

# Spa Cover Heat Loss



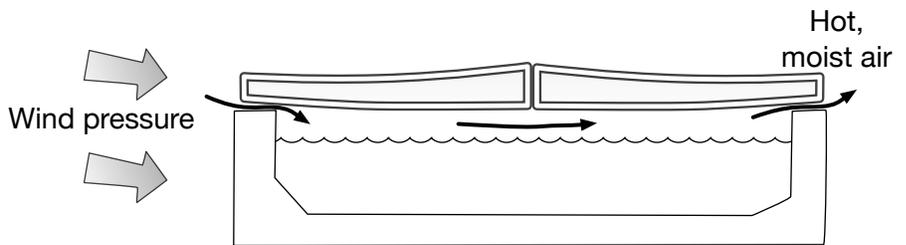
## Standard vinyl cover



Heat escapes from a spa in two ways. First, heat conducts upward right through the cover. Second, heat is lost when air enters around the edge of the cover and steam escapes. The DuraCore cover reduces both.

To reduce upward heat conduction, a cover needs a high R-value. A standard foam cover has an average thickness of three inches of polystyrene foam, for an initial R-value between 12 and 15,

depending on the density of the foam. After years of exposure to steam from below, the foam absorbs moisture. Since water is a good conductor of heat, the R-value is reduced by about half in three to four years. So the average R-value over the service life is around 8 to 10.

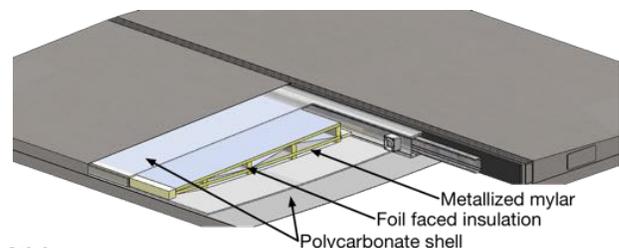


To reduce escaping steam, a cover needs to make a good seal with the top of the spa. A foam cover starts out making a good seal, but as the cover absorbs moisture, the bottom surface of the cover begins to expand with water, and the cover begins to warp upwards. This unavoidable warping opens up gaps between the top of the spa and bottom of the cover. When the wind begins to blow, outside air blows right through the spa, carrying away hot, moist air and cooling the spa water dramatically. This form of heat loss can be up to five times greater than the heat loss through simple conduction.

## DuraCore cover



The R-value of DuraCore cover is derived from adding up the R-value of the different layers, which totals 18.5 when the cover is new, and stays near that value over the life of the cover. For R-value alone, a DuraCore cover has about twice the insulating value of a foam cover.



DuraCore reduces the blow-through heat loss as well. For the cover to make a good seal around the edge of the spa, a cover needs to maintain its original shape and dimensions. DuraCore covers have nothing in them to absorb

water or swell, so they maintain their original shape over time and do not open gaps. Further, DuraCore covers have a foam gasket just under the liner that makes a solid seal around the edge of the spa.

