



QUICK STATS

LOCATION	Large Healthcare System in Boston, MA
CLIENT INDUSTRY	Healthcare and Hospitals
PARTNER SINCE	2019
SERVICES	Facilities Energy Management Capital Projects

CUSTOM-FITTED INSULATION JACKETS REDUCE HOSPITAL'S OPERATING COSTS

In a continued effort to reduce a hospital's operating costs for a large healthcare system in Boston, MA, custom designed insulation jackets were installed on uninsulated equipment throughout the site. Integrity Energy Solutions Group, the manufacturer's representative for Thermaxx, was selected to perform a heat loss survey of the entire heating system. They identified more than 130 different uninsulated pipes and equipment.

The project scope was submitted to the local utility company for energy incentive approval. Due to the success of this project from other healthcare customers, the utility company granted "enhanced incentives" to cover 100% of the project cost. The project would have cost the client \$100,000 but with the incentives covering this cost, the ROI was immediate.

Results

Annual Cost Savings:	\$39,563
Thermal Energy Savings:	3,698 MMBtu
Project Costs:	\$0
Simple Payback (years):	Immediate

There are many benefits realized from this insulation product including:

- Custom-fabricated jackets to fit tightly around any equipment.
- Insulation can withstand temperatures of up to 550 °F.
- Reusable blankets are custom-fit and secured in place, but have the ability to be removed easily when work needs to be performed on the equipment, valve or pipe.
- Creates a safe environment by reducing risk of burns, while improving the space temperature.
- Can be installed in both wet and dry environments.



Custom-sized Thermaxx jacket on mechanical equipment.

Some of the positive feedback that was received at the site included: "These jackets are super high quality and are fabricated with precision to fit around the most challenging types of equipment!"



Custom-Fit Energy Solutions



*Thermaxx Jacket #5 Temperature Readings:
Without insulation 299 °F*

With insulation 76°F

Custom sizing to fit boiler

Users at the hospital found it beneficial that the design of the product made it easy to remove and re-attach the insulation jackets. The biggest complaint from facility operators with other types of insulation products is that they are not easy to remove and put back on the equipment. Many times the maintenance of insulated equipment gets neglected, or insulation is discarded.

Results

Measurement and Verification (M&V) analysis was performed to evaluate this insulation product. A random sample of equipment was selected for the M&V study. The table below shows the baseline and post-installation temperature readings of the equipment between the vendor and EAS personnel:

Jacket #	Baseline Temperature Readings			Post Install Temperature Readings		
	Operating Temp °F (THERMAXX)	Operating Temp °F (Aramark M&V)	Variance	Insulated Touch Temp °F (THERMAXX)	Measured Temp °F (Aramark M&V)	Variance
5	239	299	25%	97	76	-22%
39	200	236	18%	88	88	0%
42	200	235	18%	90	85	-6%
56	200	167	-17%	91	77	-15%

The table below shows baseline and post-installation BTU loss between the vendor and EAS personnel.

Jacket #	Baseline BTU Loss			Post Install BTU Loss		
	Thermaxx Estimated Bare BTU/hr/sf loss	3E Plus Bare BTU/hr/sf loss	Variance	Thermaxx Estimated Insulated BTU/hr/sf loss	3E Plus Insulated BTU/hr/sf loss	Variance
5	440.40	587.20	33%	47.01	32.99	-30%
39	293.40	375.00	28%	28.50	23.00	-19%
42	287.40	375.00	30%	32.31	23.00	-29%
56	311.40	186.50	-40%	35.01	13.08	-63%

Conclusion

The results from the post-installation measurements verified that the before and after conditions were better than initially estimated. The pre-installation measurements found that the equipment was radiating more heat than expected. The post-installation BTU measurements performed indicated an **11% improvement in heating loss**, where the insulation performed better than projected. **The actual (measured) annual savings for this project is \$39,563/year**, and included an immediate payback given that utility incentives fully funded the project.