

# NuvoH2O Water Softener Efficacy & Benefits Summary

An Independent Study by **BATTELLE**

## Summary

The study tested tankless water heaters with some supplied with NuvoH2O softened water and some with untreated hard water to quantify the scale growth and the performance efficiencies.

**The study focused on** the effectiveness of the NuvoH2O systems in: (1) **preventing scale** and protecting the appliance from the corrosive and destructive power of scale, (2) preventing scale and **producing an energy savings** for the consumer, and (3) **removing scale** and returning appliances to a more efficient state of operation.

Battelle tested 15 Bosche RP17PT electric tankless water heaters and Delta RP42578 showerheads using treated municipal water with approximately 15 grains per gallon hardness and a pH value between 7.8 – 8.0.

The first phase simulated approximately 2.2 years of water use in approximately 4.5 months of testing. The second phase simulated another year of water use.

## Study Findings

The results of the Battelle study are conclusive - **NuvoH2O Water Softeners prevent the formation of scale.** The assessment of the heating elements after teardown analysis clearly shows that the NuvoH2O systems prevented scale.

The untreated water heaters exhibited more than 50x the scale mass than the NuvoH2O treated heaters with some untreated heaters exhibiting as much as 90x to 140x more scale formation. The average measure of scale indicates that the **NuvoH2O system effectively prevented over 98% of scale formation.**

The **NuvoH2O-treated showerheads had almost no surface scaling** while the worst untreated showerheads had more than 80% of their nozzles clogged.

**NuvoH2O systems are effective at improving energy efficiency and removing existing scale.** Not only will the NuvoH2O system prevent the scale build-up but can also remove scale and improve appliance efficiency.

**The NuvoH2O-treated water heaters exhibited over a 25% shorter time to achieve a steady state of operation** when compared to untreated water heaters. This decrease is achieved because the NuvoH2O-treated elements were able to directly transfer the heat from the copper elements to the water whereas scale on the untreated heating elements acted as a barrier to the heat transfer.



An untreated element on the left vs a treated element on the right.

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