

## **SIGDERS IV – Special Interest Group for Dynamic Evaluation of Roofing Systems – Phase IV**

### **Objectives**

This project aims to improve the design of roofs in order to increase their durability and wind-resistance.

### **Background**

A Special Interest Group for Dynamic Evaluation of Roofing Systems (SIGDERS) was formed in 1994 to evaluate roofing systems under dynamic conditions such as wind gusts. Since that time IRC has built the Dynamic Roofing Facility, and the Group has drafted a dynamic wind uplift test method, which has since been adopted by the Canadian Standards Association as CSA Standard A123.21-04. A best practice guide for the wind-design of mechanically attached flexible membrane roofs is also being prepared.

### **Statement of Work**

The next phase of SIGDERS will:

- identify how variations in the properties of steel decks affect the wind-uplift resistance of mechanically attached roofs, and quantify those effects,
- develop and apply a test procedure to quantify the air-leakage rate of mechanically attached roofs,
- determine how the wind-uplift resistance, perimeter and corner zones of the roof correlate with each other in real applications.

### **Expected Outcomes**

- A test procedure for measuring air leakage through mechanically attached roofs.
- Design tables showing the relationship between the uplift resistance of mechanically attached roofs and the properties of steel decks.

### **Partners**

**Associations:** Canadian Roofing Contractors' Association, Canadian Sheet Steel Building Institute, National Roofing Contractors' Association, Roof Consultants Institute  
**Manufacturers:** Atlas Roofing Corp., Canadian General Tower Ltd., Carlisle SynTec Inc., Firestone Building Products, GAF Material Corp., GenFlex Roofing Systems, IKO Industries Limited, ITW Buildex, Johns Manville Corp., Sarnafil Inc, Soprema, Stevens Roofing, Tremco Inc., Trufast Corp.,  
**Building Owners:** Canada Post Corp, Public Works and Government Services Canada.

### **Start/Expected Completion Dates**

Phase IV began in 2004 and will be completed in June 2008.

### **Project Manager**

Dr. Bas A. Baskaran: 613-990-3616; Bas.Baskaran@nrc-cnrc.gc.ca

For more information, see [http://irc.nrc-cnrc.gc.ca/bes/prsi/sigders\\_e.html](http://irc.nrc-cnrc.gc.ca/bes/prsi/sigders_e.html)

Factsheet 22, July 2007



New 16' by 32' table for Phase IV investigation of wider roofing membranes