

THE RILEM TC 223-MSC

Chair: M.R. Valluzzi (University of Padova, Italy)
Secretary: D.V. Oliveira (University of Minho, Portugal)

The Technical Committee (TC) **223-MSC (Masonry Strengthening with Composite Materials)** is active since 2007 in RILEM as its first TC working on composite materials applied to masonry constructions. It counts 46 members from 26 institutions belonging to 12 countries.

TC motivation: Composite materials, as FRP (Fibre-Reinforced Polymers) or SRP/G (Steel Reinforced Polymers/Grouts) are increasingly used for strengthening and repair of masonry structures and structural components, in a context of:

- i) large variability of masonry typologies, particularly for existing/historical structures, which constitutes complex parameters and uncertainties;
- ii) lack in standardization and test procedures harmonization, which make difficult the design/assessment of interventions, the comparison among experimental results, and the effectiveness control (structural performance and durability);
- iii) still limited scientific works (with respect to RC applications) compared to the wide diffusion in real cases, with high and increasing frequency in CH, where preservation and restoration criteria need to be observed.



OBJECTIVES

The scope of the Workshop is to provide a forum of engineers, architects, scientists, producers and professionals for the exchange of technical and scientific knowledge on the use of Composites in existing masonry structural rehabilitation. Material performance, design formulation, bond, durability, execution and effectiveness control are the main subjects to be discussed on the basis of the work of the MSC Technical Committee and the proposals of the invited speakers

TOPICS

- Strengthening materials
- Structural masonry rehabilitation
- Bond and interface behavior
- Durability
- Case studies

REGISTRATION

More than 70 people among academics, researchers, consultants and students registered at
<http://rilem223msc.isgweb.it>

LANGUAGE

Official language of the Workshop is English

SPONSORS



SANMARCO

www.sanmarco.it

TASSULLO
MATERIALS AND TECHNIQUES FOR BUILDING WELL

www.tassullo.it



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International Union of Laboratories and
Experts in Construction Materials

www.rilem.net

TC 223-MSC Final Workshop Masonry Strengthening with Composite Materials

Wroclaw (Poland)

October 16th 2012,

Centennial Hall, 14.00-18.00

Final Announcement



Event hosted by

SAHC
2012

8th International Conference on Structural
Analysis of Historical Constructions

October 15–17 Wroclaw Poland



www.sahc2012.org

TC AIMS

The TC was created to pursue the following objectives:

Systematization of current knowledge on the structural behaviour of masonry strengthened with composites

Specification of limits and capability of various systems in different contexts (modern, historical,...)

Identification of procedures for design and control (limitation parameters of efficiency, simple test procedures, in-situ effectiveness)

Guidelines for use of composite materials in existing masonry constructions

TC PRODUCTS

The TC worked on the issue of some documents and tools, derived from literature review and upgrading, from specifically planned experimental activities, and from case studies analysis; among them:

Data WareHouse (DWH) of the results obtained for various composite materials and types, masonry typologies, structural components and assemblages, local behaviour, case studies. This tool is open for contributions at:

<https://rilem223dwh.isqweb.it>

State-of-the-Art Report (STAR) on the current knowledge (experimental and analytical works, case studies, standards and codes, NDT and durability)

Round Robin Test (RRT) on composite-to-brick bond of EB FRP and SRP fabrics, including double lap (DLST) and single lap shear tests (SLST). Over 280 tests have been executed, involving 12 laboratories from 5 countries

Durability tests dealing with the influence on composite-to-masonry bond of salt crystallization, thermal and freeze-thaw cycles, tested both with pull-off and shear tests. This experimental phase involved 5 laboratories from 4 countries

For details on products and results please visit:

<http://rilem223msc.isqweb.it>



FINAL PROGRAM

OCTOBER 16TH 2012, CENTENNIAL HALL, 14.00-18.00

The Workshop will include presentations on the key topics analyzed by the TC, visit to the stands of the sponsors and a panel discussion with experts

14.00 - Welcome to participants

RILEM aims and 223 MSC TC work

M.R. Valluzzi

14.15 - Masonry and damage

L. Binda

14.30 - Composites and reinforcement systems

P. Casadei, M. Corradi

14.45 - Mechanical behavior of bond

C. Mazzotti, E. Sacco

15.10 - Durability

A. Kwiecien, D. Oliveira

15.30 - Low-impact applications in heritage constructions

G. de Felice, A. Viskovic

Coffee Break and visit to sponsor stands

16.30 - Open problems and recent trends of research

M.A. Aiello, G. Lignola, C. Papanicolaou

16.55 - Follow-up TC:

Composites for Sustainable strengthening of Masonry
G. de Felice

17.00 - Roundtable on Composites & Architectural Heritage

The debate will focus on the following questions:

- Which applications are suitable/unsuitable for strengthening architectural heritage?
P. Roca & C. Modena
- In which cases is it useful/harmful to strengthen arches and vaults with composites?
J. Ochsendorf & G. de Felice
- Are current computational methods and/or engineering formula reliable for structural design?
J. Kubica & E. Sacco
- Which trend and development should we expect in composites for strengthening historic masonry?
A. Di Tommaso & P. Lourenço

For further information and updating:

<http://rilem223msc.isqweb.it>

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