

ROOF SUPPORT SYSTEMS

FIGURE 6-1

Figure 6-1 shows conventional substrates for metal roofing. Metal roofs require an adequate support system for fastening the roof panels. Decks with compressible materials such as gypsum or perlite over them may require supplemental support members or metal roof fasteners must go through to the deck. In certain climate conditions thermal isolation at “Z” bars will be needed. See Appendix E for additional design considerations.

Steel Deck: 22 gage (0.759 mm) Min. See Figure 6-2.

The installation of pressure treated wood sleeper or 20 gage (0.912 mm) metal “Z” bars running perpendicular to the roofing pan can provide adequate support. The wood or Z bar is the height of the insulation, and the insulation is cut to fit in between this grid. The grid of wood or steel should be spaced adequately to accommodate the minimum spacing of the metal roofing cleats and fasteners. In some metal roofing systems this spacing is so small that the installation of a minimum of ½ in. (13 mm) plywood is then needed over the grid system. The longer lengths of plywood run perpendicular to the roofing sheets. See Figure 6-1A. Where the roof is of full structural class the Z bars might extend above the insulation to provide a ventilation chamber.

On some conditions an insulating fill or concrete is installed in lieu of a rigid insulation. In this condition the thickness for a Z bar should be increased to 16 gage (1.518 mm) or 14 gage (1.897 mm). Where steel decking has void in the flutes and a support is needed in that area, a piece of 18 gage (1.214 mm) strip can be instal-

led. See Detail 1. Steel decks that deflect under load can contribute to roof leaks, collection and retention of water, loss of insulation value and roof system deterioration.

Wood Deck: Minimum ½ in. (13 mm), exterior grade, pressure treated.

The installation of a metal or wood grid system must be used on a wood deck if the rigid insulation to be used over it is of 1½ in. (38 mm) thickness or greater.

Insulation to be used under a metal roof must be a rigid type board. The use of insulation with a composite wood top layer does not preclude the use of a grid fastening system or at least fastening clips for the metal roof through the insulation into the substrate).

Corrosion Control: Some chemicals used for fire retardant treatment and corrosion resistance of wood leach substances that accelerate metal corrosion. Even though wood decks may be separated from roof panels by felt and paper, fasteners are in contact with the wood. Designers should contact wood treatment companies directly to verify that chemicals in treated wood will not adversely act upon metals in contact with them. The evaluation should address dry wood and moisture absorbed from the construction phase as well as from condensation.

TRANSVERSE SEAMS

Adequate supports must be provided at transverse seam locations as well as at eave-to-ridge seams.

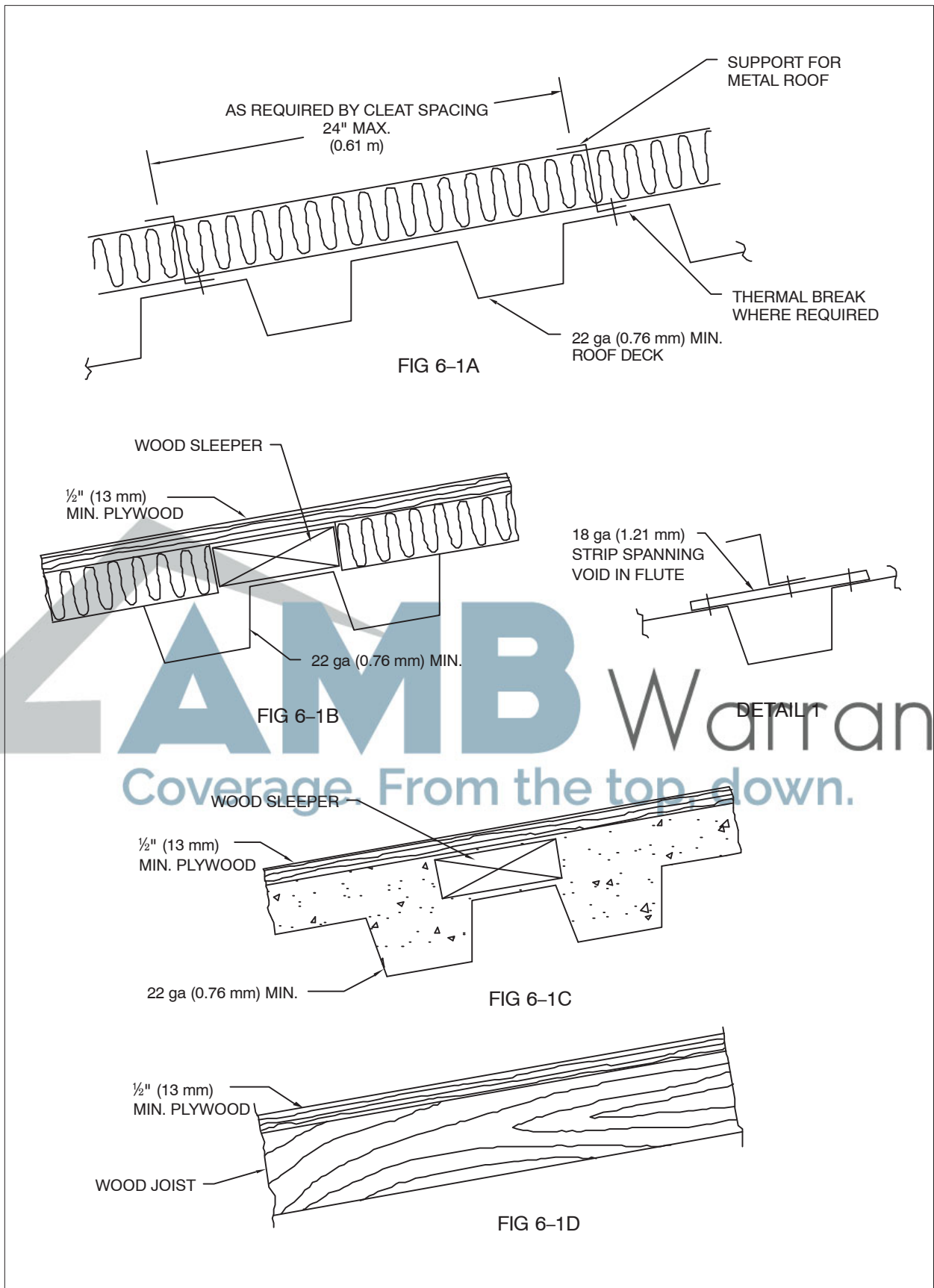


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