential.

PART 2.0 PRODUCTS

2.1 Kiefer ActivePlay Sports Vinyl

A. Vinyl

1. Wood design shall closely replicate maple strip flooring typically used in gymnasiums in both color, board size, and grain. The maple print shall be protected by a clear factory applied layer of pure PVC (Polyvinyl Chloride). The Intermediate layers shall be calendared PVC and non-woven fiberglass with a foam force reduction layer of high-density closed cell PVC foam applied in one continuous manufacturing process.

2. FloorScore Certified

B. Nominal Thickness, Width and Length

1. Kiefer ActivePlay - 7mm – 1.8 meters X 26 meters

C. Adhesive

1. Mapei 373 adhesive

D. Welding Rod

1. Matching maple color,
2. Length 80 meters

E. Gameline Paint

1. One component Pigmented Polyurethane
2. Pick from Ten Standard Colors

F. Wall Base (highly recommended)

1. 4" or 6" Rubber Cove Base
2. Pick from Standard Colors

2.2 Technical Data

<u>Sports Flooring</u>	<u>Standard</u>	<u>Thickness</u>	<u>Results</u>	<u>Sq/ft per roll</u>
Width		ALL	5' 10" (1.8 m)	
ActivePlay Pro		7mm	85' 3" (26 m)	503.75 (46.8 m ²)
American Sports Flooring Standard	ASTM F2772	ALL	Meets all requirements	
European Sports Flooring Standard	EN 14904	ALL	Class 1	
Vertical Deformation	ASTM F2157/ASTM F2772	ALL	PASS	
Ball Rebound >90%	ASTM F2117/ASTM F2772	ALL	99%	
Active Pro - Force Reduction	ASTM F2569/ASTM F2772/ EN14808	7mm	Class 2	
Surface Finish Effect (Slide) 80-110	ASTM E303/ASTM F2772/ EN 13036	ALL	PASS	
Wear Layer	ASTM F1303 / ASTM F410	ALL	Type 1 / Grade 1	
Fire Rating	ASTM E648	ALL	Class 1	
Resistance to Chemicals	ASTM F925	ALL	Excellent	
Static Load 175 psi	ASTM F970	ALL	PASS	
Phthalate Free	ASTM F3414-20	ALL	YES	

Abrasion Resistance	EN ISO 5470-1	ALL	0.095mm PASS	
Rolling Load $\geq$ 1500 N	EN 1569	ALL	0.05mm PASS	
Impact Resistance	EN 1517	ALL	PASS	
Color Fastness	EN ISO 105-B02	ALL	Excellent	
Indoor Air Quality (IAQ)	California Section 01350	ALL	Certified by FloorScore®	
ISO 9001:2015		YES	Certificate No.: IN32750A	
ISO 14001:2015		YES	Certificate No.: IN31472B	
Heavy Metals		ALL	NO	

PART 3.0 - EXECUTION

3.1 INSPECTION

- A. Prior to Inspection the entire concrete slab in the installation area shall be **broom cleaned by general contractor**.
- B. Test moisture vapor transmission of concrete flooring by use of an in-situ RH test respecting ASTM F2170. Maximum vapor level of 95% RH. Report any discrepancies to the General Contractor.
- C. Perform several bond tests on slab using actual flooring and adhesive to ensure compatibility and no adverse adhering conditions.
- D. Test concrete porosity in accordance with ASTM F3191.
- E. Report in writing to the General Contractor any visible defects of the substrate such as cracks, bumps, rough areas or variations in evenness.
- F. Report in writing to the General Contractor any surface contaminates that must be removed before the installation can proceed including but not limited to permanent markers wrote on concrete surface, paint, oil, sheetrock mud, hydraulic fluid, and/or mud.
- G. Installation shall not proceed until the General Contractor has corrected all deficiencies, PH Reading, and concrete moisture vapor is acceptable.

3.2 INSTALLATION

- A. Verify all conditions outlined in 3.1 Inspections has been satisfied.
- B. Secure Installation area from all trades allowing no foot traffic except for Installation Contractor.
- C. Carefully and without deviation follow the Kiefer ActivePlay Installation Guidelines.
 1. Prepare substrate as per ASTM F710-11 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring".
 2. Unroll flooring and allow to relax for 16 hours prior to adhering.
 3. Following starting line fold/roll back run to be adhered.

4. Apply HM adhesive with notched trowel and allow the spread adhesive to air the before covering.
5. Unfold/unroll vinyl flooring into properly prepared adhesive.
6. Roll sports vinyl with 100 lb. segmented roller crossways and then lengthways to remove entrapped air. Repeat before adhesive completely sets.
7. Respecting ASTM F1516-13 "Standard Practice for Sealing Seams of Resilient Flooring by the Heat Weld Method" route cross and length seams, weld with matching welding rod, and trim weld from surface.

D. Game Lines

1. Layout and mask gamelines using only Kiefer approved tape.
2. Clean and prepare vinyl surface per the Kiefer ActivePlay Installation Guidelines
3. Wall Base (**Optional but highly recommended**) – Install cove base on all walls touching the Kiefer ActivePlay Sports Vinyl flooring to.

3.3 CLEANING

- A. Clean up all unused materials and debris and remove from the premises.
Dispose of empty containers in accordance with federal and local regulations.

3.4 PROTECTION

A. Cure Time

1. No traffic or other trades shall be allowed on the surface for a period of one week following completion to allow for curing of paint and adhesive.

B. Trade Workers

1. It shall be the responsibility of the General Contractor to protect the surface from damage by other trades before acceptance by the owner or the owner's authorized agent.

END OF SECTION