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**Evaluation of the Load-Carrying capacity of fill in masonry arched bridges** (Conference Paper)

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Abstract

In masonry vaults or vaulted structures, such as historical bridges and viaducts, the presence of the fill is usually considered to not exert any static action and is treated like an additional permanent weight burdening on the vault, which is recognized as a unique structural function. On the contrary the fill may consistently contribute to exerting an overall static action, that should be carefully evaluated in order to perform a more realistic forecast about the carrying capacity of the masonry structure. This objective considered in the paper, where a modelling of the fill is presented in order to take into account in static analyses this important contribution. © Civil-Comp Press, 2015.

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Bridges, Fill, Masonry vaults, Numerical testing, Static action, Stress distribution, Validation

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Keywords: masonry vaults, bridges, fill, static action, stress distribution, numerical testing, validation.

Summary  
In masonry vaults or vaulted structures, such as historical bridges and viaducts, the presence of the fill is usually considered to not exert any static action and is treated like an additional permanent weight burdening on the vault, which is recognized as a unique structural function. On the contrary the fill may consistently contribute to exerting an overall static action, that should be carefully evaluated in order to perform a more realistic forecast about the carrying capacity of the masonry structure. This objective considered in the paper, where a modelling of the fill is presented in order to take into account in static analyses this important contribution.

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