Packed towers

Technology for a Sustainable Future

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

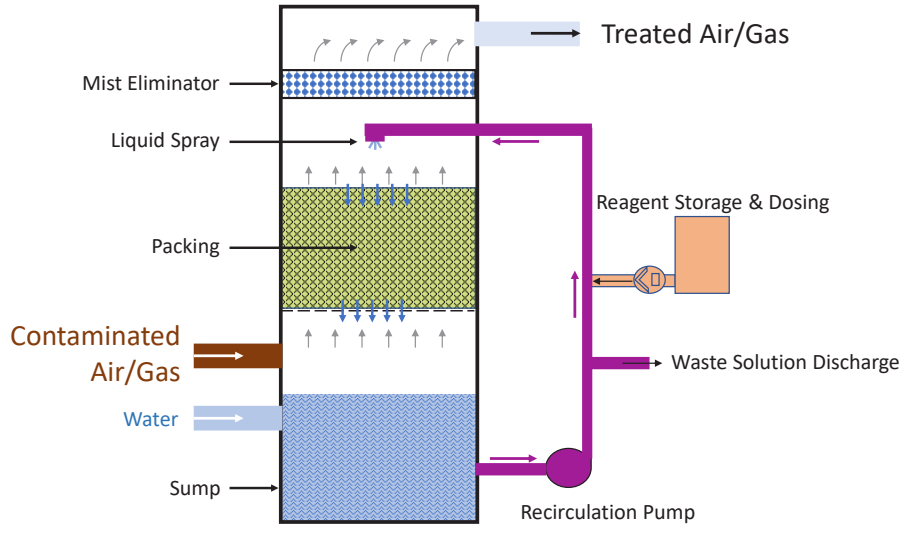
Application

- 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

- ranges from 100 to 100,000 m^3/hr per tower, multiple towers in parallel can be used for higher flowrates
- Contaminant loadings typically 1,000 to 50,000 mg/m^3 and up to 200,000 mg/m^3
- Typical removal effciency 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.



ERG Air Pollution Control

www.ergapc.co.uk

LRQA CERTIFIED ISO 9001 UKAS MANAGEMENT SYSTEMS 0001

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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 BSEN 13121 (GRP) with CE or UKCA 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, PVDF, ECTFE, 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_2 scrubbing using NaOH solution
- H_2S scrubbing uing NaOH and NaOCl solution
- NH_3 scrubbing using dilute sulphuric acid solution
- VOC scrubbing using water or mineral oils

ERG Air Pollution Control

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