

# RILEM TC HFC

High Performance Fibre Reinforced Cement-based Composites

1st Meeting, Varenna, Italy, Sept. 20, 2004

## Subcommittee on Testing

- SC 1 -

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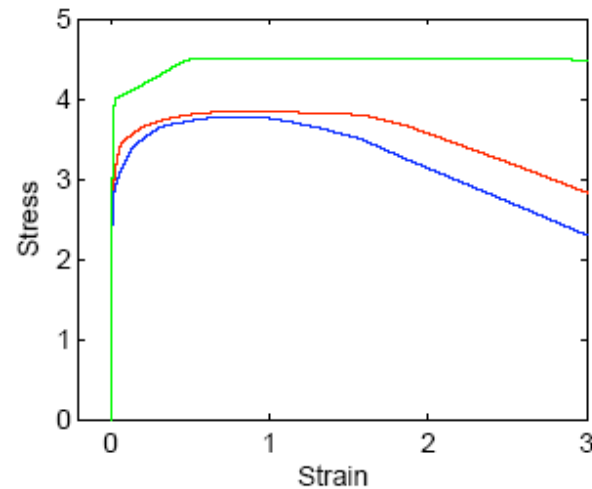
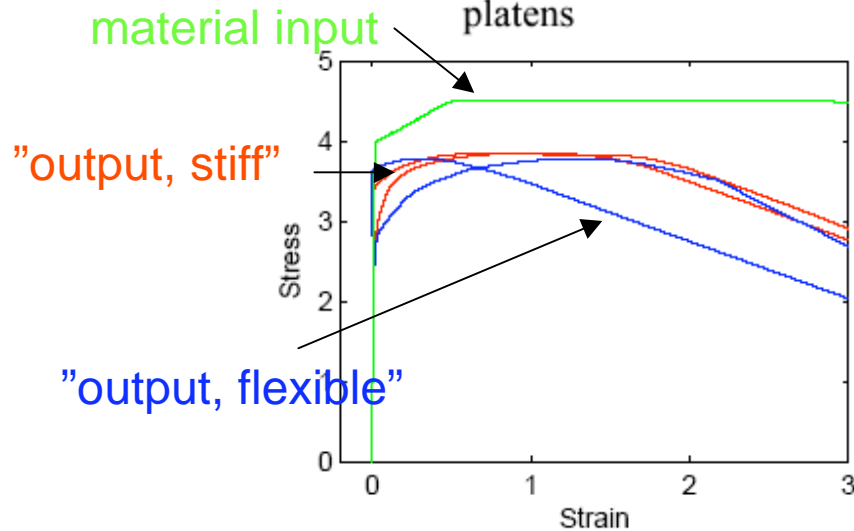
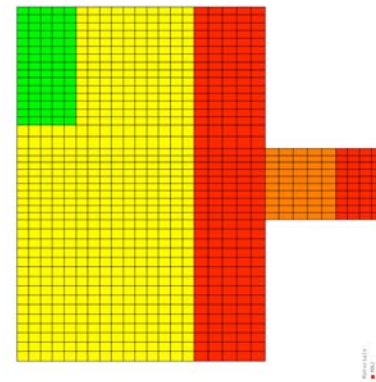
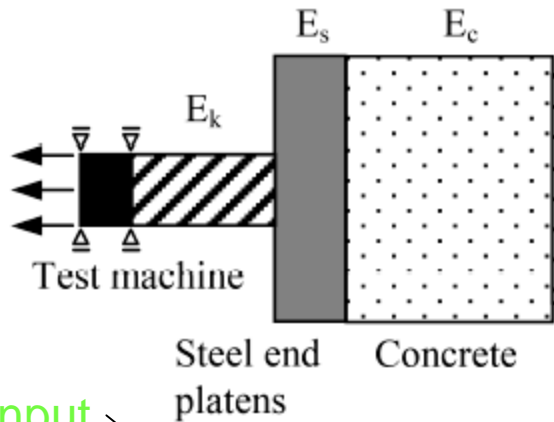
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# Present Situation

- No consensus on engineering representation of mechanical performance
- No consensus or standardization of testing methods
- Little research into the relation between testing methods (specimen size, geometry, boundary conditions...) and results

# Example: direct tension test of strain hardening material, input/output



# Major topics to be dealt with

1. Engineering representation of HPFRCC mechanical performance
2. QA test methods
3. Performance spec./research test methods
4. Advanced test methods

# Aims and Work Program I

## **Engineering (simplistic) representation of mechanical performance – Link to SC 3:**

- Definition of basic mechanical properties
- Assessment of implementation in structural analysis
- Assessment of simplifications introduced (compare with more complete models)
- Other effects: fatigue, creep, relaxation,....

# Aims and Work Program II

## **QA test methods – Link to SC 3**

- Configuration: bending
- Manufacture
- Geometry, size, boundary conditions
- Loading arrangements
- Measurements
- Analysis, back analysis? – Identification
- Parameter sensitivity

# Aims and Work Program III

## **Performance spec. and research test methods**

- Configuration: tension
- Manufacture
- Geometry, size, boundary conditions, grips
- Loading arrangements and history
- Measurements: strain, cracks, fiber integrity
- Analysis, back/forward analysis? – Identification
- Parameter sensitivity

# Aims and Work Program IV

## **Advanced testing:**

- Fatigue
- Impact
- Creep and relaxation
- Link to SC 2 on durability
- .....



# Deliverables

- State of the art on engineering properties and test methods – with SC 3
- Report on engineering properties of HPFRCC – with SC 3
- Preliminary recommendations for testing
- Round Robin report
- Final recommendations for testing – with SC 2 and 3.