

Europem n.v.

Proces, Energie & Milieu



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EUROPEM nv offers more than 45 years of know-how and experience to those who are looking for solutions for environmental, energy and process technical projects.

At our offices in Lier, the EUROPEM Team consists of process, mechanical, structural and instrumentation engineers, CAD draughtsmen, QA/QC managers, inspectors and administration staff.

Each person is highly qualified in their own field of expertise, and collectively the EUROPEM Team ensures a good and timely execution of complete turn-key projects, covering :

- Process design.
- Assistance at HAZOP reviews.
- Engineering : process, mechanical, structural, instrumentation, programming.
- Calculations : thermal mass-balances, pressure drop, heat radiation, noise, dispersion, energy-recuperation, ...
- Project management, planning.
- Procurement, expediting.
- Fabrication, inspection.
- Transportation, shipping.
- Erection, construction.
- Testing.
- Commissioning and start-up.
- Maintenance.

of our product and services range as further described into detail hereafter.

As a reputable company EUROPEM utilises its extensive experience, specialised in technological expertise know-how and financial resources to ensure that our clients are provided with the best possible service from project commencement to completion which then continues throughout the maintenance period.

The EUROPEM commitment towards our clients does not stop when a project has been delivered, we believe that such a relationship is necessary in today's competitive environment.



ATEX ZONATED EXTRACTION OF EXPLOSIVE GAS MIXTURES

Process Design

- Data-base of all usual HC's and other chemical products.
- Calculation of the degree of evaporation in a storage tank, or when (un)loading a product.
- Determination of the LEL of a gas mixture.
- Calculation and definition of the degree of explosive risk in ducts, collectors and treatment systems, in accordance with the ATEX directives.
- Assistance at HAZOP reviews.
- SIL calculation of control loops and instrumentation.
- Qualitative and quantitative risk analysis.
- Design of extraction systems according to the ATEX directives for zone 0, 1, 2.
- End-of-pipe solutions for treatment of the waste gas /liquid : active coal adsorption, condensation techniques, scrubbing systems, gas motors, ground flares, incinerators, combustors, ...



Project Execution

- Deflagration and detonation arresters.
- ATEX zone 0 fans, SS, spark free, pressure resistant, gas-tight.
- Dynamic flame arrester principle.
- Redundant instrumentation where required.
- Fail safe PLC's.



THERMAL TREATMENT OF WASTE GASES AND LIQUIDS



- Vertical temperature controlled combustors and ground flares.
- Horizontal incinerators with energy recuperation, flue gas treatment systems.
- Vertical natural draught incinerators with chimney for flue gas sampling.
- Compact combustor – MFO (Metal Fibre Oxidizer).



CO2 ABATEMENT (KYOTO)

- EUROPEM “HI – High Intensity” incineration : up to 25 % less fuel consumption.
- Energy recuperation : steam, hot water, thermal oil, gas-gas heat exchanger, ...
- Autothermal operation where possible.



ADVANCED TECHNOLOGY ON AIR POLLUTION CONTROL

- NOx prevention.
- NOx reduction (SCR, SNCR, thermal DeNOx, LeDeNOx).
- LeDeNOx, Low Energy DeNOx.
- EUROPEM “HI – High Intensity” incineration : complete destruction of VOC's.



HI INCINERATORS

HIGHER DESTRUCTION DEGREE

LOWER ENERGY CONSUMPTION

- HI “High Intensity” burners for gases and liquids, with natural gas support lances.
- Ultrasonic atomisation of liquids to prevent plugging of the atomiser..
- HI “High Intensity” mixing wall for a destruction degree of + 99,99 %. Lower fuel consumption. Shorter residence time.
- Staged combustion HI burners, specifically designed for thermal DeNOx incinerators.





ENERGY RECUPERATION

- Waste heat steam boilers.
- Thermal oil recuperators.
- Hot water boilers.
- Air preheating.
- Ice water production.



FLUE GAS TREATMENT

Removal of a.o.. :

- HCl, SO₂, NO_x
- Dioxines.
- Dust particles.
- Liquid droplets.
- Chimney exhausts.



ANALYSING EQUIPMENT FOR MEASURING, REPORTING AND CONTROLLING OF STACK EXHAUST

Such as :

CO, NO_x, SO₂, HCl, dust, dioxines, hydrocarbons, ...





THERMAL DeNOx SYSTEMS

LeDeNOx LOW ENERGY THERMAL De-NOx SYSTEM

- For waste streams loaded with NH₃ and nitrogen bound chemicals.
- No, or lower consumption of NH₃ or urea for the DeNO_x process.
- Application areas : (petro)chemical industry, meat waste processing industry, manure processing industry, ...
- Energy recuperation : optional.



REDU-REOX THERMAL DeNOx

- Nitrogen bounded chemicals are oxidized sub-stoichiometrically (with O₂ shortage), then the flue gases are conditioned, and finally re-oxidized.
- Proven technology.
- In combination with energy recuperation.
- Suitable for treating gas and liquid waste streams.



SCR / SNCR DeNOx SYSTEMS



- NOx analysing equip.
- Preheating of flue gases.
- DeNOx reactors.
- Study, engineering.
- Commissioning.



- NH3-injection and dosing.
- Duct burners, air preheaters.
- Exchangeable catalyst.
- Fabrication, erection.
- Start-up.





TREATMENT OF AIR LOADED WITH VOLATILE ORGANIC COMPOUNDS (VOC)



- Thermal recuperative combustion (with classic type heat exchanger).
- Thermal Regenerative Oxidation (RTO) : autothermal operation, low CO₂ emission.
- Thermal oxidation with integrated energy recuperation : lower fuel consumption, more compact system.
- Catalytic Oxidation : for standard type but also chlorinated hydrocarbons.





ENVIRONMENTAL FRIENDLY FLARE SYSTEMS GROUND FLARES AND COMBUSTORS

- Smokeless combustion.
- Low noise production.
- Invisible flame.
- Low or no heat radiation.



- Temperature controlled combustors.
- Complete destruction.
- With air fans or on natural draught.
- In combination with ATEX zone 0 TÜV approved extraction systems.



FLARE STRUCTURES / FLARE SYSTEMS



- Self-support flare stacks.
- Guy wired flare stacks.
- Derrick supported flare stacks
- Demountable Derrick flares.
- Guyed derrick flare structures.



- Water seals
- KO-drums.
- Molecular seals.
- Velocity seals.
- Flame holder segments.
- Wind and radiation shields.
- Smoke and pilot monitoring systems.
- Steam-control skirts, purge gas-skids.
- Calculations : structural, process, pressure drop, noise, heat radiation, dispersion, pressure vessels,...





FLARE TIPS



- EP-EAS Tip External Air Steam Tip.
- EP-IAS Tip Internal Air Steam Tip.
- EP-EAS/IAS Tip External/Internal Air Steam Tip.
- EP-GA Tip. Gas Assisted Tip.
- EP-AA Tip. Air Assist Tip.
- EP-PB Tip. Pit Burn Tip.
- EP-NH3 Tip. Ammonia Tip.
- EP-GL Tip. Gas-Liquid Tip.
- EP-H2S Tip. H2S Tip.
- EP-LG Tip. Lean Gas Tip.





EUROPEM FLARE TEST FACILITY



In proximity to our offices at Lier, EUROPEM's flare test facility is located.

Our test facility disposes of all required utilities and analysing equipment in order to perform testing with regards to :



- Flame patterns vs flow rate.
- Smokeless combustion.
- Heat radiation
- Material temperatures.



The pictures as presented show tests of :

- The EP-GA and the EP-AA Flare Tip.
- Smokeless combustion.
- Flame lick prevention.



Our test rig has a set up for gas and air assist to the flare tip, and is able to simulate wind conditions up to wind force 8.



PILOT BURNERS IGNITION SYSTEMS

- Flare pilots : HE High Energy ignition, Flame Front Ignition, combined HE / FF ignition.
- Flare ignition lances (without support gas).
- Manual and automatic HE ignition systems, FFG ignition systems, for safe area and Ex-proof area.
- Ignition and pilot burners for industrial burners, furnaces, ...
- Ex-proof pilot burners.



EUROPEM RENTAL FLARE

- Fast intervention possible, quick erection.
- Is deployed during maintenance operations at main flare system, or on gas pipe lines.
- Elevation : 18 meters
- Diameter : basis = 1000; top = can be modified.
- Capacity is variable and subject to discussion with client.
- Please contact EUROPEM for more detailed information.





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EUROPEM SUCCESSFULLY EXECUTED PROJECTS FOR



JACOBS



EVONIK
INDUSTRIES

sasol
reaching new frontiers



Rhodia



KATOEN NATIE



NESTE OIL

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