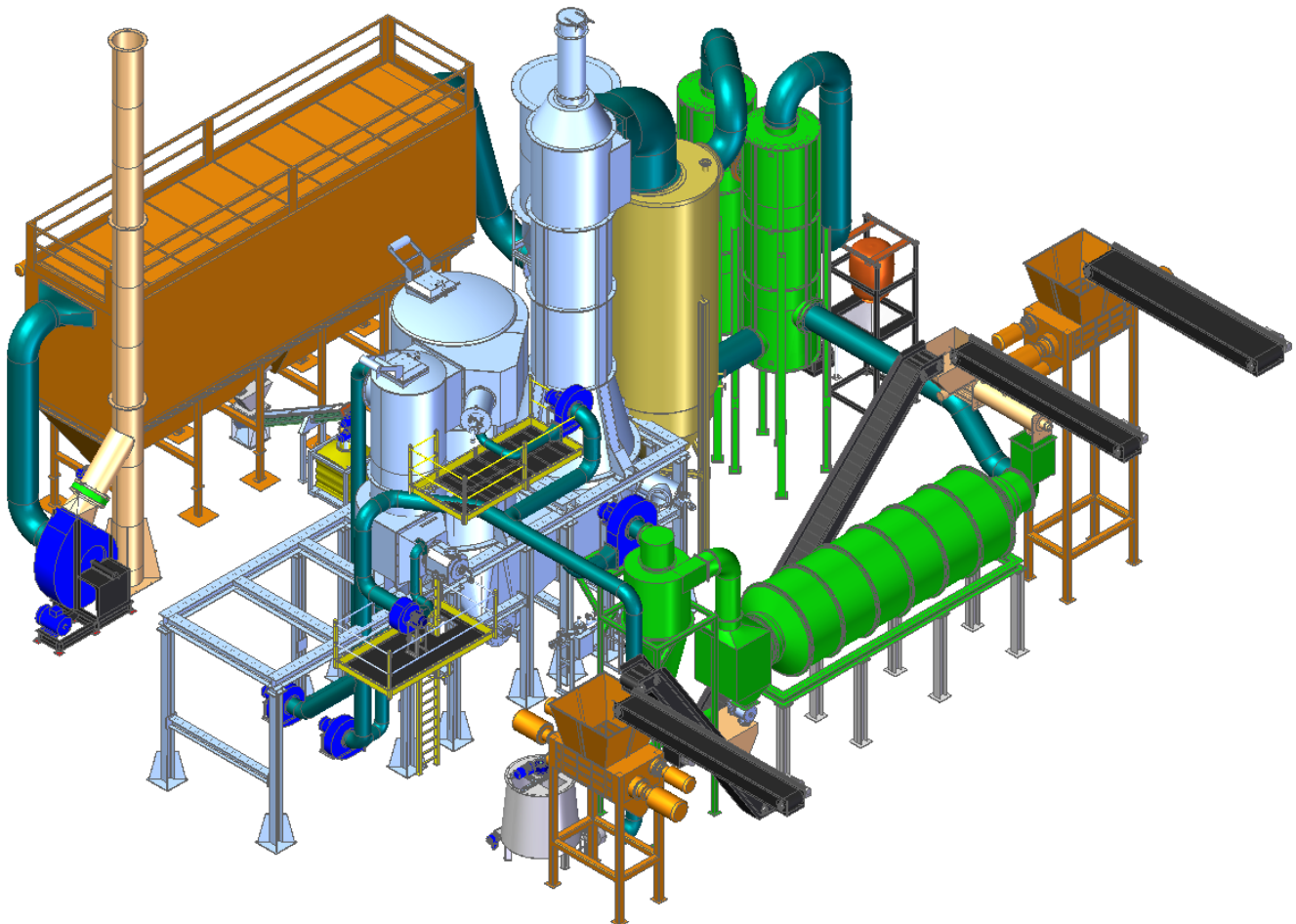




SLUDGE AND LIQUID WASTE

COMPLETE SYSTEM FOR DRYING AND COMBUSTION OF BIOLOGICAL AND INDUSTRIAL SLUDGES

# ES-FR - AB



The proposed drying and combustion system is designed to meet the emission limits required and enforced by the EU Standard # [2000/76/EU Guide line](#)

MODEL	ES – FR - AB
TREATED WASTE TYPE	SLUDGES
INCINERATION CAPACITY	SLUDGES 1500 - 3.000 Kg/h
DRYING DRUM	TRIPLE PASS ROTARY DRUM
COMBUSTION CHAMBER	COUNTER-CURRENT ROTARY KILN
OPERATION	CONTINUOUS
FEEDING	AUTOMATIC
OPERATION HOURS PER DAY	24
HEAT VALUE OF THE MIXED WASTE	15,6 MJ/Kg – MAXIMUM HUMIDITY 15%
HEAT RECOVER	SATURATED STEAM
RECOVERED THERMIC POWER	<i>Depending on the sludge composition</i>
ELECTRIC POWER POTENTIALITY IN CONDENSATION	<i>Depending on the sludge composition</i>
FLUE GAS CLEANING	DRY SCRUBBING WITH BAGS FILTER (Bicarbonate + activated carbon)

The supplied plant system has the following features:

- DRYING SECTION
  - Continuous automatic feeding system with screw conveyor
  - Triple pass rotary drum with direct heating, equipped with fumes moisture condenser, dried sludge unloading, recycling screw feeders, exchangers for drying air pre-heating.
- COMBUSTION SECTION
  - Continuous automatic feeding system with screw conveyor
  - Counter-current rotary kiln with controlled temperature (*virtually a pyrolysis under sub-stoichiometric conditions*) complete with burner and control board. Unloading of ashes is automatic and continuous.
  - Post combustion chamber is designed to grant:
    - Temperature of 850/1.050 °C
    - Combustion gas residence time from > 2 seconds
    - Swirl chamber to improve combustion's efficiency
    - Oxygen content > 6%

Complete with burner, control board and emergency chimney.

- Hot water pipes type heat exchanger for the production of superheated steam at 25 bar T = 450°C
- Flue gas cleaning system for the abatement of pollutants – acid fumes, dioxins and heavy metals – dry scrubbing type using bicarbonate and activated carbons. The system is supplied complete with reactor, reagent's dosing and bags filter.
- PLC control unit complete with dedicated operating system and net connection for online assisted technical support.
- Condensation steam turbine, complete with power supply generator, condenser, evaporation tower and accessories.

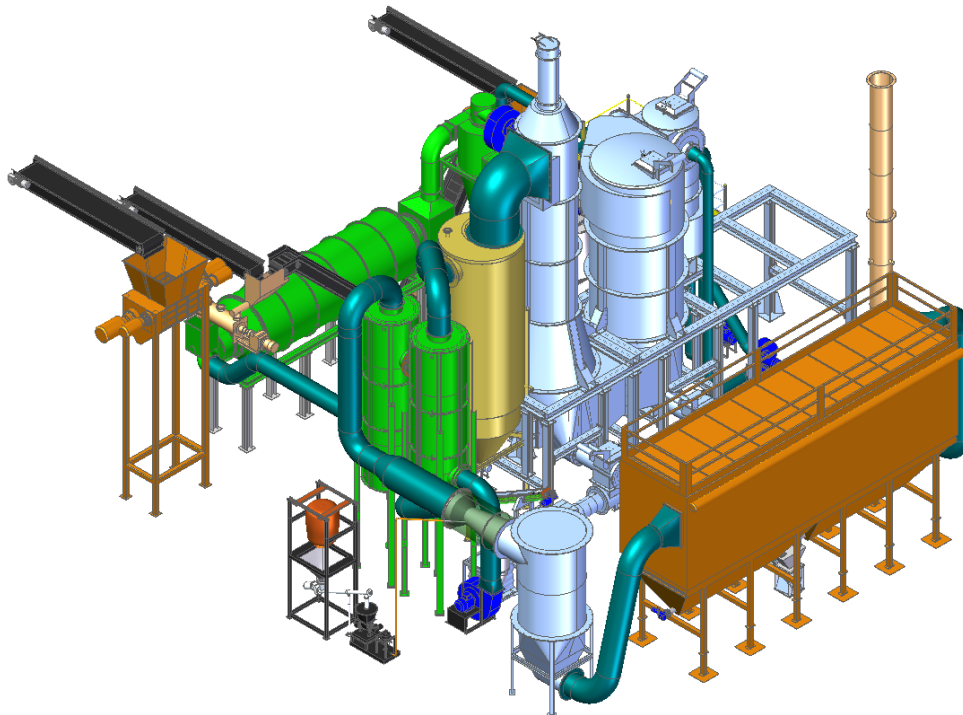
TYPE	QUANTITY	½ HOUR VALUE	DAILY AVERAGE VALUE
DUSTS	mg/Nm <sup>3</sup>	30	10
HCl	mg/Nm <sup>3</sup>	60	10
SO <sub>2</sub> + SO <sub>3</sub> as SO <sub>2</sub>	mg/Nm <sup>3</sup>	200	50
HF	mg/Nm <sup>3</sup>	4	1
NO <sub>x</sub> as NO <sub>2</sub>	mg/Nm <sup>3</sup>	400	250
CO	mg/Nm <sup>3</sup>	100	50
T.O.C.	mg/Nm <sup>3</sup>	20	10
TYPE	QUANTITY	PROBE AVERAGE VALUE	
Hg	mg/Nm <sup>3</sup>	0.5	
Cd + Tl	mg/Nm <sup>3</sup>	0.05	
Pb + Cr + Cu + Sn + Mn + Sb + As + Ni + V	mg/Nm <sup>3</sup>	0.5	
DIOXINS + DI-BENZOFURANS (2,3,7,8 TCDD)	mg/Nm <sup>3</sup>	0,1	
<i>Average value over a sampling period of 8 h.</i>			

The results of the measurements made to verify compliance with the emission limits are standardized at the following conditions:

- TEMPERATURE 273,15 K
- PRESSURE 101.3 kPa
- STATE OF GAS – MEASURED DRY
- CONTENT OF OXYGEN IN THE FLOWING GAS EQUAL TO 11% IN VOLUME

Sound pressure level 1 meter away from the logic perimeter of the source (i.e. the entire combustion system including its bases):

- 85 dB +/- 2 dB MAX



**Note: The technical data are only indicative and need to be checked in the design phase.**