

# Packed towers

Technology  
for a  
sustainable future

Packed towers are a highly efficient way of scrubbing and stripping contaminants from process gas streams and cause a minimal pressure drop. They are also an excellent method for gas cooling.

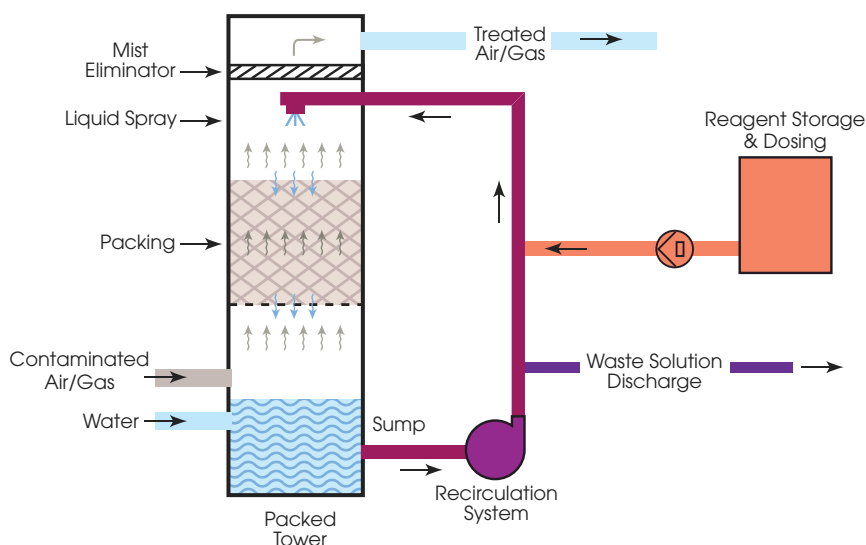
## Application

- Used for high efficiency mass transfer (scrubbing and stripping) or heat transfer (gas cooling)
- All ERG designs are bespoke and matched to the detailed requirements of the application specification
- ERG uses industry-standard random packing to optimise operating efficiency with system pressure drop and equipment size
- All packages carry a performance guarantee and are designed to provide robust operation at the lowest capital and operating costs

Our extensive design and operating experience enables us to optimise the system performance.

## Design parameters

- Flowrate ranges from 100 to 100,000 m<sup>3</sup>/hr per tower, multiple towers in parallel can be used for higher flowrates
- Contaminant loadings typically 1,000 to 50,000 mg/m<sup>3</sup> and up to 200,000 mg/m<sup>3</sup>
- Typical removal efficiency 99.5%, up to 99.95% as required
- Vessel diameters from 200 to 3,800mm, heights up to 20m
- Removal of any soluble gaseous contaminant
- Cooling saturated gas streams from typically 60 to <30°C or as required



# Packed towers

Technology  
for a  
sustainable future

## Key Features

- Complete systems supplied including recirculation pump, pipework, fan, ductwork, access platform, instrumentation and control system – and may be integrated further with other ERG mass/heat transfer equipment (e.g. quench, venturi, carbon filter, etc.) into a single Air Pollution Control solution
- Commonly used packing types include Snowflake/AstraPAC and 1", 1.5" and 2" Pall rings
- Recirculated liquor flowrate selected to minimise pump flow and energy consumption at optimal scrubbing performance
- Liquor distribution across packing using sprays, trough or ladder distributors depending on application
- Droplet elimination using chevron, impaction blade or woven mesh design to suit application – clean in place sprays available to assist with on-line maintenance
- Scrubber sump tank integrated into the packed column vessel
- Chemical dosing, water make-up and blowdown control to match specific performance requirements
- Instrumentation selection to give robust operation, high reliability and tight performance control
- System control by stand-alone MCC/C&I panel or integrated DCS, with HART or Profibus protocols available as standard
- Vessels designed as standard to PD5500 (metal) and BS4994 (GRP) with CE marking to PED as appropriate. Other design codes are available as required
- Materials selection to suit contaminants and reaction chemistry: common materials include uPVC, PP, cPVC, Derakane® GRP, Crystic® GRP, 304SS, 316SS
- Heat transfer using in-line heat exchangers

## Examples of typical scrubbing solutions

- HCl scrubbing using water/dilute HCl solution to recover HCl for reuse
- HCl scrubbing using NaOH solution to achieve extremely low discharge concentrations
- SO<sub>2</sub> scrubbing using NaOH solution
- H<sub>2</sub>S scrubbing using NaOH and NaOCl solution
- NH<sub>3</sub> scrubbing using dilute sulphuric acid solution
- VOC scrubbing using water or mineral oils



**ERG (Air Pollution Control) Limited**  
Enterprise House  
Foundry Lane Horsham  
West Sussex RH13 5PX UK

T +44 (0)1403 221000  
F +44 (0)1403 221001  
E [info@ergapc.co.uk](mailto:info@ergapc.co.uk)  
W [www.ergapc.co.uk](http://www.ergapc.co.uk)