BOOSTEC® SiC TECHNOLOGY FOR SPACE & GROUND TELESCOPES

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MERSEN BOOSTEC COMPANY

- A «S.A.S.» with a capital of 3.243 M€ hold by
  - Mersen 95.07%
  - Airbus Defence & Space 4.93%
- 80 employees
- Located South-West of France
  - 1.5 hour drive from Toulouse and Biarritz
- A material named Boostec® SiC: sintered silicon carbide
- Relevant technologies
  - From SiC powder to sintered and finished SiC parts
  - CVD SiC coatings
  - SiC Pieces from 1mm to 3.5m
  - Complex shapes
  - SiC/SiC and SiC/metal assemblies
**SINTERED SiC MATERIAL AND APPLICATION**

- **Key properties of Boostec® SiC material**
  - High specific stiffness (420 Gpa / 3.15 g/cm³)
  - High thermal stability (180 W.m/K / 2.2 \times 10^{-6}/K)
  - High mechanical strength (400 Mpa)
  - Homogeneity, isotropy, perfect stability in time
  - Excellent resistance to corrosion and abrasion

- **Application to**
  - Space and ground telescopes: mirrors, structure, focal plane hardware
  - Industrial scanning mirrors
  - Large and highly stable structures
  - RF absorbers
  - Heat exchangers
  - New generation of continuous flow chemical reactors
SiC SPACE TELESCOPES
E-ELT M4 Reaction Body

Primary mirror (M1)
- 39-metre diameter
- Concave
- 728 hexagonal segments
- Active

Secondary mirror (M2)
- 4.2-metre diameter
- Convex
- Zerodur

Third mirror (M3)
- 3.8-metre diameter
- Concave
- Zerodur

Fourth mirror (M4)
- 2.4-metre diameter
- Flat
- Thin
- Adaptive
- Ceramic glass

Fifth mirror (M5)
- 2.7 x 2.1 metres
- Flat
- Fast Tip/Tilt

Science instrument platform
DIVERSIFICATION