

STRUCTURAL MATERIALS WORKING GROUP

Presentation by
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Definition

“**Structural Materials** is defined to be any material or material system whose primary function is to be load or stress bearing (induced either mechanically or thermally), often under extreme environmental conditions”.

Covers the production, processing, manufacture, end-use and recycling of materials.



Scope and economic impact

- Metallic Materials
- Construction Materials
- Composite Materials
- Ceramic and Refractory Materials

- Accounts for circa £100bn of economic activity

Generic Issues

- In addition to cost, the environment and legislation are now the main drivers
- Perception that structural materials is a mature low technology area
- Difficulty in recruiting appropriately skilled employees
- Failure to recognise the importance of “incremental” technology developments in delivering economic benefit

Metals

Key Development Areas:

- Material systems for more arduous operating conditions
- Novel production, manufacturing and inspection processes (NDE, on-line inspection, condition monitoring)
- Modelling the full life cycle of materials
- Design and development of light weight materials and structures
- High performance coatings and surface technologies; including SMART and multi-functional





Key Recommendations (1)

- A long-term coherent strategy is required for Structural Materials, aligned to a long-term funding strategy
 - innovation and technology transfer
- The UK should pro-actively engage with large multi-national programmes (i.e. FP7) to influence the priorities to align them with UK strategy
- “Incremental” development must continue to be supported, while encouraging the development of disruptive technologies



Key Recommendations (2)

- Greater emphasis should be placed on the use of technology demonstrators to stimulate new market opportunities
- Materials modelling (including whole life cycle modelling) is a key underpinning technology and should be a priority area.
- A co-ordinated long-term training and development strategy for the sector is required; providing a framework for certificated training and development



Conclusions

- Structural Materials accounts for a high proportion of the materials related economic activity in the UK, and will make a major contribution in achieving the UK's environmental and energy reduction targets.

Supporting and stimulating continued innovation within the Structural Materials sector remains a national priority.