grass

the essential component
Bonar Yarns - Who are we?

Low & Bonar PLC

- Quoted at London Stock Exchange
- Turnover approx. EUR 600m
- Over 2,700 employees worldwide

Low & Bonar consists of two divisions:

- Bonar Technical Textiles
- Bonar Floors
Bonar Floors

Tessera®
Think Outside the Square

Flotex®
Engineered for Life

Chocflex®
Best In Class

Coral® & Nuway®
Powerful Clean Off Systems
Bonar Technical Textiles

- Woven and non woven agrotextiles, geotextiles, construction fibres
- Automotive, industrial and flooring fabrics and composites
- Technical coated fabrics
Bonar Yarns

Manufacturer of synthetic yarns (turf, carpet backings) since 1960

300 employees

2nd biggest turf yarn producer worldwide

Production: Dundee (Scotland), Ostend (Belgium), China (Yizheng) and Abu Dhabi (shortly)

Logistic Centre in Asheville (NC) USA
Bonar Yarns

- Full range of yarns for sports and landscape markets
- Advanced yarn technologies
- Modern manufacture, excellent service, quality products
- Member of all major branch organisations
Grass Development Centre

- Dedicated R&D organisation
- Polymer extrusion development
- Processing development
- Yarn characterization
- Use of Colbond facilities
Structures - Fibrillated yarns (Bonaslide, Bonasoft)

- Molten polymer, color masterbatch
- Extrusion of film and slitting
- Honeycomb structure
- Twisting
- Winding
Structures - Monofilament yarn (Bonafil, Bonablade)

- Molten polymer and masterbatch
- Extrusion of individual filaments
- Combination of filaments
- Twisting
- Winding
Structures - Hybrid (Bonaffusion)

- Molten polymer and masterbatch
- Extrusion of film and slitting
- Precision incisions
- Twisting
- Winding
Structures - Knitted Yarns (Bonakurl)

- Molten polymer and masterbatch
- Extrusion of film and slitting
- Precision incisions
- Twisting
- Winding
- Knit and de-knit process
- Heat set ‘spring’ memory
- Non-directional, true surface
End use requirements related to yarn properties

- Rotational Friction
- Comfort
- Durability
- Aesthetics
Yarn Interaction

- Rotational Friction
  - Thatch layers
    - Knit de-knit yarns
    - Texturized yarns (steam, hot air, mechanical treatment)
- Comfort
- Durability
- Aesthetics
Yarn Interaction

- Rotational Friction
- Comfort
  - Abrasiveness
  - Polymers / blends
  - Infill splash
  - Fibrillated yarns
  - Hybrid yarns
  - Surface temperature
  - Cool Grass
- Durability
- Aesthetics
Cool Grass - Surface Temperature

OUTDOOR SURFACE TEMPERATURE STUDY (Phoenix, Arizona, July 2007)
Yarn Interaction

- Rotational Friction
- Comfort
- Durability
  - Color fastness, UV stability
  - MB specification
  - UV stabilizer selection
  - Ball roll -> Resilience
  - Polymers / blends
  - Cross sections (monofilaments)
- Aesthetics
Yarn Interaction

- Rotational Friction
- Comfort
- Durability
- Aesthetics
  - Yarn types: fibrillated, monofilament, hybrid
  - Yarn type combinations
  - Colour and colour combinations
  - Cross section of monofilament (coverage)
Market Trends for Turf Yarns

- More colour combinations giving fields a more natural look
- Combinations of monofilament types
- More different cross sections in monofilament

More combinations of yarn types, e.g. monofilament + hybrid
Thatch layers (partially) replacing infills
Market Trends for Turf Products

- Reduction or replacement of SBR infill
- Replacement by text. yarn or other infills
- Alternative bonding methods
  - Weaving
  - Ultrasonic bonding
  - Heat bonding
- Systems recycling
- Modular, mobile systems
- Reduction of pile height
- Increased use of shock pads
thank you