# SECTION 32 18 23.53
# TENNIS COURT SURFACING

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Textured acrylic surfacing for concrete tennis courts and similar play areas.

B. Court marking for tennis courts.

### 1.02 RELATED REQUIREMENTS

A. See Section 01 74 19 - Construction Waste Management and Disposal.

B. Section 11 68 33 - Athletic Field Equipment11 68 23.33 - Tennis Equipment: Net and support posts.

C. Section 32 01 17 - Asphalt Pavement Repair.

D. Section 32 13 13 - Concrete Paving: Concrete pavement. General requirements for portland cement concrete materials, including admixtures and curing materials

E. Section 32 17 23.13 - Painted Pavement Markings: Court marking for tennis courts.

F. Section 32 31 13 - Chain Link Fences and Gates: Perimeter fencing and windscreen.

### 1.03 REFERENCE STANDARDS

A. NFHS (Guide) - Court and Field Diagram Guide; current edition.

B. USTA (Tech. Specs) - United Sates Tennis Association Technical Specifications; Current.

C. American Concrete Institute (ACI)

D. United States Tennis Association (USTA)

E. International Tennis Federation (ITF)

F. American Sport Builders Association (ASBA)

### 1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

### 1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer specifications for components, color chart and installation instructions..

C. Certificate: Certify that products of this section meet or exceed specified requirements.

1. ITF classification certificate for the system to be installed

D. Installer's Qualification Statement.

1. Reference list from the installer of at least 5 projects of similar scope done in each of the past 3 years.

E. Field Quality Control Submittals:

1. Batch number of each product used.
2. Upon request, an estimate of the volume of each product to be used on the site.

F. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

**1.06 QUALITY ASSURANCE**

A. Single Source Responsibility: Provide products by the same manufacturer.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

1. System manufacturer shall provide documentation that the surface to be installed has been classified by the ITF as a medium pace surface.
2. System manufacturer shall be a US owned company.
3. System manufacturer shall be a member of the ASBA.

C. Installer Qualifications: Tennis Court Constructor's Company specializing in performing the work of this section and approved by manufacturer.

1. Acrylic Surfacing Installer's Qualifications: Company specializing in installation of exterior recreational surfacings, with minimum of five years of documented experience and approved by surfacing products manufacturer.
   a. Installer shall be a builder member of the ASBA.

D. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document that prescribes execution requirements.

**1.07 MOCK-UP**

A. Provide court surfacing mock-up, 6 feet long by 6 feet wide, illustrating complete system including striping.

B. Locate where directed.

C. Mock-up may not remain as part of the Work.

**1.08 DELIVERY, STORAGE, AND HANDLING**

A. Deliver products to project site in original unopened containers with proper labels attached.

B. Store materials under cover and elevated above grade; in accordance with manufacturer specifications and MSDS.

C. All surfacing materials shall be non flammable.

**1.09 FIELD CONDITIONS**

A. Ambient Conditions: Do not install coating system when rainfall in imminent or extremely high humidity prevents drying.

B. Ambient Conditions: Do not apply coating system unless surface and air temperature are 50°F and rising.

C. Surface Conditions: Do not apply coating system if surface temperature is in excess of 140°F.

### 1.10 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a one year period after Date of Substantial Completion.

## PART 2 PRODUCTS

### 2.01 MANUFACTURER

A. Basis of Design Product: Plexipave System as manufactured by California Sports Surfaces, or approved equal.

B. Manufacturers:

1. California Sports Surfaces; Plexipave System: www.californiasportsurfaces.com
2. NovaSports USA ; Novacrylic: www.novasports.com.
3. California Sports Surfaces; DecoTurf: www.californiasportssurfaces.com

C. Substitutions: See Section 01 60 00 - Product Requirements.

### 2.02 COATING SYSTEM:: PLEXIPAVE SYSTEM.

A. Product: Acrylic Coating system over concrete with cushion.

B. ITF System Rating: 3 - Medium.

C. System Description:

1. Engineered acrylic surfacing system for tennis courts.
2. System Design: Suitable for medium court speed and allow moisture vapor to pass through from substrate.

### 2.03 MATERIALS

A. Components: Manufacturer to determine to suit Project requirements, including:

1. Patching Mix: For use in patching cracks, holes, depressions and other surface imperfections.
   a. Basis of Design Product: California Court Patch Binder as manufactured by California Products Corp., or approved equal.
      1) 100% acrylic resin blended with Portland Cement and silica sand.
      2) Percent solids by weight (minimum): 46%
      3) Weight: 8.7-8.9 lbs./gallon
2. Crack Filler: For use in filling fine cracks.
   a. Basis of Design Product: Plexipave Crack Filler as manufactured by California Products Corp., or approved equal.
      1) 100% acrylic resin heavily filled with sand.
      2) Percent solids by weight (minimum): 85%
      3) Percent solids by weight (minimum): 15 lbs./gallon
3. Acrylic Filler Course: For use as a filler for new or existing concrete surfaces.
   a. Blend 100% acrylic filler on-site with approved silica sand.

b. Basis of Design Product: California Acrylic Resurfacer as manufactured by California Products Corp., or approved equal.
   1) 100% acrylic resin (no vinyl copolymerization constituent), containing not less than 3.5% attapulgite.
   2) Percent solids by weight (minimum): 26.7%.
   3) Weight: 8.7-8.9 lbs./gallon.

4. Cushion Base Coat - A course rubber filled material used to build depth and resilience.
   a. Product: Plexicushion Base Coat as manufactured by California Products Corp., or approved equal.
      1) Proprietary latex resin filled with 0.5-1.0 mm EPDM granule.
      2) Percent solids by weight (minimum): 43.4%
      3) Weight: 8.78 lbs./gallon

5. Cushion Finish Coat: A firm rubber and selected filler material to build density and resilience.
   a. Product: Plexicushion as manufactured by California Products Corp., or approved equal.
      1) Proprietary latex resin filled with a unique combination of rubber and select mineral filler.
      2) Percent solids by weight (minimum) 43.8%
      3) Weight 9.15 lbs./gallon

6. Coating: – 100% flexible acrylic coating filled with select silica.
   a. Product: Plexipave Grand Prix as manufactured by California Products Corp., or approved equal.

7. Acrylic Color Playing Surface: For use as the finish color and texture. Blend on-site to achieve the correct surface texture.
   a. Color: To be selected by Architect from full range.
   b. Basis of Design Product: Plexichrome/Plexipave Color Base as manufactured by California Products Corp., or approved equal.
      1) Plexichrome: 100% acrylic resin (no vinyl copolymerization constituent) with selected light fast pigments.
         (a) Percent solids by weight (minimum): 36.5%.
         (b) Weight: 10.0-10.2 lbs./gallon.
      2) Plexipave Color Base: 100% acrylic resin containing no vinyl copolymerization constituent. Contains rounded silica sand.
         (a) Rounded Silica Sand: Not more than 63%.
         (b) Percent solids by weight (minimum) 74%.
         (c) Weight 13.1-14.1 lbs./gallon.
   c. Alternative Product: Factory Fortified Plexipave as manufactured by California Products Corp., or approved equal.

8. Line Paint: Compatible with acrylic surfacing, color as indicated on the Drawings or, if not indicated, as selected by Architect. Lines shall be typically white.
   a. Color: White.
   b. Basis of Design Product: Plexicolor Line Paint as manufactured by California Products Corp., or approved equal.

1) 100% acrylic resin containing no alkyds or vinyl constituents.
2) Texturing shall be rounded silica sand.
3) Percent solids by weight (minimum): 60.5%.
4) Weight: 12-12.3 lbs./gallon.

9. Water - for use in dilution/mixing shall be clean and potable.

B. All surfacing materials shall be non-flammable and have a VOC content of not less than 100g./ltr. Measured by EPA method 24.

C. Local sands are not acceptable in the color playing surface. Sands must be incorporated at the manufacturing location to insure quality and stability.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

A. Verification of Conditions: .

1. Surfacing shall conform to the guidelines of the 1 for planarity.

**3.02 PREPARATION**

A. Clean surfaces of loose dirt, oil, grease, leaves, and other debris in strict accordance with manufacturer's directions.

1. Pressure washing will be necessary to adequately clean areas to be coated.
2. Any areas previously showing algae growth shall be treated with bleach or approved product to kill the organisms and then be properly rinsed.

B. Holes and cracks: Cracks and holes shall be cleaned and a suitable soil sterilant, as approved by the Owner. Apply to kill all vegetation 14 days prior to use of binder according to manufacturer's specifications.

C. Depression: Depressions holding enough water to cover a five cent coin piece shall be filled with binder patching mix.

1. Mix Ratio: 3 gallons of Court Patch Binder, 100 lbs. 60-80 silica sand, 1 gallon Dry Portland Cement (Type I).
2. This step shall be accomplished prior to the squeegee application of Acrylic Resurfacer.
3. The contractor shall flood all the courts and then allow draining.
4. Define and mark all areas holding enough water to cover a nickel.
5. After defined areas are dry, prime with tack coat mixture of 2 parts water/l part Court Patch Binder. Allow tack coat to dry completely.
6. Spread Court Patch Binder mix true to grade using a straight edge (never a squeegee) for strike off.
7. Steel trowel or wood float the patch so that the texture matches the surrounding area.
8. Never add water to mix. Light misting on surface and edges to feather in is allowed as needed to maintain work ability.
9. Allow to dry thoroughly and cure.

D. No Work beyond this stage shall be started until a manufacturer's representative and inspector has accepted the surface.

E. Filler Course:

1. Apply to the clean underlying surface in one application to obtain a total quantity of not less than .06 gallon per square yard based on the material prior to any dilution.
    a. Filler Course may be used to pre-coat depression and crack/hole repairs to achieve better planarity prior to filler course application.
2. Over a properly repaired surface of concrete on existing courts, apply one coat of Acrylic Resurfacer according to the following mix:

| | |
|---|---|
| Acrylic Resurfacer | 55 gallons |
| Water | 20 - 40 gallons |
| Sand | 600-800 pounds / 60-80 mesh |
| Liquid Yield | 112-138 gallons |

3. On new concrete, two coats of filler course may be used to properly fill all voids in the surface.
    a. Use clean, dry 50-60 mesh sand and clean, potable water to make mixes.
    b. Quantity of sand and water in the above mix may be adjusted within above limits to complement the roughness and temperature of the surface.
4. Mix the ingredients thoroughly using accepted mixing devices and use a 70 Durometer rubber bladed squeegee to apply each coat of Acrylic Resurfacer as required.
5. Allow the application of filler course to dry thoroughly.
    a. Scrape off all ridges and rough spots prior to any subsequent application of filler course.

**3.03 APPLICATION**

A. Install in accordance with manufacturer's instructions.

B. Cushion Underlayment:

1. Application of the cushion underlayment can begin after all surface preparation has been completed and it is thoroughly dry.
2. Blend base coat in a mechanical mixer to a uniform consistency.
    a. Dilute 4 parts material to 1 part water.
3. Apply base coat in not less than three applications to obtain an average application rate of .22 gal./sy. per application. Application may be made by 50 durometer squeegee on an approved air diaphragm pump with surge suppression.
4. Take care to not allow ridges or puddles to form during application. Correct defects prior to the application of Plexicushion.
5. After the base coat has thoroughly dried, begin the application of cushion underlayment.
6. Blend cushion underlayment in a mechanical mixer to a uniform consistency.
    a. Dilute 4 parts material to 1 part water.

7. Apply cushion underlayment by a 50 durometer squeegee. Be careful not to leave ridges.
8. Apply cushion underlayment in not less than three applications at an average application rate of .11 gal per square yard.
9. Allow cushion underlayment final coat to dry for minimum 6 hours in good weather conditions.
10. Apply the first coat of acrylic color playing surface.
    a. After the application has thoroughly dried, lightly sand surface with a mechanical sander.

C. Acrylic Color Playing Surface:

1. All areas to be color coated shall be clean, free from sand, clay, grease, dust, salt or other foreign matters. Contractor shall obtain the Architect's approval, prior to applying any surface treatment.
2. Blend color base and Plexichrome with a mechanical mixer to achieve a uniform Fortified Plexipave mixture. The mix shall be:

| | |
|---|---|
| Color Base: | 30 gallons |
| Plexichrome: | 20 gallons |
| Water: | 20 gallons |

3. Application shall be made by 50 durometer rubber faced squeegees. The Fortified Plexipave mixture should be poured on to the court surface and spread to a uniform thickness in a regular pattern.
4. A total of 3 applications of Fortified Plexipave shall be made to achieve a total application rate of not less than .15 gal./sy.
    a. No application should be made until the previous application is thoroughly dry.

**3.04 LINE PAINTING**

A. Line shall be 2 inches wide unless otherwise noted on the drawings.

B. Layout lines carefully in compliance with NFHS (Guide) and USTA (Tech. Specs) guidelines.

C. Tape area to be marked to insure a crisp line.

D. Line Paint Texture: Similar to the surrounding play surface.

E. Application: Brush or roller at the rate of 150-200 sg./gal. (3/4 gal. per tennis court).

**3.05 TOLERANCES**

A. Surfacing shall conform to the guidelines of the USTA (Tech. Specs) for planarity.

**3.06 FIELD QUALITY CONTROL**

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. The Contractor shall record the batch number of each product used on the site and maintain it through the warranty period.

C. The Contractor shall provide the inspector, upon request, an estimate of the volume of each product to be used on the site.

D. Provide manufacturer's field representative to observe and resolve material questions..

**3.07 CLEANING**

A. Remove all containers, surplus materials and debris. Dispose of materials in accordance with local, state and Federal regulations.

B. Leave site in a clean and orderly condition.

C. See Section 01 74 19 - Construction Waste Management and Disposal for additional requirements.

**3.08 PROTECTION**

A. Protect installed surfacing from subsequent construction operations.

B. Do not permit traffic over unprotected surface.

**3.09 COLOR SCHEDULE**

A. Exact colors to be approved by Architect.

B. Inbound Area: Green.

C. Out of Bounds: Red.

D. Line Marking: White.