



fan stacks



Features

Wider flanges between panels increase the strength of the bolted connection.

Horizontal ribs tie into bolted vertical flanges, drastically increasing the strength of the panel seams, which account for the weakest section of the entire fan stack. This structural tie-in prevents seam deflection, and fan blade interference during high winds.

The increased velocity recovery taper angle further reduces the pressure on the top side of the fan, allowing for higher airflow through the tower. The typical taper angle is 7 degrees, while CTR stacks' taper angles range from 9 to 12 degrees, depending on the stack's height. CFD models show pressure recovery gains with angles up to 13 degrees before separation occurs.

FRP material is used in lieu of cardboard for the backside bridging of the hollow ribs. While sacrificial, cardboard can cause long-term issues due to delamination, which can clog weep holes in ribs, resulting in damage due to freezing water. The FRP material also adds 0.060" of structural material to the backside of the rib, while cardboard provides no structural value.



Accessories

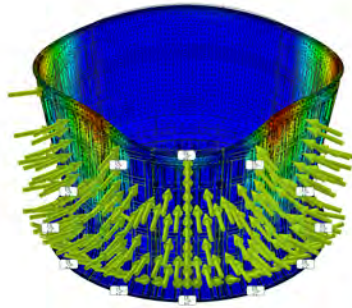
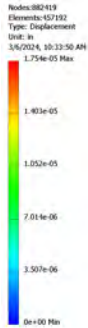
- 4" or 6" Viewports in the Fan Stack
- Drive Shaft Guards
- Access Door With Handles
- FRP and Flame-Retardant Materials Available at Your Request.

Let Us Help You With Your Next Project. Call or Email Us Today!



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Rib Profile Design Study



Fan Stacks Engineered By CTR.
 Larger ribbing provides increased strength and stiffness,
 preventing unwanted deflection during high wind loading.



CTR profile for the structural ribs

The competitions profile for the structural ribs

Fan Stack Rib Profile	Height x Width	Area	Moment of Inertia
CTR Vertical	4" x 7"	2.753 in ²	25.657 in ⁴
CTR Horizontal	4" x 8.5"	3.01 in ²	34.135 in ⁴
Competition Vertical	3" x 6"	2.308 in ²	15.268 in ⁴
Competition Horizontal	3" x 6"	2.308 in ²	15.268 in ⁴

Larger vertical ribs provide a 68% higher moment of inertia,
 while larger horizontal ribs provide over a 120% higher moment of inertia.

Horizontal ribs tie in to bolted vertical flanges, drastically increasing the strength of the panel seams,
 which account for the weakest section of the entire fan stack.

This structural tie-in prevents seam deflection causing fan blade interference during high winds.

We stock most common fan stack sizes and profiles in the gulf area,
 reducing lead times of critical components needed during planned and unplanned outages.