



ERG Products, Technologies, Services, Industrials & Application



The ERG Group Industrial Gas Cleaning , Thermal Systems, Odour Control
Copyright © All Rights Reserved | [Legal](#) | [Sitemap](#) | 2022 | Rev 0

Fabrication For the Process Industries

Index

1.0 ERG PROCESS TECHNOLOGIES – Company BRIEF

2.0 ERG Products, Technologies & Services

3.0 ERG Technologies With Applications

4.0 Industrial Details with Technologies for Odour Control Systems

5.0 Industrial Details with Technologies for Industrial Gas Cleaning & Thermal Systems

6.0 Industrial Details with Technologies for Water Treatment Systems – Degassers/Strippers

7.0 Product's & System Brochures

8.0 Company's Accreditations

9.0 ERG Contact Details



1.0 ERG Process Technologies- Company Brief

The ERG Group provides bespoke air pollution control systems and services, and high-quality plastic fabrication in the UK, Middle East and around the world.

ERG is a leading supplier of Odour Control Systems in the UK, Ireland and the Middle East.

ERG provides complete, cost-effective Odour Control Systems for sites and processes in a range of markets, with guaranteed performance to meet each client's odour treatment requirements.



2.0 ERG Products, Technologies & Services

(GROUP-1)

Industrial Gas Cleaning & Thermal Systems

- Packed tower scrubber
- V-tex® scrubbers
- Venturi scrubbers
- Tray scrubbers
- Venturi ductors
- Thermal oxidisers
- Spray tower
- Quench system
- Cyclone Particulate Removal
- Emergency Chlorine scrubber
- Carbon filters

(GROUP-2)

Odour Control Systems for Air Treatment

- Chemical scrubber
- V-tex® scrubbers
- Biotrickling filter
- Bioscrubber
- Carbon filters (single, Dual, Annular)
- Hybrid system (chemical &/or Biological &/or Carbon filter)
- Breathing carbon filter

(GROUP-3)

Stripping Systems for Water Treatment – Degasser

- Degasser Packed tower (H₂S, NH₃, CO₂ removal)
- V-tex® technology

(GROUP-4)

Plastic Fabrication of Process Vessels, Dampers & Components

- Process vessels
- Storage tanks
- Chemical tanks
- Silos
- Glass fibre reinforced tank piping & ducting
- Isolation/ balancing & Non-return dampers
- Fume hoods
- Dosing pump cabinets
- Drip trays
- Tank bunding

(GROUP-5)

System Maintenance, Supervision & Commissioning

- 24 hour-a-day, 365 days-a-year maintenance service, including electrical & mechanical repairs.
- Air pollution & odour control system inspection & repairs.
- Replacement of spent media, failed scrubber internals & other air pollution filter internals.
- Commissioning

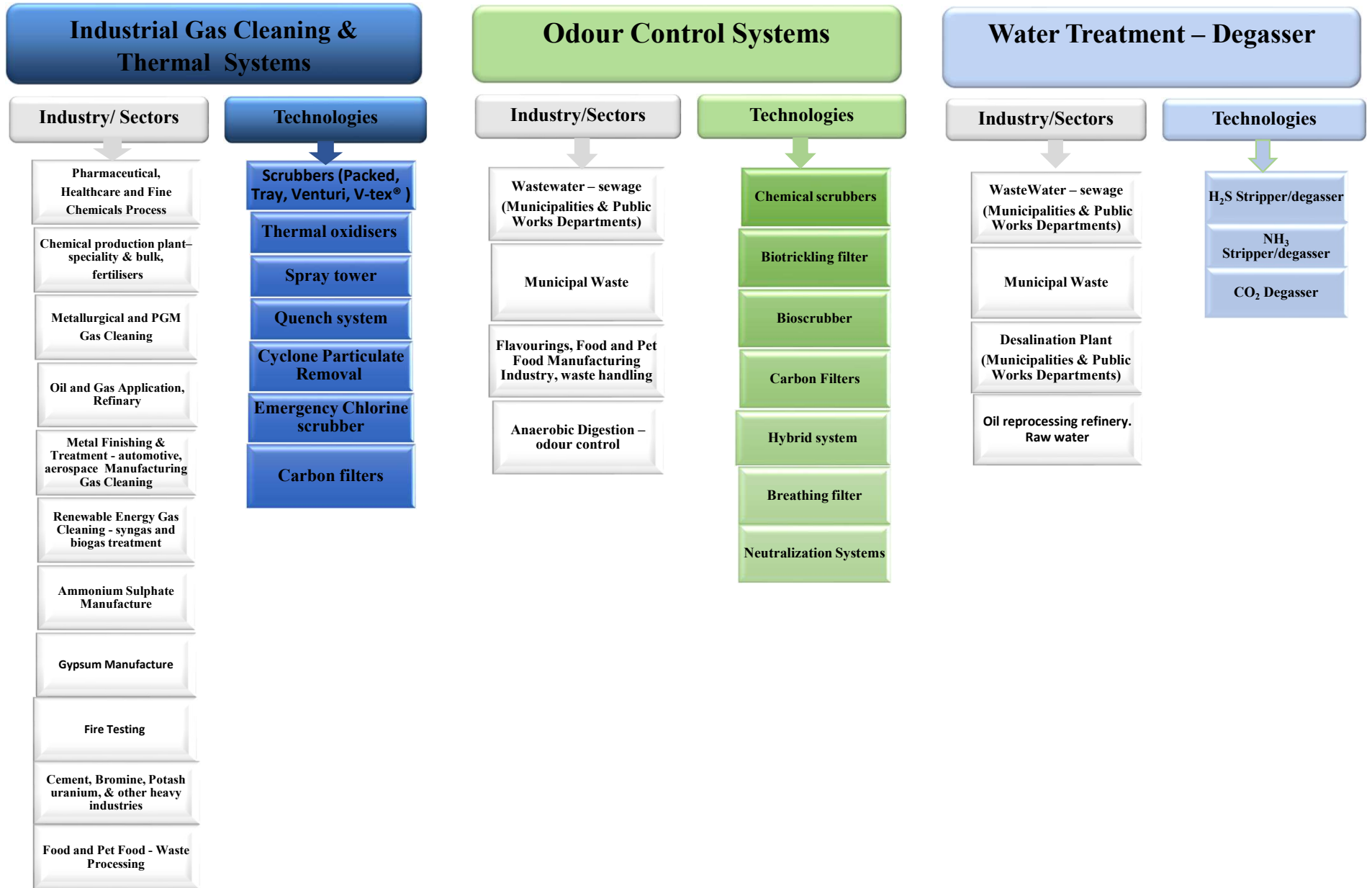
(GROUP-6)

Odour Assessment Surveys, Design Contracts & Pilot Plants

- Field odour measurement & assessment
- Engineering and Front-End Engineering Design contracts (FEED contracts)
- 3D modelling of all packages – Plant 3D and export as .dwg & Navisworks
- BIM integration
- Pilot Plants



3.0 ERG Technologies With Applications





4.0 Industrial Details with Technologies for Odour Control Systems



4.0 Industrial Details with Technologies – Odour Control Systems

Sector (1) – Waste-Water Plant

ERG's odour control systems are engineered to suit each application and supplied with a process guarantee.

Applications

ERG is a leading supplier of Odour Control Systems to the Water Industry. ERG's offers a cost-effective solution for controlling the odour at sewage treatment plants.

- Pumping stations
- Vacuum stations
- Inlet works, screens, detritors and associated skips
- Primary settlement and associated distribution chambers
- Imported and exported sewage/sludge tanks and tanker loading/discharge
- Primary, RAS, SAS, digested sludge tanks and dewatering equipment
- THP processes, Cake storage

Technologies

Each package is bespoke: designed and manufactured to the specific project requirements.

- **Chemical scrubber** to remove acidic and basic gases like H_2S , NH_3 , VOCs, mercaptans, amines, etc
- **Biotrickling filter** to remove H_2S , NH_3 , VOCs, mercaptans, amines, etc
- **Bioscrubber** to remove H_2S , VOCs and mercaptans
- **Carbon filters (single, Dual, Annular)** to remove H_2S , NH_3 , VOCs, mercaptans, amines, aldehyde, acetone, etc.
- **Hybrid system (chemical &/or Biological &/or Carbon filter)**
- **Breathing carbon filter** typical used to remove H_2S
- **Neutralization system**



4.0 Industrial Details with Technologies – Odour Control Systems

Sector (2) – Municipal Waste

ERG is an experienced Odour Control supplier, providing cost-effective solutions to the Waste Industry for more than 20 years. ERG's odour control systems are engineered to suit each application and supplied with a process guarantee.

Applications

Our bespoke packages are designed for your site's specific requirements to give efficient, safe and simple odour control – minimising nuisance odours for your staff, neighbors and customers.

We can offer you an Odour Control System tailored to your needs whether you operate a

- Municipal Waste or
- Food Waste site – treating odours from waste intake halls,
- Sorting and compaction processes,
- Transfer stations, composting and anaerobic digestion plants.

Technologies

Typical systems located in urban areas include:

- **Building and LEV** (Local Exhaust Ventilation) ductwork
- **Dust filter** to protect the downstream equipment from accumulated dust
- **Extraction fan**
- **Polishing carbon filter and discharge stack**
- And may also include a **biofilter or chemical scrubber**

Typical odour concentrations at the stack are 1,000 ouE/m³, rising to 3,000 ouE/m³ for highly odorous operations with tall discharge stacks to aid dispersion.



4.0 Industrial Details with Technologies – Odour Control Systems

Sector (3) – Flavourings, Food and Pet Food Manufacturing Industry

ERG is an experienced Odour Control supplier, providing cost-effective solutions to the Flavourings, Food and Pet Food Manufacturing Industry for more than 20 years.

Applications

Our bespoke packages are designed for your site's specific requirements to give efficient, safe and simple odour control – minimising nuisance odours for your staff, neighbors and customers.

We can offer you an Odour Control System tailored to your needs whether you operate a

- Municipal Waste or
- Food Waste site – treating odours from waste intake halls,
- Sorting and compaction processes,
- Transfer stations, composting and anaerobic digestion plants.

Technologies

Most odorous air streams can be treated using a combination of a chemical scrubber and carbon filter. A minority of projects can also be treated by thermal oxidation.

Typical systems include some or all of the following:

- **Building and LEV** (Local Exhaust Ventilation) ductwork
- **Single or multi-stage chemical scrubbing** for bulk-treatment of odorous, complex organic compounds using packed tower scrubbers, tray scrubbers or venturi scrubbers – including as required chemical storage and dosing packages.
- **Sub-coolers** to condense water vapour and certain odorous compounds
- **Thermal oxidiser**
- **Extraction fan**
- **Polishing carbon filter and discharge stack**





5.0 Industrial Details with Technologies for Industrial Gas Cleaning & Thermal Systems



5.0 Industrial Details with Technologies - Industrial Gas Cleaning Systems

Sector (1) - Pharmaceutical, Healthcare and Fine Chemicals Production Plants Process Gas Cleaning

ERG's gas cleaning systems are engineered to suit each application and supplied with a process guarantee.

Applications

ERG's abatement packages are typically installed as part of the LEV system. In most cases, a skid-mounted gas cleaning package is required. ERG also provides site mechanical and electrical installation and commissioning as required.

Our systems treat LEV extraction, process and reactor vents, and storage tank vents. Typical contaminants which we treat include:

Acid gases – HCl, Cl₂, SO₂, H₂S, mercaptans etc

Basic gases – NH₃, amines

Dust and aerosols – 100 to <1 micron particle sizes

Technologies

Our vent abatement systems are based on one or more of the following technologies. Each package is bespoke: designed and manufactured to the specific project requirements.

- **Packed tower scrubbers** – for acid gases, basic gases, some dusts, actives, some VOCs
- **V-tex® scrubbers** – for acid gases, basic gases, some dusts, actives, some VOCs
- **Venturi scrubbers** – for high concentration or fine dust and actives
- **Carbon filters** – for VOCs and solvent abatement – low concentrations
- **Scrubbers using suitable oils or solvents** – VOC and solvent abatement
- **Venturi eductors** – for applications where a vent fan is not suitable
- **Thermal oxidisers** – for VOC and solvent abatement – high concentration



5.0 Industrial Details with Technologies - Industrial Gas Cleaning Systems

Sector (2) - Chemical Production Plants - Bulk Chemicals, Fertilisers, Heat-Resistant Manufacture

ERG's gas cleaning systems are engineered to suit each application and supplied with a process guarantee.

Applications

ERG's abatement packages are typically installed to treat vents from storage tanks, reactors, vent lines/LEV systems & liquid waste handling. In many cases, a skid-mounted scrubber package is required, though ERG can also arrange site installation and commissioning.

Typical contaminants which we treat include:

Acid gases – HCl, Cl₂, Br₂, COS, HCN, SO₂, H₂S, mercaptans, etc

Basic gases – NH₃, amines, etc

Silicates – SiO₂, H₂SiF₆, SiF₄, SiCl₄, etc

Dust and aerosols – 100 to <1 micron particle sizes – mechanically and chemically generated dust including catalysts, zeolites, PTA, rubber

VOCs – MEK, methyl chloride, THF, ethyl acetate, acetone, etc

Technologies

Our vent abatement systems are based on one or more of the following technologies. Each package is bespoke: designed and manufactured to the specific project requirements.

- **Packed tower scrubbers** – for acid gases, basic gases, some dusts, some VOCs
- **V-tex® scrubbers** – for acid gases, basic gases, some dusts, some VOCs
- **Venturi scrubbers** – for high concentration or fine dust
- **Carbon filters** – for VOCs and solvent abatement
- **Quench systems** – for adiabatically cooling high temperature gas
- **Tray scrubbers** – typically large flowrate low concentration gases and dusts
- **Thermal oxidation** – waste solvents and VOC-rich vent gases
- **Low temperature DeNOx** – for NO_x abatement to high efficiency



5.0 Industrial Details with Technologies - Industrial Gas Cleaning Systems

Sector (3) - Metallurgical and PGM Gas Cleaning

ERG's gas cleaning systems are engineered to suit each application and supplied with a process guarantee. We have reference plants in the UK, Eastern Europe and the Middle East on metal (Ni, Co, Al, Sb) refining and reclamation and in precious metal refining.

Applications

Our scrubbing packages are installed to treat off gases from electrolysis processes and reactor vents, flue gases from roasters and furnaces, and vent gases from salt dryers.

Examples of gas contaminants we have experience of include:

Chlorine from electrolysis

SO₂ and particulate, including heavy metals, from roaster flue gases

NH₃ and particulate from aluminium salt dryers

HCl and chlorine from precious metal refining

Technologies

Our vent abatement systems are based on one or more of the following technologies. Each package is bespoke: designed and manufactured to the specific project requirements.

- **Packed tower scrubbers** – for acid gases, basic gases, some dusts, some VOCs
- **V-tex® scrubbers** – for acid gases, basic gases, some dusts, some VOCs
- **Venturi scrubbers** – for high concentration or fine dust
- **Quench systems** – for adiabatically cooling high temperature gas for further wet scrubbing



5.0 Industrial Details with Technologies - Industrial Gas Cleaning Systems

Sector (4) - Oil and Gas Applications

ERG provides a wide variety of air pollution control systems, including for industrial, process and commodity goods manufacturing plants and Oil and Gas applications not already covered under specific sector headings in this section.

All ERG air pollution abatement systems are purpose-designed to match the full requirements of each application and carry a process guarantee.

Technologies

Our vent abatement systems are based on one or more of the following technologies. Each package is bespoke: designed and manufactured to the specific project requirements.

- **Packed tower scrubbers** – for acid gases, basic gases, some dusts, some VOCs
- **V-tex® scrubbers** – for acid gases, basic gases, some dusts, some VOCs
- **Venturi scrubbers** – for high concentration or fine dusts
- **Carbon filters** – for VOCs and solvent abatement – low concentrations
- **Scrubbers** using suitable oils or solvents – VOC and solvent abatement
- **Thermal oxidisers** – for VOC and solvent abatement – high concentration



5.0 Industrial Details with Technologies - Industrial Gas Cleaning Systems

Sector (5) - Metal Finishing, Treatment Automotive & Aerospace Manufacturing

ERG's gas cleaning systems are engineered to suit each application and supplied with a process guarantee.

Applications

ERG has experience of treating air pollution problems from a range of metal-industry sources. These include:

Surface preparation, Strong alkali solutions for surface cleaning

De-smut and key-up the surface using low concentration nitric acid

Anodising, Hot sulphuric acid dips, Degreasing

Aluminium smelting

Steel scale cracking

Technologies

ERG's systems include for tank extraction and lip-ducts, air extraction ductwork, scrubbing towers and VOC removal.

The air pollution treated in these systems includes:

- Caustic fumes
- Acid fumes – sulphuric acid fume, phosphoric acid fumes, nitric acid fumes
- Degreasing solvents
- Scale particulate
- HCl, SO₃, NO₂



5.0 Industrial Details with Technologies - Industrial Gas Cleaning Systems

Sector (6) - Renewable Energy - Syngas and Biogas

ERG's gas cleaning systems are engineered to suit each application and supplied with a process guarantee. We have reference plants in the UK and Middle East treating the syngas and biogas from a variety of gasification and anaerobic digestion processes.

Applications

ERG's gas cleaning skid packages are typically installed upstream of the gas fan/compressor or gas engine. Our experience includes treating:

Syngas from gasification of wood, sewage sludge, municipal waste

Biogas from digestion of municipal waste, sewage sludge

We can handle gases rich in CO, CH₄, H₂, gaseous alkanes, alkenes, aromatics, etc and contaminated with:

Acid gases – H₂S, HCN, HCl, etc

Basic gases – NH₃

Tars – C₈ to C₂₀ for example

Ash and other particulates

Technologies

Our gas cleaning systems are based on one or more of the following technologies. Each package is bespoke: designed and manufactured to the specific project requirements.

- **Quench vessels** – to adiabatically cool the gas before scrubbing the contaminants
- **V-tex® scrubbers** – for acid and basic soluble contaminants gas cleaning where clogging with tars is a potential problem.
- **Packed tower scrubbers** – for acid and basic soluble contaminants gas cleaning where clogging with tars is not a potential problem, also for sub-cooling to reduce the gas water content
- **Scrubbers** using suitable oils or solvents – tar removal if required



5.0 Industrial Details with Technologies - Industrial Gas Cleaning Systems

Sector (7) - Ammonium Sulphate Manufacture

ERG's gas cleaning systems are engineered to suit each application and supplied with a process guarantee.

Applications

For processes generating significant quantities of ammonia in the vent gas, ERG has experience scrubbing this into dilute sulphuric acid solution to make >25% ammonium sulphate solution suitable for sale as fertiliser.

Using the V-tex® scrubber which operates efficiently with viscous and high density scrubbing solutions, the liquid effluent stream can be controlled to a high concentration of $(\text{NH}_4)_2\text{SO}_4$, minimising the water content and maximising the revenue stream from this liquid effluent. The solution can be further concentrated using an evaporator if required.

Technologies

Our gas cleaning systems are based on one or more of the following technologies. Each package is bespoke: designed and manufactured to the specific project requirements..

- **Packed tower scrubbers** – for acid gases, basic gases, some dusts, some VOCs
- **V-tex® scrubbers** – for acid gases, basic gases, some dusts, some VOCs
- **Venturi scrubbers** – for high concentration or fine dust
- **Carbon filters** – for VOCs, heavy metals and solvent abatement
- **Quench systems** – for adiabatically cooling high temperature gas
- **Cyclone** – typically large flowrate low concentration gases and dusts



5.0 Industrial Details with Technologies - Industrial Gas Cleaning Systems

Sector (8) - Gypsum Manufacture

ERG's gas cleaning systems are engineered to suit each application and supplied with a process guarantee.

Applications

Whether from fossil fuel combustion or mineral ore roasting, SO₂ is a well-known pollution challenge.

Flue gas desulphurisation (de-SO_x) plants in the Power sector have successfully used limestone for several decades. And ERG now brings this chemistry to the process industries for treating smaller flue gas flowrates contaminated with high SO₂ concentrations. Using the unique features of the V-tex® technology, we can scrub SO₂ from >200,000 mg/m³ to applicable local emissions concentrations as low as 50 mg/m³.

Limestone slurry is used as the scrubbing liquor, with air oxidation in the sump tank and dewatering of a side-stream effluent to produce saleable gypsum (calcium sulphate) powder.

Technologies

Flue gas desulphurisation (de-SO_x) systems are based on one or more of the following technologies. Each package is bespoke: designed and manufactured to the specific project requirements.

- **Packed tower scrubbers** – for SO₂ removal
- **V-tex® scrubbers** – for acid gases SO₂, some dusts, some VOCs
- **Venturi scrubbers** – for high concentration or fine dust
- **Carbon filters** – for heavy metals, VOCs, other gases
- **Quench systems** – for adiabatically cooling high temperature gas



Industrial Details with Technologies - Industrial Gas Cleaning Systems

Sector (9) – Fire Testing

ERG's gas cleaning systems are engineered to suit each application and supplied with a process guarantee.

Applications

ERG's extensive experience of gas cleaning includes treating the flue gases from Fire Testing facilities. These include furnaces and test rigs testing the combustion properties of building cladding, cables and batteries.

By their nature, these facilities operate with discrete test runs generating fumes for minutes or hours at a time and so the flue gas treatment needs to ramp up and down as required.

ERG's packages are typically manufactured from stainless steel to handle the instantaneous high temperatures and corrosive gases released at different points in the test run as different components in the items being tested vaporise or combust.

Technologies

- **High energy venturi** to capture the soot or ash
- **Packed tower scrubber** to remove the acidic contaminants and sometimes
- **Carbon filter** to polish any unburned hydrocarbons.

Each package includes a suitably sized fan, access structure, control system, chemical dosing and effluent handling, and automated air admittance dampers to regulate the gas flowrate and temperature at the equipment inlet.



5.0 Industrial Details with Technologies - Industrial Gas Cleaning Systems

Sector (10) – Cement, Bromine, Potash, Uranium, & Other Heavy Industries - Particulate Removal

ERG's gas cleaning systems are engineered to suit each application and supplied with a process guarantee.

Applications

Particulates are commonly part of the problem when treating contaminated gas streams and removing them is crucial to successfully clean the gas. Where the solids are not handled correctly, the gas cleaning package may clog and foul, or may not achieve the design performance, exceeding the stack dust concentration permit.

There are several different technologies for dust capture and choosing the right one to use depends on the size, composition and concentration of the particulates being captured. ERG has wide experience of handling particulates as part of their gas cleaning systems and integrates the correct solids removal device within the package.

Technologies

The main particulate capture technologies which ERG offers include the following:

- **Venturi scrubbers** can be used for all types, concentrations and sizes of dust, including sub-micron particulate where a high-pressure drop is required. Venturi scrubbers will simultaneously scrub soluble gaseous contaminants.
- **V-tex® scrubbers** can be used where the particulate is >2 micron in size and where simultaneous solids and gaseous contaminant scrubbing is needed.
- **Wetted cyclones** are used for large dusts, typically >500 micron and up to several mm in size.
- **Bag filters** using cartridges or socks are a dry technology and incorporate automated cleaning by reverse pulse air or nitrogen and dry solids collection hoppers.
- **Ceramic filters** for use at higher temperatures than bag filters or where the gas composition is not suited to a standard bag filter's construction (eg high humidity or highly corrosive contamination).





6.0 Industrial Details with Technologies for Water Treatment Systems – Degassers/Strippers



6.0 Industrial Details with Technologies – Water Treatment Systems

Sector (1) – Waste-Water Plant & Desalination Plant

ERG's mass transfer technologies commonly used for scrubbing applications (ie cleaning contaminants from a gas stream by dissolving them into a scrubbing liquor) can be used for stripping, where a clean gas is used to remove undesirable contaminants from a liquid stream.

Applications

Stripping is commonly used for cleaning up water streams which are contaminated with relatively low concentrations of contaminants which will readily vaporise – these tend to be contaminants which are normally a gas at room temperature and are water soluble, for example, H₂S, ammonia, carbon dioxide and chlorine.

Technologies

ERG's process designers can use the followings for stripping or degassing at liquid stream:

- **Packed Tower**
- **V-tex® Technology**



6.0 Industrial Details with Technologies – Water Treatment Systems

Sector (2) – Oil Reprocessing Refinery

As well as stripping inorganic contaminants from water streams, ERG has experience of removing VOCs from polluted water.

Applications

Raw water contaminated with a mixture of VOCs including BTEX (benzene, toluene, ethylbenzene, xylene) is fed to ERG's stripper which operates using air at ambient temperature. The BTEX removal efficiency from the water stream is a maximum 99.8% allowing the water to be reused on the site.

Technologies

The contaminated air may be discharged to atmosphere if the site emissions permit allows, or the VOCs can be removed from the air stream using the following technologies:

- **Thermal Oxidation**
- **Activated Carbon Adsorption**





7.0 Product's & System Brochures



7.0 Product's & System Brochures



To get a PDF file – Click on the below links

(A) Industrial Gas Cleaning & Thermal Systems

- [Packed Towers](#)
- [V-tex Scrubbers](#)
- [Venturi Scrubbers](#)
- [Thermal Oxidisers](#)
- [Tray Scrubbers](#)
- [Thermal Fluid Heaters](#)
- [Low Temperature NOx Abatement](#)
- [Energy Waste Recovery](#)
- [Fertilizer Industry – Middle East](#)
- [Hot Gas Cleaning](#)
- [Solid Waste Incineration](#)

(B) Odour Control Systems

- [Packed Tower Scrubbers](#)
- [Bio-trickling Filters](#)
- [Carbon Filters](#)
- [CIFs](#)
- [Large Carbon Filters](#)
- [Large Chemical Scubbers](#)





8.0 Company's Accreditations



8.0 Company's Accreditations

- **Quality Management System ISO 9001:2015**



[ERG Process Technologies Ltd](#)

- **Environmental Management System ISO 14001:2015**



[ERG Process Technologies Ltd](#)
[ERG \(Air Pollution Control\) Ltd](#)
[ERG APC Maintenance Ltd](#)
[ERG \(Plastic Fabrication\) Ltd](#)

- **Achilles & Safe Contractor**



[ERG's Achilles UVDB certificate of audit](#)
[ERG's Achilles certificate of UVDB Silver](#)
[Plus Registration](#)



[ERG's SafeContractor accreditation](#)



[ERG's SafePQQ Certificate of Verification](#)





9.0 ERG Contact Details



9.0 ERG Contact Details

UK Head Office

ERG (Air Pollution Control) Ltd
Bridge House Lane
Five Oaks Road, Slinfold, Horsham
West Sussex, RH13 0QW, UK

: +44 1403 290 000
: info@ergapc.co.uk
: www.ergapc.co.uk



Jordan Office –Middle East Main Office

ERG (Air Pollution Control) Ltd
122 Ali Al Hussaini Complex,
Al Shaheed Street,
Sport City,
PO Box 17246,
11192 Amman,
Jordan

: + 962 6515 9021
: Middle East Director : yousif.alshafie@ergapc-me.com
Middle East Sales Manager: raji.jaber@ergapc-me.com
Middle East Technical & Proposal Manager: rami.owais@ergapc-me.com
: www.ergapc.co.uk

Dubai Office:

Dubai Silicon Oasis
PO Box 342117
Dubai
UAE

: +971 4 395 4101
: +971 4 395 4102

