

Case of the Pump not meeting performance:

We were called by a customer to trouble shoot an old installation. Seems performance had fallen off and they were not removing liquid from the storage tank fast enough.

We met at the plant and looked at the pump. It was running, but not smoothly and seemed to have heavy vibration.

There was plenty of suction head, so NPSH was not an issue. There were no instruments or any gauges. A typical installation.

There was a short run of suction pipe, isolation valves (open) on either side of the pump then the filter which showed a low pressure drop across it.

The pump had performed well for years, but recently began to vibrate and loose capacity.

Not seeing anything wrong with the system we proceeded to disassemble the pump.

This is what the impeller looked like:



Sometimes it really is the obvious!

The water was chlorinated and the impeller was standard silicon bronze. Peerless White Paper INB SM1-203R states that "Silicon brass can experience Dezincification in certain types of applications. Dezincification is the process of selective removal of zinc from copper - zinc alloys leaving a porous mass of copper with very little mechanical strength. With impellers the first sign of Dezincification will normally be loss of performance."

The solution is to change metallurgy to an aluminum bronze, nickel - aluminum bronze, or cast iron.

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