

Q-PAC[®] high-capacity packing for Seawater FGD scrubbing

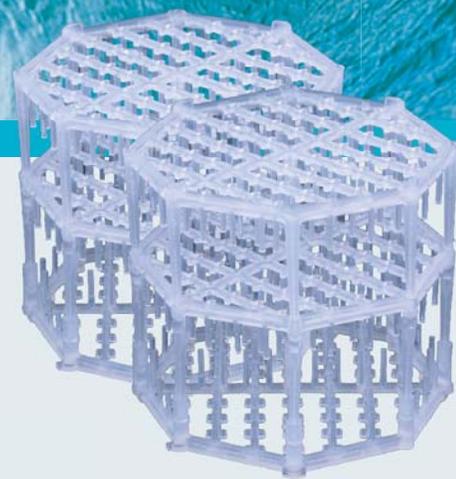
Flue gas desulfurization (FGD) by scrubbing with seawater is an economical option for many industrial facilities at coastal sites because of its simple operating principle and high reliability. The process uses the natural alkalinity of seawater to absorb and neutralize sulfur dioxide in exhaust gases.

In power plants, strained sea water is obtained from the steam turbine condenser outlet. In most plants, all of the condenser outlet water can be used for FGD, in order to utilize all the available alkalinity. Part of the water is pumped into the top of the absorber tower. The mildly alkaline water flows through a bed packed with Q-PAC[®] media to bring it into intimate contact with the rising flue gas.

Absorbed SO₂ is neutralized and oxidized, and then the water containing harmless sulfate salts is returned to the sea. The process can provide very high SO₂ removal (up to 97-99%).

Q-PAC has become the preferred packing for seawater FGD scrubbers because its patented structure provides a unique combination of gas-liquid contacting efficiency, low pressure drop, and resistance to fouling by solids.

Q-PAC is a high-capacity random packing for large scrubbers, gas absorbers, and gas-cooling towers. Its low pressure drop (packing factor 7 ft⁻¹) creates new possibilities for packed tower designs and upgrades. Its flow-through structure uses drip points and gas turbulence to create millions of small droplets, multiplying the surface area for gas-liquid contact while imposing minimal resistance to gas flow. It has a high void fraction (96.3%) and a uniformly spaced grid structure that allows small solid particles to pass through without clogging it. This combination of scrubbing efficiency, flow capacity, and fouling resistance is unmatched by any other random packing in the world.



The future for seawater FGD is mostly, although not exclusively, in coal-fired power plants. The market comprises two main segments: upgrades of existing scrubbers, and FGD equipment for new facilities.

The capabilities of Q-PAC can be utilized in both situations:

- When designing new equipment, the cross section of a scrubber can be reduced to cut costs of the structure and the liquid and gas distributors, without increasing the operating fan power requirement. As an alternative, scrubbers can be sized for conventional gas velocities but packed with Q-PAC to reduce the pressure drop and fan power consumption.
- Retrofitting an existing scrubber with Q-PAC makes it possible to decrease back pressure and reduce maintenance requirements without changing other system components.

Q-PAC is used in a variety of FGD processes to control sulfur dioxide emissions, but it is particularly well-suited for cutting the cost of pollution control by seawater FGD scrubbers at coastal sites. The high capacity, efficiency, and fouling resistance of Q-PAC can result in lower capital costs, less power consumption, lower maintenance costs, and decreased SO₂ emissions.



5302 Derry Ave, Suite G, Agoura Hills, CA 91301
Tel. 818.707.2285
sales@lantecp.com