



RCI continues its support for SIGDERS; phase V research and development activities

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**RCI Inc. continues its support
for
Special Interest Group for Dynamic Evaluation of Roofing
Systems
SIGDERS - Phase V
Research and Development Activities**

Background

On Nov. 16, 1994, members of the roofing community met at the National Research Council of Canada and formed a group with a common focus of evaluating roofing systems under dynamic environment. Thus, a *Special Interest Group on Dynamic Evaluation of Roofing Systems* (SIGDERS) was created. The mandate of SIGDERS joint research program is to carry out generic, pre-competitive research of benefit to all its members. During the Phases 1, 2, 3 and 4 objectives were identified; tasks were developed and executed through approval process by the Steering Committee members. Based on the focused effort, recently, SIGDERS made two major contributions to the roofing community:

- 1) A National Dynamic Wind Uplift Standard
(<http://www.csa-intl.org/onlinestore/GetCatalogItemDetails.asp?mat=000000000002015892>)
- 2) A Guide for Wind Design of Mechanically Attached Roof Assemblies.
(http://irc.nrc-cnrc.gc.ca/pubs/catalogue/nrcc47652_e.html)

Overall work plan for Phase V

SIGDERS Phase IV, meeting 5 was held at Marriott Waterside, Tampa, FL along with ASTM D08 – Roofing Symposium on December 1, 2007. Existing and new members participated in a discussion forum – *Where we go from here?* For discussion purposes, the following objectives (not in the order of the priority) were presented to the members:

- Development of Appropriate Testing Table Size for MARS, FBS, AARS
- Investigation of Hybrid Systems
- Investigate Wind Uplift Resistance of Fully Bonded Systems
- Quantifying the Wind Uplift Resistance of Mounted Roof Tops
- Codification of SIGDERS' Research Findings – Tech Transfer
- Development of a Web Based Design Tool – Tech Transfer
- Estimating the Adverse Effect of Corner/Edge Linear Enhancements
- Field Monitoring of the Wind Performance of Roofs

SIGDERS Phase V, meeting 1 was held at the National Research Council of Canada in Ottawa, Canada on April 16, 2008. Phase V will be officially launched summer of 2008 with the estimated completion of summer of 2010.

Based on the involved discussions and members voting, the following three objectives have been finalized.

Objective 1: Field Monitoring of the Wind Performance of Roofs

- T1: In consultation with members, identify 3 buildings located in a moderate wind zone.
- T2: Measure rooftop wind speed and compare with weather data.
- T3: Instrument the field/edge/corner zones
- T4: Collect data for wind pressures, fastener forces and membrane deflections
- T5: Compare field system performance with wind tunnel data

Objective 2: Air Intrusion Quantification of Mechanically Attached Roofing Assemblies

- T1: Documenting that wind uplift testing can address the issue of air leakage in roofing.
- T2: Measure air intrusion of mechanically attached roofing systems without any barrier/retarder.
- T3: Measure air intrusion of mechanically attached roofing systems with barrier/retarder.
- T4: Measure air intrusion of roofing systems with multilayer insulation arrangements.

Objective 3: Update CSA A123.21-04 Standard to Include Wind Uplift Resistance Evaluation of Fully Bonded System

- T1: Determine appropriate test specimen size for wind uplift resistance evaluation of FBS.
- T2: Evaluate the wind uplift resistance of rigid roofing systems with single-ply membranes.
- T3: Verify the existing CSA load cycle and its applicability to rigid systems.

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