

Effect of Grouting on the Flexural Tensile Strength of Concrete Block Masonry

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Abstract:

The forty-seven tests for flexural tensile strength of concrete block masonry provide an experimental basis for evaluating the relative strengths of ungrouted and grouted blockwork. The results show that the flexural strengths for tension normal to the bed joints are much lower than for tension parallel to the bed joint. However this inherent anisotropic characteristic of masonry is shown to be substantially reduced when the cores are filled with grout. In this case the relative increase in flexural strength for tension normal to the bed joint is much larger than for tension parallel to the bed joint. Current design code provisions concerning flexural tension for ungrouted and grouted concrete block masonry are reviewed both in terms of characteristic strengths and overall behaviour of walls subjected to out of plane bending. Some general comments regarding behaviour and some suggestions for design are provided.

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