



Roof Load Calculations

The following calculations will demonstrate that adding a Solar Shield™ evaporative roof cooling system WILL NOT add undue stress to your current roof deck. Calculations were done using an assumed 10,000 ft² treated area.

WEIGHT OF SYSTEM COMPONENTS (per 10,000 ft²)

- UVR PVC pipe: 420 lbs. (approximately 840 ft. of pipe)
- Support Blocks: 56 lbs. (168 total blocks)
- Water weight in active system: 62 lbs. (approximately 1,000 oz. of water per 10,000 ft² area)

This load (total of 538 lbs.) will be spread evenly across the 168 support blocks, each having a surface area of 12.5 in² (for a total surface area of 2,100 in²). Therefore, the system's roof load can be calculated to be:

Roof load = Total weight of system/Total area of support blocks

Or

$$538 \text{ lbs}/2,100 \text{ in}^2 = 0.256 \text{ lbs/in}^2$$

By comparison, a 180 lb. man walking across your roof will exert approximately 3.75 lbs/in², a force **14.6** times greater than that of our Solar Shield™ evaporative roof cooling system.

Got more questions?

Email: johns@pattersonfan.com

Phone: (803) 461-1555