New Product News

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Volume 1 Issue 3

WATER TREATMENT - NO CHEMICALS, NO MAGNETS, NO OZONE, NO HYPE

The standard method for controlling scale, bacteria and corrosion in cooling tower and chiller water treatment systems has been with chemical. Controversial alternatives such as magnetic treatment have various studies that debate their true effectiveness. Ozone systems have shown for the most part to be costly and marginally effective. In the 1980's a unique patented process was developed where no water conditioning is necessary utilizing dissimilar metals, in this case a high purity alloy of copper and zinc. A fluidized side-stream filtration system containing this material creates a galvanic reaction that does three things.

First, the zinc is sacrificed at a small level which is toxic to both algae and bacteria. The pH level of the water is also elevated to a level that is toxic to bacterial strains such as Legionella Pneumophilla (Legionaires disease.). The zinc is still extremely low to allow for water discharge and is harmless to humans and animals. The net result – no algae and bacteria.

Second, the elevated pH takes the treated water to the non-corrosive range, controlling the generation of organic acids, reducing the conductivity of the water and depositing a thin corrosion inhibiting film of zinc based compounds. The net result – no corrosion.

Third, the galvanic action changes the calcite scale that normally clings to pipe by modifying the crystalline structure of the scale causing it to break off and slough off. This material is also removed by the filtration process of the system with the exception of some larger particles that may collect in quiet areas of the reservoir. The net result – removal of scale and prevention of scale buildup.

This unique patented TowerClean process developed by a significant waste treatment company works by recirculating water volume such that the volume is processed every 90 minutes. This maintains the water conditioning process. The system is relatively simple using a filter chamber with a sand filter and backwash to remove solids that fall out of the system as it is treated. The reaction media is in a fluidized bed which treats the water after filtration. The TowerClean system is clean, clear, and free of debris and dirt, built around a filter designed for cooling systems. The system provides an extremely cost effective package while outperforming other systems available. It has superior reliability with no treatment chemicals, either in the system or in the blowdown water. The water is safe to discharge to the sewer or to the surface waters. The equipment is simple, performance consistent and the media is efficient, effective and recyclable. Maintenance costs minimal and the media (replaced annually) is low in cost.

The system is not the solution to every situation nor does it claim to be. The media must remain clean of contamination so some applications where water may be contaminated with oil and high levels of dirt and oil reduces it effectiveness. Also, the bigger the water treatment system, the more costly the filtration and pumping system required and at some point the capital cost becomes excessive. The system would be prohibitive (at this time) for a massive cooling tower system in a large steel mill for example. However, for certain plant operations such as injection moulding and bottling operations, the system is ideal and extremely cost effective with excellent payback. No chemicals – tight control of scale, corrosion and biofouling – 100% recyclable media – standard sizes for easy maintenance and operation. There are over 150 installations now operating for several years proving their effectiveness. A money-back performance guarantee is provided. **CIRCLE No. 79**

LOWER NOISE LEVELS IN BLOW-OFFS

Plant noise has always been a problem and with ever increasing plant expansions, additions and "speed" the noise just seems to get worse. Compressed air blow-off is one area where the noise can be reduced dramatically along with air consumption levels with the addition of super amplification technology.

In the last couple of years, there has been new developments in air amplifiers that convert the energy normally lost as pressure drop and noise into useful "flow" for water, dust and particle blow-off as well as part ejection, etc. One such product is the "patented" EXAIR Super Air Amplifer which can amplify air flow up to 25 times at the exit point where previous technology may have only allowed it to 20 times. The greater the amplification the greater the efficiency and the lower the noise levels. A side benefit is even less compressed air use. Also available is a Super Air Knife with similar advantages and lower noise levels than previous designs. It is 25% more efficient than old standard designs that already provide tremendous air savings and lower noise levels. The new Super Air Knives have a noise level of only 69 dBA at 80 psig plant air pressure.

The technology can be combined with static control for extremely effective, low-noise static elimination applications where blow-off is needed and for static removal over great distances. The effect of the super air knives coupled with a static bar or, a super amplifier coupled with a static "pin" is to create an effect where an ion cloud can be transmitted a great distance to neutralize a charge and in most cases provide adequate blow-off of particulate. The air flow is "laminar" minimizing the mixing of ions that reduces the effectiveness of static charge removal.

Air amplifiers come in other versions such as nozzles and jets that still can reduce noise levels and air consumption on anything from hand held air guns to part ejection "jets" on stamping machines. Replacing even a series of open jets in a very loud stamping plant can reduce noise levels to acceptable levels and provide less than a one year payback on air costs at a minimal investment.

CIRCLE No. 80

SAFETY IN STRIPPABLE COATINGS

With the increasing environmental concerns and worker safety rules, non-toxic waterborne strippable coatings are increasing in use to replace solvent coatings for spray booths and other applications.

Waterborne strippables have the advantage of low organic compound (VOC) content. Waterborne strippables are non-flammable, and easy to use with good sprayability. Due to safety they are easy to ship and store. Drying time is greater but the time can be accelerated simply by applying heat. Higher solid versions take less time to dry because of less water to remove but cost slightly more.

(continued next page)

(Safety In Strippable Coatings Continued)
Cohesion and adhesion is very important for proper operation. One such product – CARBICOTE has excellent cohesion and adhesion. When pulled, it stretches and peels off in large sheets. It retains its flexibility and does not become brittle with age. It adheres well to most surfaces including stainless steel. CARBICOTE is freeze-thaw stable which protects it from accidental freezing. If it is accidently frozen it can be slowly thawed for use. This attests to the high quality of the product which, compared to other water-based strippable coatings is extremely competitive. All of the versions provide excellent coverage per gallon of material.

Besides spray booths, waterborne strippables are often used in masking applications to protect surfaces from marring, corrosion, abrasion, and contamination. They can protect parts during assembly, shipment and storage. CARBICOTE is available in a high solids white, low solids white and even a "clear" version for windows and lights. The clear version is extremely popular as it can even be used as graffiti protection.

CIRCLE No. 81

EASY AND FAST WELD SCALE REMOVAL

The FINNSONIC/MEC system for weld scale removal utilizes the FINNSONIC ultrasonic cleaning system with a unique food-grade acid safe to use in system called SCALE-GONE. The system rapidly removes colorations and scale from welded stainless alloys when heated and applied in the ultrasonic with the diluted chemical. The system also removes braising scale and tarnish from copper or oxides from aluminum. The SCALE-GONE does not effect the cleaning unit and there are no corrosive fumes from the cleaning solution, even when hot. SCALE-GONE is non-corrosive even to the skin and respiratory system.

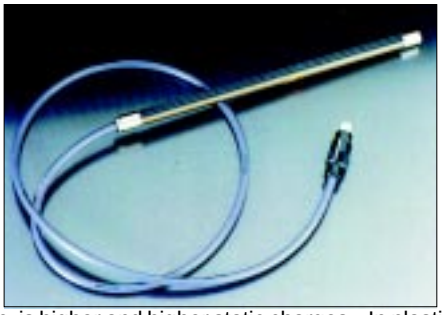
The FINNSONIC/MEC ultrasonic cleaning system accelerates the cleaning time for weld scale removal eliminating costly and time consuming, often hard to get physical labour. Simple tank systems to multiple tank units for rinsing and for non-hazardous rust inhibitors are available. Complete turn-key projects provided as required.

Other applications for the SCALE-GONE include removal of rust and scale from mild steel, carbon steel, steel alloys, low chromium stainless steel and cast iron parts. It also removes rust, tarnish, oxides, dirt, cement, plaster of Paris, water marks, food residues, and heat scale and wet marks from 300 or 400 series stainless steel, monel, copper, brass, aluminum and its many alloys, all plastics, glass, painted surfaces, porcelain, glazed tile, chrome plate, nickel plate and fabrics with acid stable dyes. Non-hazardous rust inhibitors are available for steel and non-ferrous materials.

CIRCLE No. 82

SUPER STATIC ELIMINATION SAVES

Static elimination in various industries is required when it causes a problem. For example, dirt buildup on plastics requires the elimination of static charges from the part and the dirt itself prior to blow-off with either a compressed air unit (usually an air amplifier) or with a blower system if space and capital cost allows (as well as the increased noise factor) when preparing for paint. In such applications, the nature of the plastics as time goes



on, is higher and higher static charges. In plastic film production, static charges cause film to curl, stick and can jam machines causing production headaches. In such operations as these, speeds are increasing at a dramatic rate.

The problem of static elimination on both cases becomes increasingly difficult with standard technology for two reasons:

First, you cannot get close to the part (like a plastic part) just because of the nature of the part and in the case of film, the faster the speed, the more the film can move or flutter so placing a static bar close can be a problem. Second, the faster you go in the case of film or the nature of the material in plastic painting can create extremely high charges that are more difficult to reduce and/or eliminate.

One way to assist in removing static charges at a distance is by adding air to "blow" the ions onto the material. This is fine but the air itself scatters the ions and, while it can allow the static eliminator to reduce static at a distance, it reduces its overall effectiveness in strength and may not work for high charges. Also, in some cases, air of any sort – whether compressed air or a blower is not feasible. In some cases but in decreasing use is something called a "hot bar" which is not safe to the touch and the hazard it can create is becoming an issue in some areas and applications.

HAUG North America, a Canadian manufacturer and division of a major European static control manufacturer produces in Canada a Model VS static eliminating bar that is three times more powerful than a standard static bar. While only marginally more costly the bar can eliminate static "at a distance" and is shockless (safe to touch), easy to clean and install. Ideal applications for film is on slitters where static bars cannot be mounted more than a couple inches away, and

where air use is not feasible and of course, on high charge applications other static bars cannot address. This Model VS bar is particularly effective over even greater distances with an air amplifier or blower coupled to the unit because, since the bar is so powerful, even if the air scatters some ions, it has so much more it is extremely effective at an even greater distance. A major application here is using the VS bar with air for blow-off applications in plastic paint finishing. Since the major force holding the particles to the part is the static charge, less mass flow for blow-off is needed which can mean less compressed air use (if using air amplifiers) or a smaller blower system (if using high pressure blowers). This is particularly important where blowers are concerned because too powerful a blower reduces static elimination at a distance by scattering the ions more and can also raise serious issues of air balance in a paint finishing system.

HAUG of course produces other static bars, plus lower power blower systems. HAUG also produces powerful "charging" systems of unique efficient design for temporary pinning applications. HAUG being Canadian based makes it particularly attractive for fast delivery and strong service backup in Canada for Canadian machine builders and special applications.

In any situation concerning static control, it is best to look at each situation as unique. In all situations the Model VS bar may not apply but it is certainly an option where static problems remain consistently stubborn. Other models and other makes of static bar will apply depending on the situation.

CIRCLE No. 83

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