

# M&M Engineering's Boiler Tube Failure Handbook



## Hole—Waterside



Locations	Water wall
Boiler Type	Power
Industry	Electric Utility

Appearance	Thick-lipped rupture, may be very large window missing or a flap hanging by one edge or a long crack.
Mechanism	Hydrogen damage
Comment	Hydrogen damage is an under-deposit corrosion mechanism. Damage occurs in high heat areas (e.g., above burners). Often associated with one or more low pH excursions in the boiler and/or long-term contamination (condenser tube leak). High probability that other tubes are similarly affected. All affected tubes must be replaced.

