Roofs and Attics - Thermal and Moisture Performance

Books and Research Reports

Canada Mortgage and Housing Corporation
Diagnosing Attic Performance by Snow- and Frost-Melt Patterns
Ottawa: Canada Mortgage and Housing Corporation
2004
“This project investigated whether snow or frost-melt patterns on roofs would be good predictors of ice damming potential and attic problems. Photographs of roof melt patterns were taken to document where heat was leaking into attics. Warm attics, or hot spots in melt patterns, can encourage rapid snow melt on roofs, which can lead to the formation of ice dams. Photographs were later used to compare the roofs under ice dam forming conditions.”
Available at: CMHC

Canada Mortgage and Housing Corporation
Field Testing of Valved Soffit Vent Performance in Protecting Roof and Attic in Strong Winds
: Canada Mortgage and Housing Corporation
2007
A simple and effective retrofit, valved soffit vents ("VSVs") are designed to blow closed in strong winds, thereby preventing the entry of snow or rain and reducing wind pressurization of the roof space. Previous testing of VSV performance in depressurizing roof spaces has been limited to scale model houses mounted on automobiles. This study explores full-scale "real world" VSV performance by monitoring a house roof space in strong winds.”

Eberhard S.
Roof Construction Manual: Pitched Roofs
: Basel; Boston: Birkhauser
2003
“The Roof Construction Manual with over 1800 plans and 220 photographs is a vital reference work on the construction of pitched roofs. It offers extensive and fundamental information on all common types of roofing, and provides practical details for their construction. The volume is divided according to the type of roof elements and the jointing techniques. Thirteen kinds of roofs and the relevant materials including thatch, wood, slate, tile, concrete, fibrous cement, bitumen, glass, metal, membranes, and synthetic materials are documented. Also described in detail are essential topics such as ventilation, the vapour and wind seals, insulation and water drainage, and the topics of renovation and energy conservation are examined.”
Available at: BCIT

RCABC Guarantee Corp. (RGC)
RCABC Consumers Roofing Guide
:
2006
“The information provided in this publication from the Roofing Contractors Association of British Columbia (RCABC) was compiled as a guide to assist consumers with the selection of roofing services in British Columbia. This roofing guide includes information sections reprinted from the RCABC Guarantee Corp. (RGC) Roofing Practices Manual (RPM) and other publications including those used by the RCABC Educational Foundation (REF) during the training of roofing apprentices and journey persons for the province of British Columbia.”
Available at: HPO, http://www.rcabc.org

RCABC Guarantee Corp. (RGC)
RCABC Roofing Practice Manual

2006
“The Roofing Contractors Association of British Columbia produced this newly revised (seventeenth edition) roofing manual. Offering an overview of roofing assemblages and building science as it pertains to roofing—there are also details for all types of roof assemblages from low slope to steeply sloped. All members of the Association are listed and the guarantee program is explained.”
Available at: BCIT, VPL, HPO, http://www.rcabc.org

Roppel, Patrick and Lawton, Mark
Attic Ventilation and Moisture Research Study
Burnaby, BC, Canada: Homeowner Protection Office
2014
This report presents the findings of a two-phase research project that looked at the presence of moisture and mold growth on the roof sheathing of ventilated attics constructed in coastal climates. Phase 1 examined and confirmed through field testing and monitoring that in some maritime climates mold growth may occur even in well ventilated attics. Phase 2 of the study focused on evaluating the factors that lead to moisture collection and mold growth in order to identify design solutions and treatments that would minimize the potential for mold growth. Available at: HPO

Articles
None


Alaimo, Giuseppe ; Francesco Accurso . 2008. The Assessment of Durability of Discontinuous Roofing: An Experiment on Sandwich Panels. 11DBMC International Conference on Durability of Building Materials and Components Istanbul, Turkey

Ana-Maria Dabija . 2008. Refurbishing the Roof: Possibilities, Consequences and Policies in
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Building Rehabilitation. 11DBMC International Conference on Durability of Building Materials and Components Istanbul, Turkey


Anon. 2000. Insulating an attic access. USA, Home Energy March/April: 10-11


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Erik Brandt ; Tommy Bunch-Nielsen . 2008. Service Life (Model) for Bituminous Roofing. *11DBMC International Conference on Durability of Building Materials and Components Istanbul, Turkey*


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Garcez, Nuno; Lopes, Nuno; Brito, Jorge de; Silvestre, José. 2012. System of inspection, diagnosis and repair of external claddings of pitched roofs. *Construction and Building Materials* 0: 1034-1044

Available at: UBC


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*Vancouver, British Columbia*  
Available at: BCIT, CMHC, HPO

Haddock, Rob; Dutton, Ron. 2011. Service Life Assessment of a Low-Slope 55 % Al - Zn Alloy-Coated Steel Standing Seam Roof System. *Journal of ASTM International*  
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Roofing Tiles: Assessing the Reliability of Prediction Models. *11DBMC International Conference on Durability of Building Materials and Components Istanbul, Turkey*

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Quirouette, R.. 2005. The anatomy of an ice dam. *Building Envelope Forum Online Newsletter, June*
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**Air/Vapour Barriers, Membranes, Sealants**

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Suda Molletic, ; Bas Baskaran, ; Pascal Beaulieu,. 2011. Thermal Induced Stresses on Modified Bituminous Low - Slope Roofing Systems. 13th Canadian Conference on Building Science and Technology (CCBST) Winnipeg, MB

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**Moisture Performance**

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Steskens, Paul; Dobbels, Filip; Loncour, Xavier; Flamant, Gilles. 2012. The influence of air permeability and type of underlay on the hygrothermal performance of an inclined roof. *5th International Building Physics Conference (IBPC)* Kyoto, Japan

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