



**EverTUFF<sup>®</sup> TURF<sup>™</sup>**

ETT-2-0311



Spears<sup>®</sup> EverTUFF<sup>®</sup> TURF<sup>™</sup> Fittings are specifically engineered to meet the demanding system requirements of today's golf course and sports turf irrigation applications. This patented design provides greater surge resistance than Schedule 80 fittings for the most reliable turf fittings on the market. Produced in a distinct Blue color injection molded from specially balanced PVC materials or optional CPVC Gray, these performance fittings are Class 315 rated (315 psi) and available in IPS sizes 1" through 4".

#### **Design Tested**

EverTUFF<sup>®</sup> TURF<sup>™</sup> Fittings have been computer engineered through Finite Element Analysis (FEA) studies for optimum material placement, strength and performance. Spears<sup>®</sup> Research & Development testing has shown the resulting design to best handle proper solvent cementing and correctly applied cyclic conditions of modern sports turf irrigation systems.

#### **Full Class 315 Pressure Rating**

Unlike the varying pressure ratings assigned to PVC Schedule piping, the EverTUFF<sup>®</sup> TURF<sup>™</sup> Class 315 designation maintains a uniform 315 psi pressure rating for all fittings sizes.

#### **Full Selection of Basic Configurations**

EverTUFF<sup>®</sup> TURF<sup>™</sup> Fittings are produced in the basic configurations including Tees, Reducing Tees, 90° and 90° Sweep Elbows, 45° Elbows, Couplings, Reducer Bushings, Male Adapters and Special Reinforced (SR) Female Adapters – in sizes 1" through 4".

*Progressive Products from Spears<sup>®</sup> Innovation & Technology*

## Optional CPVC for Higher Temperatures

Where heat and excess temperature can be a major concern, EverTUFF® TURF™ Fittings are available in higher temperature CPVC gray material.

## NSF Certified

EverTUFF® TURF™ Fittings are NSF Certified for use in potable water systems and are naturally lead-free.

## The Performance Difference – Patented Design

Spears® EverTUFF® TURF™ Fittings form a class of their own by merging different design parameters for conventional fittings with special PVC material selection to collectively produce a unique, highly surge resistant line of fittings that has been awarded a U.S. Patent.

## EverTUFF® TURF™ Proven 2X Stronger Than Competitor Special “surge” Fittings

Independent 3<sup>rd</sup> party high-stress failure testing was conducted by the Center for Irrigation Technology (CIT) at California State University, Fresno. **Identical test is designed to force fittings to failure demonstrated that Spears® EverTUFF® TURF™ Fittings are over 2X stronger than competitor’s special “surge” fittings.**

| Product Test                    | Average Cycles To Failure |
|---------------------------------|---------------------------|
| Competitor Special “surge” Tees | 6,107.6                   |
| Spears® EverTUFF® TURF™ Tees    | 14,234.4                  |

Performance that is a direct result of Spears® engineering and unparalleled processing capability!

## Lifetime Warranty\*

We are so confident in this fitting that it carries a Lifetime Warranty!

## Selection Guide for Choosing PVC or High Temperature CPVC Materials

Heat can play a significant part in performance of any piping system. As with all thermoplastic products, pressure rating reduction is required as temperatures increase. This can apply to primary and secondary heat sources, such as basic ambient temperature and absorbed temperature from solar exposure or solar heated water supply sources. The following table shows applicable Class 315 (315 psi) pressure de-rating as temperatures elevate.

| PVC & CPVC Class 315 Pressure Ratings at Elevated Temperatures, PSI |             |             |              |              |              |              |              |              |              |              |              |              |
|---|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Application Temperature   | 73°F (23°C) | 90°F (32°C) | 100°F (38°C) | 110°F (43°C) | 120°F (49°C) | 130°F (54°C) | 140°F (60°C) | 150°F (66°C) | 160°F (71°C) | 170°F (77°C) | 180°F (82°C) | 200°F (99°C) |
| PVC   | 315         | 236         | 195          | 161          | 126          | 98           | 69           | --           | --           | --           | --           | --           |
| CPVC  | 315         | 287         | 258          | 227          | 205          | 180          | 158          | 132          | 126          | 91           | 79           | 62           |

Maximum Service Temperature: PVC = 140°F; CPVC = 200°F

\*See Spears® Limited Lifetime Warranty for additional warranty details.

Plastic piping systems should be engineered, installed, operated and maintained in accordance with accepted standards and procedures for plastic piping systems. It is absolutely necessary that all design, installation, operation and maintenance personnel be trained in proper handling, installation requirements and precautions for installation and use of plastic piping systems before starting.



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