

Presentation on CI and Plate Type Air Preheater

By

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Director

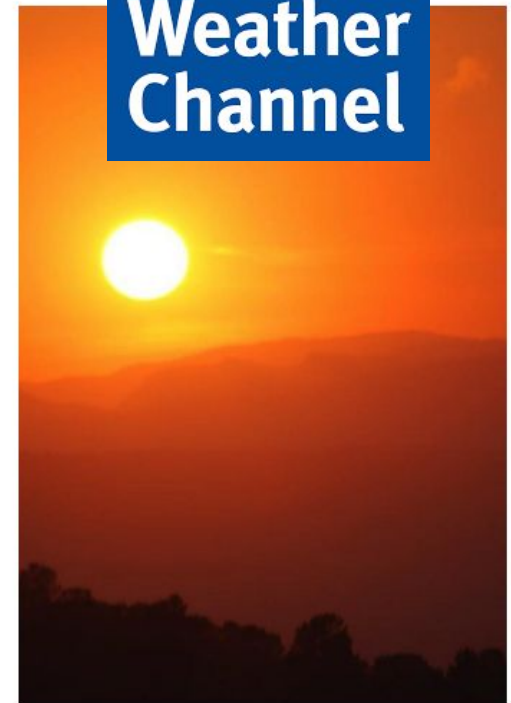
Trust Well Engineers (India) Pvt. Ltd.

Heat Safety

- Even in the Spring, heat with or without humidity can take a toll on the body
- Know the signs of heat illness. Types of heat illnesses include heat cramps, heat exhaustion, heat stroke.
- Reschedule outdoor work and strenuous activities for another day or until the coolest time of day
- Stay hydrated by drinking plenty of water



The
Weather
Channel





Trust Well Engineers (India) Pvt. Ltd.

Trust Well Engineers (India) Pvt. Ltd. strongly believe in reducing the carbon footprint by providing advanced and innovative waste heat recovery solutions.

Thus we offer customized solutions to extract maximum heat energy going into the atmosphere.

The company has designed and manufactured complex and non-standard WHRB for ISRO, various IOCL refineries and the Indian Navy.

Resources

We are ISO certified company located near Shirdi, a holy place of Sai Baba having two facilities in the vicinity of 500 meter.

- ❖ Proximity to Shirdi Airport
- ❖ Total Plot Area: 1,61,327 Sq. ft.



Codes and Standards available

Latest codes and standards are available:

- ❖ IBR CODE BOOK 2021
- ❖ ASME SEC.II
- ❖ ASME SEC VIII DIV 1
- ❖ ASME SEC.V
- ❖ ASME SEC.IX

Softwares used

Software's we used

- ❖ CEASER,
- ❖ STADD-PRO,
- ❖ PV- Elite,
- ❖ Auto CAD,
- ❖ MS Project,
- ❖ MS Excel.



Trust Well Engineers (India) Pvt. Ltd.

Association with EIL



We are enlisted at Engineers India Limited (EIL) for Soot Blowers.

[APH Presentation\EIL CERTIFICATE 31 JAN 2023.pdf](#)

We are in the process of the enlistment at EIL for the Shell and Tube Waste Heat Recovery Boiler.



Cliental -

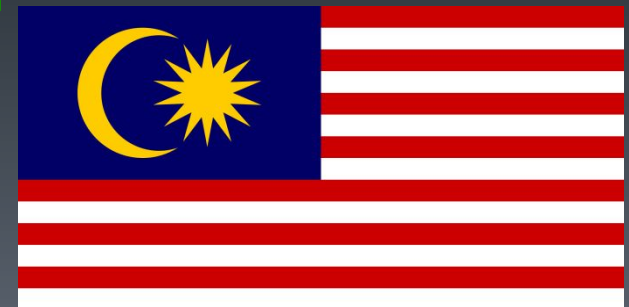
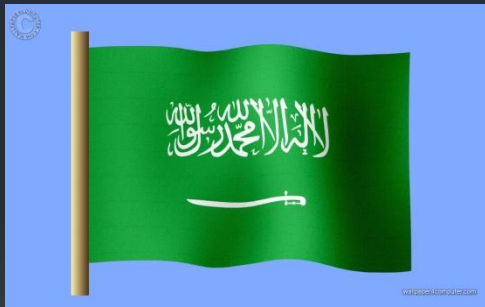
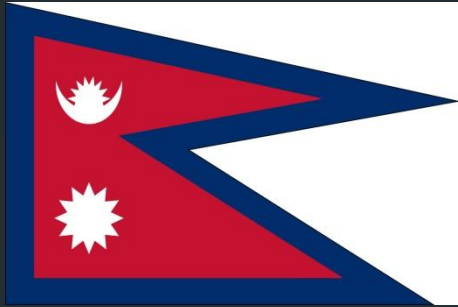


IndianOil



IIT Mumbai

Our Product installed and working smooth



Types of Air Preheater we can supply

We can Design and manufacture various types of Air Preheater

- Plate type Air Preheater
- CI Air Preheater
- Steam Coil Air Preheater

We provide One Stop solution

We are capable of the following activities for Air Pre-Heaters

□ Design

- ◆ Thermal Engineering
- ◆ Equipment Sizing

□ Manufacturing of Equipment

□ Testing as per approved QAP and TPI

□ Commissioning Support

Design Guideline for CI and Plate Type Air Preheater

1. Design guidelines

- I. Thermal Design
- II. Mechanical Design
- III. Structural Design

2. Design guidelines

The APH shall be designed so as to have the air leakage rates within 0.25% of normal flow rate.

Case Study - Plate Type Air Preheater

SR.	DESCRIPTION	VALUE
1	Application	Natural Gas Fired Boiler
2	Capacity	10,085 kg/hr,
3	Inlet Hot Gas	250 °C
4	Outlet Cold Gas	170 °C
5	Gas Side Pressure Drop	25 mmwc
6	Air Flow	9565 kg/hr
7	Inlet Temperature	30 °C
8	Outlet Temperature	115 °C
9	Air Side Pressure Drop	15 mmwc
10	Provided Heating Surface Area	107 Sq. mtr
11	MOC - Heating Plates	SS 304
12	MOC - Casing / Ducting	Carbon Steel (IS 2062 Gr. B)

Plate Type Air Preheater

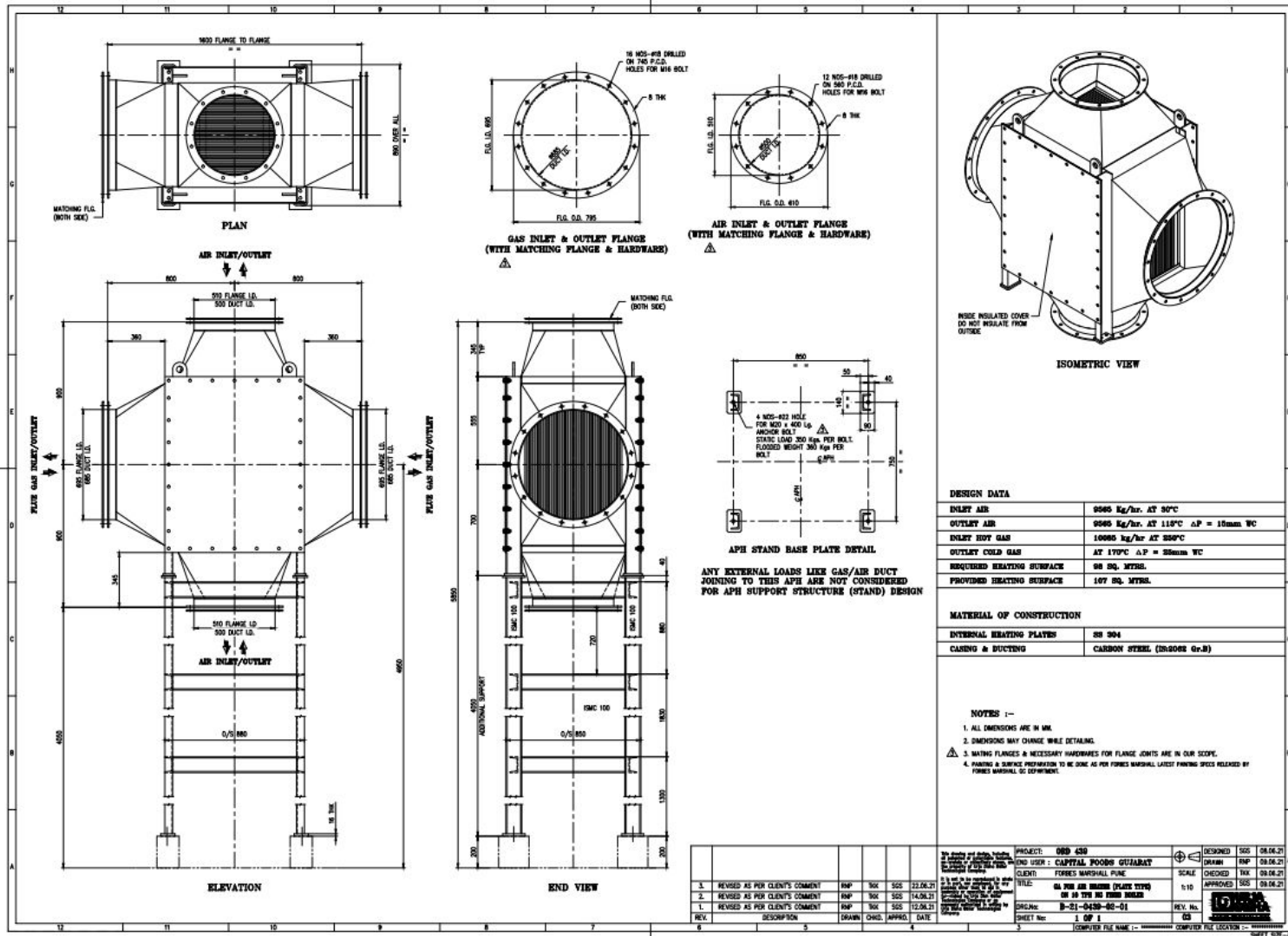


Plate Type Air Preheater

Inspection of
Plate type APH
@ Workshop



Plate Type Air Preheater

Inspection of
Plate type APH
@ Workshop



Plate Type Air Preheater

Inspection of
Plate type APH
@ Workshop



Plate Type Air Preheater

APH installed at site @ M/s. Capital Foods through Forbes Marshall



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APH installed at site @ M/s. Capital Foods through Forbes Marshall



CI Air Preheater

SR.	DESCRIPTION	VALUE
1	Application	Fired Heater Flue Gas
2	Capacity	99248 kg/hr,
3	Inlet Hot Gas	354 °C
4	Outlet Cold Gas	212 °C
5	Gas Side Pressure Drop	80 mmwc
6	Air Flow	93528 kg/hr
7	Inlet Temperature	90 °C
8	Outlet Temperature	257 °C
9	Air Side Pressure Drop	50 mmwc
10	Provided Heating Surface Area	2812 Sq. mtr
11	MOC - Cast Tubes	Gray CI
12	MOC - Casing / Ducting	Carbon Steel (IS 2062 Gr. A)

Codes used for CI and Plate Type Air Preheater



Code	Used for
ASME Sec. 1	This Section provides requirements for all methods of construction of power, electric, and miniature boilers.
ASME Sec. 8	His code is dedicated for pressure vessels.
IS: 875 - Part 3	Code of Practice for Design Loads (other than earthquake) for buildings and structures
IS: 1893	Criteria for Earthquake Resistant Design of Structures Part-1 (General Provisions and Buildings) Part-4 (Industrial Structures Including Stack like Structures)
IS: 800	Code of Practice for General Construction in Steel
ASME SEC. 9	Welding & Brazing Qualifications
ASME/ASTMM/IS	Material Specifications Designations

CI Air Preheater

Photos of C.I. Plates



CI Air Preheater

Photos of C.I. Plates



Steam Coil Air Preheater

Photos of SCAPH



Standard Practice – What we follow

QAP -

[APH Presentation\QAP-PLATE TYPE APH.pdf](#)

WPS

[APH Presentation\WPS 1.pdf](#)

[APH Presentation\WPS 2.pdf](#)

PQR

[APH Presentation\PQR.pdf](#)

Our other products

- Waste Heat Recovery Boilers
- Finned and Gilled Econimizers
- Steam Coil Air Pre Heaters
- Super Heaters
- Steam Silencers
- Soot Blowers
- ❖ Steam Operated
- ❖ Air Operated

List of Flagship Projects for WHRB

SR	CLIENT NAME	SITE	PRODUCT	APPLICATION
1	M/S. Orablue Chem Pvt. Ltd.	Bahadurgad, Morbi, Gujrat	Waste Heat Recovery Boiler	H ₂ SO ₄ Gas waste Heat Recovery
2	SI Group India Pvt. Ltd.	TTC Industrial Area, Navi Mumbai	Waste Heat Recovery Boiler	Hydro carbon Comene waste Heat Recovery
3	M/S. Indo Baijin Chemicals Pvt. Ltd.	Dahej, Gujarat	Waste Heat Recovery Boiler	Sulfur Recovery unit (SRU) in petrochemical industry
4	M/S. Jasubhai Engineering Pvt. Ltd. End user - UPL Ltd.	Dahej, Gujarat	Waste Heat Recovery Boiler	Waste gases from the cyanide plant from the fertilizer plant of UPL Ltd.
5	Satish Dhavan Space Research Center	Rasayani, Maharashtra	Waste Heat Recovery Boiler	Flue gases in the exothermic reaction in Nitric Acid plant
6	Aarati Drugs Ltd.	Ankaleshwar, Gujarat	Dual Fuel Power Boiler	25TPH @ 50 kg/cm ² Dual Fuel Power Boiler

Thank You



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