E-Cube – an ingeniously simple paint separation solution

Böblingen/Holzgerlingen, Germany, March 13, 2013 – The E-Cube separation system from Eisenmann uses an intelligent filtration method to remove overspray from the air. It is energy and resource efficient, simple to use and can be operated by unskilled staff. E-Cube is suitable for systems of all sizes and, due to its ingenious filter technology, operates without the need for chemicals, water or other additives – conserving resources and simplifying waste disposal. The cube-shaped design means separation modules require less space for storage; when fully assembled they fit on a euro pallet. E-Cube can be quickly and efficiently retrofitted to existing solutions that previously featured other separation modules.

The E-Cube mechanical overspray separation system is situated below a grid in the spray booth. Air, contaminated with paint particles during spraying, is sucked in and routed through the separation system. As it passes through the separation modules, paint particles are removed from the air. There is a second filter stage after the separation modules (also known as ‘cubes’), to increase the separation rate. Motorized shutters ensure that E-Cube modules can be individually removed and replaced during periods when the plant is not in use. System pressure is monitored to ensure steady, consistent operation, without cross-flow. It is possible to recirculate air or utilize a supply and exhaust air system.

Filters replace chemicals, water and additives

The separation modules are hybrid filters, consisting of surface and depth-type filters. Individual filter elements are arranged in such a way as to create a labyrinthine flow path. This configuration provides an ideal sequence of coarse and fine separation, ensuring an even distribution of particles in the separation module. Depending on the type of paint applied, the system can achieve a separation rate between 0.5 and 2 mg/m³ of air.
Cubes have a high capacity and a service life ranging from one to several weeks, depending on the mode of operation. For example, a cube in a ten-meter long spray booth, operated in three shifts and producing 60 kg of overspray per hour, has a mean service life of one week.

Simple to operate

The cubes themselves are made mostly from recycled material and can be folded up during storage and delivery to save space. What’s more, they are easy to assemble and replace – this can be undertaken by unskilled staff. As E-Cube does not consume chemicals, water or other additives, waste and associated costs are significantly lower than for comparable separation systems.

E-Cube can be used in any wet paint application, for example by automakers, automotive suppliers and by manufacturers of commercial and agricultural vehicles. Other areas of application include wind power, plastics coating, and metal finishing.

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Eisenmann is a leading global provider of industrial solutions and services for surface finishing, material flow automation, thermal process technology and environmental engineering. A family-run business founded in 1951 in southern Germany, Eisenmann develops and builds made-to-measure manufacturing, assembly and distribution plants that are highly flexible, energy- and resource-efficient – and deployed by enterprises throughout the world for more than 60 years. With a workforce of 3,700 in Europe, the Americas and BRIC countries, the company posts annual revenues of approximately 600 million Euros (2011).
Eisenmann's E-Cube is simple to use and can be operated by unskilled staff. It is resource efficient, and does not require chemicals, water or other additives.

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