

ERG (Air Pollution Control) Ltd

Company Profile

2023

Corporate Philosophy

Founded in 1978 in West Sussex, United Kingdom, ERG Group has extensive business operations in environmental protection in the form of Air Pollution Control, Industrial Gas Cleaning, Thermal Systems and Odour Control Units. Throughout dedication to innovativeness and excellence, we developed leading process solutions that shape the industry standards for target emissions, adhere to restricted manufacturing specifications and comply to stringent quality regulation. These efforts demonstrate the building blocks of ERG's commitment to undertake environmental and corporate social responsibilities, maintaining a corporate sustainable management system that passes our values to future generations, ensuring company growth.

00.

Since 1978

01.

Corporate Identity



Explore our vision, values and principles as means of developing a strong future. We contribute as a partner to our clients who face a verity of challenges. Our goal remains to provide process solutions of unparalleled quality placing ourselves in the niche circle of globally trusted air pollution control companies. Each of the group companies is committed to ultimately maintain professional business conduct that nurtures relationships, build industrial expertise and implement innovative improvements, offer the best available process solution compliant to the target emissions, achieve a delight customer experience seeking continual growth, foster a culture of mutual trust in workplace, comply to the requirements of the business management system and improve its effectiveness.

Our Vision

“To become a market leader and a world-class solution partner in air pollution control”

Our Value

Our corporate values encapsulate the spirit of the group companies, shaping our behavior and our view of the world.

- | | | | |
|------------------|------------------|-----------------|-------------|
| ■ Innovativeness | ■ Trust | ■ Excellence | ■ Integrity |
| ■ Quality | ■ Responsibility | ■ Collaboration | ■ Openness |



02.

Fundamental Philosophy

We contribute to the world through the pursuit of superior competence in air pollution control and gas cleaning. The board of directors, management and employees within ERG group are fully committed to conducting all of its business operations in compliance with the applicable laws. To create a coherent business framework, ERG group corporate principles and the management strategy are implemented through the company policies.

- Health, Safety, Environment and Quality Policy
- Corporate Social Responsibility Policy
- Environmental Policy
- Modern Slavery Policy
- Information Security Policy
- Anti Bribery and Corruption Policy
- Counterfeit, Fraudulent and Suspect Item Policy
- Health and Safety Policy
- Quality Policy

03.

Group Companies

ERG (Air Pollution Control) Ltd.

Innovative solutions over the full range of technologies that mitigates the risk of air pollution. Turnkey supply of the complete package in industrial air pollution control, gas treatment and odour control units including FEED and consultancy, engineering and design, manufacturing, supply, installation and commissioning.

ERG APC Maintenance Ltd.

Supplies maintenance services for odour, air pollution control and gas treatment systems, including framework servicing and maintenance, refurbishments and upgrades, media changes, process performance reviews and emergency breakdown cover.

ERG (Plastic Fabrication) Ltd.

Specializes in the fabrication and assembly of skid-mounted packages.

ERG Process Technologies Ltd.

The group parent company.



04.

Accreditation

ERG acquired the international standard of quality ISO 9001 as part of the group commitment to work more efficiently, meet necessary regulatory requirements and to address risks effectively. Thereafter, we quired the certification of environmental management system ISO 14001 to ensure all business operations are conducted within environmental framework. The Company's credentials include registered membership of or accreditation by the following associations and industry bodies:

- Achilles UVDB Certificate of Audit
- Achilles Certificate of UVDB Silver Plus Registration
- SafeContractor Accreditation
- SafePQQ Certificate of Verification



05.

Why working with ERG?

Performance Strength and Competitiveness

Having pursued superior quality and conducted extensive research and development; ERG became a market leader in environmental protection and a world-class specialist manufacturer supporting various industrial fields. As environmental emissions continue to be more restricted, ERG is committed to develop and implement improvements to the full range of air pollution control systems to the industry standard emissions.

Diversified Capabilities

With our extensive expertise, we strive to offer solutions that accurately incorporate client's needs. We can offer the full range of air pollution process technologies and supportive services from consultancy, design, manufacturing and assembly to final installation, commissioning and hand-over.

Exceptional Customer Support System

Inspired by the group vision, ERG has adopted a customer-centric approach that takes speed, efficiency, responsibility key success factors of customer communications.

Global Supply Chain

ERG has a wide range of supply alternatives, securing a variety of sourcing opportunities around the world.



06.

Our Clients

Our customer services attitude helped us build a base of repeated orders in different business fields.

Since 1978, we have been a solution partner serving over than 1,000 clients in pharmaceutical, healthcare and fine chemicals, mining, minerals and metals, power and energy, chemicals and petrochemicals, wastewater, municipal waste and food industries.



07.

Business Fields

Since 1978, our product range has expanded steadily serving a wide range of business fields in industrial gas cleaning, thermal systems and odour control.

7.1

Mining, Minerals and Metals

We have reference plants in the UK, Eastern Europe and the Middle East on metals (Ni, Co, Al, Sb) refining and reclamation and in precious metal refining. 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 (Cl_2), SO_2 and particulates, including heavy metals, from roaster flue gases, NH_3 and particulate from aluminum salt dryers, HCl and chlorine (Cl_2) from precious metal refining.



7.2

Chemical's Plant

ERG provides a variety of air pollution control systems for Chemical production plants. ERG's purpose-designed scrubbing systems are engineered to suit each application and client's requirements and are supplied with a process guarantee. We have reference plants throughout the chemical industry, with sector experience in bulk chemicals, fertilizers, intermediates, fine chemicals, agrochemicals, heat-resistant materials manufacture, specialty chemicals, petrochemical and consumer products. ERG's abatement packages are typically installed to treat vents from storage tanks, reactors, vent lines/LEV systems, liquid waste handling, packaging areas and thermal oxidizers. Typical contaminants which we treat include acid gases (HCl , Cl_2 , Br_2 , COS , HCN , SO_2 , H_2S , mercaptans), basic gases (NH_3 , amines), Silicates (SiO_2 , H_2SiF_6 , SiF_4 , SiCl_4), dust and aerosols (generated dust including catalysts, zeolites, PTA, rubber) and VOC's (MEK, methyl chloride, THF, ethyl acetate, acetone).



7.3

Power and Energy

ERG has significant experience of providing gas cleaning systems for syngas and biogas treatment. We have reference plants in the UK and Middle East treating the syngas and biogas from a variety of gasification and anaerobic digestion processes. ERG's gas cleaning 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. Our systems can handle gases rich in CO , CH_4 , H_2 , gaseous alkanes, alkenes, aromatics contaminated with acid gases (H_2S , HCN , HCl), basic gases (NH_3 , Amines), tars (C_8 to C_{20} for example), ash and other particulates.

7.4

Pharmaceutical, Healthcare and Fine Chemicals

ERG provides a variety of air pollution control systems for pharmaceutical, healthcare, agrochemical and fine chemical production plants. ERG's gas cleaning systems are engineered to suit each application and supplied with a process guarantee. ERG's abatement packages are typically installed as part of the LEV system. 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), basic gases (NH₃, amines), dust and aerosols (100 to <1 micron particle sizes), pharmaceutical actives and VOC's (MEK, methyl chloride, THF, ethyl acetate, toluene).



7.5

Wastewater, Municipal Waste and Food Industry

Based around our standard range of biological filters (Bio-scrubbers and Bio-trickling Filters), chemical scrubbers and carbon filters, we can offer a reliable and cost-effective solution for eliminating odour generated within the plant. ERG provides the full range of odour control technologies, bio-trickling filters / bio-scrubbers, activated carbon filters and chemical scrubbers. Our odour control systems are extensively used in the waste water treatment industry, making ERG a leading supplier to the water utility companies including Thames Water, Southern Water and Scottish Water.

08.

Process Solutions

ERG provides complete gas cleaning solutions for a large range of industries and a variety of applications. With over 40 years' experience and hundreds of reference plants to draw on, our design and project team is capable of solving air pollution control problems by supplying and installing the latest abatement technology.

8.1

Packed Towers (Scrubbers, Strippers)

Packed tower scrubbers are a highly efficient way to remove soluble contaminants from air and other gas streams. Packed towers are also used for stripping contaminants from liquid streams and for direct-contact cooling of gas streams. Typical scrubbing and stripping solutions include:

- HCl scrubbing water/dilute HCl solution to recover HCl for reuse
- HCl scrubbing using NaOH solution to achieve extremely low discharge
- HBr scrubbing using NaOH solution
- SO₂ scrubbing using NaOH solution
- H₂S scrubbing using NaOH and NaOCl solution
- NH₃ scrubbing using dilute sulphuric acid solution
- VOC's scrubbing using water or mineral oils
- H₂S Stripping by air

8.2

Spray Towers

Spray Towers are used for low efficiency, low capital cost scrubbing of large particulates and highly soluble gaseous contaminants. Spray towers are especially effective for applications where the inlet contaminants hydrolyse to form difficult to handle solids, or where more efficient scrubbing is not desired for budget or technical reasons. ERG spray towers are provided as complete scrubbing packages, with the necessary fan, ductwork, pump, pipework and controls. In some applications, the spray tower may also be combined with other ERG mass/heat transfer equipment (venturi, tray tower, packed tower, V-tex[®] scrubber, etc).



8.3

Tray Towers

Tray towers are used for cleaning gas flows which are contaminated with both particulate and soluble noxious gases. Their unique design enables them to capture particulate >2 micron as well as soluble gases to high efficiencies of removal. The gas to be treated flows upwards through each tray stage, passing through the orifices on each tray plate and then as bubbles through the scrubbing liquor on top of each tray. The scrubbing liquid flow across each tray, over the weir and down the downcomer to the tray stage below.

8.4

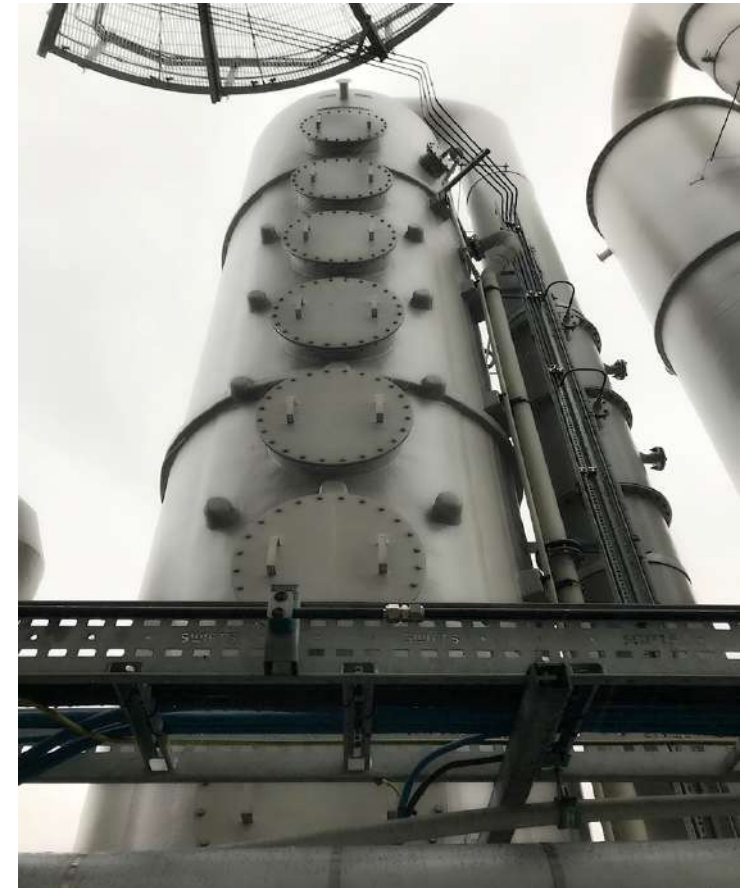
Quench Vessels

Quench vessels are used to rapidly cool hot flue gas, process gas or syngas. ERG has extensive experience of high temperature quenching as the first stage of a gas cleaning package including Oxidizer flue gases in the range 850 to 1,150°C, containing sulphurous and/or halogenated contaminants and particulates, process gases up to 500°C, also containing sulphurous and/or halogenated contaminants and particulates and syngases up to 250°C, containing VOC's, ammonia, halogenated and sulphurous contaminants and tars

8.5

Venturi Scrubbers

Venturi scrubbers are used for solids removal from flue gases and process vents, providing efficient removal of particulates as small as 0.2 µm (micron). The scrubbers are suitable for mechanically generated (large) and chemically generated (small) particulates with typical particulate size in the range 0.5 to 10 µm. Material loading, density, and solubility are all factored into ERG's design. ERG provides both types, fixed throat and variable throat venturis.



8.6

V-tex[®] Scrubbing Technology

V-tex[®] is an outstanding, patented technology for gas scrubbing and stripping applications. The V-tex[®] scrubber is especially suited to applications where traditional packed towers cannot be used because they would foul due to solids in the gas and/or liquid streams clogging up the packing media. And the V-tex[®] provides users with a highly efficient scrubber unit which is more compact than a traditional packed tower. Thanks to the opposed-jet spray nozzle at the heart of the technology, V-tex[®] gas scrubbers offer flexible, robust operability and unrivalled, maintenance-free availability, across a wide variety of process applications. The advantages of V-tex[®] technology make it especially suitable for two main types of scrubbing application.

- Scrubbing where solids in the gas and/or liquid will block packing – the open scrubbing chamber and non-clogging spray nozzle design mean that a V-tex[®] scrubber operates much more effectively than a packed scrubber which will block up. ERG has successfully installed V-tex[®] scrubbers for a wide range of extremely challenging duties. These include Flue gas desulphurisation – SO₂ scrubbing using 10-15% limestone and gypsum slurry as the scrubbing liquor, halogenated silicon and boron compounds scrubbing where the gas hydrolyses to gelatinous or crystalline solids which are extremely difficult to handle and require the most robust scrubbing technology available and syngases containing tars which can coat and clog packing materials but are treated effectively by V-tex[®] technology.
- Scrubbing where headroom is limited – the intense mass transfer in the V-tex[®] chamber achieves scrubbing to the same efficiency as a packed tower in only 30% of the height. This is particularly useful for localised scrubbing of vents in pharmaceutical and tech sector manufacturing.



8.7

Thermal Oxidizers

Thermal oxidation is a well-established method of treatment of contaminated process gases to meet IED (2010/75/EU) emission targets. ERG offer systems to match project requirements including:

- After Burners / Residence Chambers
- Pyrolysis Chambers $T > 650^{\circ}\text{C}$
- Precombustion Chambers $T > 850^{\circ}\text{C}$
- Direct fired oxidation up to 100% DRE (destruction removal efficiency) (alternative methods of heat recovery available)
- Recuperative thermal oxidation $> 99\%$ DRE and 75% Heat Recovery
- Regenerative thermal oxidation 98% DRE and 95% Heat Recovery
- Cooling systems so that ambient $<$ flue gas $T >$ dew point $< 850^{\circ}\text{C}$
- Post combustion NO_x abatement systems



8.8

Biological Filters (Bio-trickling Filters, Bio-scrubbers)

ERG developed an innovative biological technology using the BioCure™ structured synthetic media. The media is designed to mitigate unpleasant environmental impact by eliminating odour and a wide range of organic compounds to the highest degree of performance and reliability through the entire design life of the system. A variety of organic compounds could potentially generate odour. The BioCure™ media operates on the principle of fixed film absorption and biological oxidation of air contaminants by micro-organisms. Odour causing compounds are dissolved in the biofilm surrounding the media matrix and oxidized by organisms into stable by-products. Due to its engineering flow channels, the BioCure™ media provides exceptionally high performance, stable performance (>99%) at high inlet H₂S load exceeding 1,000ppm. ERG design optimizes the operating parameters to ensure the media is capable of handling process upsets, shock loads and peak variations.



8.9

Carbon Filters

ERG offers a comprehensive range of carbon filters used as standalone filters or polishing a bio-trickling filter or chemical scrubber discharge. All our dry media filters require no operator intervention and provide guaranteed odour control performance. Our carbon filter systems offer assured performance, guaranteed discharge concentrations and competitive costing.

- High removal efficiency of H₂S and other odours
- Outlet H₂S concentrations <5-10 ppb
- VOC's polish to <200 ouE/m³
- Filters to treat 200 to 200,000 m³/hr
- Low pressure drop <500 Pa
- Bed life designed to suit requirements
- Low capital cost
- Supplied in PVC/GRP or coated steel

9.

Engineering Services Capability

9.1

FEED and Consultancy

ERG offers specialized consultancy including basic engineering and screening of process alternatives. The know-how of our staff enables us to develop highly reliable solutions, we engage highly qualified senior engineers, experienced project managers, technical directors, sales and business development managers who devote their capabilities to managing and delivering complex projects in a timely manner. We work closely with our clients starting from the concept design development and pre-award phases to ensure the design intent is fully captured at early stages of project development.

- FEED studies and concept design development
- Assessment of Best Available Technology
- Site Surveys
- Pilot plants

9.2

Detailed Engineering and Project

ERG undertakes integrated engineering approaches covering process, piping, mechanical, structural, electrical, control, instrumentation and safety for full project implementation.

9.3

Fabrication

At ERG Plastic Fabrication Ltd, we specialises in the high quality custom fabrication of process industry vessels and associated components from GRP and composite plastic materials. With almost 40 years experience of supplying tanks, scrubbers, filters, silos, vessels, piping and ducting, we are sure to be able to meet your requirements with high quality products at competitive prices.

9.4

Commissioning, Hand-over and Training Services

In addition to project implementation, ERG also has in-depth knowledge and capability to commission complex projects smoothly and to start-up the operation safely.

- On-site commissioning management
- Prescribing pre-operational checks
- Performance analysis and optimization
- On-the-job training to plant personnel
- Validation OEM-O&M Manuals

9.5

Maintenance

Minimizing non-compliant emissions to atmosphere by regular, planned maintenance protects your reputation and saves money. ERG's Maintenance Department help you keep your air pollution and odour control systems running effectively and at the lowest operating costs. Our specialist engineers are experts in maintaining most types of air pollution equipment and always work to the highest safety standards.

- 24 Hour-a-day reactive electrical and mechanical maintenance.
- Development of planned maintenance schedule to suit your needs.
- Scrubber and vessel internal cleaning, inspection and repairs.
- Replacement of spent carbon media, bio-media and failed scrubber internals.



10.

Corporate History

- 1978: ERG Lancy Group sold to AEA Technology
- 1986: ERG Odour Purification Ltd name changed to ERG (Air Pollution Control) Ltd.
- 1990: Business operations expanded significantly under Southern Water's ownership
- 2004: ERG obtains the V-tex® technology from Accentus.
- 2005: ERG's maintenance division growth is consolidated with our first frameworks for Southern Water and Scottish Water.
- 2007: ERG's Middle East regional office is founded.
- 2008: ERG buys APC Process Engineering Ltd
- 2010: ERG acquires The Ultimate Filter Company as ERG (Plastic Fabrication) Ltd.
- 2015: Business operations expanded to include equipment and maintenance capabilities to include thermal oxidation.
- 2021: ERG moves to a new, purpose-built site in Horsham – comprising fabrication workshop and offices.

11.

Corporate Profile

Name	ERG (Air Pollution Control)
Foundation	September 14, 1978
Group Managing Director	James Scott-Bowden
Accounting Date	February 28
Annual Sales	11 Million GBP (Year ending February 2022)
Employees	110 (as of December 2022)
Banks	HSBC Bank Plc
Head Office	United Kingdom
Overseas Offices	Jordan, United Arab Emirates
Business Outline	<ol style="list-style-type: none">1. Design, manufacture, supply, testing, installation and commissioning of air pollution control, industrial gas cleaning, thermal systems and odour control units.2. Maintenance services through ERG APC Maintenance.3. Manufacturing of bespoke equipment through ERG Plastic Fabrication.



UK office: +44 1403 290 000

Middle East office: +962 6515 9021

United Arab Emirates office: +971 50 960 9838



Head Office
Bridge House Lane
Five Oaks Road, Slinfold, Horsham
West Sussex, RH13 0QW, UK

Middle East Office
Al Shaheed Street, Sport City
PO Box 17246, 11195 Amman, Jordan

United Arab Emirates Office
Dubai Silicon, Operation Centre
PO Box 342117, Dubai, UAE



Email: info@ergapc.co.uk

Website: www.ergapc.co.uk

