SECTION 32 18 16

RESILIENT SURFACING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. The requirements of the Standard Specifications for Public Works Construction (SSPWC), latest edition, Parts 2 through 6, apply to this project and are incorporated herein by this reference. Part 1 is specifically excluded.

B. Drawings, project manual, and general provisions of the Contract, including, without limitation, General Conditions of the Contract, additional General Conditions of the Contract, and Division 1 specification sections, apply to this section.

C. Reference Standards:
A Handbook for Public Playground Safety as prepared by the U.S. Consumer Product Safety Commission.
ASTM F1487-93 Standard Consumer Safety Performance Specifications for Public Use Playground Equipment.
The provisions of the Federal Consumer Products Safety Commission (CPSC) guidelines for impact attenuation under playground equipment.
The provisions of the Americans with Disabilities Act of 1990 for accessibility to play area equipment.

1.02 SCOPE

A. The Work of this Section shall consist of furnishing all labor, materials, equipment, appliances and services necessary for the execution and completion of all Resilient Surfacing Work as shown on the Plans and as described in the Specifications including, but not necessarily limited to, the following:
1. Analysis of maximum fall-height for as-built play equipment;
2. Design of resilient surfacing thickness;
3. Excavation, grading and compaction of subgrade;
4. Placement and compaction of aggregate base;
5. Installation of resilient surfacing system;
6. Coordination with Work of other Sections;
7. Testing;
8. Clean-up;
9. Replacements, Repairs, Guarantees and Warranty Work.

1.03 QUALITY ASSURANCE

A. Prior to the start of any Work of this Section, Contractor shall arrange a meeting at the job site with the following representation:
1. Prime Contractor
2. Resilient Surfacing Installer
3. Play Equipment Installer
4. City Representative
5. Project Architect

B. The purpose of this meeting is to verify the suitability of the site to accept Work of this Section and to assure a high quality installation. Surfacing installer shall have a minimum of three years experience in this type of work.

C. The resilient surfacing as installed shall meet or exceed the Consumer Product Safety Commission's guidelines for shock absorbency materials used under play structures, and shall comply with the provisions of the Americans with Disabilities Act of 1990 with respect to accessibility standards.

1.04 RELATED WORK

A. 11 68 13 Play Equipment

B. 31 22 19 Site Grading

1.05 GUARANTEE

A. The resilient surfacing product manufacturer shall guarantee against defects in materials and workmanship for a minimum period of two (2) years, excluding acts of vandalism, nature or war.

1.06 SUBMITTALS

A. Color Samples: 6” x 6” minimum color samples of the resilient surfacing shall be submitted at the preconstruction meeting for the review and approval of the City representative and the Landscape Architect.

B. Qualifications: Submit certificate of qualifications of the playground surfacing installer.

C. Shop Drawings: Per sub-section 3.02 Analysis and Design, following herein, Shop Drawings shall be submitted to the City representative for review, together with a written report to document compliance with the CPSC Guidelines, all prior to installation of the product.

D. Maintenance Manuals: At the end of the project, but prior to final acceptance, Manufacturers product description, warranty, installation instructions, Shop Drawings, recommendations for resilient surfacing maintenance, etc., shall be submitted together in a loose leaf binder format for City representative review, approval, and use in maintaining the surfacing.

E. Documentation of Inspection and Certification: Per sub-section 1.07 Inspections & Testing, following herein, documentation of inspection and certification shall be submitted no later than the start of the Final Acceptance Inspection.

1.07 INSPECTIONS & TESTING

A. Prior to Final Acceptance of the Project, inspection and certification shall be obtained from the surfacing manufacturer, surfacing installer, and play equipment manufacturer, and shall be provided to the City Representative. The certifications shall attest to the adequate and proper installation of the finished product.

PART 2 - MATERIALS

2.01 QUALITY ASSURANCE

A. Products used in the Work of this Section shall be produced per the following subsection, Subsection 2.03 Resilient Surfacing.

2.02 RESILIENT SURFACING

A. Approved Products:
   1. Preferred: SpectraPour poured in place rubber surfacing as manufactured by Spectraturf, Inc. and available from Rec West, (818) 735-3838.
   2. Approved Alternate: Pro-Tect Turf pour in place surfacing by T.J Janca Construction, Inc. (888) 272-1191.
   3. Approved Alternate: No Fault Safety Surface as manufactured and sold by No Fault Group, LLC., (866) 637-7678.
   4. Approved Alternate: TotTurf EPDM, manufactured and installed by Robertson Recreational Surfaces, a PLAYCORE company, (800) 858-0519.

B. The surfacing shall be a poured-in-place type of safety surface for use as a resilient, shock absorbing cushion under playground equipment. It shall be porous throughout, entirely seamless, and create a tight seal around the play equipment. The surfacing shall consist of a two (2) layer system with a soft cushion layer covered by a durable, weather resistant, colored wearing layer as follows:
   1. Cushion Course: Two (2) types of shredded SBR Rubber particles held in place by a polyurethane binder applied to 100% of the particles. Particle type one: 1 mm - 4 mm cubical; Particle type two: .5 mm - 2 mm in thickness by .25 cm - 2 cm in length strand. The cushion course shall be a precise three component part mixture of these type SBR Rubbers and the polyurethane binder with a minimum installed thickness of 1 5/8" or greater as necessary to achieve the safety standards defined by the Federal Consumer Product Safety Commission guidelines.

   2. Wearing Course: EPDM Rubber granules, 1 mm - 4 mm chipped, held in place by a polyurethane binder applied to 100% of the granules. The wearing course shall be a precise two component part mixture of the full color EPDM rubber granules and the polyurethane binder with a minimum installed thickness of 3/8".

   3. Weed Control Blanket: Shall be a polypropyline fabric as provided by the resilient surfacing manufacturer.

   4. Quality Control: In order to provide consistent quality control during installation, all component parts (ingredients of the surfacing mix) are to be pre-measured and sealed in individual containers for delivery to the job site.

   5. Aliphatic urethane binder is to be used as recommended by the manufacturer.

2.04 COLOR

C. Custom mix surface colors shall be as shown on the Construction Plans.

PART 3 - EXECUTION

3.01 QUALIFICATIONS OF INSTALLERS

A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

3.02 ANALYSIS AND DESIGN

A. Work of this Section shall not commence until after the installation of all concrete paving and play equipment structural members and foundations is complete. Once all deck heights, post top heights, slide top/canopy heights and swing frame heights are established, the Resilient Surfacing installer shall analyze the maximum potential fall-heights presented by the "as-built" equipment installation and shall design the thickness of the resilient surfacing system based upon the "as-built" conditions, to ensure the shock absorbency of the system meets or exceeds the standards for play and surfaces as defined by the Federal Consumer Product Safety Commission (CPSC) guidelines. Thickness of the resilient surfacing may be varied within the play area as a function of the various maximum potential fall-heights. Thickness of cushion course shall be a minimum of 1 5/8". A written report to document the analysis and design of the resilient surfacing, together with Shop Drawings identifying the limits of the various design thickness shall be prepared by the resilient surfacing installer and submitted to the City representative.

3.03 SUBGRADE PREPARATION BASE

A. After analysis and design of the resilient surfacing thickness, Contractor shall prepare the play area subgrade in accordance with Section 301-1.2 Preparation of Subgrade of the Standard Specifications as described for installation of untreated base. Compact to 90% relative compaction, tolerance to be a variance of not more than 1/2" from the grades specified by the analysis and design.

3.04 FINISH OF SURFACING

A. The wearing course shall be hand troweled to produce an even, uniform surface. Surface "Sheet" drainage shall be provided as shown on the Plans. The surfacing installer shall adhere to manufacturer's instructions. The manufacturer's representative shall be present during installation and shall provide the City representative with written certification that the product has been installed in accordance with the manufacturer's recommendations.

3.06 CLEAN UP

A. After completion of the Work of this Section, remove all debris; clean-up all spills of material from surfaces; and keep the play area surfacing in a clean condition until accepted by the City representative.

END OF SECTION 32 18 16