

# SIGDERS' PUBLICATIONS

[as of Nov 2007, Meeting IV-5]

## *Papers in Refereed Journal*

1. Baskaran, B.A., Ko, S.K.P., "Optimizing wind uplift resistance of mechanically attached roof systems," Submitted to: *Building and Environment*, pp. 1-29
2. Molleti, S., Baskaran, B.A., Ko, K.P., "Development of a new test method for air leakage quantification of roofing assemblies," Submitted to: *Journal of Testing and Evaluation*, pp. 1-35
3. Molleti, S., Baskaran, B.A., "Air leakage quantification of roofing assemblies over steel deck," Submitted to: *Journal of Wind Engineering and Industrial Aerodynamics*, pp. 1-25
4. Baskaran, B.A., Molleti, S., Sexton, M., "Impact of air intrusion on the wind uplift performance of fully bonded roofing assemblies," Submitted to: *Construction and Building Materials*, pp. 1-28
5. Baskaran, B.A., Molleti, S., Sexton, M., "Wind performance evaluation of fully bonded roofing assemblies," Accepted to: *Construction & Building Materials*, pp. 1-34, 2007.
6. Baskaran, B.A., Ham, H., Lei, W., "New design procedure for wind uplift resistance of architectural metal roofing systems," *Journal of Architectural Engineering*, 12, (4), December, pp. 168-177, December 01, 2006
7. Baskaran, B.A., "Top 10 questions and answers on static vs. dynamic wind testing for commercial roofs," *Interface - Journal of Roof Consultant Institute (RCI)*, 24, (9), September, pp. 5-13, September 01, 2006
8. Baskaran, B.A., Molleti, S., "Application of numerical models to evaluate wind uplift ratings of roofs. Part II," *Wind & Structures*, 8, (3), May, pp. 213-233, May 01, 2005
9. Baskaran, B.A., Liu, K.K.Y., Lei, W., Delgado, A.H., "A New facility to simulate simultaneous wind and thermal effects on roofing systems," *Journal of Testing and Evaluation*, 31, (4), July, pp. 1-10, July 01, 2003
10. Baskaran, B.A., Katsman, R., Sexton, M., Lei, W., "Investigation of thermally induced loads in modified bituminous roofing membranes," *Construction and Building Materials*, 17, (3), April, pp. 153-164, April 01, 2003
11. Baskaran, B.A., Savage, M.G., "Wind pressure measurement on fullscale flat roofs," *Interface (Journal of the Roof Consultants Institute)*, 21, (4), April, pp. 17-21, April 01, 2003
12. Baskaran, B.A., "Dynamic wind uplift performance of thermoplastic roofing system with new seaming technology," *Journal of Architectural Engineering*, 8, (4), December, pp. 97-107, December 01, 2002
13. Baskaran, B.A., Sexton, M., Molleti, S., "Wind uplift ratings of mechanically-attached single-ply modified bituminous roofing systems," *Interface, Roof Consultants Institute (RCI)*, 20, (11), November, pp. 16-20, November 01, 2002

14. Baskaran, B.A., Borujerdi, J., "Application of numerical models to determine wind uplift ratings of roofs," *Wind & Structures*, 4, (3), June, pp. 213-226, June 01, 2001
15. Baskaran, B.A., Chen, Y., Vilaipornsawai, U., "A New dynamic wind load cycle to evaluate flexible membrane roofs," *Journal of Testing and Evaluation*, 27, (4), July, pp. 249-265, July 01, 1999
16. Baskaran, B.A., Lei, W., Richardson, C., "Dynamic evaluation of thermoplastic roofing system for wind performance," *Journal of Architectural Engineering*, 5, (1), pp. 16-24, March 01, 1999
17. Baskaran, B.A., Chen, Y., "Wind load cycle development for evaluating mechanically attached single ply roofs," *Journal of Wind Engineering and Industrial Aerodynamics*, 77-78, Sept-Dec., pp. 83-96, 1998
18. Chen, Y., Baskaran, B.A., Lei, W., "Wind load resistance of modified bituminous roofing systems," *Construction and Building Materials*, 12, (8), December, pp. 471-480, 1998
19. Baskaran, B.A., Dutt, O., "Performance of roof fasteners under simulated loading conditions," *Journal of Wind Engineering and Industrial Aerodynamics*, 72, Nov-Dec., pp. 389-400, 1997
20. Baskaran, B.A., "Effects of dynamic wind loads on roofing systems - New Research Investigates the Effects of Dynamic Wind Loads on Roofing Systems", *Interface, Roof Consultants Institute (RCI)* 14, (10), Oct, pp. 5-8, 1996

### **Refereed Conference Proceedings**

21. Molleti, S., Baskaran, B.A., "A New test method for quantifying air leakage of a mechanically-attached roofing assembly," Proceedings of the RCI 22nd International Convention (Orlando, Florida, March 01, 2007), pp. 105-116, March 01, 2007
22. Baskaran, B.A., Molleti, S., Booth, R.J., "Understanding air barriers in mechanically attached low slope roofing assemblies for wind uplift," Proceedings of the 3rd International Building Physics Conference (Concordia University, Montreal, QC. August 27, 2006), pp. 443-450, August 27, 2006
23. Baskaran, B.A., Ko, S.K.P., "Which is the weakest link? Wind performance of mechanically attached systems," Proceedings of the RCI 21st International Convention (Phoenix, Arizona, March 23, 2006), pp. 29-39, March 01, 2006
24. Baskaran, B.A., Sexton, M., Lei, W., Molleti, S., "Pullout resistance of roofing fasteners using different methods," *ASTM STP*, 1451, Roofing Research and Standards Development: Fifth Symposium (Tampa, Florida, December 07, 2003), pp. 19-36, December 01, 2003
25. Baskaran, B.A., Molleti, S., Sexton, M., "Wind uplift performance of roofing systems with vapour barrier," 9th Canadian Conference on Building Science and Technology (Vancouver, B.C., February 27, 2003), pp. 349-364, February 01, 2003
26. Baskaran, B.A., Mihailovic, M., Lei, W., Sheahan, J.P., "Wind uplift resistance of low slope mechanically fastened roofs with attached and loose-

- laid insulation boards," Proceedings of the North American Conference on Roofing Technology (Toronto, Ontario, September 16, 1999), pp. 12-20, September 16, 1999
27. Baskaran, B.A., Vilaipornsawai, U., Savage, M.G., Cooper, K.R., "Effect of roofing membrane on wind uplift pressures," ASCE - 1999 Structures Congress (New Orleans, Louisiana, April 19, 1999), pp. 1055-1059, May 01, 1999
  28. Baskaran, B.A., Zahrai, S.M., Chen, Y., "Numerical evaluation of roofing systems for wind uplift pressures," 3, 10th International Conference on Wind Engineering into the 21st Century (Copenhagen, Denmark, June 21, 1999), pp. 1747-1754, 1999
  29. Baskaran, B.A., Lei, W., "New facility for dynamic wind performance evaluation of roofing systems," 4th International Symposium on Roofing Technology (Gaithersburg, MD., U.S.A., September 17, 1997), pp. 168-179, September 01, 1997
  30. Baskaran, B.A., Chen, Y., Savage, M.G., "Development of a wind load cycle for testing commercial building envelopes," 1, ASCE Structures Congress XV (Portland, Oregon, U.S.A., April 13, 1997), pp. 6-10, April 01, 1997
  31. Baskaran, B.A., Dutt, O., "Evaluation of roof fasteners under dynamic wind loading," Ninth International Wind Engineering Conference (New Delhi, India, January 09, 1995), pp. 1207-1218, 1995
  32. Zahrai, S.M., Baskaran, B.A., "Table size effect on wind resistance of modified bituminous roofing systems," International Conference on Building Envelope Systems and Technologies (ICBEST) (Ottawa, Ontario, June 26, 2001), pp. 319-324, July 01, 2001
  33. Baskaran, B.A., Paroli, R.M., Booth, R.J., "Wind performance evaluation procedures for roofing systems current status and future trends," 5th International Conference on Building Envelope Systems and Technology (Bath, U.K., April 15, 1997), pp. 37-52, April 01, 1997

### ***NRC Technical Publications***

34. Baskaran, B.A., Smith, T.L., A Guide for the Wind Design of Mechanically Attached Flexible Membrane Roofs, Ottawa : Institute for Research in Construction, National Research Council Canada pp. 107, December 01, 2005
35. Baskaran, B.A., Dynamic Wind Testing of Commercial Roofing Systems, *Construction Technology Update*, (55), pp. 6, November 01, 2002
36. Baskaran, B.A., "NRC-IRC publishes new guide for the wind design of mechanically attached roofs," *Construction Innovation*, 10, (4), December, pp. 5, December 01, 2005
37. Baskaran, B.A., "Newsbrief - SIGDERS project, Phase IV," *Construction Innovation*, 10, (4), December, pp. 5, December 01, 2005
38. Baskaran, B.A., "NRC-IRC researcher part of investigations following Hurricane Katrina," *Construction Innovation*, 10, (4), December, pp. 7, December 01, 2005

39. Baskaran, B.A., "IRC helps North Americans build better, safer roofs to withstand hurricanes," *Construction Innovation*, 10, (1), March, pp. 7, March 01, 2005
40. Baskaran, B.A., "What we're hearing: get out those travel planners, and start booking now!"
41. Baskaran, B.A., "SIGDERS research results in two new tools for better understanding of roofing performance," *Construction Innovation*, 7, (3), September, pp. 7, September 01, 2002
42. Baskaran, B.A., "SIGDERS research focuses on improving wind resistance of roofing systems," *Construction Innovation*, 4, (1), Fall, pp. 9, 1998
43. Baskaran, B.A., "SIGDERS publishes initial results," *Construction Innovation*, 2, (4), July, pp. 7, July 01, 1997
44. Baskaran, B.A., "IRC consortium to create test protocol for the North American roofing industry," *Construction Innovation*, 2, (2), November, pp. 9, 13, November 01, 1996
45. Baskaran, B.A., Dutt, O., Paroli, R.M., "Investigating roofing systems' ability to withstand dynamic wind effects," *New Roofing Study Under Dynamic Wind Effects Building Performance News*, (24), Fall, pp. 1, October 01, 1994

#### **Reports & Other Publications**

46. Ko, K.P., Baskaran, B.A., SIGDERS Wind Uplift Resistance Data on Mechanically Attached Single Ply Roofing Systems - Effect of Membrane Widths. Part II, *Research Report, Institute for Research in Construction, National Research Council Canada*, 229, pp. 105, May 01, 2007
47. Evoniak, S., Ko, K.P., Molleti, S., Baskaran, B.A., SIGDERS Wind Uplift Resistance Data on Mechanically Attached Single Ply Roofing Systems - Effect of Steel Deck Parameters. Part II, *Research Report, Institute for Research in Construction, National Research Council Canada*, 230, pp. 26, May 01, 2007
48. Ko, K.P., Molleti, S., Bishop, M., Baskaran, B.A., SIGDERS Wind Uplift Resistance Data on Mechanically Attached Single Ply Roofing Systems - Effect of Steel Deck Parameters, *Research Report, Institute for Research in Construction, National Research Council Canada*, 217, pp. 99, March 01, 2006
49. Baskaran, B.A., Ko, K.P., SIGDERS Wind Uplift Resistance Data on Mechanically Attached Single-Ply Roofing Systems - Effect of Membrane Widths, *Internal Report, Institute for Research in Construction, National Research Council Canada*, 865, pp. 99, February 10, 2006
50. Ko, S.K.P., Baskaran, B.A., Wind Uplift Resistance of Single-Ply Membrane Roofs - Effect of System Parameters, pp. 123, April 20, 2004
51. Sexton, M., Baskaran, B.A., SIGDERS Wind Uplift Rating of TPO Systems, pp. 7, March 24, 2004
52. Savage, M.G., Baskaran, B.A., Alfawakhiri, F., Cooper, K.R., Pressure Distribution Data Measured During the October 1995 Wind Tunnel Tests on a Mechanically-Attached, EPDM Single-Ply Roofing System, pp. 203.
53. Savage, M.G., Baskaran, B.A., Cooper, K.R., Lei, W., Pressure Distribution

- Data Measured During the November 1994 Wind Tunnel Tests on a Mechanically-Attached, PVC Single-Ply Roofing System, pp. 133, February 01, 1996
54. Sexton, M., Baskaran, B.A., SIGDERS Wind Uplift Resistance Data on Mechanically Attached Single Ply Roofing Systems-Effect of Fastener Placement Location, *Internal Report, Institute for Research in Construction, National Research Council Canada*, 839, pp. 38, March 01, 2002
  55. Lei, W., Baskaran, B.A., SIGDERS Wind Uplift Resistance Data on Mechanically Attached Single Ply Roofing Systems-Effect of Vapor/Air Barrier, *Internal Report, Institute for Research in Construction, National Research Council Canada*, 823, pp. 68, September 01, 2001
  56. Lei, W., Baskaran, B. A., SIGDERS Wind Uplift Resistance Data for PVC Roofing Systems, *Internal Report, Institute for Research in Construction, National Research Council Canada*, 821, pp. 62, December 01, 2000
  57. Xu, G., Baskaran, B. A., Wind Uplift Resistance Data of TPO Roofing Systems with New Seaming Concepts, *Internal Report, Institute for Research in Construction, National Research Council Canada*, 817, pp. 71, October 01, 2000
  58. Baskaran, B.A., Nabhan, F., Standard Test Method for the Dynamic Wind Uplift Resistance of Mechanically Attached Membrane Roofing Systems, *Internal Report, Institute for Research in Construction, National Research Council Canada*, 699, pp. 24, September 01, 2000
  59. Mihailovic, M., Lei, W., Baskaran, B.A., SIGDERS Wind Uplift Resistance Data for TPO Roofing Systems, *Internal Report, Institute for Research in Construction, National Research Council Canada*, 809, pp. 58, June 01, 2000
  60. Xu, G., Baskaran, B.A., Lei, W., SIGDERS Wind Uplift Resistance Data for Modified Bituminous Roofing Systems, *Internal Report, Institute for Research in Construction, National Research Council Canada*, (808), pp. 84, June 01, 2000 (IRC-IR-808)
  61. Lei, W., Baskaran, B.A., Mihailovic, M., SIGDERS Wind Uplift Resistance Data for Thermoset Roofing Systems, *Internal Report, Institute for Research in Construction, National Research Council Canada*, 807, pp. 84, May 01, 2000
  62. Zahrai, S.M., Baskaran, B.A., Numerical Evaluation for the Effect of Table Size on Roof Wind Uplift Resistance. Part 1: Thermoplastic Roofing Systems, *Internal Report, Institute for Research in Construction, National Research Council Canada*, 709, pp. 32, May 01, 1999
  63. Chen, Y., Baskaran, B.A., Development of Load Sequence using Pressure Records Measured from Wind Tunnel Studies for Mechanically- Attached Single-Ply PVC and EPDM Roofs, *Internal Report, Institute for Research in Construction, National Research Council Canada*, 743, pp. 63, June 01, 1997
  64. Baskaran, B.A., Savage, M.G., Alfawakhiri, F., Cooper, K.R., Fastener Load Data Measured During the November 1994 Wind Tunnel Tests on a Mechanically-Attached PVC Single-Ply Roofing System, *Internal Report*,

- Institute for Research in Construction, National Research Council Canada, 740, pp. 54, May 01, 1997*
65. Baskaran, B.A., Savage, M.G., Alfawakhiri, F., Cooper, K.R., Membrane Deflection and Fastener Load Data Measured During the October 1995 Wind Tunnel Tests on a Mechanically-Attached EPDM Single-Ply Roofing System, *Internal Report, Institute for Research in Construction, National Research Council Canada, 742, pp. 68, May 01, 1997*
  66. Baskaran, B.A., Kashef, A., Application of Numerical Models for the Dynamic Evaluation of Roofing Systems. Part 1: Review of the State-of-the-Art, *Internal Report, Institute for Research in Construction, National Research Council Canada, 690, pp. 43, May 01, 1995*
  67. Baskaran, B.A., Dutt, O., Application of Lab Procedures for the Dynamic Evaluation of Roofing Systems. Part 1: Review of Existing Standards, *Internal Report, Institute for Research in Construction, National Research Council Canada, (692), pp. 26, May, 1995*
  68. Baskaran, B.A., Sexton, M., SIGDERS Wind Uplift Resistance Data on Mechanically Attached Single Ply Roofing Systems - Effect of Cover Boards, *Research Report, Institute for Research in Construction, National Research Council Canada, 144, pp. 109, February 01, 2004*
  69. Baskaran, B.A., Ladubec, C., Sexton, M., SIGDERS Wind Uplift Resistance Data on Fully Bonded Single Ply Roofing Systems, *Research Report, Institute for Research in Construction, National Research Council Canada, 114, pp. 79, December 01, 2002*
  70. Sexton, M., Ladubec, C., Baskaran, B.A., SIGDERS Wind Uplift Resistance Data on Fully Bonded Single Ply Roofing Systems - Effect of Vapour/Air Barrier, *Research Report, Institute for Research in Construction, National Research Council Canada, 115, pp. 73, December 01, 2002*
  71. Sexton, M., Ladubec, C., Baskaran, B.A., SIGDERS Wind Uplift Resistance Data on Mechanically Attached Single Ply Roofing Systems-Effect of Membrane Thickness, *Research Report, Institute for Research in Construction, National Research Council Canada, 117, pp. 50, November 01, 2002*
  72. Baskaran, B.A., "Making progress - a North American group shows how to design durable mechanically attached flexible membrane roof assemblies," *Professional Roofing*, 36, (8), August, pp. 38-42, August 01, 2006
  73. Baskaran, B.A., "Wind uplift and roofs: mechanically attached membrane study," *Construction Canada*, 48, (3), May, pp. 32-36, 38, May 01, 2006
  74. Baskaran, B.A., "Blow-by-blow wind test: can metal roofs survive high winds? It may depend on the air leakage of the structural deck," *Roofing BC*, 1, (1), Summer, pp. 14-15, June 01, 2004
  75. Baskaran, B.A., "The Effect of wind on roofing systems," *Building*, 48, (2), May/June, pp. 30, May 01, 1998
  76. Paroli, R.M., Baskaran, B.A., "Keeping roofs on and working," *Building*, 46, (2), pp. 11-12, 14, April 01, 1996
  77. Baskaran, B.A., Dutt, O., "Putting roof fasteners to the test in high winds," *RSI-Roofing, Siding, Insulation*, 71, (1), January, pp. 1-3, January 01, 1994