



TIG welding



Expanded pipes



Manufacture



MIG welding

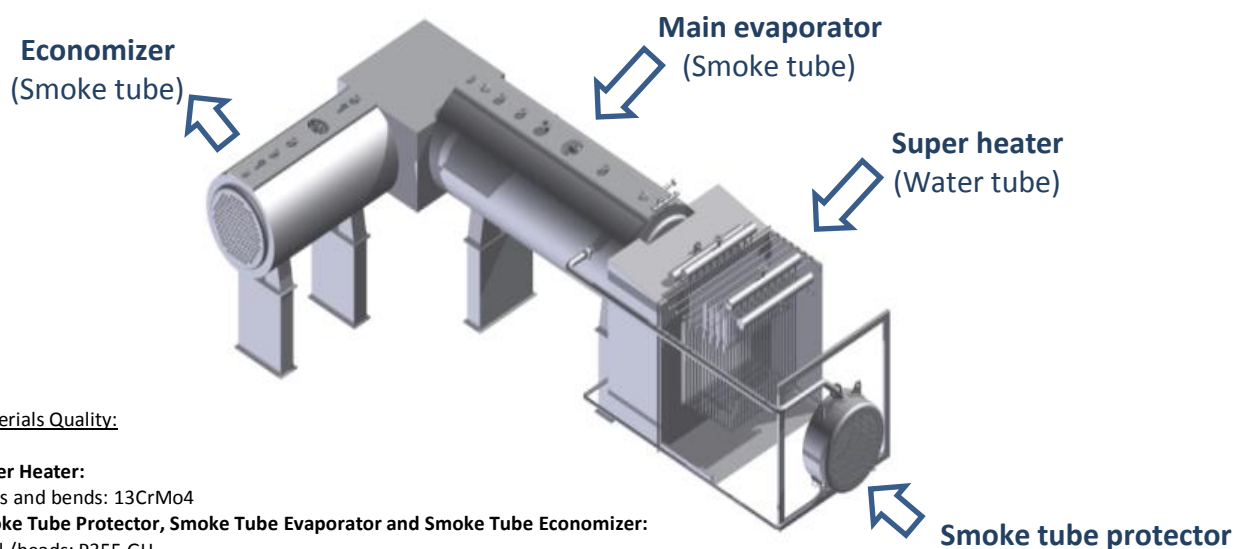
STEP 1 - Situation

Client requested to fabricate in our workshop in Lisbon a Steam Boiler Plant in accordance to CE Directive PED 97/23/CE, code EN 12953.

The fabrication was divided in four main elements which had to be fabricated separately and including all connection pipes and insulation.

Before packing, all the main elements would have to be interconnected for testing the alignment while witnessed by the Client and the 3rd party Notified Body (Inspecta).

MAIN ELEMENTS:



Materials Quality:

Super Heater:

Pipes and bends: 13CrMo4

Smoke Tube Protector, Smoke Tube Evaporator and Smoke Tube Economizer:

Shell /heads: P355 GH

Pipes: P235 GH

STEP 2 - Challenge

Short Time frame for delivery.

Effective Procurement procedure to comply with delivery time, quantities and quality standards.

Project revisions during fabrication with the complete set of As Built drawings made by STEP Engineering Department.

3rd Party Notified Body inspections according with CE Directive PED 97/23/CE.



Economizer tube plate



Evaporator



Final Assembly



Smoke tube protector

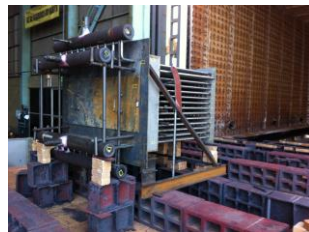
STEP 3 - Action

STEP executed the work in 101 running days since the day of the Purchase Order to the day the equipment left of premises, including procurement, 180° bending of the 13CrMo4 pipes, post weld heat treatment, fabrication, welding, drawing revision, pressure test, assembly test and packing.

It was also delivered a complete databook with all QA/QC work of monitoring and control, as built drawings, certifications, plannings and reports.



Bended tube test piece



Post weld heat treatment at 660 °C



Welded bends



Super heater



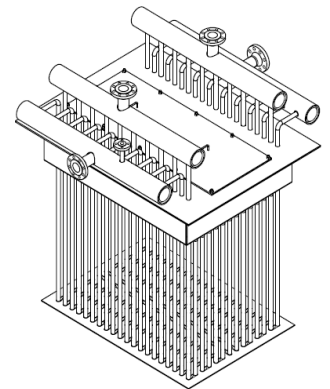
Pressure test

STEP 4 – Result

From detailed fabrication drawings, to material supply, assembly and welding, the fabrication has been executed at the higher quality level in a short time frame.

The success of this project relies on STEP commitment to have an on-going improvement in the quality and delivery of all fabricated products and services, at a competitive price, and to maintain STEP's position as a supplier of choice.

Our certifications and investment in the Quality and Welding Control and Assessment are partly responsible for our success and good references able to be considered as successful case studies.



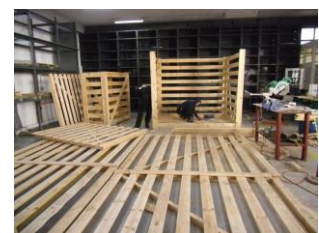
Insulation



NDT



Fabrication



Packing