

Perforated Metals Provide Strength, Durability in Deionization, Filtration & Other Demanding Purification Processes

Freshwater is among the scarcest natural resources on Earth. The problem is only becoming more urgent, with water use increasing twice as fast as the global population, according to the United Nations.

To manage freshwater resources wisely, companies, utilities and governments use a variety of water purification processes. Perforated metals act as a vital component in these processes, thanks to the strength and durability of these materials under the toughest conditions.

Perforated Metals' Increasing Role

While wire cloth is common to support filtration functions in many purification processes, perforated metals offer a more durable alternative. Two metals in particular are excellent choices:

- Stainless steel, with custom hole patterns as specified to meet unique needs
- Titanium, which is 40% lighter than steel and 60% heavier than aluminum, with the best strength-to-weight ratio among metals

These materials' superior corrosion resistance—which is crucial to the harsh conditions associated with water purification processes—is derived from their ability to form a stable oxide protective layer.

Key Applications

DEMINERALIZATION

Used in large commercial buildings, factories, power generation plants, hospitals and more, demineralization involves removing minerals or mineral salts to provide water that won't build up deposits in heating and cooling systems.

Perforated metals are beneficial specifically in deionizing water for power plants. An ion exchange unit, called a demineralizer or deionizer, consists of a cation bed, an anion bed and a mixed bed of both cation and anion resins.

Various filters and strainers are used in conjunction with cation beds and negatively charged ions from the anion beds. Perforated metals are a durable option for use in these filters.

Why Perforated Metals?

Because in tough conditions, perforated metals are stronger and more durable than wire cloth.

For example, demineralization takes place in a high-pressure tank. If that pressure builds up too high or suddenly drops, wire cloth is susceptible to bending or breaking. Perforated metals provide the structural integrity to withstand the stress without adding much weight.

Visit www.iperf.org to discover more about the advantages of perforation.

IPA Media Contact:

Brenda Campbell
Account Executive
Scheibel Halaska
414-270-3521
bcampbell@insideSH.com

WASTEWATER TREATMENT

In food, pharmaceutical and chemical manufacturing, as well as municipal treatment plants, a filter press applied to slurry helps separate water from solid waste.

The process involves filling a multi-chambered press with slurry and pushing the water out through a permeable membrane, leaving the solids in the press.

It's another case in which perforated metals provide greater strength and durability.

DESALINATION

Used in communities lacking freshwater but with abundant saltwater, desalination involves removing salt to make water drinkable or suitable for crop irrigation, among other uses.

As with demineralization, perforated metal acts as a strainer in the process.

A Widening Variety of Uses

The applications discussed above are just the beginning. The water purification uses of perforated materials are growing more diverse, including a wide array of applications that sort and manage debris in liquid.

To match unique needs, perforated metal can be as thin as foil or as thick as a 1½-inch steel plate, with holes punched in a wide array of shapes, patterns and sizes from microscopic up to 3 inches in diameter.

Whatever your water purification application, turn to the members of the Industrial Perforators Association for a perforated metal solution that helps manage precious freshwater resources in a durable and cost-effective manner.

IPA Media Contact:

*Brenda Campbell
Account Executive
Scheibel Halaska
414-270-3521
bcampbell@insideSH.com*

About the Industrial Perforators Association

As the only North American organization devoted to the advancement of perforated materials, the Industrial Perforators Association continues to push the boundaries of what these materials can do. Through extensive research, knowledge sharing, standards setting and more, the IPA provides our members with the tools to drive innovation and increase utilization in perforation. In the process, we act as an essential resource to anyone who may benefit from incorporating perforated materials into their design. Discover more about the IPA and perforated materials at www.iperf.org.