ADVANCED TECHNOLOGIES IN BOILER PRODUCTION

INDUSTRIAL TECHNOLOGICAL LINE FOR PRODUCTION OF MEMBRANE WALLS

For the first time in Ukraine a high-performance modern production of membrane walls according to international standards was created by “Kotloturboprom” Ltd. These membrane walls are used in steam boilers of thermal and district heating power plants, hot-water boilers (with heat capacity above 30 GCal) and heat-recovery boilers.

Besides this, membrane walls could also be applied in metallurgical, chemical, oil and gas industries.

Membrane walls production line of German company Deuzer Maschinenfabrik Heitze GmbH & Co was installed and put into operation at “Kharkov boiler mechanical plant” Ltd.

This line comprises:

- Roller conveyer;
- Calibration (plate-straightening) machine, Type 100, SCHNUTZ Company;
- Automatic machine for tubes sanding;
- Machine for membrane walls bending, DEUMA Company.

Basic production characteristics:

- Max. length of a membrane wall: 20 000 мм
- Diameter of tubes: 25 ÷ 102 мм
- Width of fin: 10 ÷ 100 мм
- Welding type: submerged arc welding
- Min. bending radius: 150 мм
**Calibration machine** ensures straightening of strip steel with the following dimensions:

- Input width from 12 to max. 105 mm
- Input thickness from 5 to max. 10 mm
- With yield strength of max. 400 N/mm².

**Bending of membrane walls** is provided by the machine with the following technical parameters:

- Membrane wall tubes diameter: 27 ÷ 101 mm
- Tubes wall thickness, max.: 10 mm
- Wall width: 2000 mm
- Bending radius: 150 ÷ 400 mm
- Bending angle, max.: 150°

If necessary, membrane walls are heat treated in an electrical furnace (Termomaster YaO-12.110.15/900).

**Technological process of membrane walls production:**

1st phase:
Welding of a set from three tubes using space fins

2nd phase:
Welding of panels from three tubes into one required wall

3rd phase:
Bending of ready membrane walls using Deuma bending machine.

Installed production line of membrane walls ensures high quality level in accordance with all European norms.

Membrane walls could be supplied to domestic market or abroad, either for repair and modernization projects or for/with new furnaces (according to Customer design or the design of Kharkov Central Design Office – branch of Kotloturboprom Ltd.).