

COST E55 – Modelling the Performance of Timber Structures

**4rd Workshop and 6th MC Meeting
University of Zagreb
Croatia
24.-25. September 2008**

Parallel session / WG 2 meeting on the vulnerability of timber components - Background Information -

The WG2 meeting will focus on

1. Moisture induced stresses

(Background document to be prepared by Staffan Svensson.)

2. Ductility aspects concerning timber connections

(Background document prepared by André Jorissen. See separate document.)

Zagreb meeting:

- Discussion on moisture induced stresses and connections based on the slides submitted.
- Outcome:
 - Concerning the moisture induced stresses, draft proposals on:
 - The effects of internal and external constraints on the load carrying capacity of wood based joints and elements with structural application
 - Constitutive models for moisture transport in wood subjected to natural varying climate
 - Hygro-mechanical model for wood in two and three dimensions
 - A code format for the moisture related excitation; moisture induced stresses as an action
 - Concerning timber connections, draft proposals on:

- Definition of a relevant ductility criterion for connections
- Load-slip characteristics (k_s , u_y , u_f , etc) for all kind of connections (dowel type, tooth plates, split rings, punched metal plates, glued in rods, axially loaded screws, etc.). Preferably these characteristics are presented in a format suitable for probabilistic analyses.

Outcome of the COST E55 action regarding the working group 2 activities.

The main deliverables from WG2 are:

- Guidelines for taking moisture induced stresses into account.
- Ductility definition regarding connections
- Ductility requirements / guidelines for connections regarding practical applications
- The result of load slip analysis regarding ductility aspects

Preparation before Zagreb meeting:

- Staffan Svensson
 - Preparation of the parallel session on moisture induced stresses based on the slides submitted
 - Preparation of a draft guideline on moisture induced stresses
- André Jorissen
 - Preparation of the parallel session on joint ductility based on the slides submitted
 - Analyses of the connection tests carried out between 1994 and 1998 at Delft University of Technology in Delft regarding load slip curves (and ductility aspects).
 - Preparation of a draft on ductility requirements / guidelines for connections regarding practical applications
- All participants in working group 2 sessions prepare at least two slides on at least one of the two topics mentioned for discussion. To identify the sub-topics these slides should be submitted to Staffan Svensson and/or André Jorissen at the latest on September 17, 2008. Additional slides, which can be used in the discussion, can be prepared in the week between September 17 and September 24 as well.