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Technical Bulletin 162

This bulletin is to address a frequently asked question:

Question: Is it okay to increase the gauge or thickness of a tested panel assembly?

Example: a panel assembly is tested in 24 gauge steel but the spec calls for 22 gauge steel instead.

Answer: It is both an industry standard and an acceptable engineering practice to move up a gauge [i.e. 24 ga. to 22 ga. steel or .032" to .040" aluminum] without requiring additional testing provided the assembly is installed as tested using the same values as tested.

Note: see PAC's White Paper entitled "Interpolation vs. Extrapolation" for more information on this subject.

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COMMON SENSE DEFINITIONS OF TESTED ROOF ASSEMBLIES

INTERPOLATION vs. EXTRAPOLATION

This is a white paper to assist training Petersen Personnel, Distributors, Contractors and PAC Association members, along with any interested Designers, Architects, Engineers or any Authority Having Jurisdiction. (AHJ)

Some of the below listed examples are taken in bits or in whole from Underwriters Laboratory® (UL) and/or Florida Department of Education Hurricane Shelter definitions of tested/approved roof assemblies and generally accepted engineering practices.

INTERPOLATION [or rational analysis] of a tested roof assembly: One may use an enhancement of a tested assembly by the same manufacturer, same gage and/or thickness of roof covering for the same approval. EXTRAPOLATION is never permitted with these tested assembly approvals.

Example: A Product Approval is tested over 1/2" plywood with "peel & stick" membrane.
The interpolation [or rationale] allows for:

- 5/8" plywood - YES
- 3/4" plywood - YES
- or any thicker wood deck - YES
- any thicker "peel & stick" - YES

5/8" OSB - NO
3/4" OSB - NO
any other OSB - NO
synthetic/felt paper - NO

The same rational analysis allows for the tested roof covering to be enhanced in this manner: again, same panel profile, same gage/thickness or heavier gage:
Example: A Product Approval is tested using a 24 Gage Steel panel x 18" wide panel:
The interpolation [or rationale] allows for:

- 16" wide 24 Gage Steel Panel - YES
- 12" wide 24 Gage Steel Panel - YES
- 18" wide 22 Gage Steel Panel - YES
- 16" wide 22 Gage Steel Panel - YES

20" wide 24 Gage Steel Panel - NO
24" wide 24 Gage Steel Panel - NO
18" wide 26 Gage Steel Panel - NO
16" wide 26 Gage Steel Panel - NO

The same rationale allows for the steel decking of the tested roof assembly to be enhanced in this manner:
Heavier/thicker gage steel decking:
Example: A Product Approval is tested using a 22 Gage Steel Deck, "B" Decking is typical:

- 20 Gage Steel Decking has approval - YES
- 18 Gage Steel Decking has approval - YES
- 16 Gage Steel Decking has approval - YES

24 Gage Steel Decking no approval - NO
26 Gage Steel Decking no approval - NO
29 Gage Steel Decking no approval - NO