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Stress analysis of masonry vaults and static efficacy of FRP repairs (Article)

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Abstract

In the paper, the basic principles for the analysis of structures made by Not-Resisting-Tension (NRT) material are introduced, the theory is then applied for investigating the static behaviour of a NRT masonry arch model and to test the effect of reinforcements made by FRP strips of variable length. A wide experimental campaign is developed and numerical/experimental comparison is provided in order to evaluate the skill of the adopted model in capturing the real behaviour of the structure with or without reinforcement. © 2007 Elsevier Ltd. All rights reserved.

Author keywords

Masonry-like structures; Not-Resisting-Tension Model; Numerical-experimental validation; Theoretical approaches

Indexed keywords

Engineering controlled terms: Fiber reinforced plastics; Numerical methods; Reinforcement; Structural analysis
Engineering uncontrolled terms: Masonry like structures; Not Resisting Tension; Numerical experimental validation; Theoretical approaches
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Stress analysis of masonry vaults and static efficacy of FRP repairs

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Abstract

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Nomenclature

λ	load multiplier
λ^*	collapse multiplier
β	statically admissible multiplier
γ	kinetically sufficient multiplier
p, F	surface and body force vectors

Article outline

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- 3. Basic principles for structural analysis...
- 4. Specialization of the general theory...
- 5. Specialization of the general approach...
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- 7. Conclusions
- Acknowledgements
- References

Figures and tables

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