

SECTION 09622

COATED RUBBER ATHLETIC FLOORING

[Notes like this one help the specifier identify and make selections. Remove all notes when editing is complete. You can remove them quickly by selecting all text in "Specifier Notes" style and deleting it.]

[Option: Metric equivalents can be removed globally by deleting the text in style "Metric".]

[Note: Please re-number articles and paragraphs after editing is complete. This document is not written using automatic paragraph numbering so that it is compatible with many formats.]

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes: Interior seamless polyurethane-coated rubber athletic flooring.

[Note: Delete the following if not required; then delete product 2.2E and application 3.3G]

1. Game lines

- B. Related Sections include:

[Note: Edit the following for project conditions]

1. Section 02740, finishing requirements specified in this Section
2. Section 03300, curing, finishing and drying requirements specified in this Section.
3. Section 06100, wood sheathing-underlayment or underlayment requirements.

1.2 REFERENCES

- A. DIN Standards 18032 Part 2 "Sports Halls; Sports Surfaces; Requirements and Testing", as developed by The Otto-Graf Institute, an affiliate of Stuttgart University, in Stuttgart, Germany.

1.3 SYSTEM DESCRIPTION

- A. Design Requirements: Seamless interior athletic surface designed to reduce fatigue and injuries, and with the following characteristics:

1. Slip resistant
2. Seamless finish
3. Repairable and re-coatable surface.

- B. Performance Requirements: Athletic flooring system shall comply with Technical Requirements of DIN 18032 Part 2 including the following:

Test Procedure	Decoflex™	Decoflex™	Decoflex™	Decoflex™
DIN 18032-2 Method	7 mm	9 mm	11 mm	12 mm
Flooring System Thickness	7 mm	9 mm	11 mm	12 mm
Coefficient of Friction	0.42	0.42	0.42	0.42
Impact Resistance	15 Nm	15 Nm	14 Nm	13 Nm
Remaining Indentation	0.03 mm	0.07 mm	0.06 mm	0.08 mm
Force Reduction	19%	23%	30%	32%

Test Procedure DIN 18032-2 Method	Decoflex™ 7 mm	Decoflex™ 9 mm	Decoflex™ 11 mm	Decoflex™ 12 mm
Vertical Deformation	0.77 mm	1.08 mm	1.31 mm	1.45 mm

C. Athletic Flooring Surface Performance Requirements:

1. Shore Hardness: 68 per ASTM D 2240
2. Abrasion Resistance: 0.039 gr. per ASTM D 4060 and 0.05 mm per Taber CS17/1000R
3. Tensile Strength: 3.53 N/sq. mm per DIN 18032-2
4. Elongation at Break: 73% per DIN 18032-2

D. Component Technical Data

Pore Sealer

Durometer Shore A	79 ~ 85
Tensile Strength	5.52 ~ 6.90 N/mm ²
Elongation	70%

Wear Coat

Tensile Strength	9.0 ± 0.5 Nm
Elongation at Break	200 ± 10 %
Tear Strength	25 N/mm
Shore A Hardness	80 ± 2 points

Top Coat

<u>Component Properties</u>	Part A Base	Part B Isocyanate
Viscosity @ 25°C		
2.5 rpm (cps)	24,000	160
20 rpm (cps)	4,000	160
Weight (kg) / litre	± 1.24	± 1.12
Color	See color card	Colorless

D. Flammability: Class 1 per ASTM D 2859

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawing: Game line layout plan, indicate line widths and colors
- C. Samples for Initial Selection: For each type of product indicated.
- D. Samples for Verification: 24 by 24 inch complete system on 0.25 inch thick rigid backing; selected top coat color; example of game line.

[Note: Delete the following if project is not LEED certified or delete points that are not required]

E. LEED Submittals:

1. Credits MR 4.1 and MR 4.2: Product Data indicating percentages by weight of postconsumer and preconsumer recycled content and statement indicating costs for each product having recycled content.
2. Credit EQ 4.1: Manufacturers' product data for adhesives, including printed statement of VOC content.

F. Installer's certification and experience.

G. Maintenance Data: For maintenance manual.

1.5 QUALITY ASSURANCE

A. Manufacture's Qualifications: Experience manufacturing and warranting coated rubber athletic flooring systems.

[Note: The following testing is optional and adds nominal cost to the project. Delete QMP if additional cost is not warranted.]

1. Quality Monitoring Program (QMP): testing by an independent lab either in the plant or at the project site. Test product(s) for compliance with DIN 183032-2 and this specification.

B. Installer's Qualifications: Trained and certified by Manufacturer.

C. Performance Testing: Written reports of tests conducted by a testing laboratory accredited by International Association of Athletics Federations (IAAF).

D. Fire-Test-Response Characteristics: Provide products identical to those tested for fire-exposure behavior per test method indicated by a testing and inspecting agency acceptable to authorities having jurisdiction.

E. Environmental Quality: Products shall contain no halogen, formaldehyde, nor PVC. Products shall be recyclable without generating environmentally harmful byproducts at end of use.

[Note: Mockup is optional. Specify requirements. Mockups can be expensive and have an impact on the construction schedule. A small isolated area could be used for an in-place mockup and, if accepted, may be part of the finished project. An adjacent closet or storage room would be ideal for this purpose.]

F. Mockup: Area for mockup is indicated in Drawings. Demonstrate proposed protection and installation methods.

1. Mockup will be judged for aesthetic effects and workmanship. Approval of mockup does not relieve Contractor from complying with performance, product and execution requirements.
2. Approved mockup may be incorporated in final work.
3. Do not proceed with installation until mockup is approved.

[Note: Pre-installation conference is recommended. Coordinate specific requirements with mockups in Quality Assurance requirements in Division 1.]

- G. Pre-Installation Conference: Include Manufacturer's representative. Comply with Division 1 requirements including discussion of the following:
 - 1. Coordination with other work
 - 2. Acceptance of substrates.
 - 3. Acceptance of Mockup.
 - 4. Protection of other work during installation
 - 5. Protection of coated rubber athletic flooring during and after installation.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in manufacturer's original, unopened wrappings and containers.
- B. Protect products from weather, frost and excessive heat
- C. Conditioning: Acclimatize Decoflex™ mat, coatings and adhesive at a minimum temperature of 68°F [20°C] for not less than 24 hours before installation.

1.7 PROJECT CONDITIONS

[Note: Coordinate requirements in paragraphs A, B, and C with project design. Delete requirements that do not apply.]

- A. Concrete Substrate: Engineered design and mix, cured for not less than 28 days. Dry concrete after curing to moisture requirements in Part 3.
- B. Wood Substrate: Engineered design or smooth, structurally sound existing floor:
 - 1. Not less than 7/8 inch [20 mm] thick tongue-and-groove plywood.
 - 2. Approved underlayment is required over other wood substrates.
- C. Asphalt Substrate: Engineered design and mix, cured for not less than 14 days.
- D. Sequencing: Do not begin installation of Decoflex™ until other work in area is complete and area is cleared of extraneous materials.
 - 1. If the requirements are as such that Decoflex™ surface must be installed before other trades have completed their work, the installed Decoflex™ surface shall be covered with a suitable protective covering
- E. Restricted access to areas finished in this Section: 24 hours prior to installation and 7 days after installation is complete, Installer or personnel accompanied by Installer.

1.8 WARRANTY

- A. Manufacturer's standard five-year limited warranty.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Approved Manufacturer:
Rephouse America LLC
P O Box 248, 203, Eggert Road
Buffalo, New York 14225-0248, USA

Tel : 519 821 1803

Fax: 519 821 6694

- B. Approved Product: Rephouse Decoflex™ Universal Indoor Sports Surfacing System.

2.2 SYSTEM COMPONENTS

- A. Rubber Mat: Prefabricated rubber mat of recycled black rubber particles and polyurethane binder.

1. Density: 43.6 lb/cu ft [700 kg/m³]
2. Recycled Content: At least 80%
3. Form: Rolls, 5 feet [1.5 meter] wide by 65 feet [20 meters] long

[Note: Delete thicknesses not required. If more than one thickness is used for this project, either create a schedule of Decoflex™ Flooring at the end of this Section or indicated thicknesses in Drawings and finish Schedule.]

4. Thickness: 5 mm (3/16inch)
4. Thickness: 7 mm (9/32 inch)
4. Thickness: 9 mm (11/32 inch)
4. Thickness: 10 mm (25/32 inch)

- B. Pore Sealer: Manufacturer's two-component polyurethane sealer.

- C. Wear Coat: Manufacturer's two-component, self-leveling, high-build polyurethane.

1. Cured Thickness: 2mm

- D. Top Coat: Manufacturer's two-component pigmented aliphatic polyurethane coating:

1. Color: Selected from full range of available colors

- E. Line Paint: Rephouse two-component pigmented polyurethane line paint.

1. Colors: Selected from full range [Custom colors, match Architect's samples]

2.3 INSTALLATION MATERIALS

[Note: Delete materials for installation methods that are not required in project.]

- A. Adhesive: Rephouse PU88 two-part polyurethane adhesive.

[Note: Retain the following for LEED point EQ 4.1 or for a "Green Spec."]

1. Use adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24): 60 g/L.

- B. Masking Tape: 3-M #233 automotive masking tape. (Do not use "blue tape.")

PART 3 EXECUTION

3.1 EXAMINATION

[Note: Delete exterior or interior conditions if not applicable to project.]

- A. Substrate Surface: Smooth with no compaction or trowel ridges and shall not vary from smooth by more than 3/64 inch [3 mm] measured under a 12 ft [4 m] straight edge, measured in any direction.

- B. Assure that substrate is dry:

1. Interior Concrete: Not more than 2 pounds water / 1000 square feet / 24 hours, measured by ASTM F 1869 anhydrous calcium chloride test.
 - C. Assure that substrate is clear of all foreign matter and free of dust, dirt, oil or any kind of spills.
 1. Remove concrete curing agent, other coatings and lattice by sand blasting or shot blasting.
 2. Remove contaminants that will interfere with adhesive bond.
 - D. Existing Floor Finishes: Structurally sound, firmly bonded to substrate and smooth.
 1. Repair defects such as cracks, chips or loose joint material.
 2. Remove paint, oil, wax and similar coatings.
 - E. Do not proceed with installation until unacceptable conditions have been corrected.
- 3.2 PREPARATION**
- A. Vacuum clean substrate.
 - B. Unroll and layout prefabricated rubber mat to “relax” prior to installation. Cut to fit.
- 3.3 INSTALLATION**
- A. General: Comply with Manufacturer’s written installation instructions, approved during Submittals.
 - B. Application of Adhesive: Mix adhesive per instructions and apply with recommended notched trowel to entire substrate at recommended rate:
 1. Smooth Concrete: 0.11 gal./sq. ft. [0.65 kg/sqm]
 2. Smooth Asphalt: 0.18 gal./sq. ft. [1.10 kg/sqm]
 - C. Installation of Prefabricated Rubber Mat: When the adhesive is tacky, place the mat onto the surface making sure that each sheet is placed in a straight line. Stagger butt joints.
 1. Roll out mat using a trolley so that all entrapped air is removed.
 2. Assure seams and butt joints are to be level and not pinched.
 3. Roll entire surface with a 100-pound [45 kg.] hand-held flooring roller.
 4. Place weights as necessary to hold the mat in place.
 5. Remove any excess adhesive that protrudes above the seams and joints.
 - D. Application of Pore Sealer: Mix sealer per instructions. Apply with recommended trowel at 113 sq. ft. per gallon [0.65 kg/sqm].
 - E. Application of Wear Coat: Mix wear coat per instructions. Pour the mixed wear coat in a row on to the sealed base mat and spread using a rubber notched squeegee. The wear coat material is self leveling.
 1. Prior to starting make sure everything is ready to go as once mixing has started there can be no stopping until the entire floor has been covered with mixed wear coat. The entire wear coat installation should be poured ‘wet on wet’ - not allowing the wear coat to harden in between each pour.
 2. Plan for a single pour of wear coat for the entire floor.
 3. Apply a single 2 mm thick wear coat “lift”: 19.6 sq. ft. per gallon [2.60 kg/sqm].

- F. Application of Top Coat: Inspect wear coat. Sand imperfections. Mix top coat per instructions to achieve approved color. Apply top coat with roller, employing 3-pass technique:
 - 1. First roller pass: spread top coat
 - 2. Second roller pass: even out top coat and pick up excess
 - 3. Third roller pass: impart permanent textured surface
 - 4. Application Rate: 187 sq. ft. per gallon [0.18 kg/sqm].
- G. Application of Line Paint: Allow sufficient time for top coat to dry before layout game lines. Layout game line per approved Shop Drawings. Mask edges. Mix and apply line paint per instructions.
 - 1. Layout Tolerances: comply with applicable athletic association rules.
 - 2. Allow line paint to dry and cure prior to installing protective cover. Close area to traffic.

3.4 PROTECTION

- A. Cover sealed flooring with a breathable, non-staining, untreated kraft paper.
- B. Do not move heavy and sharp objects directly over surfaces. Place hardboard or plywood panels over flooring and under objects while they are being moved. Slide or roll objects over panels without moving panels.

END OF SECTION