



WHY SCALE MATTERS

Protect Water Heaters Before Efficiency Drops



Scale build-up can significantly reduce the performance and lifespan of both tank and tankless water heaters. Even a thin layer of mineral deposits acts as an insulator, limiting heat transfer while restricting the small internal water passages that are essential for efficient operation.

As scale accumulates, it can result in:



10–30% reduction in thermal efficiency



15–40% decrease in hot water output



10–25% increase in fuel or energy consumption



Higher heat exchanger temperatures that can lead to overheating, error codes, cracked welds, and premature equipment failure

Homes with untreated hard water often experience reduced water flow, longer heating times, inconsistent water temperatures, and the need to descale the unit every **6–12 months**. Maintenance requirements increase as water hardness exceeds **8–12 grains per gallon (gpg)** and become especially critical above **20 gpg**. Silica and suspended solids can rapidly accelerate scale formation even further.

Studies conducted by the **U.S. Department of Energy, Oak Ridge National Laboratory**, and leading water heater manufacturers have documented the significant impact scale has on system performance and energy efficiency.



Prevent Scale Before It Starts

ScaleArmor™ is a patented scale reduction media under the IAPMO Z601 certification that helps protect water heaters by stopping scale from accumulating on metal contact parts while reducing corrosion. It also descales any build-up that has occurred slowly over time. While it cannot remove existing scale or repair previous damage, it provides effective, long-term protection for new or properly maintained systems. In extremely hard or aggressive water conditions, additional treatment may be recommended.



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