SECTION 02791 - PLAYGROUND SURFACE SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 WORK INCLUDED

A. This Work includes furnishing and installing the SAF DEK safety surface.

1.3 DESCRIPTION OF SYSTEM AND GENERAL CONDITIONS

A. SAF DEK shall be poured in place and troweled to provide for a resilient, seamless rubber surface installed over the specified base. The surfacing manufacturer shall be responsible for all labor, materials, tools, equipment, and applicable taxes to perform all work and services for the installation of the surface. the surface shall be stable and slip-resistant to comply with all requirements set forth in the Americans with Disabilities Act.

1.4 QUALITY ASSURANCE

A. Test Results:

1. Impact Attenuation - ASTM F1292-00 and ASTM F1292-96: Impact attenuation test results will be provided to the Owner or Owner's representative. These test results shall be certified an submitted on the letterhead of an independent testing lab. impact attenuation test results shall meet or exceed Consumer Product Safety Commission Guidelines for impact attenuation (G-max and Head Injury Criteria, "H.I.C."). Both test results must be administered and evaluated under the same test, and these results must be shown for 3 drops at each required temperature, 32 degrees F, 72 degrees F, and 120 degrees F; yield less than 200 G's and less than 1,000 H.I.C. The impact site must be performed on the "worst case scenario" area of the sample tested. Testing laboratory must be certified to meet calibration program requirements of MIL-STD-45662A. Test report must state the base tested for this product.
2. Accessibility of Surface Systems - ASTM F1951-99: All playground surfacing products must pass testing to ensure wheelchair access under and around playground equipment as required by the Americans with Disabilities Act.
3. Coefficient of Friction - ASTM D2047-82: All products must meet a minimum standard on coefficient of friction of 0.9 wet, 1.0 dry. No exceptions will be made to this requirement, in an effort to ensure ample slip-resistant conditions.
4. Permeability: Product shall meet or exceed a coefficient of permeability of five feet per minute. NOTE: From a geotechnical standpoint, the permeability of a material is a measure

of the velocity at which water will flow through the void spaces or pores under a given hydraulic gradient. The product shall handle a minimum of eight inches of rainfall per hour.

5. Flammability of Finished Floor Cover - ASTM D2859: Product shall pass flammability.
6. UPITT Test for Combustion Product Toxicity: Product shall pass the Pittsburgh Protocol Test for toxicity. The passing result is that the product is considered no more toxic than wood.
7. Tensile Strength - ASTM D412-87 and Tear Resistance - ASTM D624-86: This test indicates a product's ability to stretch, and how far it will stretch before it breaks. Test result must be a minimum of tensile strength = 60 psi, and percent elongation at break - 40 (140 percent of original size).
8. To assure compliance with 1, 2, 3, 4, 5, 6, and 7 above, installation shall be provided by the manufacturer, No Fault Industries, MANUFACTURER SHALL BE THE INSTALLER.

B. Contractor Prequalifications: A list of 50 surfacing projects completed with a similar product within the last 8 years. The list shall include names of project representatives and respective telephone numbers. At least 20 of these projects must be at least 5 years old. This list shall also contain projects which require the same level of difficulty, size of project, type of project, e.g., color transitions and special graphics. These 50 projects shall have been contracted and installed by the company bidding the job.

C. Manufacturer's Assurance:

1. A cashier's check or proposal bond, executed by a reliable surety company authorized to do business in the State of Kansas, in the amount of 20 percent of the total of the entire Bid must accompany the Bid proposal. Bids without cashier's check or proposal bond will not be considered. All Bidders shall be prepared to submit a performance bond for their work.
2. All Bidders must also submit Material Safety Data Sheets (MSDS) and Product Data Sheets on all materials.

D. Insurance Requirements: All Bidders must carry minimum insurance of $1,000,000 general liability; $1,000,000 product liability, and $6,000,000 excess liability.

1.5 COLOR EPDM MATERIALS (TOP CAP/WEARING SURFACING)

A. All EPDM cap materials will be peroxide-cured rubber.

1.6 SUBMITTALS

A. Any alternate product must be submitted with prior approval packages a minimum of 10 days prior to Bid Date. Submittal packages shall include but not be limited to:

1. Reference list per all of the requirements of Contractor prequalifications.
2. Two samples measuring 1' x 1' x 2" thickness with tapered edges.
3. A written guarantee from manufacturer of the proposed product against all defects in material and/or workmanship.
4. Impact attenuation (per fall height requirements and depth specified), accessibility of surface systems, coefficient of friction, permeability, flammability, toxicity and tensile strength test results from independent approved and certified testing laboratories.

5. Proof of specified insurance requirements.
6. MSDS and Product Data Sheets.

1.7 WARRANTY

A. SAF DEK safety surface shall be warranted for labor and materials for a period of no less than three years. Written warranty must be submitted by the surface manufacturer.

1.8 APPROVED MANUFACTURER/INSTALLER

A. No Fault Industries, Inc., 11325 Pennywood Avenue, Baton Rouge, LA 70809, (800) 232-7766.

B. Any product or surfacing manufacturer which has not met the prior approval requirements of this section shall not be approved.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Polyurethane Primer and Binder: 100 percent single component polyurethane binding agent - methylene dephenyl isocyanate (MDI) based binder.

B. Poured Cap: EPDM pigmented synthetic rubber granules (1 to 3 mm peroxide cured) with a minimum EPDM content of 25 percent by weight and certified letter from manufacturer stating this content. STRAND, SHAVED, CHIPPED OR SHREDDED RUBBER IS NOT ACCEPTABLE IN THE POURED CAP.

C. Impact Course: SBR or EPDM select rubber. The impact layer is to be a precise combination of recycled black rubber and polyurethane binder.

PART 3 - EXECUTION

3.1 BASE REQUIREMENTS

A. The base shall have the specific minimum slope (2 percent) and shall vary no more than ⅛-inch when measured in any direction with a 10-foot straightedge. Asphalt base shall be allowed to cure a minimum of 14 days and new concrete shall be allowed to cure a minimum of 7 days prior to commencement of surfacing.

3.2 PREPARATION

A. Scheduling: SAF DEK shall be installed after the playground equipment is installed and after the subsurface is ready to receive SAF DEK. The temperature should be 40 degrees and rising during the installation of the surface.

B. Cleaning: The entire subsurface shall be clean, dry and free from any foreign and loose material.

3.3 INSTALLATION

A. Thickness: Total depth of the surface shall be two inches. Surface thickness will vary in the impact course according to fall height. The Architect or Owner's representative should contact the equipment manufacturer to determine exact fall height requirements. Review SAF DEK fall height chart for correct total depth of surface.

B. Impact Course: The 1⅝-inch impact course must be composed of recycled rubber and be free of foreign matter. The impact course will be poured in place by means of screening and hand-troweled to maintain a seamless application. All rubber in the impact course will be of a select quality and consistent blend of recycled rubber sizings to achieve maximum porosity and minimum residue. Rubber quality and sizings will be reviewed during the submittal process. Installation method shall use a measured screed rod 1/16-inch thicker than the required depth.

C. Poured Cap: The ⅜-inch minimum poured cap material shall be composed of EPDM granular rubber only. The cap will have a minimum weight of 2.2 pounds per square foot. The cap will be poured in place by means of screening and hand-troweled to maintain a seamless application. All rubber shall remain consistent in gradation and size. COLOR TINTED BINDER WILL NOT BE ALLOWED. Installation method shall use a measured screed rod 1/16-inch thicker than the required depth.

D. Edges: Surface edges shall be flush with edge of adjacent area or tapered to provide safe transition. Surface shall be sloped to drain as indicated on Plans.

E. Large Areas: All areas in excess of 2,000 square feet or that require adjacent color pours will have a cold joint or seam due to the nature of the installation process. Although seldom visible, large areas or adjacent colors require the SAF DEK material to be installed on separate days.

3.4 PROTECTION

A. Surface installation crew shall be responsible for the protection of SAF DEK surface during the installation process. Owner or General Contractor shall be responsible for the protection of the surface during the curing period upon completion of the installation.

3.5 COLOR

A. The color of SAF DEK will be 50 percent tan/50 percent black.

END OF SECTION 02791