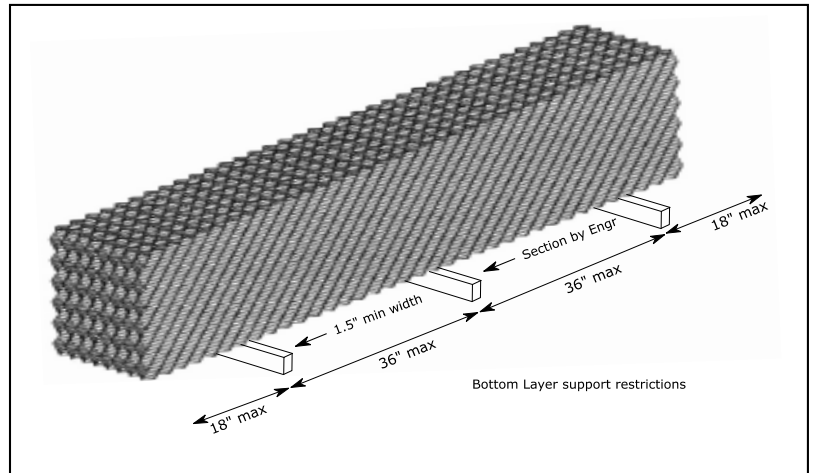


Installation Guidelines

Counterflow Film Fills

The ultimate responsibility for designing a fill support system for any particular cooling tower project rests with the designer/structural engineer of record for the cooling tower. In order to assist the designer, we provide the following guidelines to help insure a reliable and well performing installation. Additionally, these guidelines apply to field erected cooling towers operating in a typical industrial cooling tower environment (ie, maximum water temperature of 120°F, dead loads of 25 psf or less and no accommodation for any other type of load that may be exerted on the fill modules. For severe operating conditions beyond those described above, contact CE Shepherd Company for additional guidance.

1. For a total fill depth of 6', we recommend the bottom layer of fill be constructed of 15 mil material and modules in this layer be 24" depth. The layers above the bottom layer can consist of 12" or 24" deep modules at the preference of the designer. The modules in each layer should be oriented perpendicular to the modules in the layer below. When installing the modules in each layer, they should be fit snugly together without gaps greater than 1/4" between the modules, at penetrations or at sidewalls/endwalls (without adequate sealing).
2. The actual fill supports should have a minimum width of 1.5" and be spaced no more than 36" apart for 15 mil material and no more than 30" apart for 10 mil material. In the bottom layer each module should be supported by a minimum of 3 beams uniformly spaced. If used, cantilevered sections should be limited to 18" or less. The cross sectional area of the fill supports as well as connections to the tower structure should be determined by the designer/structural engineer of record.
3. During and after the installation of the fill system, the installed modules should be protected from debris created by module or other work being performed inside the cooling tower. The top side of all layers must also be protected from damage by workers through the use of plywood or similar material to spread the loads imposed by the foot traffic.
4. For true vertically fluted fill (CES190+ and CES500-V), care should be taken to minimize blockage caused by the fill support system as oversized supports can negatively affect thermal performance.
5. To minimize the negative effects of wall water, diverters/strippers may be considered for installation at the top of the fill packs.



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