

Failure of Simply-Supported Flat Roofs by Ponding of Rain

Paper presented by JAMES CHINN (April, 1965, Issue)

Discussion by **MARTIN P. WALSH, JR., P.E.**

THE ARTICLE BY Prof. Chinn, while a complete treatment of an isolated simple beam, fails to caution the reader that deflection of subframing members must also be considered in the ponding problem. The typical framing situation encountered is often considerably more serious due to the additional deflection of joists, subpurlins and other framing members which serve to transfer the roof loads to the main girders.

The sample problems in the paper assume zero deflection in the members between adjacent girders; this requires infinitely rigid subframing members. In practice these subframing members often have deflections equal in magnitude to those of the main girders. This office has found this cumulative deflection ponding effect neglected in many designs.

Also, the last equation on page 39 is inconsistent unit-wise. To make the answer 0.344 (instead of 344), the unit weight of water must be expressed as 0.0624 kips per cubic ft instead of 62.4 pounds per cubic ft.

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