

Fiber Reinforced Polymer Used for Flooding Protection of Engineering Structures Made of RC and Brick Masonry

Author(s): Gabriel Oprișan • Vlad Munteanu • Nicolae Țăranu • Alina Lazăr

Tomme: LIV (LVIII) | **Fascicle:** 2 | 2008

Pages: 61-68

Abstract text:

Urban and rural floods are becoming nowadays a frequent problem to be dealt with, by both the population and the authorities. Floods and flood related natural disasters act against the civil, industrial and agricultural structures by the hydrostatic and hydrodynamic pressures of water. A set of protective solutions based on Fiber Reinforced Polymer (FRP) composite materials, for structural elements of buildings subjected to flood loadings, is proposed and analysed. These solutions are achieved by using the hand lay-up forming technique utilizing glass, carbon or aramid fibers fabrics pre-impregnated with thermosetting epoxy, polyester or vinyl ester resins. The application of these FRP composites is carried out on reinforced concrete columns and beams as well as on brick masonry works aiming to increase in the overall load bearing capacity, especially against horizontal loads. An improved protection against excessive humidity is also envisaged. The Finite Elements Method based LUSAS software was used to simulate a partially flooded structure. The numerical modeling was carried out in both the un-strengthened and strengthened conditions of the structure in order to assess the increasing in load and deformation capacities of the structural elements. Volumetric finite elements were used for modeling the concrete and masonry members.

Key Words:

FRP Composites; Flooding; Reinforced Concrete Members; Brick Masonry Panels.

[View full text PDF](#) 

Author(s) Information

Gabriel Oprișan

Affiliation: „Gheorghe Asachi” Technical University, Jassy, Department of Civil and Industrial Engineering.

Email: oprisan@ce.tuiasi.ro

Vlad Munteanu

Affiliation: „Gheorghe Asachi” Technical University, Jassy, Department of Civil and Industrial Engineering.

Email: munteanu@ce.tuiasi.ro

Nicolae Țăranu

Affiliation: „Gheorghe Asachi” Technical University, Jassy, Department of Civil and Industrial Engineering.

Email: taranu@ce.tuiasi.ro

Alina Lazăr

Affiliation: „Gheorghe Asachi” Technical University, Jassy, Department of Civil and Industrial Engineering.

Email: -

All documents with a  icon require Adobe Acrobat installed on your computer

Current Issue 

T. LVI (LX), Fasc. 3, 2010

[Browse](#)

[by Issues](#)

[by Authors](#)

[For Authors](#)

[Preparing Artworks](#)

[Manuscript Submission](#)

[Manuscript Template](#)

[Journals Name Abbreviation](#)

[Copyright Transfer Statement](#)

[Abstracted & Indexed](#)

The Bulletin of the Polytechnic Institute of Jassy, Construction Architecture Section is indexed and abstracted in:

Index Copernicus, ProQuest, Ebsco, DOAJ, BASE, Scientific Commons, DRIVER.

WorldWideScience.org, getCITED, ResearchGATE, Ovid LinkSolver, Genamics Journalseek, Electronic Journals Library, WorldCat, Intute.

[Ranking](#)

The journal is ranked by the National University Research Council as a B+ quality journal (CNCSIS Code 44).

Search in:



