Assessment of the minimum requirements of the Canadian design code for roof sheathing panels on wood-frame houses

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One of the most vulnerable components of residential buildings in severe storms is roof sheathing and damage to it causes large monetary loss due to rainwater subsequently penetrating inside the buildings. Accordingly, many reliability analysis studies of roof sheathing have been performed. This study extends previous research by varying the following elements: 1. Wind tunnel test data are utilized as wind load information instead of wind loads specified in design codes as used by previous studies, and 2. Assessment of the existing requirements for roof sheathing in the Canadian design code (NBCC) is performed. The present study finds that the minimum requirements of the NBCC are inadequate in many regions of Canada for all roof-types and dimensions of house considered, and some recommendations based on the obtained results are presented.