



Galvanized Roofing

This resource presents guidelines for the attachment of galvanized metal roofing in Guam, the U.S. Virgin Islands, and other areas of the United States subject to similar wind speeds and coastal hazards. All information presented here is based on specifications and illustrations in the *report Building to Minimize Typhoon Damage: Design Guidelines for Buildings*, prepared by FEMA in response to damage caused by Typhoon Paka in Guam.

Material Specifications

For Guam (and areas subject to similar wind speeds and coastal hazards), use 24-ga aluminum zinc alloy (Galvalume) panels complying with ASTM A 792 Grade 50-B, attached with #14 stainless steel screws with gasketed stainless steel washers.

For the U.S. Virgin Islands and Puerto Rico (and areas subject to similar wind speeds and coastal hazards), use 25-ga panels with all other specifications being the same as above.

Attachment Specifications

See Table 1 and Figures 1 through 3

References

Federal Emergency Management Agency. *Building to Minimize Typhoon Damage: Design Guidelines for Buildings*. July 1998.

Table 1. Complete Load Path Fastener Options

24- ga metal Roofing*	
Option 1: Metal roofing over 3/4"-thick plywood sheathing	
C	#14 screws at 8" o.c. maximum (every third corrugation) in rows 24" o.c. (rows 15" o.c. at ridges and overhangs)
D	#14 screws at 6" o.c. maximum (every second corrugation) in rows 24" o.c. (rows 15" o.c. at ridges and overhangs)
Option 2: Metal roofing over 1/2"-thick plywood sheathing with 1 x 4 battens	
C	#14 screws at 12" o.c. maximum (minimum three screws per sheet) in rows 30" o.c. (rows 18" o.c. at ridges and overhangs)
D	#14 screws at 8" o.c. maximum (every third corrugation) in rows 30" o.c. (rows at 18" o.c. at ridges and overhangs)
Flashing Attachments: See Figures 1 through 3.	
Exterior Grade Plywood Sheathing	
Option 1: 3/4"-thick plywood sheathing attachment to multi-chord roof trusses at 32" o.c.	
C	#14 screws at 10" o.c. maximum (6" o.c. at ridges and overhangs)
D	#14 screws at 7" o.c. maximum (4" o.c. at ridges and overhangs)
Option 2: 1/2"-thick plywood sheathing with 1 x 4 batten attachment to single-chord roof trusses at 16"	
C	#14 screws at 12" o.c. maximum (8" o.c. at ridges and overhangs) with a minimum of two #14 screws per batten to truss
D	#14 screws at 9" o.c. maximum (5" o.c. at ridges and overhangs) with a minimum of two #14 screws per batten to truss
Roof Ridge: To secure roof truss to ridge blocking, use Simpson, or equivalent, A34 Framing Anchor (stagger on opposite sides of blocking for nailing to top chord of truss).	

Notes:

- * Method of attachment used in Guam
- C indicates buildings in exposure B or C
- D indicates buildings in exposure D of influenced by abrupt changes to topography (as defined in ASCE 7)

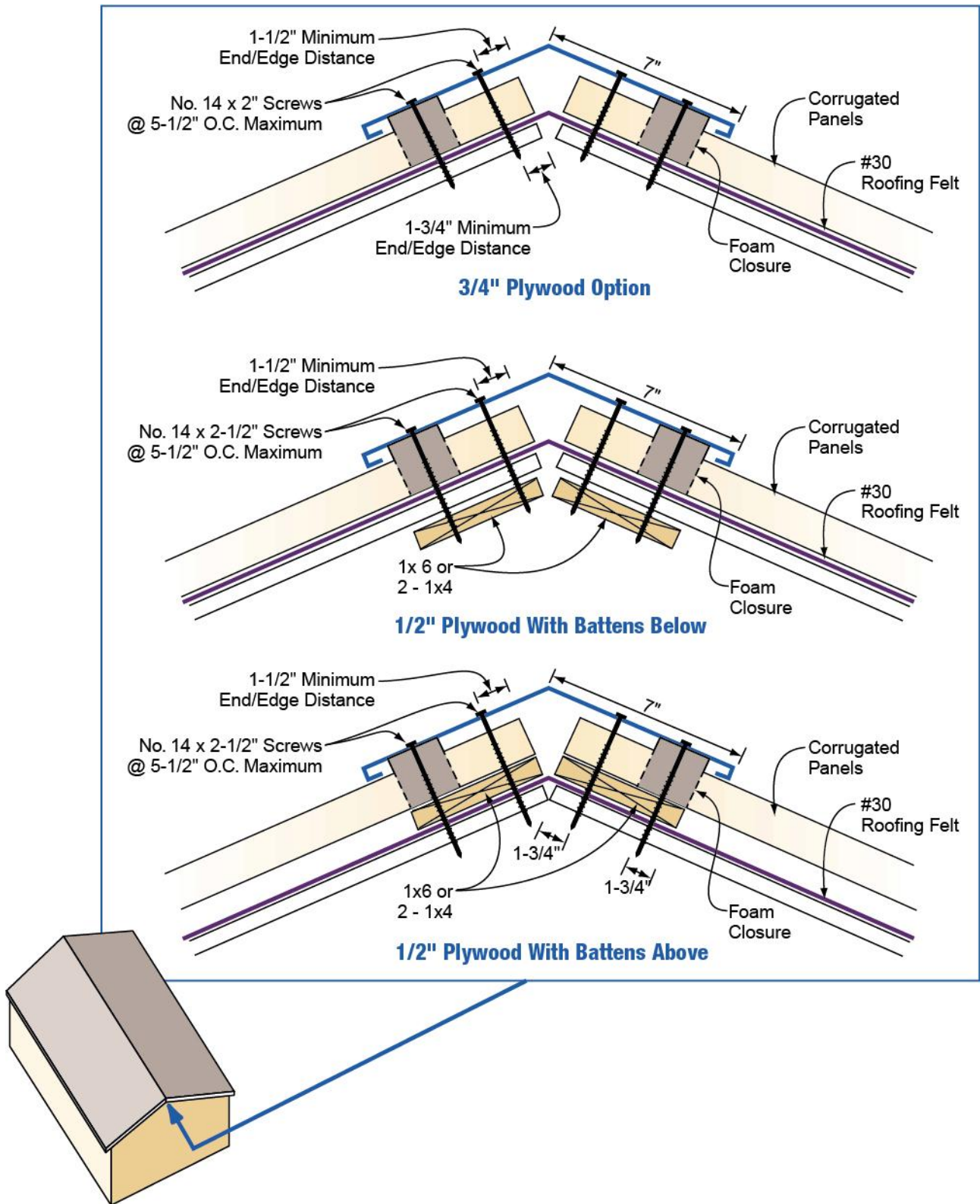


Figure 1. Ridge flashing detail for galvanized metal roofing.

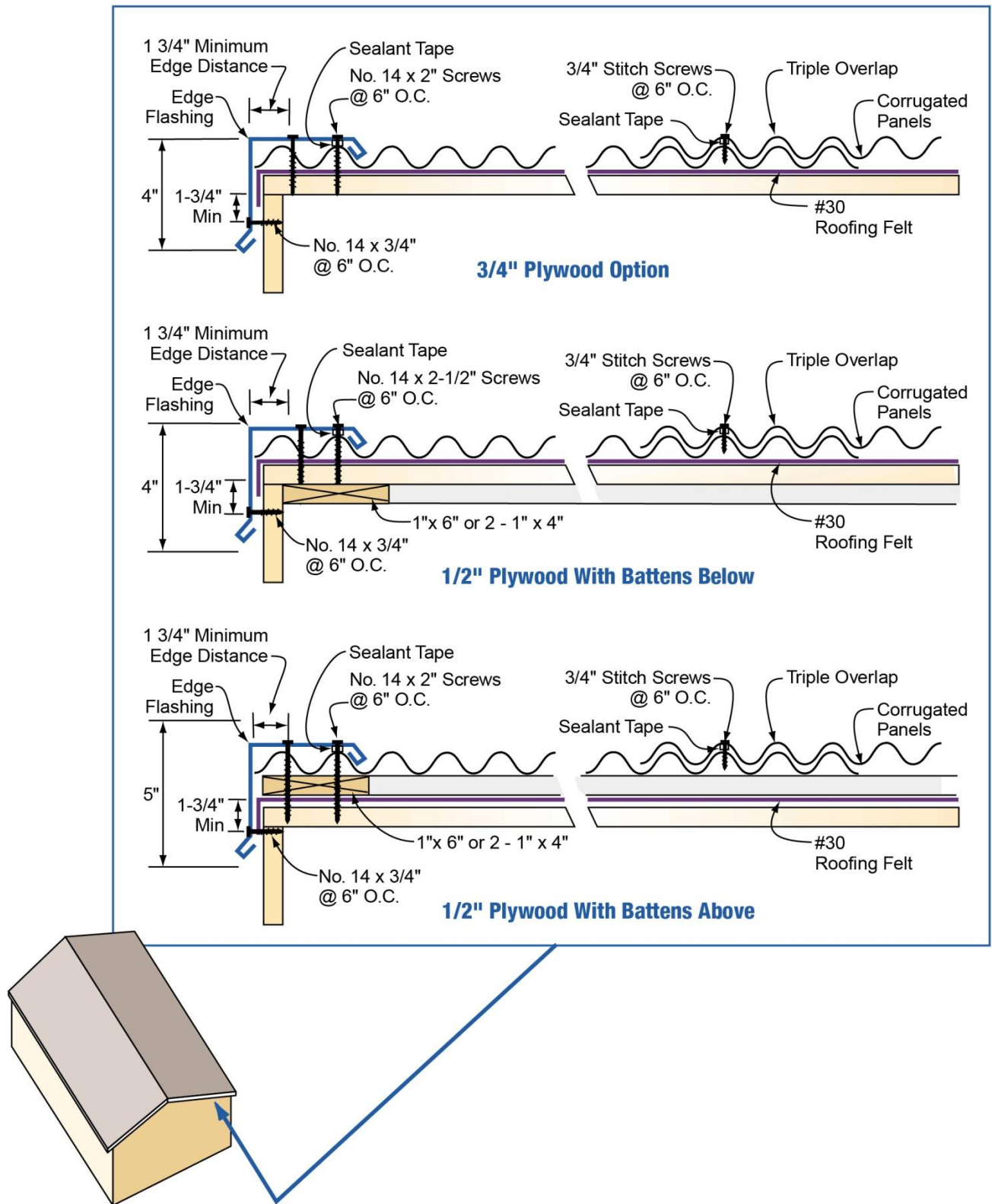


Figure 2. Eave flashing detail for galvanized metal roofing.

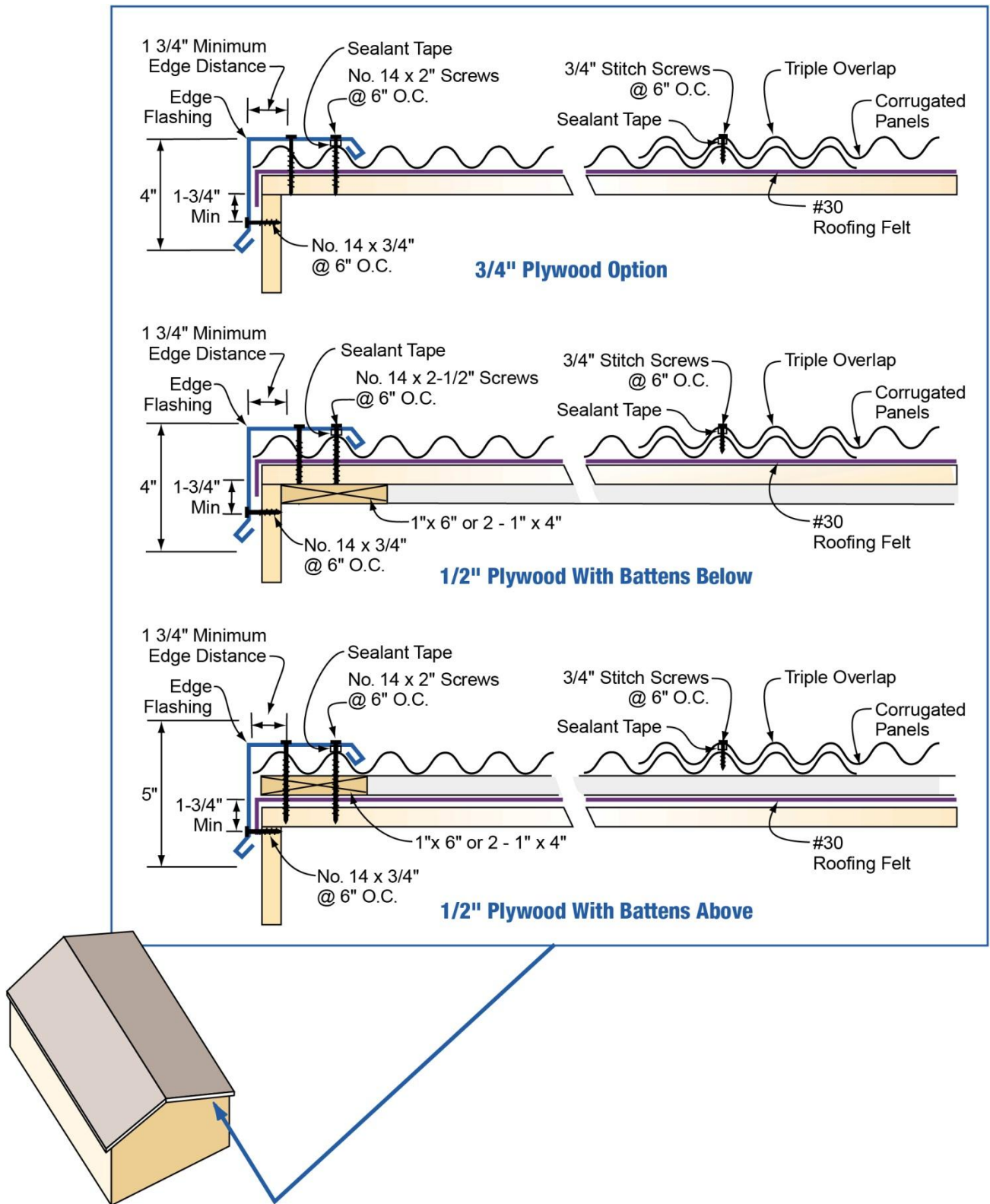


Figure 3. Rake flashing detail for galvanized metal roofing.