

**HR Engineering, Inc.**1541 E. Market St.
York, PA 17403

15 December 2020

Brian Long, R & D Manager
Morton Buildings, Inc.
252 W. Adams Street
P.O. Box 399
Morton, IL 61550

RE: Evaluation Report Hi-Rib II Roof Panels, 2020 FBC

Dear Mr. Long;

The following Morton Buildings, Inc. roofing product; Hi-Rib II Steel Roof Panels has been determined by testing and a combination of comparative and rational analyses to be in conformance with 2020 Florida Building Code, Sections 1504.3.2 *Metal panel roof systems* and 1507.4. *Metal roof panels*. Uplift testing was done to UL 580 and UL 1897 at Underwriters Laboratories, Inc. and is reported in UL File Number R21540 and Project 07NK20519. Roof diaphragm testing was done to ASTM E 455 at Architectural Testing, Inc. and is reported in their project 77287.01-122-44. The comparative and rational analyses were done by myself and are reported here. The complete analyses for the results shown here is in a 7 page hand written report titled *HI-RIB II STEEL ROOF PANELS FLORIDA EVALUATION 2020*.

Testing was done in 2007 under UL 1897-04. The present version of UL 1897-12 has no additional testing required by UL, or change in actual test requirements.

The configuration of these panels is, 36" effective width, 7/8" high ribs at 12" spacing, and 2 embosses between each rib. The panels are produced in 3 different thicknesses; 0.015", 0.017", and 0.019". Installation is on wood purlins spaced at 24" maximum, with a minimum panel slope of 2:12. Installation fasteners are proprietary #9 (0.177" diameter) stainless steel screws with a bonded 7/16" diameter stainless steel washer under the head. A screw is installed through each panel rib into each purlin.

The allowable design pressures for the 0.015" thick panel are +/-60 psf, which is adequate for the 110 mph wind zone, exposure B, with a maximum roof height of 50 feet. The allowable design pressures for the 0.017" thick panel are +/-75 psf, which is adequate for 120 mph wind zone, exposure B, with a maximum roof height of 60 feet; or 120 mph wind zone, exposure C, with a maximum roof height of 15 feet; or 110 mph wind zone, exposure C, with a maximum roof height of 35 feet. The allowable design pressures for the 0.019" thick panel are +/-90 psf, which is adequate for 145 mph wind zone, exposure B, with a maximum roof height of 30 feet; or 130 mph wind zone, exposure C, with a maximum roof height of 15 feet; or 130 mph wind zone, exposure B, with a maximum roof height of 60 feet; or 120 mph wind zone, exposure C, with a maximum roof height of 35 feet. In order to obtain these values, the screws must penetrate into the wood purlins a minimum of 1-1/8 inches.