

9th AUSTRALASIAN MASONRY CONFERENCE

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Abstracts are to be in English and are not to exceed 300 words. A typical example follows.

The abstract should be presented in its final form in which it is intended to appear.

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Bold capitals and centred.
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Author(s) names(s) in capitals and centred.
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Bold left justified.
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Up to six keywords.
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SIMPLIFIED ANALYSIS FOR SHEAR FORCE DISTRIBUTION BETWEEN DIFFERENT MASONRY SHEAR WALLS

A.N. AUTHOR

Senior Lecturer
School of Engineering
The University of Newcastle
Callaghan NSW Australia

ABSTRACT

This report describes the development and application of a small-scale test method for the determination of bond strength in masonry. The test procedure was developed to investigate the bond strength and the corresponding mortar macro/microconstituents in a given section of masonry. This small-scale test is able to measure the “local” rather than the “average” bond strength of mortar joints. The test involves coring masonry couplets using a hollow diamond impregnated drill bit to obtain cylindrical specimens with a length-to-diameter aspect ratio of 3:1. The mortar bed joint is located perpendicular to the longitudinal axis and in the centre of the specimen. Samples are tested in direct tension under controlled displacement conditions. This technique allows several bond strength results to be obtained from a single brickwork couplet or alternatively, the bond strength in specific regions of the joint may be assessed. The uniform stress distribution across the joint in the test specimen and the small size of the specimens makes this a useful technique to study mortar/unit bond interactions by allowing the failure surfaces to be examined in detail using optical and scanning electron microscopy techniques.

KEYWORDS: Masonry; brick; block; deformability; testing; analysis.

9th AUSTRALASIAN MASONRY CONFERENCE

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9th AUSTRALASIAN MASONRY CONFERENCE

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TITLE	Bold capitals and centred. Followed by two blank lines.
NAME(S) OF AUTHOR(S)	Author(s) name(s) in capitals and centred. Followed by one blank line. Affiliations in upper and lower case (title case) and centred. Followed by four blank lines.
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PARAGRAPHS	Paragraphs should start without indentation and should be separated by one blank line.
EQUATIONS	Equations should be placed close to the point where they are first mentioned and referred to in the text as “equation (1)”. Equations should be on a separate line and should be numbered consecutively, e.g., (8), (9a), (9b), (10), etc.
TABLES	Tables should be placed close to the point where they are first mentioned and referred to in the text as “Table 1”. Tables should be numbered consecutively, e.g., “Table 1. Particle Size Distribution”.
FIGURES	Figures should be placed close to the point where they are first mentioned and referred to in the text as “Figure 1”. Figures should be numbered consecutively, e.g., “Figure 1. Illustrative Example”.
REFERENCES	The references are to be listed in alphabetical order. In the text the citations should appear as last names of the authors and year of publication (e.g., Smith 2000; Smith and Brown 2001; Smith et al. 2002). The list of references should appear at the end of the paper.

SIMPLIFIED ANALYSIS FOR SHEAR FORCE DISTRIBUTION BETWEEN DIFFERENT MASONRY SHEAR WALLS

A.N. AUTHOR

Senior Lecturer
School of Engineering
The University of Newcastle
Callaghan NSW Australia

SUMMARY

Currently used simplified methods for the distribution of shear forces between masonry shear walls of different dimensions are presented.

INTRODUCTION

Masonry shear walls in multi-storey buildings are connected by floors and roofs that act as rigid diaphragms to force the walls to act together to resist lateral load due to wind or earthquake.

Sub Heading

For a wall, wall X, the deflection X_x is used to define the rigidity of the wall, R_x as shown in equation (1) below

$$R_x = 1/X_x \tag{1}$$

The most commonly used approximate method for determining relative rigidity of walls is to calculate the deflections at the tops of walls caused by a unit horizontal load as shown in Table 1.

Table 1. Particle Size Distribution

Column 1	Column 2	Column 3	Column 4
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The method is readily illustrated on a simply supported beam carrying a partial uniformly distributed load (see Figure 1).

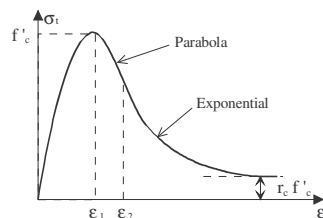


Figure 1. Illustrative Example

REFERENCES

Bogus, A., "Impulse Functions in Structural Mechanics", *The Royal Society*, Vol. 77, December, 1988, pp. 2828–2832.

Wittrick, W.H., "A Generalisation of Macaulay's Methods With Applications in Structural Mechanics", *American Institute of Aeronautics and Astronautics Journal*, Vol. 3, No. 2, February, 1965, pp. 46–54.