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The following pages will outline a case study, which shows the benefits in energy and cost savings of properly installed mechanical insulation.

Insulation is a proven means for conserving energy, reducing greenhouse gas emissions, increasing process productivity, providing a safer and more productive work environment, controlling condensation (which can lead to mold growth), supporting sustainable design technology and a host of other benefits.

Mechanical insulation does all of this, while providing a return on investment (ROI) rate, which is seldom rivaled. Despite the proven ROI, insulation is often overlooked and its benefits undervalued. Insulation is truly the lost or forgotten technology. Can you think of a more important time than now to think about how insulation can help you?

An insulation system is a technology, which needs to be engineered and maintained throughout the entire process. Several studies have estimated roughly 10 to 30 percent of all installed insulation is now missing or damaged.

The practice of not replacing or maintaining an insulation system in a timely and correct manner reduces the full benefits of insulation, and in return, decreases the ROI. In many cases, significant other issues - such as excessive energy loss, corrosion under insulation (CUI), mold development, increased cost of operations and reduced process productivity or efficiency - develop.

You can learn more on www.MechanicalInsulatorsLMCT.com, where additional case studies can be viewed.

Please do not hesitate to contact me should you have any additional questions.
Thank you,

Peter Ielimi

Executive Director
Mechanical Insulators Labor Management Cooperative Trust

ENERGY AUDIT ECOLE LE CROISÉE

Total Heat Loss
5 year savings of
\$ 6,599.40

CO₂ Reduction of
3.87 MT/Year



Benefits:

- Simple payback period
- CO₂ Reduction
- Personnel safety

Audit Done By:
Joshua Sherrard
Certified Thermographer
Certified 3E Plus Auditor

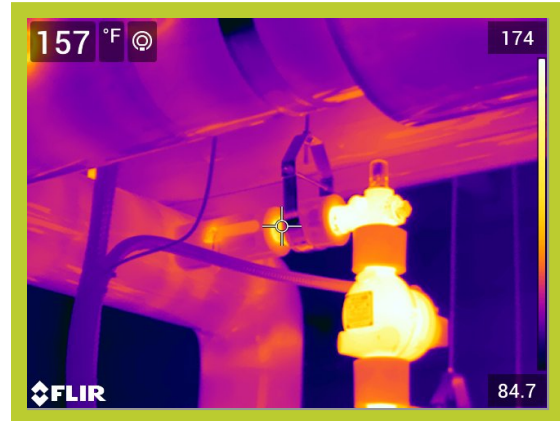
Boiler Room



Operating Temperature,	130 *F	Emittance of Surface	0.95
Ambient Temperature,	75 *F	Expected Useful Life of Insulation System	20 yrs.
Insulation selected	Fiberglass	Operating hours per year	8320
		Efficiency of fuel Conversion%	75%

THICKNESS	HEAT LOSS	FUEL COST \$/yr	1styr SAVINGS.	5yr. SAVINGS	CO2 EMMISSIONS
0	13,398	\$ 405.72	\$405.72	\$2028.60	1.26
1	2,604	\$ 79.38	\$326.34	\$1631.70	0.42
1.5	2,142	\$ 65.10	\$340.62	\$1703.10	0

Boiler Room



Operating Temperature,	130 *F	Emittance of Surface	0.95
Ambient Temperature,	75 *F	Expected Useful Life of Insulation System	20 yrs.
Insulation selected	Fiberglass	Operating hours per year	8320
		Efficiency of fuel Conversion%	75%

THICKNESS	HEAT LOSS	FUEL COST \$/yr	1styr SAVINGS.	5yr. SAVINGS	CO2 EMMISSIONS
0	2,637	\$ 79.83	\$79.83	\$399.15	0.24
1	387	\$ 11.73	\$68.10	\$340.50	0.03
1.5	291	\$ 8.85	\$70.98	\$354.90	0.03

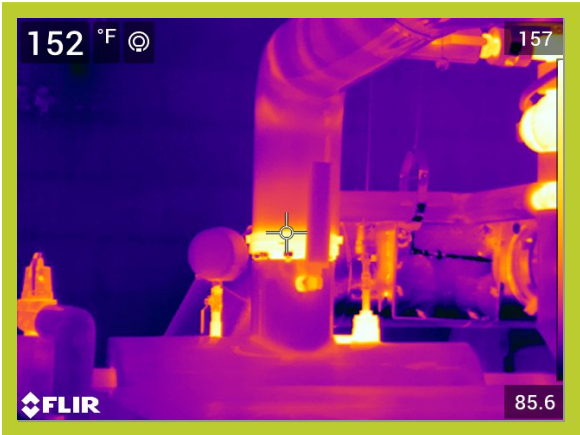
Boiler Room



Operating Temperature,	152 *F	Emittance of Surface	0.95
Ambient Temperature,	75 *F	Expected Useful Life of Insulation System	20 yrs.
Insulation selected	Fiberglass	Operating hours per year	8320
		Efficiency of fuel Conversion%	75%

THICKNESS	HEAT LOSS	FUEL COST \$/yr	1styr SAVINGS.	5yr. SAVINGS	CO2 EMMISSIONS
0	18,090	\$ 547.92	\$547.92	\$2739.60	1.71
1	2,457	\$ 74.43	\$473.49	\$2367.45	0.27
1.5	1,818	\$ 55.08	\$492.84	\$2464.20	0.18

Boiler Room

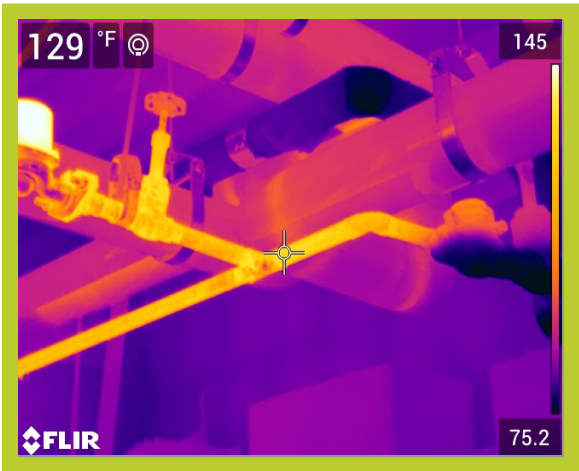


Operating Temperature,	156 *F	Emittance of Surface	0.95
Ambient Temperature,	75 *F	Expected Useful Life of Insulation System	20 yrs.
Insulation selected	Fiberglass	Operating hours per year	8320
		Efficiency of fuel Conversion%	75%

THICKNESS	HEAT LOSS	FUEL COST	1styr	5yr.	CO2
		\$/yr	SAVINGS.	SAVINGS	EMMISSIONS
0	9,150	\$ 277.02	\$277.02	\$1385.10	0.87
1	1,164	\$ 35.22	\$241.80	\$1209.00	0.12
1.5	855	\$ 25.86	\$251.16	\$1255.80	0.09

*Estimated Calculations supplied by 3E Plus Mechanical Insulation Energy Calculator *

Boiler Room

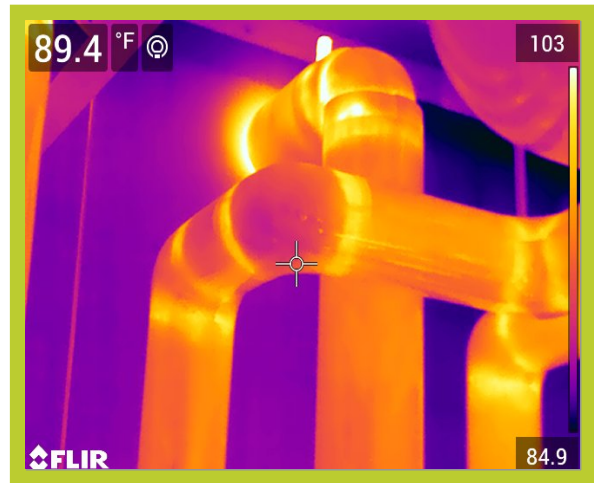


Operating Temperature, Ambient Temperature, Insulation selected	130 *F	Emittance of Surface	0.95
	75 *F	Expected Useful Life of Insulation System	20 yrs.
	Fiberglass	Operating hours per year	8320
		Efficiency of fuel Conversion%	75%

THICKNESS	HEAT LOSS	FUEL COST	1styr	5yr.	CO2
		\$/yr	SAVINGS.	SAVINGS	EMMISSIONS
0	3,405	\$ 103.14	\$103.14	\$515.70	0.33
1	483	\$ 14.64	\$88.50	\$442.50	0.06
1.5	336	\$ 10.14	\$93.00	\$465.00	0.03

*Estimated Calculations supplied by 3E Plus Mechanical Insulation Energy Calculator *

Boiler Room



Operating Temperature,	100 *F	Emittance of Surface	0.95
Ambient Temperature,	68 *F	Expected Useful Life of Insulation System	20 yrs.
Insulation selected	Fiberglass	Operating hours per year	8320
		Efficiency of fuel Conversion%	75%

THICKNESS	HEAT LOSS	FUEL COST	1styr	5yr.	CO2
		\$/yr	SAVINGS.	SAVINGS	EMMISSIONS
0	1,110	\$ 33.66	\$33.66	\$168.30	0.12
1	180	\$ 5.43	\$28.23	\$141.15	0.03
1.5	135	\$ 4.11	\$29.55	\$147.75	0

Ventilation Room

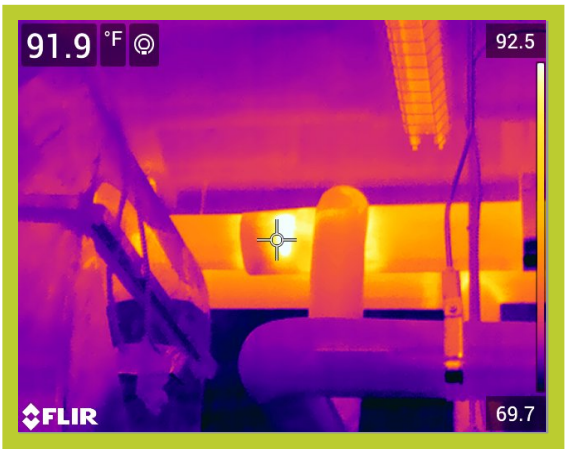


Operating Temperature,	96 *F	Emittance of Surface	0.95
Ambient Temperature,	68 *F	Expected Useful Life of Insulation System	20 yrs.
Insulation selected	Fiberglass	Operating hours per year	8320
		Efficiency of fuel Conversion%	75%

THICKNESS	HEAT LOSS	FUEL COST	1styr	5yr.	CO2
		\$/yr	SAVINGS.	SAVINGS	EMMISSIONS
0	1,617	\$ 48.93	\$48.93	\$244.65	0.15
1	285	\$ 8.61	\$40.32	\$201.60	0.03
1.5	222	\$ 6.69	\$42.24	\$211.20	0.03

*Estimated Calculations supplied by 3E Plus Mechanical Insulation Energy Calculator *

Ventilation Room



Operating Temperature,	92 *F	Emittance of Surface	0.95
Ambient Temperature,	68 *F	Expected Useful Life of Insulation System	20 yrs.
Insulation selected	Fiberglass	Operating hours per year	8320
		Efficiency of fuel Conversion%	75%

THICKNESS	HEAT LOSS	FUEL COST	1styr	5yr.	CO2
		\$/yr	SAVINGS.	SAVINGS	EMMISSIONS
0	2,160	\$ 65.25	\$65.25	\$326.25	0.15
1	405	\$ 12.15	\$53.10	\$265.50	0
1.5	315	\$ 9.60	\$55.65	\$278.25	0

*Estimated Calculations supplied by 3E Plus Mechanical Insulation Energy Calculator *

Results

Simple Payback Period, yrs	3.6
Internal Rate of Return (IRR or ROI)	27.5%
Net Present Value,	\$21,628

Calculations

Year	Investment	Annual Savings	Annual Cash Flow	Cumulative Cash Flow
0	\$-4,752	\$0	\$-4,752	\$-4,752
1	\$0	\$1,319	\$1,319	\$-3,433
2	\$0	\$1,319	\$1,319	\$-2,114
3	\$0	\$1,319	\$1,319	\$-795
4	\$0	\$1,319	\$1,319	\$524
5	\$0	\$1,319	\$1,319	\$1,843
6	\$0	\$1,319	\$1,319	\$3,162
7	\$0	\$1,319	\$1,319	\$4,481
8	\$0	\$1,319	\$1,319	\$5,800
9	\$0	\$1,319	\$1,319	\$7,119
10	\$0	\$1,319	\$1,319	\$8,438
11	\$0	\$1,319	\$1,319	\$9,757
12	\$0	\$1,319	\$1,319	\$11,076
13	\$0	\$1,319	\$1,319	\$12,395
14	\$0	\$1,319	\$1,319	\$13,714
15	\$0	\$1,319	\$1,319	\$15,033
16	\$0	\$1,319	\$1,319	\$16,352
17	\$0	\$1,319	\$1,319	\$17,671
18	\$0	\$1,319	\$1,319	\$18,990
19	\$0	\$1,319	\$1,319	\$20,309
20	\$0	\$1,319	\$1,319	\$21,628