UAA College of Engineering
University of Alaska Anchorage

UAA Professional Development Seminar Series

Roof Ice Dams and Snow Loads on Structures

Presented by: Dr. Scott Hamel, PE
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Director – ConocoPhillips Structures Testing Lab

ABSTRACT: Roof ice damming is caused by a complex interplay of internal and external temperatures, insulation configuration, ventilation, snow volume, and drainage. Roofs over heated spaces, both residential and commercial, can be designed and constructed as either "cold roofs" or "hot roofs". A cold roof has a path for heat to escape allowing snow cover to remain at approximately the ambient air temperature, while hot roofs have no such mechanism which allows heat from the structure to warm, and often melt, snow on the roof. This presentation will review the design and construction of hot and cold roofs, and discuss the formation and associated factors of roof ice dams.

In addition, the factors associated with the design of snow loads in modern buildings including drifts, unbalanced loads, and sliding will be reviewed. The presentation is intended for a wide audience including architects, engineers, builders, and homeowners.

BIO: Dr. Scott Hamel grew up on the seacoast of New Hampshire, and spent his summers in the NH mountains working as a staff member at the Hidden Valley Scout Reservation. After high school, he pursued a degree in Civil Engineering from Worcester Polytechnic Institute in Massachusetts, and worked part-time as a surveyor and draftsman. He was also a member of the WPI Crew team for four years and was highly ranked in National and European Competitions. After earning his B.S. degree in 2000, he began his career as a bridge inspector and roadway designer in Boston, working on

contracts from MassHighway, MBTA and the City of Boston. In 2003, he moved to Colorado to pursue a Master's in Civil Engineering with an emphasis in structures at the University of Colorado at Boulder, which he earned in 2005. Dr. Hamel was employed for three years by S.A. Miro in Denver as a Structural Engineer designing multi-story commercial and government buildings, including hospitals, office buildings, and museums, and earned his Professional Engineering (PE) license in 2006. In 2007, returned to school and in 2011 completed his doctorate at the University of Wisconsin-Madison in structural engineering. His research was conducted primarily at the Forest Products Laboratory (FPL) in Madison and his dissertation was on computer modeling the time-dependent behavior of Wood-plastic Composites (WPCs). Since 2003, he has also been heavily involved in Engineers without Borders (EWB) at both the local and national level, on a variety of bridge and water projects in Haiti, El Salvador, and Rwanda. He is a registered PE in Wisconsin and Alaska.

Friday, March 24, 2023
11:45 am - 12:45 pm
Online Via YouTube Live