

## SECTION 02790

### SYNTHETIC ATHLETIC SURFACING

*[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: Exterior dual-layer athletic surfacing, Decoflex™ "D" Outdoor.

*[Note: Select the type of game lines from below by deleting the one not required.]*

1. Game line paint
2. EPDM inlaid game lines

- B. Related Sections include:

*[Note: Edit the following for project conditions]*

1. Section 02740, finishing requirements specified in this Section
2. Section 02750, curing and finishing requirements specified in this Section
3. Section 03300, curing and finishing requirements specified in this Section.

##### 1.2 REFERENCES

- A. DIN Standards 18035 Part 6, "Synthetic Surfacing for Sports Facilities; Requirements and Testing", developed by The Otto-Graf Institute, Stuttgart, Germany.

##### 1.3 SYSTEM DESCRIPTION

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

1. Slip resistant
2. Ultraviolet color fast top material
3. Repairable surface.

- B. Performance Requirements: Athletic flooring system shall comply with the Technical Requirements of DIN 18035-6 including the following:

Test Procedure (DIN 18035-6 unless indicated otherwise)	Decoflex™ D6	Decoflex™ D8	Decoflex™ D10
System Thickness	6 mm	8 mm	10 mm
Standard Deformation	0.31 mm	0.44 mm	0.64 mm
Force Reduction	12%	16%	20%
Sliding Coefficient, Dry	0.86	0.86	0.86

Test Procedure (DIN 18035-6 unless indicated otherwise)	Decoflex™ D6	Decoflex™ D8	Decoflex™ D10
Sliding Coefficient, Wet	0.63	0.63	0.63
Ball Rebound	99%	100%	100%
Water Permeability	Impermeable but breathing capability		
Abrasion Resistance	rV = 6.5	rV = 6.8	rV = 6.9
Maximum Indentation when Loaded	1.2 mm	2.0 mm	2.4 mm
Remaining Indentation	0.11 mm	0.18 mm	0.18 mm
Flammability	Class 1	Class 1	Class 1
Tensile Strength	1.24 N/mm <sup>2</sup>	1.14 N/mm <sup>2</sup>	0.97 N/mm <sup>2</sup>
Elongation at Break	48%	49%	46%
Deformation Modulus	4.7 N/mm <sup>2</sup>	4.7 N/mm <sup>2</sup>	4.3 N/mm <sup>2</sup>

#### 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.
- F. Installer's certification and experience.
- G. Maintenance Data: For maintenance manual.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer'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 183035-6 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. 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.]*

- E. 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.]*

- F. 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.

## **1.7 PROJECT CONDITIONS**

*[Note: Coordinate requirements in paragraphs A and B with project design. Delete requirement that does 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. Asphalt Substrate: Engineered design and mix, cured for not less than 14 days.

## **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 : 866 898 8007

Fax: 519 821 6694

B. Approved Product: Rephouse Decoflex™ D Outdoor Sports Surfacing System.

*[Delete system that is not required.]*

1. Decoflex™ D6, dual layers, 6 mm total thickness
2. Decoflex™ D8, dual layers, 8 mm total thickness
3. Decoflex™ D10, dual layers, 10 mm total thickness

## 2.2 SYSTEM COMPONENTS

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

1. Density: 53 lb/cu ft [850 kg/m<sup>3</sup>]
2. Recycled Content: At least 80%
3. Form: Rolls, 4 feet [1.20 meter] wide by full length for job, but normally less than 100 feet.

*[Note: Delete thickness not required.]*

4. Thickness: 3 mm (1/8 inch) for Decoflex™ D6
5. Thickness: 4 mm (5/32 inch) for Decoflex™ D8
6. Thickness: 6 mm (1/4 inch) for Decoflex™ D10

B. Top Layer: Prefabricated EPDM mat of integrally colored EPDM particles and polyurethane binder.

1. Density: 75 lb/cu ft [1,200 kg/m<sup>3</sup>]
2. Form: Rolls, 4 feet [1.2 meter] wide by full length for job, but normally less than 100 feet.
3. Color: Selected from full range of at least 12 colors

*[Note: Delete thickness not required.]*

4. Thickness: 3 mm (1/8 inch) for Decoflex™ D6
5. Thickness: 4 mm (5/32 inch) for Decoflex™ D8 and D10

*[Note: Select type of game line and delete the one not required. Inlaid game lines are considered permanent.]*

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

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

D. Inlaid Game Lines: Prefabricated EPDM particles and polyurethane binder, same thickness as Top Layer:

1. Width: 2 inches
2. Colors: At least one color per game selected from full range.

## 2.3 INSTALLATION MATERIALS

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

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 contaminates that will interfere with adhesive bond.
- D. Do not proceed with installation until unacceptable conditions have been corrected.

### **3.2 PREPARATION**

- A. Broom clean substrate.
- B. Unroll and layout prefabricated rubber mat to “relax” prior to installation.

### **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 Base 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.

*[Note: Remove paragraphs D and F below if inlaid game lines are not required.]*

- D. Preparation for Inlaid Game Lines: Establish fixed reference points and layout game lines, logos and graphics in accordance with approved Shop Drawings. Apply adhesive tape per manufacturer’s instructions.
- E. Installation of Top Layer: Establish reference points, master layout lines, and roll lines per manufacturer’s instructions. Layout rolls perpendicular to Base Mats and adhere to Base Mat with specified adhesive in compliance with manufacturer’s instructions.

1. Assure that the directions of base mat and top layer are perpendicular to each other.
  2. Assure seams and butt joints are to be level and not pinched.
  3. Roll entire surface with a 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.
- F. Installation of Inlaid Game Lines: Re-establish game lines from reference points. Mark and cut both side of lines and graphics and remove top layer. Assure that masking tape is removed with top layer. Apply adhesive and install lines and graphics.
1. Roll and weight lines and graphics to remove air and assure full adhesion.
  2. Remove excess adhesive.

*[Note: Remove paragraphs G below if painted game lines are not allowed.]*

- 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. Do not move heavy and sharp objects directly over completed sports surfaces. Place hardboard or plywood panels over sports surface and under objects while they are being moved.

END OF SECTION