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DIVISION 9 Finishes - SECTION 09 65 00 Resilient Flooring
OSST– Prefabricated sport surfaces with vulcanized two-layer construction

PART 1.0- GENERAL

1.1 SUMMARY

A. The work of this section includes:

1. OSSTRAX Rolls for indoor applications
2. OSSTRAX Rolls for outdoor applications
3. OSSTRAX-Elite Rolls for indoor applications
4. OSSTRAX-Elite Rolls for outdoor applications
5. Adhesives: refer to installation manual

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. ASTM International (ASTM)

1. ASTM D412: Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension.
2. ASTM D2240: Standard Test Method for Rubber Property (Durometer Hardness).
3. ASTM D3389: Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform Abrader).
4. ASTM F925: Standard Test Method for Resistance to Chemicals of Resilient Flooring.
5. ASTM F1514: Standard Test method for Measuring Heat Stability of Resilient Flooring by Color Change.
6. ASTM F1515: Standard Test Method for Measuring Light Stability of Resilient Flooring by Color Change.
7. ASTM F2157: Standard Specification for Synthetic Surfaced Running Tracks
8. ASTM E303: Standard Test Method for Measuring Surface Frictional Properties
9. ASTM F2569: Standard Test Method for Evaluating the Force Reduction Properties of Surfaces for Athletic
10. ASTM E648: Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

C. EN European Committee for Standardization (EN)

1. EN 13036-4: Road and airfield surface characteristics. Test methods -the pendulum test for friction.
2. EN 14808: Surfaces for sports areas. Determination of shock absorption.
3. EN 14809: Surfaces for sports areas. Determination of vertical deformation.
4. EN 14810: Spike resistance (Tensile strength and elongation)
5. EN 12230: Elongation at break & tensile strength

D. GREENGUARD Environmental Institute (GEI)

1. GREENGUARD Certification: Compliant with stringent emission levels for over 360 VOCs, plus a limit on the total of all chemical emissions combined (TVOC).

E. REACH

1. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing European Chemicals Agency.

F. SVHC

1. Candidate List of substances of very high concern for Authorization (published in accordance with Article 59(10) of the REACH Regulation)

1.3 SYSTEM DESCRIPTION

- A. Performance Requirements: Prefabricated sport surface vulcanized in two layered construction, consisting of EPDM, natural rubber, mineral fillers, stabilizing agents, color pigments, and a non-permeable, textured wear resistant shock absorbing surface layer, bonded by vulcanization, 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. Post-consumer material - waste materials diverted from the waste stream after consumer or commercial use.
- C. Pre-consumer material - materials diverted from the waste stream during the manufacturing process. Excluded are regrind, rework, and scrap.
- D. Product Data: Submit product data, including manufacturer's guide specifications product sheet, for specified products.
- E. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors, patterns, and textures.
- F. Samples: Submit selection and verification samples for finishes, colors, and textures.
- G. Quality Assurance Submittals: Submit the following.
 1. 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.

2. Manufacturer's Field Reports: Manufacturer's field reports specified herein.

H. 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.
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 document indicating qualification.

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. Manufacturer's production process must be ISO 9001 and ISO 14001 certified
- C. Mock-Ups: Install job mock-up at project site 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 and 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: Store sports flooring rolls in original wrappings, and label intact until time of installation.
- D. Storage and Protection: The general contractor shall provide a secure, clean and dry storage location, which is protected from exposure to harmful weather conditions at 65 to 104 degrees F (18 to 40 degrees °C).
- E. Keep rolls well positioned in an upright position with pallet, and do not stack anything on top including stacking rolls on top of each other

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: Limited Warranty against manufacturing defects in material for a period of One (1) year from the date of purchase and a Ten (10) years Excessive Wear Period 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 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.

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:

A. KING ARTHUR INDUSTRIES CO., LTD.

Address: No.512, Chioufen Rd, Luntze Tsun, Yung-Ching Hsaing, ChangHua Hsien, Taiwan

TEL: +886-4-8223131 FAX: +886-4-8229956

2.2 DISTRIBUTOR (USA)

A. Ecore International

Address: 715 Fountain Ave. Lancaster, PA 17601 USA

TEL: 866-795-2732 Info@ecoreintl.com

2.3 PROPRIETARY PRODUCT(S)

1. OSSTRAX Rolls for indoor applications
2. OSSTRAX Rolls for outdoor applications
3. OSSTRAX-Elite Rolls for indoor applications
4. OSSTRAX-Elite Rolls for outdoor applications

(Continue to page below)

2.3.1 OSSTRAX Rolls for indoor applications

OSSTRAX Rolls for indoor applications Available in thicknesses of 8mm, 10mm, 13mm (WA certified track surface) Prefabricated sport surface vulcanized in two layered construction, consisting of EPDM, natural rubber, mineral fillers, stabilizing agents, color pigments, and a non-permeable, textured wear resistant, waffle-like shock absorbing surface layer bonded by vulcanization.					
			Thickness		
Test items	Test Methods	Requirements	8mm	10mm	13mm
Elongation at break	ASTM D412	≥40%	≥210%	≥210%	≥210%
Tensile Strength	ASTM D412	≥75psi	≥120psi	≥120psi	≥120psi
Hardness of wear layer	ASTM D2240	**	53±5	53±5	53±5
Hardness of backing	ASTM D2240	**	35±5	35±5	35±5
Abrasion resistance (H18,1KG,1000cycles)	ASTMD3389	≤2.0g	≤1.5g	≤1.5g	≤1.5g
Resistance of Chemicals	ASTMF925	≤Slight Change	No change	No change	No change
Color Heat stability	ASTMF1514	≤8.0ΔE	0.61	0.61	0.61
Color Light stability	ASTMF1515	≤8.0ΔE	1.74	1.74	1.74
Shock Absorption	ASTM F2569	>10%	23(±3)	28±3	38(±3)
Vertical deformation	ASTM F2157	<3.5mm	1.3(±0.3)	1.4(±0.3)	1.7(±0.3)
Friction (Dry)	ASTM E303	80~110	≥105	≥105	≥105
Spike resistance -Tensile strength - Elongation	EN14810	Not differ more than 20%	**	**	≤20%ΔTr% ≤20%ΔEb%
World Athletics certified surface	WA	Compliant	**	**	Certified
REACH SVHC items	REACH	Compliant	Compliant		
GREENGUARD Cert	GREENGUARD	Compliant	Compliant		
Critical Radiant Flux	ASTM E648	≥0.1w/cm2	Compliant		
Sum of 18 PAHs (Polycyclic Aromatic Hydrocarbons)	Af PS GS 2014:01	Not detected	Not detected		
Surface Finish	Manufacturer		Track embossing		
Roll Dimensions	Manufacturer		Width: 100cm to 140cm (3' 4" to 4' 7") Length: 6M to 15M (19' 8" to 49' 2.6")		
Roll Thicknesses	Manufacturer		8mm, 10mm, 13mm (WA certified track surface)		
Colors	Manufacturer		See catalogue		

2.3.2 OSSTRAX Rolls for outdoor applications

OSSTRAX Rolls for outdoor applications Available in thicknesses of 8mm, 10mm, 13mm (WA certified track surface) Prefabricated sport surface vulcanized in two layered construction, consisting of EPDM, natural rubber, mineral fillers, stabilizing agents, color pigments, and a non-permeable, textured wear resistant, waffle-like shock absorbing surface layer bonded by vulcanization.					
			Thickness		
Test items	Test Methods	Requirements	8mm	10mm	13mm
Elongation at break	ASTM D412	≥40%	≥190%	≥210%	≥210%
Tensile Strength	ASTM D412	≥75psi	≥120psi	≥120psi	≥120psi
Hardness of wear layer	ASTM D2240	**	43±5	43±5	43±5
Hardness of backing	ASTM D2240	**	33±5	32±5	34±5
Abrasion resistance (H18,1KG,1000cycles)	ASTMD3389	≤2.0g	≤1.3g	≤1.3g	≤1.3g
Resistance of Chemicals	ASTMF925	≤Slight Change	No change	No change	No change
Color Heat stability	ASTMF1514	≤8.0ΔE	0.61	0.61	0.61
Color Light stability	ASTMF1515	≤8.0ΔE	1.74	1.74	1.74
Shock Absorption	WA(EN14808)	35~50%	25(±3)	30(±3)	38(±3)
Vertical deformation	WA(EN14809)	0.6~2.5mm	1.3(±0.3)	1.6(±0.3)	1.9(±0.3)
Friction (Dry) (wet)	WA(EN13036-4)	≥80 ≥47 or 0.5u	≥100 ≥47	≥100 ≥47	≥100 ≥47
Elongation at break	WA (EN12230)	≥40%	≥190%	≥190%	≥190%
Tensile Strength	WA (EN12230)	≥0.4Mpa	≥0.6	≥0.6	≥0.6
Spike resistance -Tensile strength - Elongation	EN14810	not differ more than 20%	**	**	≤20%ΔTr% ≤20%ΔEb%
REACH SVHC items	REACH	Not detected	Not detected		
Sum of 18 PAHs (Polycyclic Aromatic	Af PS GS 2014:01	Not detected	Not detected		
Synthetic surfaces requirements for outdoor sports areas	EN14877	Compliant	**	**	Compliant
World Athletics certified surface	WA	Compliant	**	**	Certified
Surface Finish	Manufacturer		Track embossing		
Roll Dimensions	Manufacturer		Width: 100cm to 140cm (3' 4" to 4' 7") Length: 6M to 15M (19' 8" to 49' 2.6")		
Roll Thicknesses	Manufacturer		8mm, 10mm, 13mm (WA certified track surface)		
Colors	Manufacturer		See catalogue		

2.3.3 OSSTRAX-Elite Rolls for indoor applications

OSSTRAX-Elite Rolls for indoor applications Available in thicknesses of 8mm, 10mm, 13.5mm (WA certified track surface) Prefabricated sport surface vulcanized in two layered construction, consisting of EPDM, natural rubber, mineral fillers, stabilizing agents, color pigments, and a non-permeable, textured wear resistant, waffle-like shock absorbing surface layer bonded by vulcanization.					
			Thickness		
Test items	Test Methods	Requirements	8mm	10mm	13.5mm
Elongation at break	ASTM D412	≥40%	≥250%	≥250%	≥250%
Tensile Strength	ASTM D412	≥75psi	≥190psi	≥190psi	≥190psi
Hardness of wear layer	ASTM D2240	**	53±5	53±5	53±5
Hardness of backing	ASTM D2240	**	35±5	35±5	35±5
Abrasion resistance (H18,1KG,1000cycles)	ASTMD3389	≤2.0g	≤1.5g	≤1.5g	≤1.5g
Resistance of Chemicals	ASTMF925	≤Slight Change	No change	No change	No change
Color Heat stability	ASTMF1514	≤8.0ΔE	0.61	0.61	0.61
Color Light stability	ASTMF1515	≤8.0ΔE	1.74	1.74	1.74
Shock Absorption	ASTM F2569	>10%	23(±3)	28±3	38(±3)
Vertical deformation	ASTM F2157	<3.5mm	1.3(±0.3)	1.4(±0.3)	2.1(±0.3)
Friction (Dry)	ASTM E303	80~110	≥105	≥105	≥105
Critical Radiant Flux	ASTM E648	≥0.1w/cm2	Compliant	Compliant	Compliant
Spike resistance -Tensile strength - Elongation	EN14810	Not differ more than 20%	**	**	≤20%ΔTr% ≤20%ΔEb%
REACH SVHC items	REACH	Not detected	Not detected		
Sum of 18 PAHs (Polycyclic Aromatic Hydrocarbons)	Af PS GS 2014:01	Not detected	Not detected		
GREENGUARD Certification	GREENGUARD	Compliant	Compliant		
Surface finish	Manufacturer		Track embossing		
Roll Dimensions	Manufacturer		Width: 100cm to 140cm (3' 4" to 4' 7.") Length: 6M to 15M (19' 8" to 49' 2.6")		
Roll Thicknesses	Manufacturer		8mm, 10mm, 13mm (WA certified track surface)		
Colors	Manufacturer		See catalogue		

2.3.4 OSSTRAX-Elite Rolls for outdoor applications

<p style="text-align: center;">OSSTRAX-Elite Rolls for outdoor applications</p> <p style="text-align: center;">Available in thicknesses of 8mm, 10mm, 13.5mm (WA certified track surface)</p> <p style="text-align: center;">Prefabricated sport surface vulcanized in two layered construction, consisting of EPDM, natural rubber, mineral fillers, stabilizing agents, color pigments, and a non-permeable, textured wear resistant, waffle-like shock absorbing surface layer bonded by vulcanization.</p>					
			Thickness		
Test items	Test Methods	Requirements	8mm	10mm	13.5mm
Elongation at break	ASTM D412	$\geq 40\%$	$\geq 190\%$	$\geq 190\%$	$\geq 190\%$
Tensile Strength	ASTM D412	$\geq 75\text{psi}$	$\geq 120\text{psi}$	$\geq 120\text{psi}$	$\geq 120\text{psi}$
Hardness of wear layer	ASTM D2240	**	43(± 3)	45(± 3)	45(± 3)
Hardness of backing	ASTM D2240	**	33(± 3)	32(± 3)	32(± 3)
Abrasion resistance (H18, 1KG, 1000cycles)	ASTMD3389	$\leq 2.0\text{g}$	$\leq 1.2\text{g}$	$\leq 1.2\text{g}$	$\leq 1.2\text{g}$
Resistance of Chemicals	ASTMF925	$\leq$ Slight Change	No change	No change	No change
Color Heat stability	ASTMF1514	$\leq 8.0\Delta E$	0.61	0.61	0.61
Color Light stability	ASTMF1515	$\leq 8.0\Delta E$	1.74	1.74	1.74
Shock Absorption	WA (EN14808)	35~50%	25(± 3)	30(± 3)	39(± 3)
Vertical deformation	WA (EN14809)	0.6~2.5mm	1.3(± 0.3)	1.6(± 0.3)	2.2(± 0.3)
Friction (Dry)	WA (EN13036-4)	≥ 80	≥ 100	≥ 100	≥ 100
(Wet)		≥ 47	≥ 47	≥ 47	≥ 47
Elongation at break	WA (EN12230)	$\geq 40\%$	$\geq 190\%$	$\geq 190\%$	$\geq 190\%$
Tensile Strength	WA (EN12230)	$\geq 0.4\text{Mpa}$	≥ 0.8	≥ 0.8	≥ 0.8
REACH SVHC items	REACH	Not detected	Not detected		
Sum of 18 PAHs (Polycyclic Aromatic Hydrocarbons)	Af PS GS 2014:01	Not detected	Not detected		
Surface finish	Manufacturer		Track embossing		
Roll Dimensions	Manufacturer		Width: 100cm to 140cm (3' 4" to 4' 7.") Length: 6M to 15M (19' 8" to 49' 2.6")		
Roll Thicknesses	Manufacturer		8mm, 10mm, 13mm (WA certified track surface)		
Colors	Manufacturer		See catalogue		

2.4 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted

2.3 RELATED MATERIALS

- B. Related Materials: Refer to other sections listed in Related Sections paragraph herein for related materials.

2.4 SOURCE QUALITY

- C. Source Quality: Obtain Prefabricated sport surface vulcanized in two layered construction, consisting of EPDM, natural rubber, mineral fillers, stabilizing agents, color pigments, and a non-permeable, textured wear resistant shock absorbing surface layer, bonded by vulcanization 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. Comply with manufacturer's technical documents for installation and maintenance procedures for flooring product.
- 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 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.

3.6 PROTECTION

- A. Protection: Protect installed product and finish surfaces from damage during construction.

3.7 SCHEDULES

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

END OF SECTION