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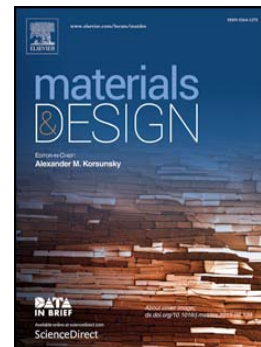
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Bahman Ghiassi, Daniel V. Oliveira, Vera Marques, Edgar Soares, Hamid Maljaee

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Multi-level characterization of steel reinforced mortars for strengthening of masonry structures

Bahman Ghiassi^{*1}, Daniel V. Oliveira², Vera Marques³, Edgar Soares⁴, Hamid Maljaee⁵

ABSTRACT

Textile Reinforced Mortars (TRMs) have received extensive attention for externally bonded reinforcement of historical and masonry structures. Despite this recent attention, the available information on the test methods and mechanical performance of TRMs at different scales are limited. Extensive experimental results are still necessary for development of design formulas and application guidelines. This paper presents a multi-level experimental investigation on the performance of Steel Reinforced Grouts (SRGs) as a common TRM type. The focus is not only on the mechanical characterization but also the test methods and practical challenges. The tests include materials characterization, fiber-to-mortar bond characterization, tensile tests on TRM composite, and TRM-to-masonry bond characterization tests. The tests are performed on three different SRG systems made of pozzolanic lime-based and geopolymeric-based mortars as sustainable matrices for strengthening and restoration applications.

Keywords: Textile Reinforced Mortar; Masonry; EBR Strengthening; Geopolymer mortar; Lime-based mortar; Experimental characterization;

¹Post-doctoral research associate, ISISE, University of Minho, Department of Civil Engineering, Azurém, 4800-058 Guimarães, Portugal. Phone: +351 253 510 499, fax: +351 253 510 217, E-mail: bahmanghiassi@gmail.com

²Associate Professor, ISISE, University of Minho, Department of Civil Engineering, Azurém, 4800-058 Guimarães, Portugal. Phone: +351 253 510 247, fax: +351 253 510 217, E-mail: danvco@civil.uminho.pt

³Msc, ISISE, University of Minho, Department of Civil Engineering, Azurém, 4800-058 Guimarães, Portugal. Phone: +351 253 510 247, fax: +351 253 510 217, E-mail: a58570@alumni.uminho.pt

⁴PhD student, ISISE, University of Minho, Department of Civil Engineering, Azurém, 4800-058 Guimarães, Portugal. Phone: +351 253 510 499, fax: +351 253 510 217, E-mail: id5261@alunos.uminho.pt

⁵PhD student, ISISE, University of Minho, Department of Civil Engineering, Azurém, 4800-058 Guimarães, Portugal. Phone: +351 253 510 499, fax: +351 253 510 217, E-mail: h.maljaee.civil@gmail.com

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