

PT. TMMIN
Sunter Plant
PAD-GASHE Dept

Trial Heat-Less Coating Roof Report

Approved	Checked	Checked	Prepared
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I. Activity Plan

Activity : Trial Implementation of Heat-Less Coating Roof (Toppa-cosmo Product)
 Location : Warehouse TR ~ Sunter 1 Plant
 Schedule : 18th July 2012 until 09th August 2012

II. Objective

To analyze effectiveness of Heat-Less Coating Roof on reducing temperature inside building especially at working area

III. Target

- Based on Spec of Product*
1. Reduce at least Avg. 9^oC of Temperature Roof
 2. Reduce at least Avg. 1,5^oC of Temperature Working Area

III. Methode of Trial

By Comparing current temperature working area (Warehouse TR) with after implementation of Heat-Less Coating Roof

A. Detail Technical

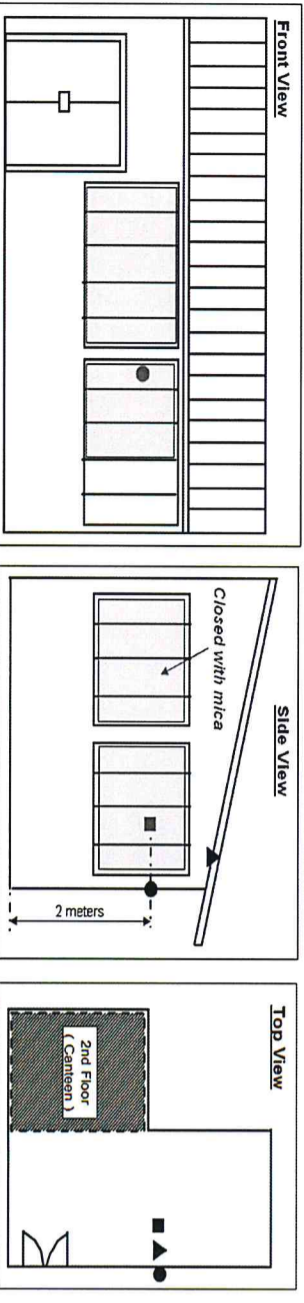
Equipment : HIOKI LR5001 - Logger
 Control Item : Temperature (Celcius)
 Cycle Time : 15 minute
 Measurement Schedule : 18th July 2012 until 09th August 2012
 Coating Schedule : Friday, 27th July 2012

B. Detail Condition Warehouse TR

Comparing Relative humidity and temperature with crankshaft line

Crankshaft	Temperature (Celcius)			Relative Humidity (%)			Conclusion
	Crank shaft	W/H TR	Diff	Crank shaft	W/H TR	Diff	
Utara	32.3	32.0	-0.3	59.6	62.8	3.2	Warehouse condition is similar with Crankshaft Condition
Tengah	32.2	32.0	-0.2	60.6	62.8	2.2	
Selatan	32.2	32.0	-0.2	60.6	62.8	2.2	
Measuring Tool	Sanifx	Hioki LR5001		Sanifx	Hioki LR5001		

C. Layout Warehouse TR



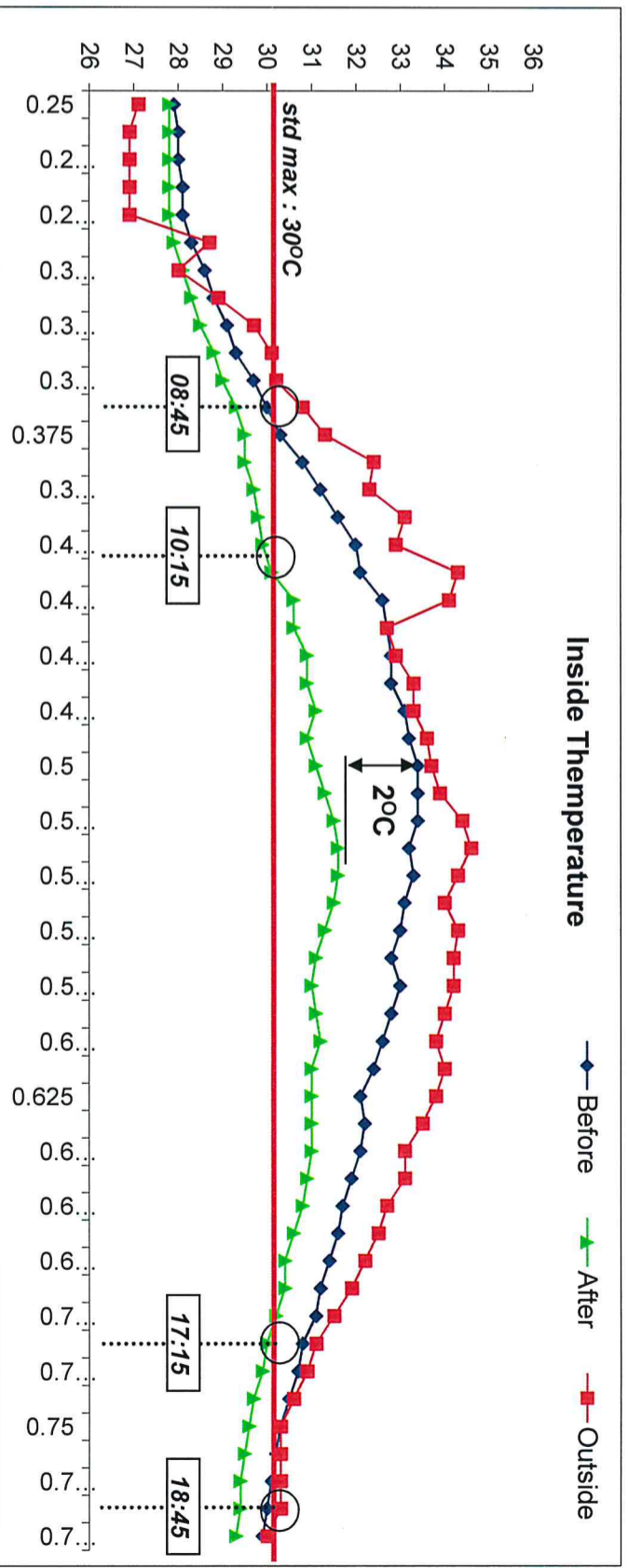
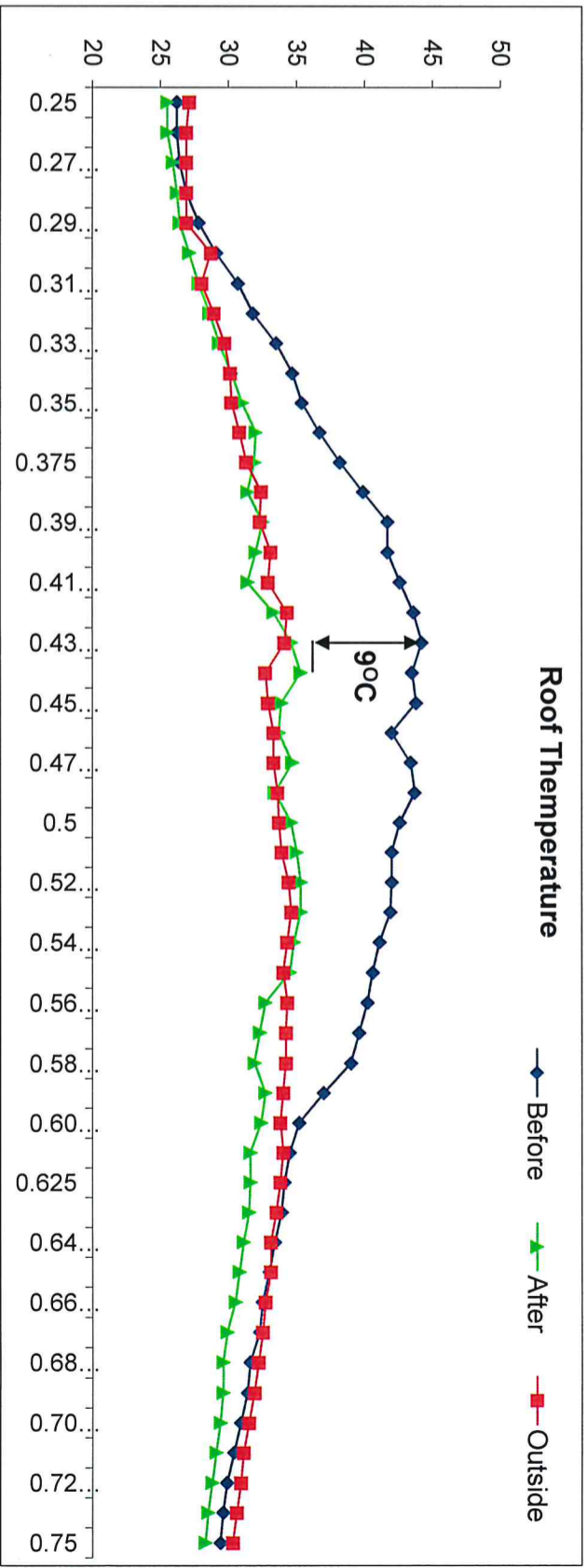
Detail Explanation :

- ~ Inside, outside & roof thermometer are alignment (at one line)
- ~ Inside & Outside thermometer are placed 2 meters from floor.
- ~ Roof Thermometer placed at bottom surface of roof

Legend :

- Outside Thermometer
- Inside Thermometer
- ▲ Roof Thermometer

IV. Evaluation



Item	Unit	Before	After	Reduce
Roof Max Temperature	Celsius	44.2	35.3	9
Inside Max Temperature	Celsius	33.4	31.6	2
Duration T > 30°C	Hour	10	7	3

V. Conclusion

With Heat-less Coating Roof, Average temperature at inside is reduce 2^oC, but still can't achieved 30^oC (STD Max). However, duration of Hot temperature at inside (above 30^oC) become smaller, from 10 hours/day to 7 hours/day (Reduce 3 hour/day)