



*Scope: This specification is intended for use as a guideline for the construction of a new tennis court on a crushed aggregate, laser graded base, finished with a cushioned grass court surface using the unique Nova'ProAdvantaget XP system.*

## SECTION 02542



### **NOVA'PROADVANTAGE XP TENNIS SURFACE NEW CONSTRUCTION – CRUSHED ROCK BASE**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

A. This section includes and is not limited to:

1. Construction of a Nova'ProAdvantage XP monolithic pavement ACushionCourt@ tennis court consisting of a grass-like network of tufted, polyethylene, ultraviolet resistant fibers interlocked with select aggregates and an eco-friendly cushioned backing.
2. Crushed rock base, laser graded and stabilized.
3. Tennis net posts, foundations and anchor straps.
4. Brick or concrete block curbing.
5. Sub grade preparation.

##### **1.02 QUALITY ASSURANCE**

- A. The Nova'ProAdvantage XP tennis surface shall be constructed by an approved installer certified by NGI Sports'(NGI). The Nova'ProAdvantage XP system shall meet manufacturing specifications set up for same.
- B. All material shall be clearly marked.
- C. Material shall not be installed when rain is imminent or the temperature is below 40°F.
1. The installation of the Nova'ProAdvantage XP system shall be completed in dry weather.
  2. Neither surface nor aggregates may be moist or wet.
  3. Fabrication should be done in dry weather with the temperature above 40°F and rising.

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### 1.03 WARRANTY

- A. Materials shall have a minimum limited warranty supplied by the manufacturer.
- B. Contractor to provide {Owner} {Architect} {Landscape Architect} {Engineer}, upon completion of warranty application, written warranty at completion of project in accordance with Section {01700} {01740} of the Project Manual.

## PART 2 - PRODUCTS

### 2.01 SURFACING SYSTEM FOR TENNIS

A. The Nova'ProAdvantage XP turf system shall consist of artificial fibers that shall meet the following minimum specifications:

1. Tufting Construction	ASTM D418
2. Breaking Elongation	124%, ASTM D1682
3. Breaking Load	181 lbs., ASTM D1682
4. Grab Tear Strength	100 lbs., ASTM D1682
5. Seam Tensile Strength	55lbs./inch, minimum
6. Melting Point	334.4°F, ASTM D789
7. Flame Test	Pass, ASTM E108
8. Fiber System	Fibrillated Polyethylene
9. Pile Height	.625 inches
10. Primary Backing	Dual Polyester
11. Back Coating	Natural Urethane
12. Secondary Backing	Urethane Foam
13. Line System	Sportline
14. Infill	3.5 lbs psft.

- B. The color shall be Irish Green or French Red and all fibers in each roll applied to the tennis court shall be from the same dye lot.
- C. White lines are tufted in place at the manufacturing plant (Sportline System). Refer to product installation guideline to determine application.
- D. Turf surfacing materials can be perforated during production to assist in court drainage and in the prevention of moss/algae growth on surface.
- E. Granular Fill (XP-TexFill) Material Options.
  - a. Option 1 – Specially selected light weight, graded and shaped granules in colors of Rubico Green or French Red shall be filtered into the fibers at the rate of 3.5 lbs psft as required by the manufacturer’s detailed specifications.
  - b. Option 2 – Special Blend Topdressing. A base layer of selected grade and shape sub-angular sand is filtered into the fibers at a rate of 3.25 lbs psft. This base layer is covered with a special blend of Rubico Green or French Red topdressing at a rate of .4 lbs psft.

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- c. Option 3 – Specially selected grade and shape sub-angular sand granules shall be filtered into the fibers at a rate of 3.5 lbs psft as required by the manufacturer’s detailed specifications.

- F. Seams: Weather resistant polyester tape and one component moisture cured urethane adhesive as recommended by system manufacturer.

**BASE MATERIALS**

**2.02 ROCK BASE**

A. Minimum 4" aggregate base with 1" to 2" layer of stone dust screening blended with optional stabilizer added for the leveling course and 2 mm separation/stabilization pad constructed on a prepared sub grade per plans and specifications.

B. Minimum 4" crushed stone rock base shall be used.

1. Materials for the crushed stone base may be a combination of crushed stone, crushed or uncrushed sand gravel, limestone gravel, or other locally qualified binder materials approved by the {Owner} {Architect} {Landscape Architect} {Engineer}.

2. These materials shall be thoroughly mixed to ensure the final product will have a uniform grading and plasticity.

3. Stone dust screenings shall conform to local specification for construction and the following:

a. Retained on the 3/8"(9.5mm) sieve	-0- %
b. Retained on the No. 4 (4.75mm) sieve	0-5%
c. Retained on the No. 8 (2.36mm) sieve	0-15%
d. Retained on the No. 16 (1.18mm) sieve	15-50%
e. Retained on the No. 30 (600mm) sieve	40-75%
f. Retained on the No. 50 (300mm) sieve	70-90%
g. Retained on the No. 100 ( 150mm) sieve	90-98%

4. The crushed stone or gravel shall conform to local specifications for rock base construction and the following:

a. Retained on the 2" sieve	-0- %
b. Retained on the 12@ sieve	0-5%
c. Retained on the 3/4 A sieve	5-30%
d. Retained on the No. 4 sieve	35-60%
e. Retained on the No. 8 sieve	45-70%
f. Retained on the No. 40 sieve	60-83%
g. Retained on the No. 200 sieve	80-92%

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- C. Stone Dust Screenings Layer: Shall be constructed in one lift, laser graded and finished.
- D. Crushed Aggregate Base Course Construction: If the required compacted depth of the base course exceeds 6", the base shall be constructed in two or more lifts of approximately equal thickness.

## 2.04 TENNIS COURT ACCESSORY MATERIALS

- A. Net Post Sleeves
  1. At least 24 hours prior to placing concrete, dig 24" diameter holes in the base, not less than 30" in diameter at the bottom and not less than 36" deep. Place net post sleeves in position with the top approximately 1/4" below the finished court elevation and pour 6" of concrete around the bottom to hold in position. Be sure sleeve remains plumb.
  2. Concrete for foundations for sleeves shall be mixed in ratios of six standard 94 pound sacks of cement per cubic yard of concrete, with one such sack of cement to not more than six U.S. gallons of water, attaining a compressive strength of not less than 3,500 psi at the 28<sup>th</sup> day after pouring.
  3. Foundations shall be so designed and poured, and the posts so set, as not to cause cracking or other damage to the finished court surface.
- B. Net Posts and Sleeves Equipment: Tennis posts shall be made out of steel, metal or wood of sufficient strength to properly support the net at a height of 42". Posts and sleeves shall be set where indicated on drawings. Posts shall be set plumb and true so as to support the net at a height of 42" above the court surface at the net posts.
- C. Center Strap Anchor: A center strap anchor shall be positioned as shown on the drawings and set in concrete footings measuring 12" X 12" X 12".
- D. Tennis Nets: Shall be polyethylene 3mm braided body, 42' long and 3.25' wide, polyester top binding attached with four lock stitched rows. Sides shall be braced with dowels for a neat, taut appearance. Nets shall be installed, upon completion, to posts and cables.

## PART 3 - EXECUTION

### 3.01 SUB GRADE AND SURFACE PREPARATION

- A. Area is to be cleared of all trees, stumps, vegetation, and topsoil and treated with a soil sterilent.
- B. Prepare sub grade by blading, rolling and lightly scarifying a sound surface to within a finished tolerance of 1/8" in (10') ten feet when measured in any direction and a minimum overall slope of .25%.
- C. Contour of the sub grade shall conform to those of the finished grade of +/- 2 ".

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#### D. Fill and compaction:

1. When fill is required, it shall be placed in 6" lifts, maximum, with approved material and each lift shall be thoroughly compacted to a density of 95% proctor.
2. All unstable or otherwise objectionable material shall be removed from the sub grade and replaced with approved material.
3. All holes, ruts and depressions shall be filled, reshaped and compacted as required to place the sub grade in acceptable condition to receive base material.
4. Prior to placing succeeding layers of material, the top of the under layer shall be significantly moist to ensure uniform moisture between layers.
5. The edges and edge slopes of the sub grade shall be bladed and otherwise depressed to conform to the lines and the dimensions of the finished surface.
6. Install a continuous, engineered 2 (two) mm thick woven geotextile over the entire sub grade.

### 3.02 PERIMETER EDGING

A. A floating type curb of standard brick or concrete block set in cement mortar as detailed in the drawings shall be installed around the perimeter of the court area. Sections may be left open to allow trucks and other equipment to enter and leave the court area until other work specified herein has been completed.

B. The finished curb elevation shall be exactly 2" below the finished grade level and the court's surface course shall be tapered from 6" (six inches) out to meet it. Provision shall be made for water to drain over or under the curb on the low side of the court.

### ROCK BASE INSTALLATION

#### 4.01 PLACING OF ROCK BASE

- A. The maximum compacted thickness of any one layer shall not exceed 6" (six inches).
- B. Immediately after placing, the material shall be compacted at not less than 95% proctor.
- C. Prior to placing succeeding layers of materials, the top of the under layer shall be significantly moist to ensure uniform moisture between layers.

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- D. The surface of the compacted finish base course shall be uniform and smooth, conforming to specified sloping requirements of a minimum of .25% to a maximum of 1% in one continuous plane.
- E. Crushed Stone Screening Leveling Course: After the completion of the rock base, a 1" (one inch) to 2" (two inch) layer of stone dust screening shall be applied to make sure the surface is level. The screening may be mixed with a stabilizer, spread, laser graded and thoroughly compacted.
- F. Finished surface of the leveling course shall not vary from the specified grade more than 1/8" in 10' when measured in any direction and shall slope in one direction at a rate of a minimum of .25% to a maximum of 1%.

### 5.01 INSTALLATION OF TENNIS COURT ACCESSORIES

- A. Post foundations shall be not less than 24" in diameter at the top, not less than 30" in diameter at the bottom, and not less than 36" in depth.
- B. Foundations shall be situated so as to provide a clear distance between posts of 33' on single courts and 42' on double courts.
- C. The metal anchor strap, located at the center of the net, shall be set in a concrete footing measuring 12" in diameter and 12" deep.
- D. Square footings and foundations are not acceptable.
- E. Tennis nets shall be installed, upon completion, to posts and cables for a neat, taut appearance.

### 6.01 TENNIS COURT SURFACE PREPARATION

- A. Nova'ProAdvantage XP tennis surfacing system shall be installed on a sound base surface within surface tolerance not exceeding 1/8" in 10' when measured in any direction with a minimum slope of .25% to a maximum of 1%.
- B. The entire surface shall be checked for any depressions. Depressions 1/16" or deeper shall be filled or leveled.
- C. The entire surface shall be thoroughly cleaned to remove dust, dirt and foreign debris.

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## 7.01 NOVA'PROADVANTAGE XP SURFACING SYSTEM

- A. Confirm that all center strap anchors and net post sleeves are in place prior to surface installation.
- B. The surface course shall be installed according to manufacturer's specifications.
- C. All surface course materials are to be installed after the surface has been inspected and approved by the {Owner} {Architect} {Landscape Architect} {Engineer}.
- D. The Nova'ProAdvantage XP cushioned base sheet shall be placed over subbase in accordance with manufacturer's instructions.
- E. Sections of the cushioned base sheet layer are to be laid out according to manufacturer's instructions for Sportline System.
- F. Lines are to be factory tufted in place (Sportline System). Refer to system installation guidelines from system manufacturer for installation.
- G. All joints shall be attached with Nova'XP-Bond, a special combination of a one-component moisture cured urethane adhesive and a weather resistant polyester tape. Heat seaming methods shall not be allowed. All seams and lines to be cut shall be cut without damaging tops of the fibers.
- H. Base Sheet Infill: Using a special mechanical device to filter the material into the fabric, the Nova'XP- Texfill material in fill shall be filtered into the cushioned base sheet mat in several light layers and shall be brushed in to allow for compaction and a level finish.
- I. Once leveled and filled, surface is to be mechanically treated to achieve proper compaction. Once process is completed, court shall be top dressed and tested for ball bounce. Court(s) will not require an extended break-in period if above treatment is completed properly.
- J. CAUTION: Do not allow petroleum products to be spilled on the Nova'ProAdvantage XP surface.

## 7.02 CLEAN UP

- A. Upon completion of the work, the contractor shall remove all containers, surplus materials and debris and have the site in a clean and orderly condition acceptable to the {Owner} {Architect} {Landscape Architect} {Engineer}.
- B. Provide {Owner} {Architect} {Landscape Architect} {Engineer} with Nova'ProAdvantage-XP Maintenance Manual at completion of project in accordance with Section {01700} {01730} of the Project Manual.

END OF SECTION

(revised 01/30/07)

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