ERG’s DryCat System for Odour Control

ERG (Air Pollution Control)’s DryCat System matches odour treatment to odour source

This tailor-made solution uses well-established odour control building blocks to treat odour problems. The DryCat System is technically optimised, with low capital and operating costs.

Key benefits

- Low capital cost and low running costs
- No chemicals on site – operator friendly
- Compact design – optimised footprint
- Outlets to <50ppb H₂S so stack height not an issue
- Small biofilter so easy to maintain
- CIF and biofilter bed life 3-5 years
- Impregnated carbon filter bed life >1 year
- High room ventilation rates only add a small increment to capital and running costs

Units installed and operating successfully at

- Southern Water
  Tunbridge Wells STW
- South West Water
  Dawlish STW, Sidmouth STW and Comborough STW
- North of Scotland Water
  Dingwall STW
- Yorkshire Water
  Whitby STW
- Anglian Water
  Boston STW and Ingoldmells STW
- West of Scotland Water
  Oban STW, Rothesay STW
  Campbeltown STW and Helensburgh STW
- Welsh Water
  Felinfach STW

For more details of ERG (Air Pollution Control) Ltd’s DryCat System and other Odour Control Systems, contact James Scott-Bowden or David Lorberg.

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Unit operations – the building blocks
The DryCat System comprises at least two of the three basic “building block” equipment items. In all cases, the equipment selection and sizing is matched to the site requirements.

• Catalytic Iron Filter (CIF)
  - Rusting iron media removes H₂S in one or two stages to efficiencies of 50-80%
  - Used for bulk removal of high H₂S loads (50-500ppm) in small gas flows (typically less than 3,000m³/hr)
  - Ideal for treating highly odorous air flows from sludge tanks, sludge presses, imported/exported sludge pumping stations

• Biofilter
  - Cost effective method of removing H₂S to good efficiency from medium air flows
  - Traditional peat and heather technology – well proven
  - Cheap to install and operate
  - Protected from damaging peak H₂S loads by the CIF
  - Assured outlet H₂S concentration by carbon filter
  - Ideal for treating medium-odour air from preliminary and primary treatment areas

• Impregnated carbon filter
  - Caustic impregnated carbon to polish H₂S to <50ppb and mercaptans to <100ppb
  - Guaranteed boundary levels in ppb H₂S or OU/m³
  - Cheap to run as the majority of the H₂S is removed by the upstream CIF and biofilter
  - Bed life designed to suit site requirements, typically >1year
  - Ideal for treating general ventilation air from process buildings

Case study - Rothesay STW
Flowrate = 12,500m³/hr air, inlet H₂S concentration = peak 135ppm, average 60ppm, guaranteed stack H₂S concentration = 300ppb, design H₂S removal efficiency = 99.2%
The DryCat System was installed for approx 75% capital cost of a wet chemical scrubber. The DryCat System operating cost is estimated at £9k/year, compared to a wet chemical scrubber (using caustic and bleach) operating cost estimated at £23k/year, a saving of £14k/year or 60%.