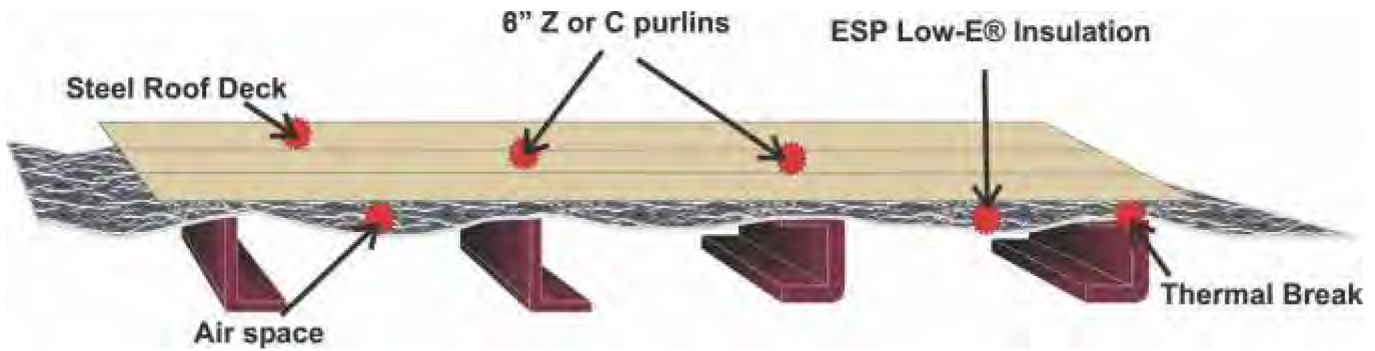


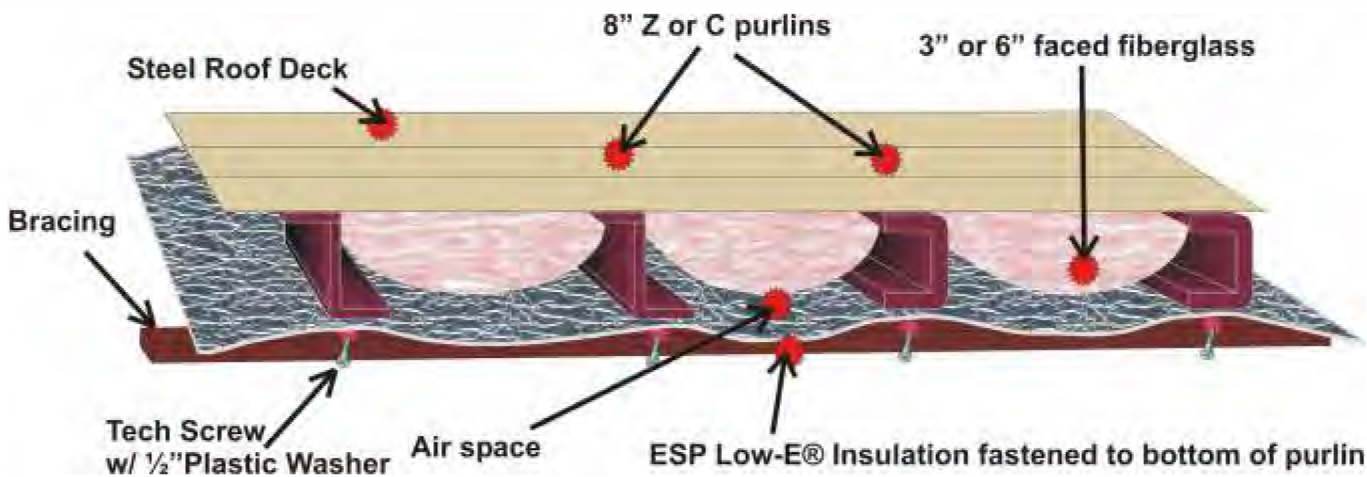
# Pre Engineered Steel Applications

## Commercial Metal Roofing

Average System R-Value: Down R- 11.04, Up R- 7.39



Average System R-Value: Down R- 21.04 (3" Fiberglass), Down R- 30.04 (6" Fiberglass)  
Up R- 17.38 (3" Fiberglass), Up R- 26.39 (6" Fiberglass)

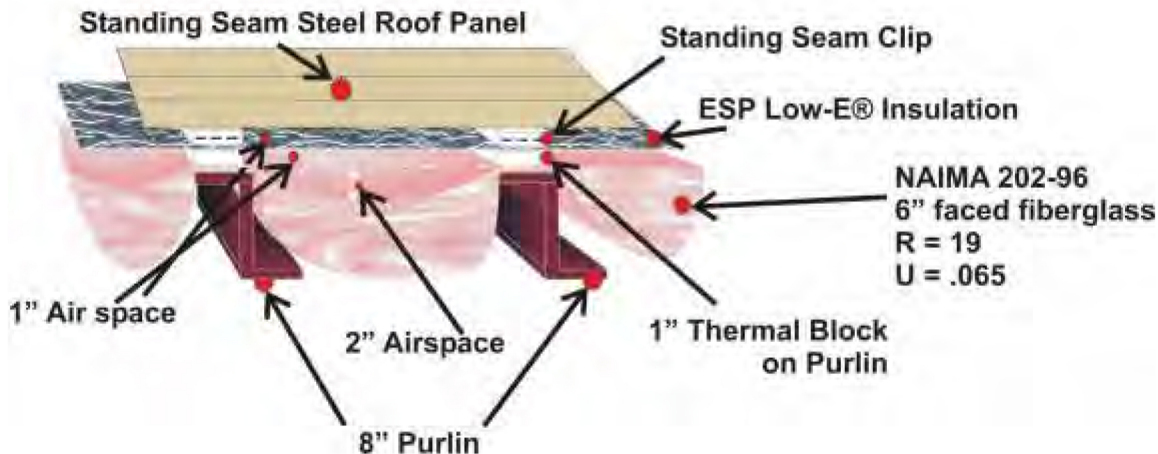


SYSTEM R-VALUES FOR ESP LOW-E® INSULATION AS PER ASTM C-976, AIR TO AIR, ADJUSTED TO MEET CRITERIA EQUIVALENT TO ASTM 1224

## ASHRAE 90.1 Compliance Application

Average System R-Value: R- 17.85 (3" Fiberglass) \*SDR, R- 21.73 (3" Fiberglass) \*SSR, R- 18.51 (4" Fiberglass) \*SDR  
R- 26.31 (6" Fiberglass) \*SDR, R- 30.30 (6" + 3" Fiberglass) \*SSR, \*SDR = Screw Down Roof \*SSR = Standing Seam Roof

### ESP Low-E® Insulation and ASHRAE 90.1 System Patent Pending



SYSTEM R-VALUES CALCULATED USING ENVSTD 4.0 ESP LOW-E® INSULATION AS R-11 SHEATHING