Slide 1

Structured Foam Injection Molding

PL ET 370

Slide 2

Structured Foam

- Applications
  - Telephone Booths
  - Stadium Seating
  - Playground Slides
  - Electronic Housings/Chassis
  - Pallets
  - Battery Trays

Slide 3

Structured Foam

- High Strength to Weight Ratio
- Integral Solid Skin
- Cellular Core
Slide 4

**Structural Foam**
- Low Pressure Process (90% of Market)
- Base Resin & Blowing Agent
- Resin Extruded into Accumulator
- Injection
  - Short Shot
  - Gas comes out of Phase
    - Finishes Filling

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Slide 5

**Structural Foam**
- **Advantages**
  - Low Molded in Stresses
  - Lower Clamp Tonnage
  - Variable Wall Thickness
  - Reduction of Sink Marks
  - Very Large Parts

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Slide 6

**Structural Foam**
- **Disadvantages**
  - Gas Bubbles on Part Surface
  - Must be de-gassed 24-48 hours before painting
  - Longer Cycle Times
  - Post Blow
  - Blowing Agent - By-Products
Slide 7

Structural Foam
- Common Problems Associated with Processing
  - Surface Finish - Gas Bubbles
  - Post Blow

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Slide 8

Structural Foam
- Materials
  - Polyolefins
  - Polystyrene
  - Nylon 66
  - ABS
  - Polycarbonate

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Slide 9

Structural Foam
- Mold Materials
  - Steel
  - Aluminum
Slide 10

Student Presentations

- Day 1 - 9-APR-02
  - Sheet Fabrication
  - Machining Plastics
  - Post-Molded Part Finishing
  - Mold Texturing

Slide 11

Student Presentations

- Day 2 - 11-APR-02
  - Adhesive Bonding & Cementing
  - Ultrasonic/Vibrational/Hot Gas Welding
  - Assembly Machines
  - Robots & Part Pickers

Slide 12

Student Presentations

- Day 3 - 16-APR-02
  - Fusion/Friction/RF Welding
  - Mechanical Fasteners
  - Inserts
  - Coating & Painting Plastics
Slide 13

Student Presentations
- Day 4 - 18-APR-02
  - Metallized Finishes
  - Hot Stamping
  - Pad Printing
  - In-Mold Decorating