

Masonry Research
Saskatchewan Centre for Masonry Design
University of Saskatchewan

There are three areas of masonry related research currently being pursued at the Saskatchewan Centre for Masonry Design, University of Saskatchewan.

1. Non-Contact Splices in Masonry Walls (Principal Investigator: Dr. Lisa Feldman)

Mr. Kawsar Ahmed, an M.Sc. student, recently completed the first phase of this study looking into the effect that placing pairs of lap-spliced reinforcing bars in adjacent grouted cells in a masonry wall, rather than in direct contact within the same cell, had on the strength and deformation characteristics of the splice. In addition, two different test methods for evaluating lap splice performance were compared: pull-out tests similar to those reported in the literature, and flexural tests of full-sized wall specimens. Kawsar's work was awarded the **Outstanding M.Sc. Student Thesis** prize from The Masonry Society.

A second M.Sc. student, Denise Sanchez, is working on a continuation of Kawsar's research into the behaviour of non-contact lap splices, considering the effects of bars lapped in the same cell but separated by various distances (i.e. not in direct contact). Denise is also extending the work comparing the two lap splice test methods described above.

Also working in this area is M.Sc. student Alexander (Sasha) Kisin. However, Sasha's focus is on remedial measures that can be taken to mitigate the effects of non-contact splices that may occur inadvertently during construction.

2. Realistic Wind Loads on Unreinforced Masonry Walls (Principal Investigator: Dr. Bruce Sparling)

The effects of realistic, gusty winds on the flexural behaviour of ungrouted, non-loadbearing concrete masonry block walls are being investigated in this study. Specifically, the response to the dynamic wind loads is being compared to that obtained using more conventional quasi-static load tests. Two types of wall support conditions are being considered: ideal pinned supports at the top and bottom ends of the walls, and supports that more closely resemble those typically used in practice.

3. Cold Weather Construction of Masonry (Principal Investigators: Dr. Moh Boulfiza and Dr. Leon Wegner)

The focus of this research project is to explore potential construction methods, such as the use of admixtures for the mortar and grout, to extend the temperature range under which masonry can be safely constructed without the requirement for heating and hoarding. This research will consider factors including cost effectiveness, durability, interaction with reinforcing and the effect on workability in assessing potential solutions for cold weather construction.