

# Yarn and Infill

## *Components make Systems*

- Materials
- Construction
- Innovation

Governor of Victoria  
Exports Award  
Winner 2008



[www.sti-sports.com](http://www.sti-sports.com)

Dr. Martin Schlegel – Managing Director  
Advanced Polymer Technology Australasia Pty Ltd  
[www.advpolytech.com](http://www.advpolytech.com)  
[www.sti-sports.com](http://www.sti-sports.com)

# Materials

## Materials used in Turf Fibres

- **Nylon**
- **Polypropylene (PP)**
- **Polyethylene (PE)**
- **Advanced Polyolefine**

# Construction

**Fibrilated tape**

**Monotape**

**Monofilament**

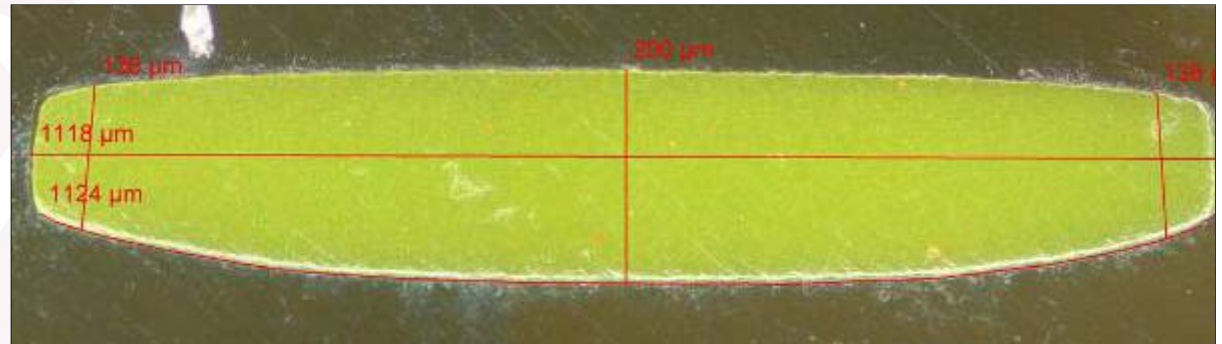
**Knit-de-Knit (KdK)**

**Texturized**

**Twisted**

**Wrapped**

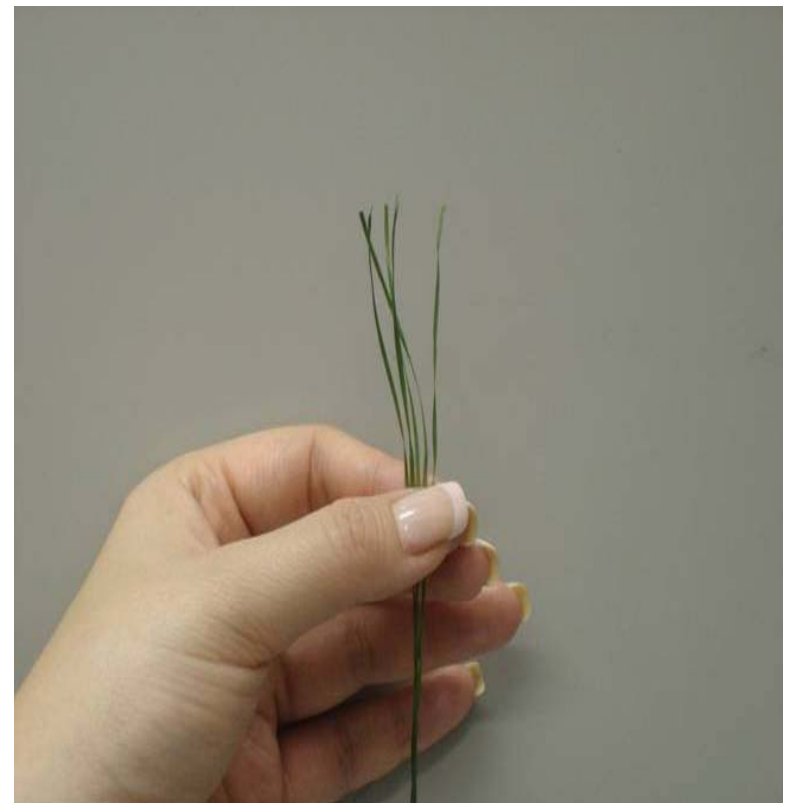
# Monofilament-Yarn



Monofilament yarns are extruded as single fibres from a spinneret

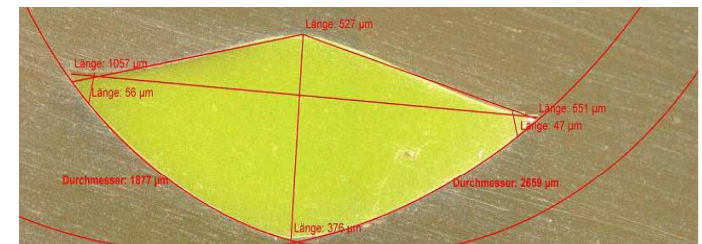
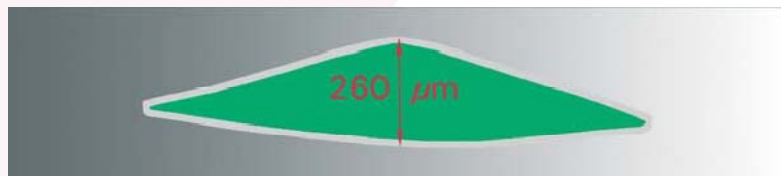
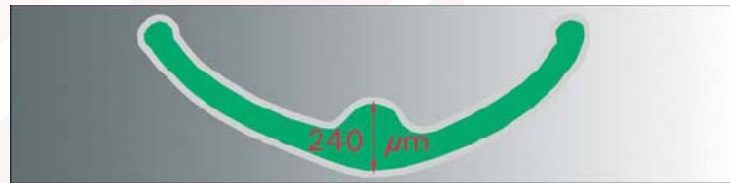
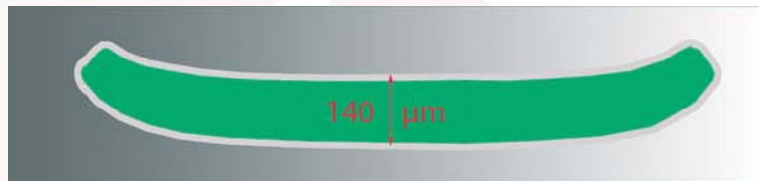
Most realistic appearance

Yarn can be extruded in different shapes



# Re-Spring Technology

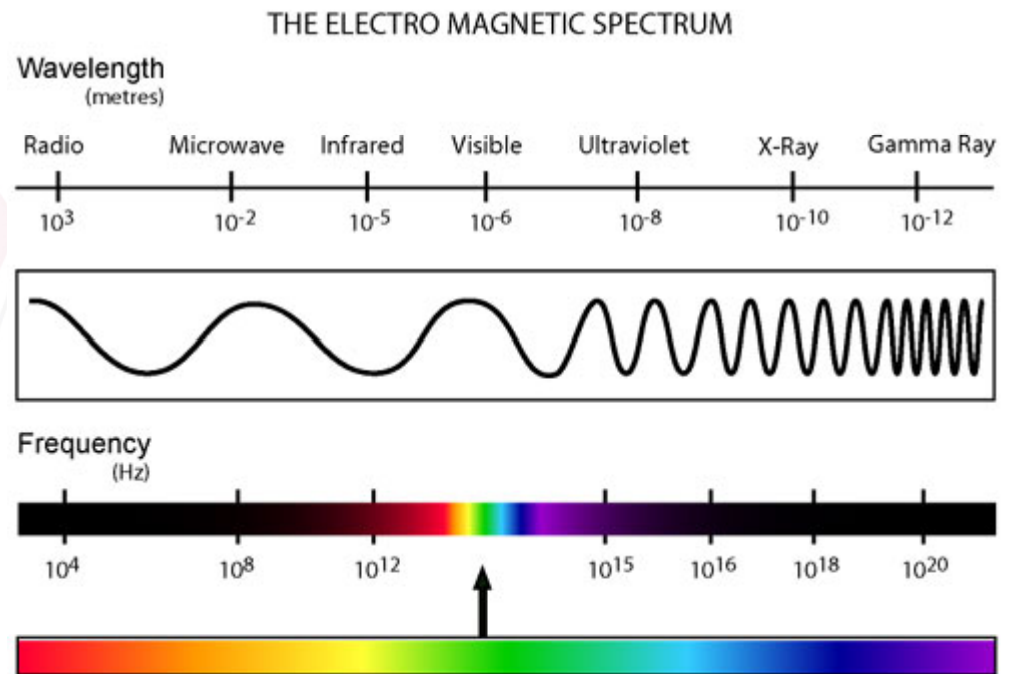
## Cross Section RS 270/280µm



# Cool Technology

- IR causes vibration in molecules

- IR produces about 50% of earth heat

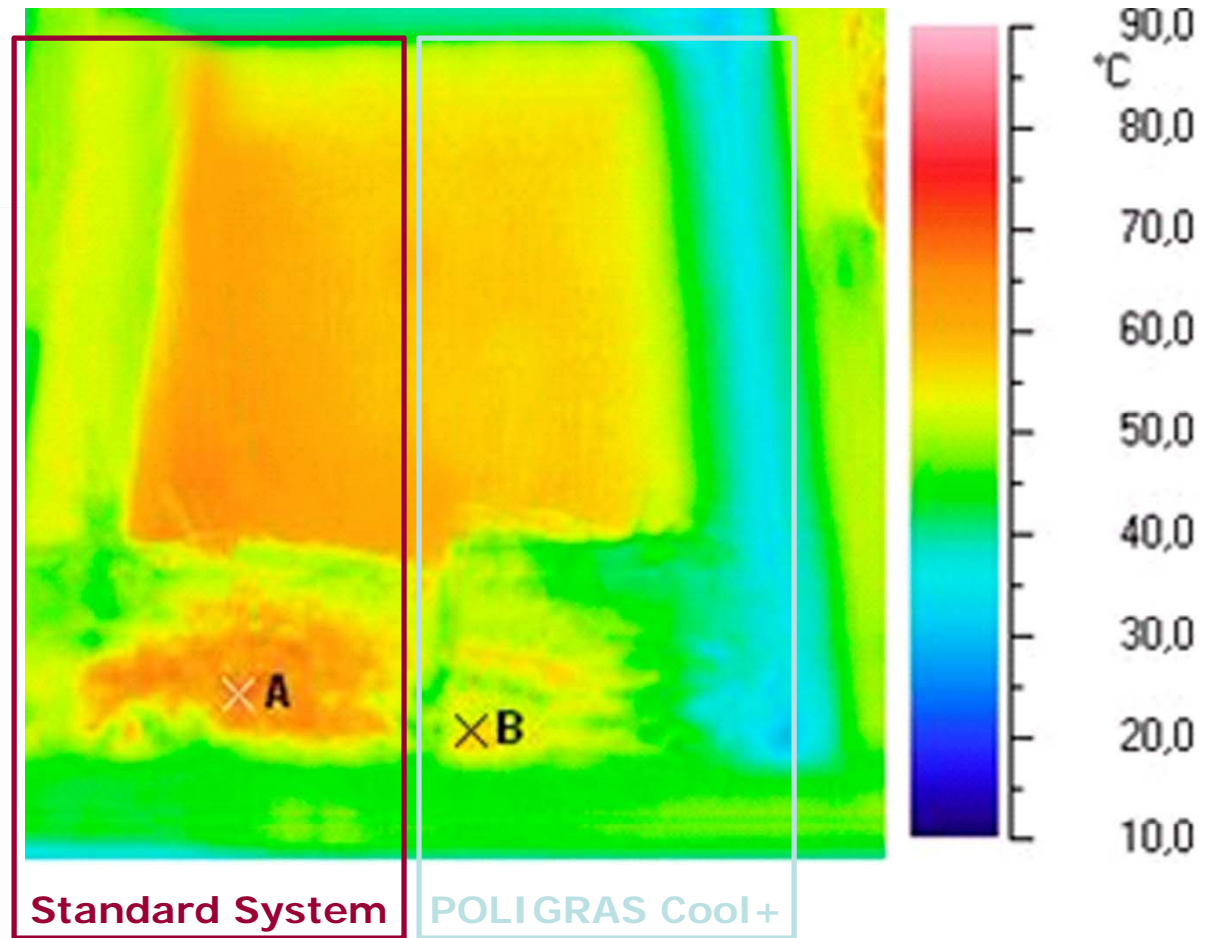


➤ Use of IR-reflecting Pigments



# 'Coolplus' Technology

- Surface temperature reduction of up to 20%
- Increase in player comfort and safety



# Yarn and Infill Study



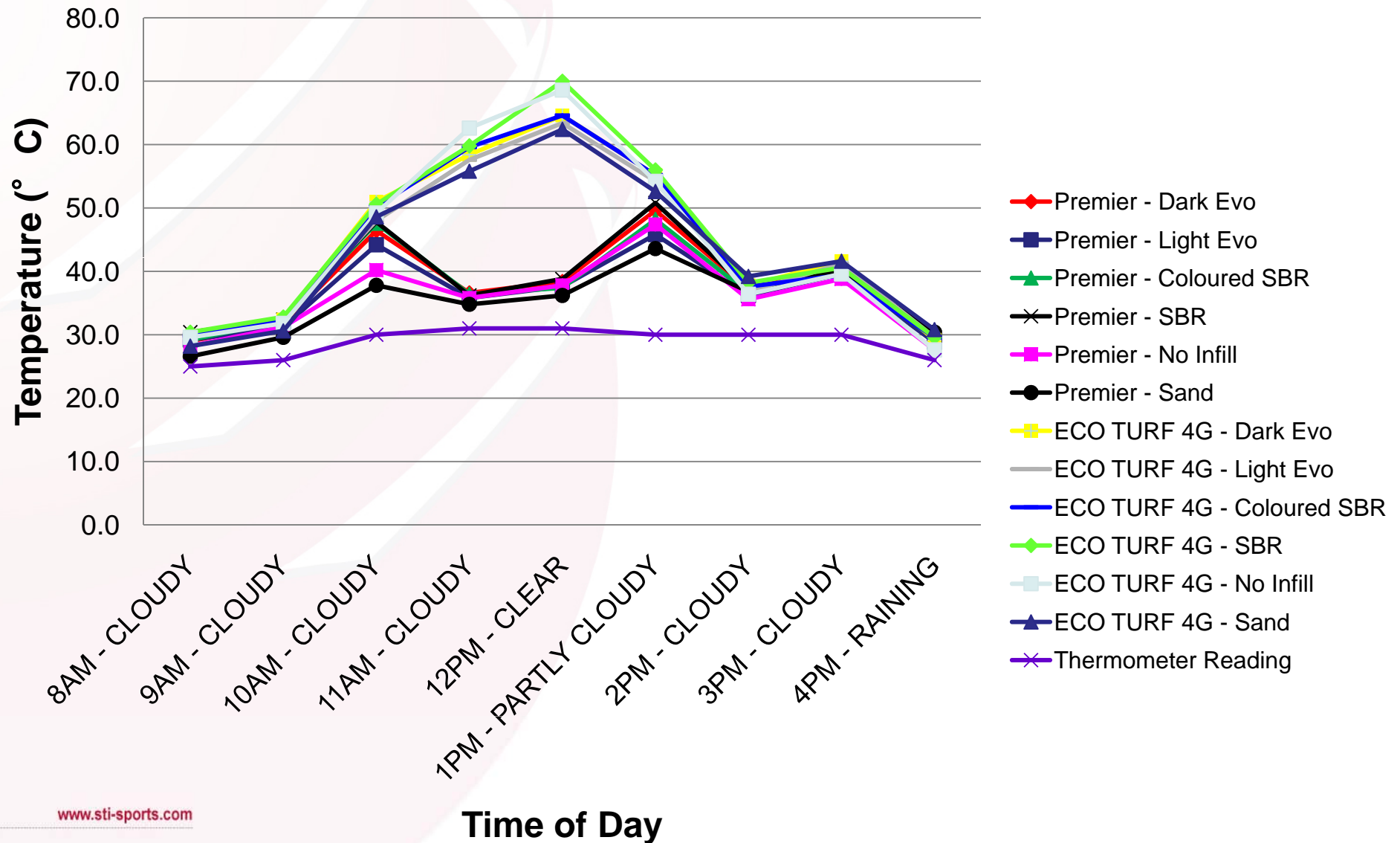


# Yarn and Infill Study (2)



# Temperature Recording

Temperature - Time



# Test Results



**Synthetic Turf reaches high temperatures**

- 89°C in 44°C direct sunlight

**Combination of cool yarn and cool infill**

- consistently 15% cooler
- in some conditions 25% cooler

**Standard fibers and cool infill**

- 5% cooler

**Cool yarn and SBR-infill**

- 5% to 10% cooler
- colored SBR no significant improvement

# Thank you

Governor of Victoria  
Exports Award  
Winner 2008



[www.sti-sports.com](http://www.sti-sports.com)

Dr. Martin Schlegel – Managing Director  
Advanced Polymer Technology Australasia Pty Ltd  
[www.advpolytech.com](http://www.advpolytech.com)  
[www.sti-sports.com](http://www.sti-sports.com)