

Water quality and degradation mechanisms

Mechanism	Accelerating factor	Engineering control
Pitting and crevice corrosion	Chlorides, deposits, stagnant zones and temperature	Alloy selection, deposit control, flushing and monitoring
Erosion-corrosion	High velocity, solids and poor inlet geometry	Velocity control, inlet design, cleanliness and suitable alloy
Microbiologically influenced corrosion	Stagnation, biofilm and weak biological control	Water treatment, flushing and microbiological monitoring
Galvanic corrosion	Dissimilar metals and unfavorable area ratio	Coordinate tube, tubesheet, coating and cathodic protection
Stress-corrosion cracking	Specific environment, residual stress and temperature	Grade selection, heat treatment and fabrication control
Fouling	Hardness, suspended solids, organics and poor velocity	Treatment, online/offline cleaning and flow control
Vibration and fretting	Support spacing, shell-side velocity and resonance	Vibration analysis, support design and contact-point inspection

Source / basis: <https://niktrd.com/condenser-tube>