

Square Lower Sidewall Headers In Stoker Units

Purpose

Advise owners and operators of stoker-fired boilers with square lower sidewall headers to inspect these headers for possible cracking.

Problem

Older stoker-fired boilers, with square lower furnace sidewall headers, have experienced header cracking. These square headers have relatively thick walls. Because of their location, directly above the grates, these headers experience large temperature differentials between their outside and inside surfaces, especially on units where no chill tubes are installed to protect these headers. These large temperature differentials, the relatively thick walls, and age of the header make them susceptible to cracking.

Recommendations

1. The lower sidewall headers should be inspected

for signs of cracking. The cracking can begin on the internal surfaces and thus may not be visible during an inspection of the outside surfaces. Particular attention should be paid to the corners at the ends of the header and the header end plates.

2. Both an external and an internal inspection should be performed. The internal inspection should be done using fiber optics. If cracking is found, header replacement should be considered. Replacement of square headers with welded round headers is recommended. This replacement is considered an upgrade, because the wall thickness of the headers can be reduced, lowering the potential for high through-wall temperature gradients and resulting stresses.

Support

If you have any questions or require assistance in performing these inspections, please contact Babcock & Wilcox Field Service Engineering.

For more information, contact your nearest B&W sales and service office.

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