



Packed Towers

Efficient scrubbing and stripping for gas streams and for gas cooling.

Packed towers are a highly efficient way to scrub and strip contaminants from process gas streams while maintaining a minimal pressure drop. They are also an excellent method for gas cooling.

Application and Design

ERG's packed towers are used for high-efficiency mass transfer (scrubbing and stripping) or heat transfer (gas cooling). All ERG designs are bespoke and are matched to the specific requirements of the application. The company uses industry-standard random packing to optimise operating efficiency with system pressure drop and equipment size.

ERG's extensive design and operating experience allows us to optimise system performance. All packages come with a performance guarantee and are designed for robust operation at the lowest possible capital and operating costs.

Design parameters include:

Flow rates that range from 100 to 100,000 m³/hr per tower. Multiple towers can be used in parallel for higher flowrates.

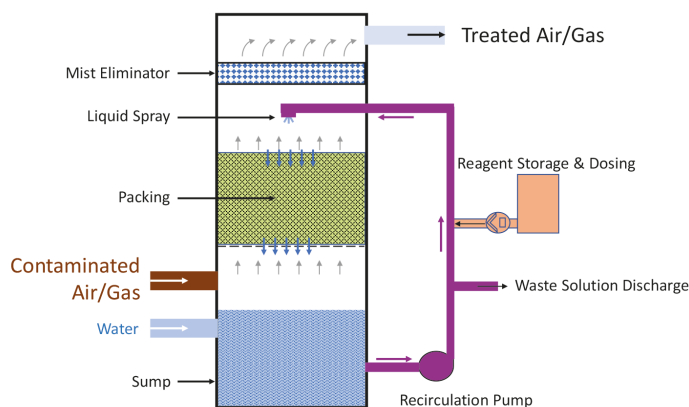
Contaminant loadings that typically range from 1,000 to 50,000 mg/m³ and up to 200,000 mg/m³.

A typical removal efficiency of 99.5%, or up to 99.95% if required.

Vessel diameters that range from 200 to 3,800 mm, with heights up to 20 meters.

The ability to remove any soluble gaseous contaminant.

Cooling saturated gas streams from a typical 60°C to less than 30°C or as required.





Key advantages

Key Features and Solutions

ERG's packed tower systems come with a full range of components, including a recirculation pump, pipework, fan, ductwork, access platform, instrumentation, and a control system. They can be integrated with other ERG mass/heat transfer equipment like scrubbers, venturis, or carbon filters.

Key features include:

Commonly used packing types, such as Snowflake/AstraPAC and 1", 1.5" and 2" Pall rings.

Recirculated liquor flow rate selected to minimise pump flow and energy consumption at optimal scrubbing performance.

Liquor distribution across packing using sprays, trough or ladder distributors, depending on the application.

Droplet elimination using chevron, impaction blade or woven mesh designs to suit application - clean in place sprays available to assist with on-line maintenance.

A 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 are 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 are selected to suit contaminants and reaction chemistry: common materials include uPVC, PP, cPVC, PVDF, ECTFE, Derakane®, GRP, Crystic® GRP, 304SS, and 316SS.

Typical scrubbing solutions include:

- HCl scrubbing using water/dilute HCl solution to recover HCl for reuse.
- HCl scrubbing using NaOH solution to achieve extremely low discharge concentrations.
- SO₂ scrubbing using NaOH solution.
- H₂S scrubbing using NaOH and NaOCl solution.
- NH₃ scrubbing using dilute sulphuric acid solution.
- VOC scrubbing using water or mineral oils.



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