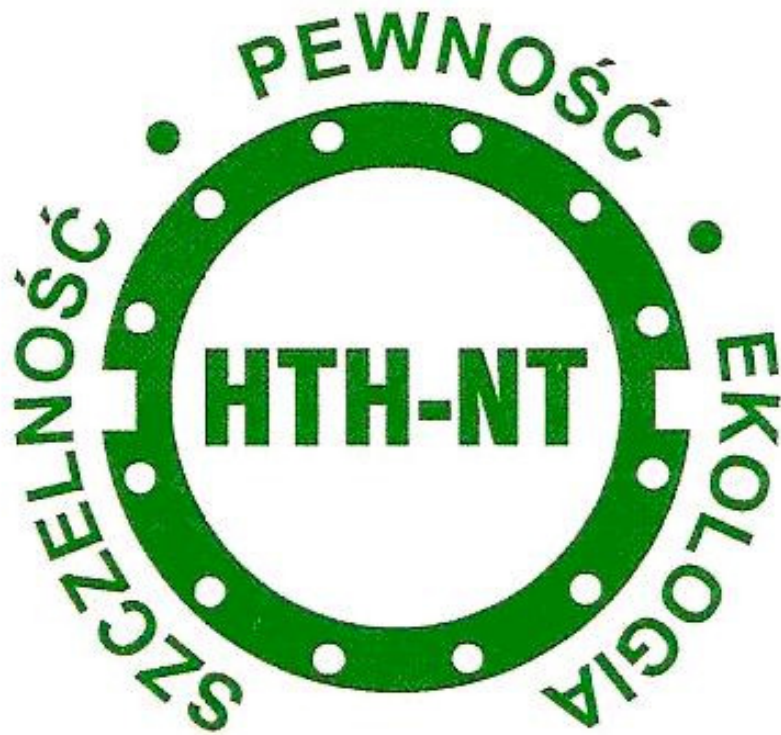


REPORT ON PERFORMANCE OF SUPER THERM® COATING ON REFRIGERATION TRUCK



REPORT OWNER: HTH-NOVOTECH LTD., POLAND



Goal of the test:

Showing energy savings possible to gain after application of Super Therm® coating on the roof of refrigeration truck.

Procedure of the test:

Conducted test relied on comparison of cooling down loading space of two identical refrigeration cars, one with roof coated with Super Therm® coating (0,25mm thickness), and another one without this coating. Both cars, standing next to each other were exposed to sun radiation when their refrigeration units were working. To obtain absolutely objective results of the test cars weren't loaded. Application of Super Therm® coating was done 3 months before carrying out the test, within this time car was normally used.

Data about the trucks:

Car make - Man TGL 12.201, year of production - 2006, loading space producer - Lamberet, capacity – 14 pallets, refrigeration unit – Supra 750, roof area – approx. 16m².

Data about the test:

Place of the test – Krzeszowice, Poland.

Date of the test – 20.09.09

Duration of the test – 4,5 hours

Weather data*:

	Time	Temperature (°C)	Humidity (%)	Sun radiation (W/m ²)	Wind (m/s)
	12.00	18,6	63	518	0
	13.00	20,1	57	536	0
	14.00	21,5	56	496	0
	15.00	22,0	57	407	0
	16.00	22,2	58	330	2
Average	-	20,9	58,2	457,4	0,4

* data obtained from Institute of Meteorology – meteorological station in Balice town (temperature, humidity, wind) and from Observatory of Jagielonski University (sun radiation).

Test run:

Both trucks were taken out from garage about 10 a.m. then for two hours were standing outdoor with refrigeration units turned off. Actual test began at 12 p.m. by turning on refrigeration units in both cars, and lasted till 4.30 p.m. Deactivation of refrigeration units were fixed on temperature -22°C, and activation on temperature -18°C.

Results of the test:

	Time of cooling down loading space in the truck without Super Therm coating®	Time of cooling down loading space in the truck with Super Therm® coating
Cooling nr 1	130 minutes	99 minutes
Cooling nr 2	65 minutes	22 minutes
Cooling nr 3	28 minutes	19 minutes
Cooling nr 4	27 minutes	18 minutes
Cooling nr 5	-	18 minutes
Cooling nr 6	-	17 minutes
Cooling nr 7	-	17 minutes
TOTAL COOLING TIME	250 minutes	210 minutes

Comment:

Even though the amount of activations of cooling aggregate in truck with roof coated with Super Therm® was higher that in case of truck without Super Therm®, however total time of refrigeration unit work was 40 minutes shorter for truck with roof coated with Super Therm®, what gives 19% of energy savings.

As seen in above test results, application of Super Therm® enable obtaining desired temperature in the loading space much quicker, what enhance conditions of carried goods (especially food).

Moreover, Super Therm® application positively influence operation of refrigeration unit, extending its life span.

It must be noticed, that the test was carried out in the end of September, so we can assume that energy savings during summer time will be higher.

GPS report from the refrigeration truck with roof **not coated** with Super Therm®

Occurrence	Time check	Town, Street	Temp.1	Temp.2
Current position	2009-09-20 10:02	Krzeszowice, Daszyńskiego	12	12
Current position	2009-09-20 10:17	Krzeszowice, Poprzeczna	13	13
Current position	2009-09-20 10:32	Krzeszowice, Poprzeczna	13	14
Current position	2009-09-20 10:47	Krzeszowice, Poprzeczna	14	14
Current position	2009-09-20 11:02	Krzeszowice, Poprzeczna	14	15
Current position	2009-09-20 11:17	Krzeszowice, Daszyńskiego	15	16
Current position	2009-09-20 11:32	Krzeszowice, Daszyńskiego	16	16
Current position	2009-09-20 11:47	Krzeszowice, Daszyńskiego	17	17
Activation entrance 1	2009-09-20 11:56	Krzeszowice, Poprzeczna	17	17
Current position	2009-09-20 12:02	Krzeszowice, Poprzeczna	9	11
Current position	2009-09-20 12:17	Krzeszowice, Poprzeczna	-7	-4
Current position	2009-09-20 12:32	Krzeszowice, Daszyńskiego	-12	-10
Current position	2009-09-20 12:47	Krzeszowice, Poprzeczna	-16	-14
Current position	2009-09-20 13:02	Krzeszowice, Daszyńskiego	-18	-16
Current position	2009-09-20 13:17	Krzeszowice, Daszyńskiego	-20	-18
Current position	2009-09-20 13:32	Krzeszowice, Poprzeczna	-22	-20
Current position	2009-09-20 13:47	Krzeszowice, Poprzeczna	-23	-21
Current position	2009-09-20 14:02	Krzeszowice, Poprzeczna	-23	-22
Deactivation entrance 1	2009-09-20 14:06	Krzeszowice, Poprzeczna	-23	-22
Activation entrance 1	2009-09-20 14:16	Krzeszowice, Poprzeczna	-18	-18
Current position	2009-09-20 14:17	Krzeszowice, Poprzeczna	-18	-18
Current position	2009-09-20 14:32	Krzeszowice, Poprzeczna	-16	-17
Current position	2009-09-20 14:47	Krzeszowice, Daszyńskiego	-18	-16
Current position	2009-09-20 15:02	Krzeszowice, Poprzeczna	-22	-20
Current position	2009-09-20 15:17	Krzeszowice, Poprzeczna	-23	-22
Deactivation entrance 1	2009-09-20 15:21	Krzeszowice, Daszyńskiego	-23	-22
Activation entrance 1	2009-09-20 15:31	Krzeszowice, Poprzeczna	-18	-18
Current position	2009-09-20 15:32	Krzeszowice, Poprzeczna	-18	-18
Current position	2009-09-20 15:47	Krzeszowice, Poprzeczna	-21	-20
Deactivation entrance 1	2009-09-20 15:59	Krzeszowice, Poprzeczna	-23	-22
Current position	2009-09-20 16:02	Krzeszowice, Poprzeczna	-22	-21
Activation entrance 1	2009-09-20 16:09	Krzeszowice, Daszyńskiego	-18	-19
Current position	2009-09-20 16:17	Krzeszowice, Daszyńskiego	-17	-16
Current position	2009-09-20 16:32	Krzeszowice, Poprzeczna	-23	-22
Deactivation entrance 1	2009-09-20 16:36	Krzeszowice, Poprzeczna	-23	-22

GPS report from the refrigeration truck with roof **coated** with Super Therm®

Occurrence	Time check	Town, Street	Temp.1	Temp.2
Current position	2009-09-20 09:54	Krzeszowice, Poprzeczna	8	8
Current position	2009-09-20 10:09	Krzeszowice, Poprzeczna	8	8
Current position	2009-09-20 10:24	Krzeszowice, Poprzeczna	9	8
Current position	2009-09-20 10:39	Krzeszowice, Poprzeczna	9	9
Current position	2009-09-20 10:54	Krzeszowice, Poprzeczna	9	9
Current position	2009-09-20 11:09	Krzeszowice, Poprzeczna	10	9
Current position	2009-09-20 11:24	Krzeszowice, Poprzeczna	10	10
Current position	2009-09-20 11:39	Krzeszowice, Poprzeczna	10	10
Current position	2009-09-20 11:54	Krzeszowice, Poprzeczna	11	10
Activation entrance 1	2009-09-20 11:55	Krzeszowice, Poprzeczna	11	10
Current position	2009-09-20 12:09	Krzeszowice, Daszyńskiego	-4	-2
Current position	2009-09-20 12:24	Krzeszowice, Poprzeczna	-12	-10
Current position	2009-09-20 12:39	Krzeszowice, Poprzeczna	-16	-15
Current position	2009-09-20 12:54	Krzeszowice, Poprzeczna	-18	-17
Current position	2009-09-20 13:09	Krzeszowice, Daszyńskiego	-20	-19
Current position	2009-09-20 13:24	Krzeszowice, Daszyńskiego	-22	-21
Deactivation entrance 1	2009-09-20 13:34	Krzeszowice, Poprzeczna	-23	-22
Current position	2009-09-20 13:39	Krzeszowice, Poprzeczna	-21	-20
Activation entrance 1	2009-09-20 13:44	Krzeszowice, Poprzeczna	-18	-18
Current position	2009-09-20 13:54	Krzeszowice, Poprzeczna	-19	-18
Deactivation entrance 1	2009-09-20 14:06	Krzeszowice, Poprzeczna	-22	-22
Current position	2009-09-20 14:09	Krzeszowice, Poprzeczna	-21	-21
Activation entrance 1	2009-09-20 14:16	Krzeszowice, Daszyńskiego	-18	-18
Current position	2009-09-20 14:24	Krzeszowice, Poprzeczna	-18	-17
Deactivation entrance 1	2009-09-20 14:35	Krzeszowice, Poprzeczna	-22	-22
Current position	2009-09-20 14:39	Krzeszowice, Poprzeczna	-21	-21
Activation entrance 1	2009-09-20 14:45	Krzeszowice, Poprzeczna	-18	-18
Current position	2009-09-20 14:54	Krzeszowice, Poprzeczna	-18	-18
Deactivation entrance 1	2009-09-20 15:03	Krzeszowice, Poprzeczna	-22	-22
Current position	2009-09-20 15:09	Krzeszowice, Poprzeczna	-20	-20
Activation entrance 1	2009-09-20 15:13	Krzeszowice, Poprzeczna	-18	-18
Current position	2009-09-20 15:24	Krzeszowice, Poprzeczna	-20	-19
Deactivation entrance 1	2009-09-20 15:31	Krzeszowice, Poprzeczna	-22	-22
Current position	2009-09-20 15:39	Krzeszowice, Poprzeczna	-19	-19
Activation entrance 1	2009-09-20 15:41	Krzeszowice, Poprzeczna	-18	-18
Current position	2009-09-20 15:54	Krzeszowice, Poprzeczna	-21	-20
Deactivation entrance 1	2009-09-20 15:58	Krzeszowice, Poprzeczna	-22	-22
Activation entrance 1	2009-09-20 16:08	Krzeszowice, Poprzeczna	-18	-18
Current position	2009-09-20 16:09	Krzeszowice, Poprzeczna	-18	-18
Current position	2009-09-20 16:24	Krzeszowice, Poprzeczna	-22	-21
Deactivation entrance 1	2009-09-20 16:25	Krzeszowice, Poprzeczna	-22	-22

Comment:

As seen in the above reports, even before commencement of the actual test (between 10 a.m. and 12 a.m.) temperature of the loading space in truck with roof coated with Super Therm® was on average 4°C – 7°C lower than loading space in the truck without this coating.