



Customer : M/s Aakar Foundry

**Thermal Insulation Coating to
LPDC Holding Furnace 2**

**Thermal Insulation Coating Completion Dates : 16th & 25th January, 2018
“Before & After” Thermography Dates : 9th Oct, 2017 & 14th March, 2018**



LPDC Holding Furnace 2 : Cleaned earlier coating & dust

Before HRTI 400 Coating



LPDC Holding Furnace 2 : Thermal Insulation Coating HRTI- 400 done to inner & outer surface of shell (3 layers)



After HRTI 400 Coating



LPDC Holding Furnace 2 : Thermal Insulation Coating HRTI- 1200 done on Cold Lining by Ceramic Boards (3 Coats)



Before HRTI 1200 Coating



After HRTI 1200 Coating

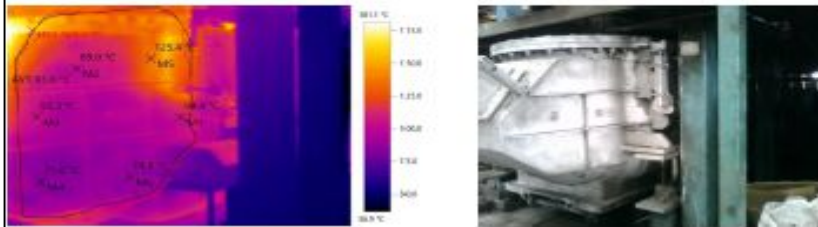


LPDC Holding Furnace 3 & 2



LPDC HF 3 Without Coating

File: 3 BEFORE IR001090 LPDC HF 3 ANGULAR SIDE.BMT Date: 09-10-2017
 lens type: 35° x 25° lens serial no.: Time: 12:29:05



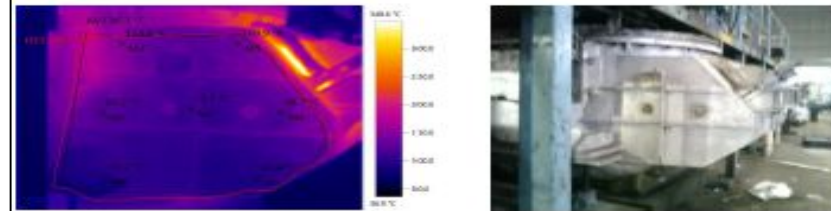
Picture parameters:
 Emissivity: 0.96
 Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	94.4	0.96	20.0	CenterSpot
Measure point 2	89.0	0.96	20.0	-
Measure point 3	93.3	0.96	20.0	-
Measure point 4	71.6	0.96	20.0	-
Measure point 5	125.4	0.96	20.0	-
Measure point 6	74.6	0.96	20.0	-
Hot spot 1	160.3	0.96	20.0	-
Average Area 1	93.9	0.96	20.0	-

LPDC HF 2 With Coating

File: 4 AFTER IR003480 LPDC HF 2 ANGULAR SIDE.BMT Date: 14-03-2018
 lens type: 35° x 25° lens serial no.: Time: 17:16:48



Picture parameters:
 Emissivity: 0.96
 Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	79.3	0.96	20.0	CenterSpot
Measure point 2	89.2	0.96	20.0	-
Measure point 3	114.4	0.96	20.0	-
Measure point 4	88.7	0.96	20.0	-
Measure point 5	100.9	0.96	20.0	-
Measure point 6	70.2	0.96	20.0	-
Measure point 7	69.6	0.96	20.0	-
Cold spot 1	47.7	0.96	20.0	-
Hot spot 1	145.7	0.96	20.0	-
Average Area 1	86.3	0.96	20.0	-

After Thermal coating application Furnace Surface / skin
 Reduction in temperature

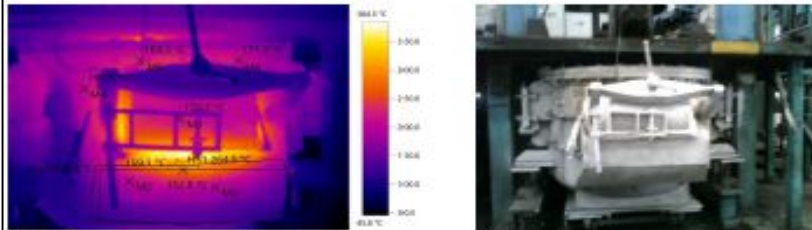
Location	Before Coating	After Coating	Reduction in Temperature
Angular Side Max Temp	160.3°C	145.7°C	14.6°C
Angular Side Average Temp	93.9°C	86.3°C	7.6°C

LPDC Holding Furnace 3 & 2



LPDC HF 3 Without Coating

File: 1 BEFORE IR001112 LPDC HF 3 METAL TAPPING DOOR .BMT Date: 09-10-2017
 lens type: 35" x 26" lens serial no.: Time: 12:40:49



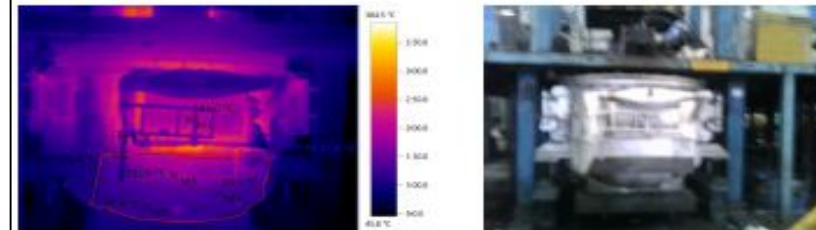
Picture parameters:
 Emissivity: 0.96
 Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	173.7	0.96	20.0	CenterSpot
Measure point 2	159.1	0.96	20.0	-
Measure point 3	152.8	0.96	20.0	-
Measure point 4	161.5	0.96	20.0	-
Measure point 5	169.3	0.96	20.0	-
Measure point 6	171.2	0.96	20.0	-
Hot spot 1	264.5	0.96	20.0	-
Average Area 1	141.8	0.96	20.0	-

LPDC HF 2 With Coating

File: 2 AFTER IR003475 LPDC HF2 METAL TAPPING DOOR.BMT Date: 14-03-2018
 lens type: 35" x 26" lens serial no.: Time: 17:14:45



Picture parameters:
 Emissivity: 0.96
 Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	141.0	0.96	20.0	CenterSpot
Measure point 2	110.5	0.96	20.0	-
Measure point 3	132.6	0.96	20.0	-
Measure point 4	95.1	0.96	20.0	-
Measure point 5	88.8	0.96	20.0	-
Cold spot 1	41.4	0.96	20.0	-
Hot spot 1	203.6	0.96	20.0	-
Average Area 1	105.4	0.96	20.0	-

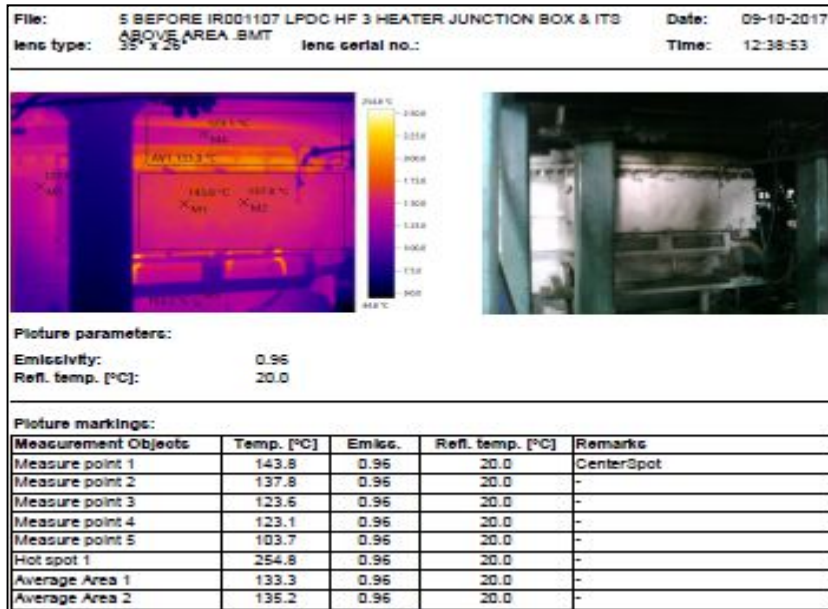
After Thermal coating application Furnace Surface / skin
 Reduction in temperature

Location	Before Coating	After Coating	Reduction in Temperature
Metal Tapping Door Max Temp	264.5°C	203.6°C	60.9°C
Metal Tapping Door Average Temp	141.8°C	105.4°C	36.4°C

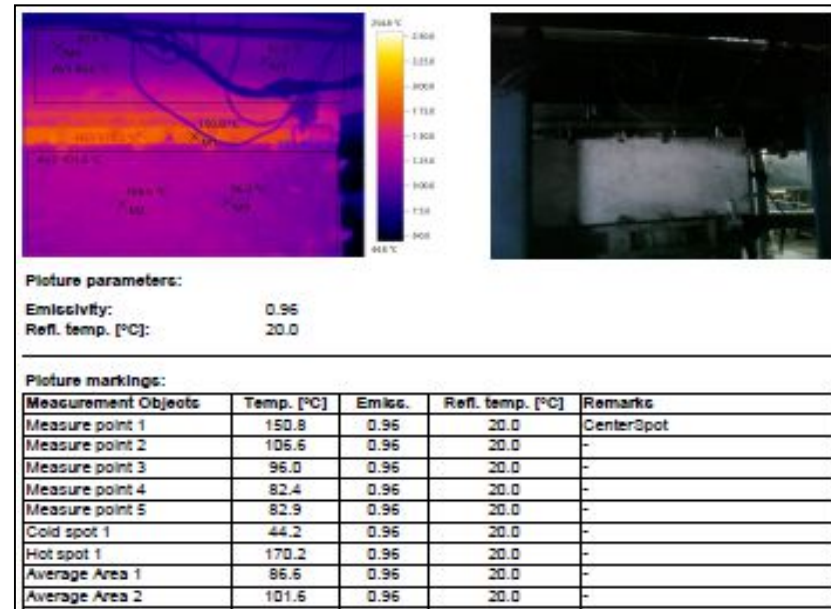
LPDC Holding Furnace 3 & 2



LPDC HF 3 Without Coating



LPDC HF 2 With Coating



After Thermal coating application Furnace Surface / skin
 Reduction in temperature

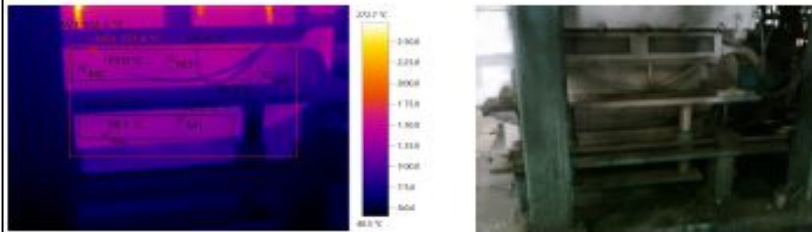
Location	Before Coating	After Coating	Reduction in Temperature
Heater Junction Box & Above Area Max Temp	254.8°C	170.2°C	84.6°C
Heater Junction Box & Above Area Average Temp	134.3°C	94.1°C	40.2°C

LPDC Holding Furnace 3 & 2



LPDC HF 3 Without Coating

File: 7 BEFORE IR001108 LPDC HF 3 HEATER JUNCTION BOX & ITS ABOVE AREA.BMT Date: 09-10-2017
 lens type: 35° x 25° lens serial no.: Time: 12:39:03



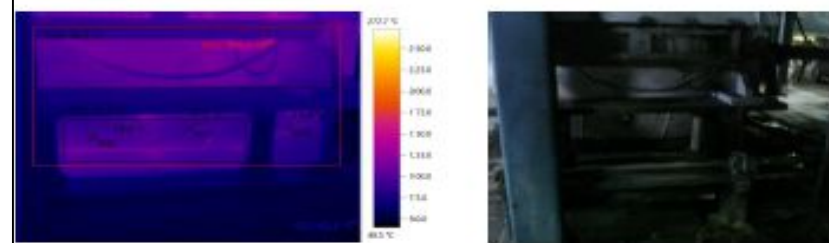
Picture parameters:
 Emissivity: 0.96
 Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	95.8	0.96	20.0	CenterSpot
Measure point 2	103.0	0.96	20.0	-
Measure point 3	105.6	0.96	20.0	-
Measure point 4	92.0	0.96	20.0	-
Measure point 5	98.1	0.96	20.0	-
Hot spot 1	123.6	0.96	20.0	-
Average Area 1	102.3	0.96	20.0	-
Average Area 2	95.6	0.96	20.0	-

LPDC HF 2 With Coating

File: 8 AFTER IR003479 LPDC HF2 HEATER JUNCTION BOX & ITS ABOVE AREA.BMT Date: 14-03-2018
 lens type: 35° x 25° lens serial no.: Time: 17:16:21



Picture parameters:
 Emissivity: 0.96
 Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	70.6	0.96	20.0	CenterSpot
Measure point 2	74.0	0.96	20.0	-
Measure point 3	73.8	0.96	20.0	-
Cold spot 1	42.3	0.96	20.0	-
Hot spot 1	107.1	0.96	20.0	-
Average Area 1	78.2	0.96	20.0	-
Average Area 2	75.5	0.96	20.0	-

After Thermal coating application Furnace Surface / skin
 Reduction in temperature

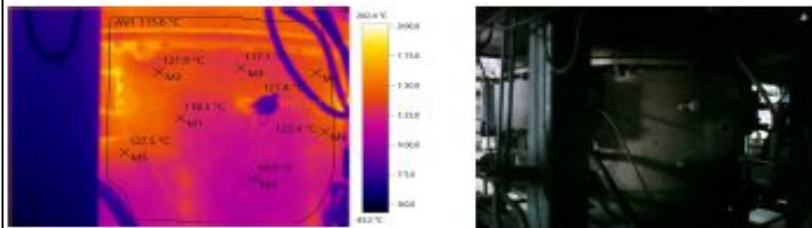
Location	Before Coating	After Coating	Reduction in Temperature
Heater Junction Box & Above Area Max Temp	123.6°C	107.1°C	16.5°C
Heater Junction Box & Above Area Average Temp	99.0°C	76.9°C	22.1°C

LPDC Holding Furnace 3 & 2



LPDC HF 3 Without Coating

File: 9 BEFORE IR001109 LPDC HF 3 BACK SIDE .BMT Date: 09-10-2017
 lens type: 35" x 25" lens serial no.: Time: 12:39:35



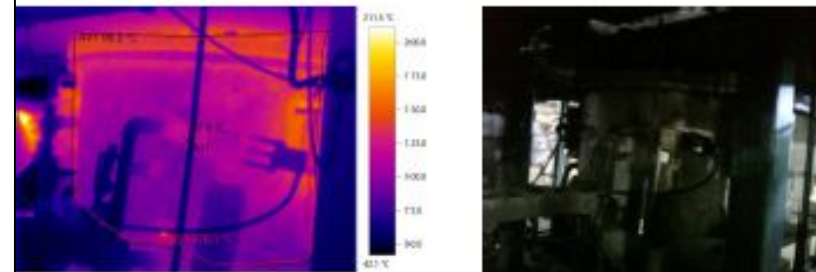
Picture parameters:
 Emissivity: 0.96
 Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	118.1	0.96	20.0	CenterSpot
Measure point 2	121.9	0.96	20.0	-
Measure point 3	117.1	0.96	20.0	-
Measure point 4	94.9	0.96	20.0	-
Measure point 5	127.5	0.96	20.0	-
Measure point 6	123.4	0.96	20.0	-
Measure point 7	127.8	0.96	20.0	-
Hot spot 1	202.4	0.96	20.0	-
Average Area 1	115.6	0.96	20.0	-

LPDC HF 2 With Coating

File: 10 AFTER IR003482 LPDC HF 2 BACK SIDE.BMT Date: 14-03-2018
 lens type: 35" x 25" lens serial no.: Time: 17:17:12



Picture parameters:
 Emissivity: 0.96
 Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	95.9	0.96	20.0	CenterSpot
Cold spot 1	42.1	0.96	20.0	-
Hot spot 1	178.1	0.96	20.0	-
Average Area 1	88.5	0.96	20.0	-

After Thermal coating application Furnace Surface / skin
 Reduction in temperature

Location	Before Coating	After Coating	Reduction in Temperature
Back Side Max Temp	202.4°C	178.1°C	24.3°C
Back Side Average Temp	115.6°C	88.5°C	27.1°C

Status for Before & After Thermal Insulation Coating to LPDC Holding Furnace Surface Temperature (Values in °C)



Sr. No.	Location	Before Thermal Insulation Coating LPDC Holding Furnace No. 3. Images taken on 09.10.2017			After Thermal Insulation Coating LPDC Holding Furnace No. 2 Images taken on 14.03.2018			Difference	
		Image No.	Max. Temp.	Avg Temp of Area	Image No.	Max. Temp.	Avg Temp of Area	Max. Temp.	Avg Temp of Area
1	Metal Tapping Door	IR001112	264.5	141.8	IR003475	203.6	105.4	60.9	36.4
2	Angular Side	IR001090	160.3	93.9	IR003480	145.7	86.3	14.6	7.6
3	Heater Junction Box & Above Area	IR001107	254.8	134.3	IR003475	170.2	94.1	84.6	40.2
4	Heater Junction Box & Above Area	IR001108	123.6	99.0	IR003479	107.1	76.9	16.5	22.1
5	Back Side	IR001109	202.4	115.6	IR003475	178.1	88.5	24.3	27.1
Average Reduction in Temperature								40.2	26.7



LPDC HF 2 Consumption Comparison with LPDC HF 1

Date	LPDC HF 2 Lining WITH Thermal Insulation Coating	LPDC HF 1 Lining WITHOUT Thermal Insulation Coating
	Units Consumption	Units Consumption
11-03-2018	442	515
12-03-2018	401	518
13-03-2018	521	481
14-03-2018	486	522
15-03-2018	483	536
Total Consumption	2333	2572
Average for 5 Days	466.6	514.4
Consumption Reduction in Units	47.8	
% Consumption Reduction	9.3%	
Per Unit Rate	₹ 8.30	
Energy Cost Saved per Day	₹ 396.74	
No of Working days	26	
Energy Cost Saved per month	₹ 10,315.24	
Insulation Coating Cost	₹ 26,640.00	
ROI in Months	2.6	

LPDC HF 2 Consumption Details Before Taking for Lining & Thermal Insulation Coating

Sr. No.	Month	Avg per day	Comparitive Consumption Reduction
1	Sep-17	550	15.2%
2	Oct-17	600	22.2%

Remarks

1. Thermal Insulation Coating has reduced surface temperature by 27°C.
2. ROI achieved 2.6 months against 3 months committed as per our offer.
4. Aakar Team has decided to do Thermal Insulation Coating for LPDC HF 3 immediately & subsequently LPDC HF 4.



Thanks
& What can
we do for you!