How Does it Work?
A simplified explanation

THE HARD WATER PROBLEM

Calcium creates scale in pipes, on appliances and other plumbing surfaces. This leads to higher heating and energy costs and expensive repairs to appliances, such as ice machines, coffee makers, dishwashers and cooling towers in commercial buildings. Scale can also be a source for bacteria to grow, which can be a health concern in drinking water applications. Calcium, on the other hand, is important to human health, and supplements are recommended if Calcium is reduced or totally void in one's diet.

THE SOLUTION

AquaMagna's simple magnetic scale reduction system transforms Calcium ions into Calcium crystals, which are stable and cannot attach to pipes, surfaces, hardware or heat exchanger components. The crystals are so small they are easily rinsed away by the water flow. When water evaporates, the mineral deposits on sink sand shower walls can be easily wiped away.

HOW DOES IT WORK?

When a conductive fluid passes through a powerful magnetic field, an electromotive force is induced through the fluid perpendicular to the direction of fluid flow and the flux field. The magnetic flux field further causes polar water molecules to be aligned along the flux or magnetomotive force vector, thus affecting the kinetics of crystallization of the minerals in the water. Random covalent bonding of the nucleation points of these scale forming molecular clusters is reduced and, therefore, these minerals stay in suspension. They are prevented from growing so large so as to precipitate out of solution and form "hard" scale on the walls of pipes and equipment. Instead, they form crystals of very low physical strength; a light powdery film forms rather than the hard scale from a tight lattice structure.

In the case of calcium carbonate, the crystal form becomes delicate aragonite rather than hard calcite. Both crystals have the same empirical formula, but their internal bonding and physical strengths are very different.

The kinetic energy to make it all happen comes from the motion of the flowing water through the magnetic field. As the water flows past the powerful magnetic configuration, the molecules are aligned to a uniform directional field. Water regains its solvency and will not allow the minerals to form crystals of hard scale. Further, the water will actually re-dissolve existing scale back into solution.

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