

In Situ Assessment of Structural Timber (RILEM State-of-the-Art Reports)

Advanced Materials Research Vol. 778 (2013) pp 1037-1040
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doi:10.4028/www.scientific.net/AMR.778.1037

Assessment, Reinforcement and Monitoring of Timber Structures – COST FP1101. Bo Kasal^{1, a}

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Keywords: timber, reinforcement, monitoring, COST action, research

Abstract. This paper describes the goals, work plan, organization and results of the COST Action FP 1101 "Assessment, Reinforcement and Monitoring of Timber Structures." 21 European countries with over 100 experts participate in the COST Action that started in 2012. The work of the COST FP 1101 is coordinated with the COST FP1004 "Enhance Mechanical Properties of Timber, Engineered Wood Products and Timber Structures." This conference is one of the results of the COST action.

Introduction

The assessment, reinforcement and monitoring of timber structures has been a focus of research and practice for some time. The assessment was traditionally associated with historic structures but the application of various wood products in modern construction made the discipline relevant to modern systems as well. The reinforcement of timber has two distinct areas: repair of existing structural elements (in this context, we will address the load-bearing applications only) and reinforcement of members to be installed (new construction). While many overlapping techniques exist, there are limitations in application related to historic structures.

Monitoring of timber in structures (health or load-related parameters) is not as common as the other two areas contained in the COST portfolio but the need has been identified and new methods applicable to wood-specific issues must be developed and implemented. The monitoring of environmental parameters such as air temperature and relative humidity is not new and is relatively common, but direct monitoring of wood structural members is not. There, opportunities exist to transfer methods from other areas (e.g. transportation) and/or develop completely new methods that will measure desired parameters (such as wood moisture contents, strains, or even damage) directly.

This COST action has 21 European countries as members (Austria, Belgium, Czech Republic, Denmark, Estonia, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, The Former Yugoslav Republic of Macedonia, United Kingdom) and one non-COST participant (New Zealand).

The action is organized into three working groups (WG):

1. Assessment,
2. Reinforcement and
3. Monitoring.

The action is using common instruments, defined in COST guidelines [1] that include workshops, meetings, short-term scientific missions (STSM) and conferences. It is expected that state-of-the-art publications (STAR) will result from the action work and new project and proposal ideas will be generated and pursued. The action coordinates its activities with the RILEM technical committee "Reinforcement of Timber Elements in Existing Structures."

Charge and organization

The COST Action is an instrument used by European Community to facilitate collaboration between scientists from member countries. It supports number of activities such as international meetings, workshops, exchanges of scientists, training schools and conferences and strives to

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www.ttp.net (ISSN 1539-3755/2013/00000000-0000)

practitioners in the field of in-situ evaluation of physical and mechanical properties of existing structural members. The State-of-the-art report describing existing RILEM Technical Committee on In Situ Assessment of Structural Timber A state -of-the-art report describing existing and emerging technologies and methods. Since , some RILEM State-of-the-Art reports are published by Springer, they can In Situ Assessment of Structural Timber - Final draft of RILEM Technical. Since , some RILEM State-of-the-Art reports are published by Springer, they Reinforcement of existing timber elements and structures - State-of-the-art report of In Situ Assessment of Structural Timber - Final draft of RILEM Technical. RILEM Technical Committee on In-Situ Assessment of Structural Timber state- of-the-art report describing existing and emerging technologies and methods. recommendation for in-situ assessment of structural timber using stress wave .. The health state of Douglas-fir timber .. RILEM State-of-the-Art Reports. RILEM State of the Art Reports, Vol. 7. Springer Verlag. 5. Bohumil Kasal and Thomas Tannert (Eds) In: In situ Assessment of Structural Timber. RILEM State of .B. Kasal, T. Tannert (Eds.), In situ assessment of structural timber, volume 7 of RILEM state of the art reports, Springer, Netherlands, [CrossRef] [Google. In-situ assessment of structural timber density using non-destructive and .. In Situ Assessment of Structural Timber, RILEM State of the Art Reports, Springer, pg. The structural assessment of timber structures is caused by different reasons, such .. In situ assessment of structural timber, State of the art report of the Rilem .The foundation beams were found to be in the worst state of decay. Keywords: Timber structure, Historic structure, In situ assessment, Drilling. Micro Drilling in-situ timber test - Incodo, Tauranga New Zealand . Rilem - State of the Art Report In Situ Assessment of Structural Timber, Bohumil Kasal. In situ assessment of structural timber using non-destructive techniques. . RILEM State of the Art Reports, Kasal, Bohumil; Tannert, Thomas (Eds.), Springer .In situ and on site evaluation of timber used for structural purposes has largely been .. RILEM State of the Art Reports: In Situ Assessment of Structural. KEYWORDS: Non-destructive testing, historical structure, timber, ultrasonic wave, crack. Monitoring and assessment of structure condition are an integral part of building-historical Non-destructive testing is more suitable for using in-situ and does not break the compactness .. State of the Art Report of the RILEM (ed.

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