

Chiller vs Ice Changing Concrete Temperature from 92°F to 85°F

Capital Investment

Chiller		Ice	
40 Ton Chiller	\$ 37,500		
Freight	\$ -		
Installation	\$ 3,000		
Total	\$ 40,500	Total	\$ -

Operating Costs per Yard *

*30 gallons of chilled water per yard (chilling from 70°F to 40°F)
550 yards/day produced*

Chiller		Ice	
Electricity		Ice	
<i>\$0.10/kWh</i>			
460 Volt, 70 amps = 55.7kW	\$ 0.080	52lbs, \$0.25/lb	\$ 13.00
Producing 70 yds/hr		<i>Adding 52 lbs of ice is the equivalent energy as chilling the water from 70°F to 40°F</i>	
55.7kW / 70yds/hr = 0.8 kWh / yd			
0.8 kWh / yd X \$0.10/kWh = \$.08/ym			
Labor		Labor	
<i>\$30/hr, 15 minutes daily for chiller cleaning</i>	\$ 0.014		
<i>\$7.5/day / 550 yds = \$0.014</i>			
Interest		Labor	
<i>7.5% Annual Interest</i>	\$ 0.055	<i>\$30/hr, 5 min to load 520 lbs of ice, assuming 10 yd truck</i>	\$ 0.25
<i>\$40,500 x 7.5% / 100 days / 550 yds/day</i>			
Depreciation			
<i>10 year useful life</i>	\$ 0.074		
<i>\$40,500 / 10 yrs / 100 days / 550yds/hr</i>			
Total Costs Per Yard	\$ 0.223	Total Costs Per Yard	\$ 13.25

Savings per yard =

\$13.03

Payback - How many yards of concrete do you have to pour to have the chiller pay for itself?

Initial Investment	\$40,500
Savings per yd	\$13.03
Number of yards to pay for the chiller	3,109

* Based on the average costs of a concrete producer in the USA, and used for example purposes only.

Your specific costs could be different.