

Additional Insulation Benefits: Lower Cooling Costs

Air conditioned plastics plants see even greater electricity savings with insulation systems by UniTherm International. UniTherm jackets keep heat in the machines, reducing the energy consumed by cooling systems.

In this example reduction on machine cooling costs adds an additional 16% of savings to the customer's return on investment.

Plant Information	
Number of Machines	103
Machine Operating Hours	6,177.6 hours /year
Cooled Operating Hours	3,601 hours/year
Percent Heat Loss to Ambient	80%
Cooling System Efficiency	1.2kW/ton
kWH Rate	0.083
Insulation Investment	\$93,936.00

Without Machine Insulation

Machine Efficiency	
Energy Consumed per Machine	29,700 kWh/year
Total Machine Consumption	3,059,100 kWh/year
Annual Machine Energy Costs	\$253,905.30

Cooling System Efficiency	
Cooling to Offset Heat Gain	1,406,156 Btu/hour
Annual Cooling Required	5,063 MMBtu/year
Annual Cooling Energy	506,333 kWh/year
Annual Cooling Costs	\$42,025.64

With Machine Insulation

Machine Efficiency	
Energy Consumed per Machine	19602
Machine Operating Hours	2,019,006 kWh/year
Annual Machine Energy Costs	\$167,577.50

Cooling System Efficiency	
Cooling to Offset Heat Gain	928,063 Btu/hour
Annual Cooling Required	3,342 MMBtu
Annual Cooling Energy	334,180 kWh/year
Annual Cooling Costs	\$27,736.94

Energy Savings Total	
Annual Machine Energy Consumption Reduction	86,328 kWh/year
Annual Machine Energy Cost Reduction	\$86,327.80
Annual Cooling Energy Consumption Reduction	1,721 kWh/year
Annual Cooling Costs Reduction	\$14,288.70
Annual Machine & Cooling Costs Reduction	\$100,616.50

Project Economics	
Cost to Insulate	\$93,936.00
First Year Savings	\$100,616.50
Payback Period	0.93 Years