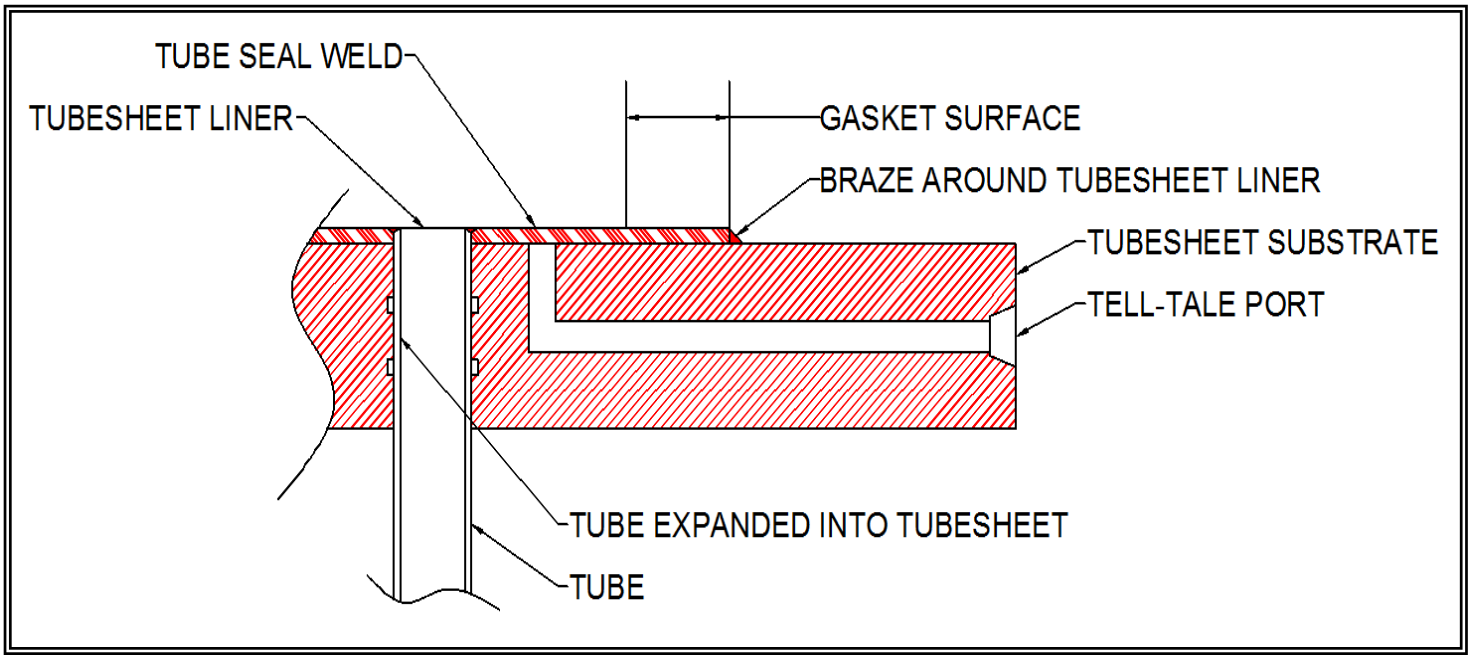
TITAN METAL FINISHING

FULLY WELDED FLUSH FACE FULLY DRAINABLE TUBESHEET DESIGN

During fabrication it is imperative that the weld area is adequately purged with an inert gas (argon). TITAN introduces the gas to the annulus between the tubesheet substrate and the tubesheet liner via the tell tale holes.

The heat exchanger has a substrate tubesheet with a tantalum liner that covers the wetted surfaces of the tubesheet up to and including the entire gasket surface. The tantalum tubing is expanded into the double grooved tubesheet and the solid tantalum tubing is welded to the tantalum tubesheet loose liner. The tube to tubesheet liner seal welds are liquid penetrant and helium mass spectrometer tested. The assembled heat exchanger is hydrostatically tested to ensure a 100% leak free unit.

While in service, the tell tale ports can be used to monitor the integrity of the tube expansions and seal welds independently during operation. The tell tale ports eliminate the possibility of cross contamination similar to a double tubesheet design. This design not only provides an early indication of a problem, but also reveals the severity of the problem. If shell side fluid leaks from the tell tale, then it is probable that there is a tube roll leak. The service side fluid is typically not very corrosive therefore the tell tale hole can be plugged and the roll leak fixed during your next scheduled shutdown. If there is tubeside fluid leaking from the tell tale, then it is probable that there is a breach in the integrity of the seal weld. Since the tubeside fluid typically much more corrosive, immediate shutdown and repair is recommended.



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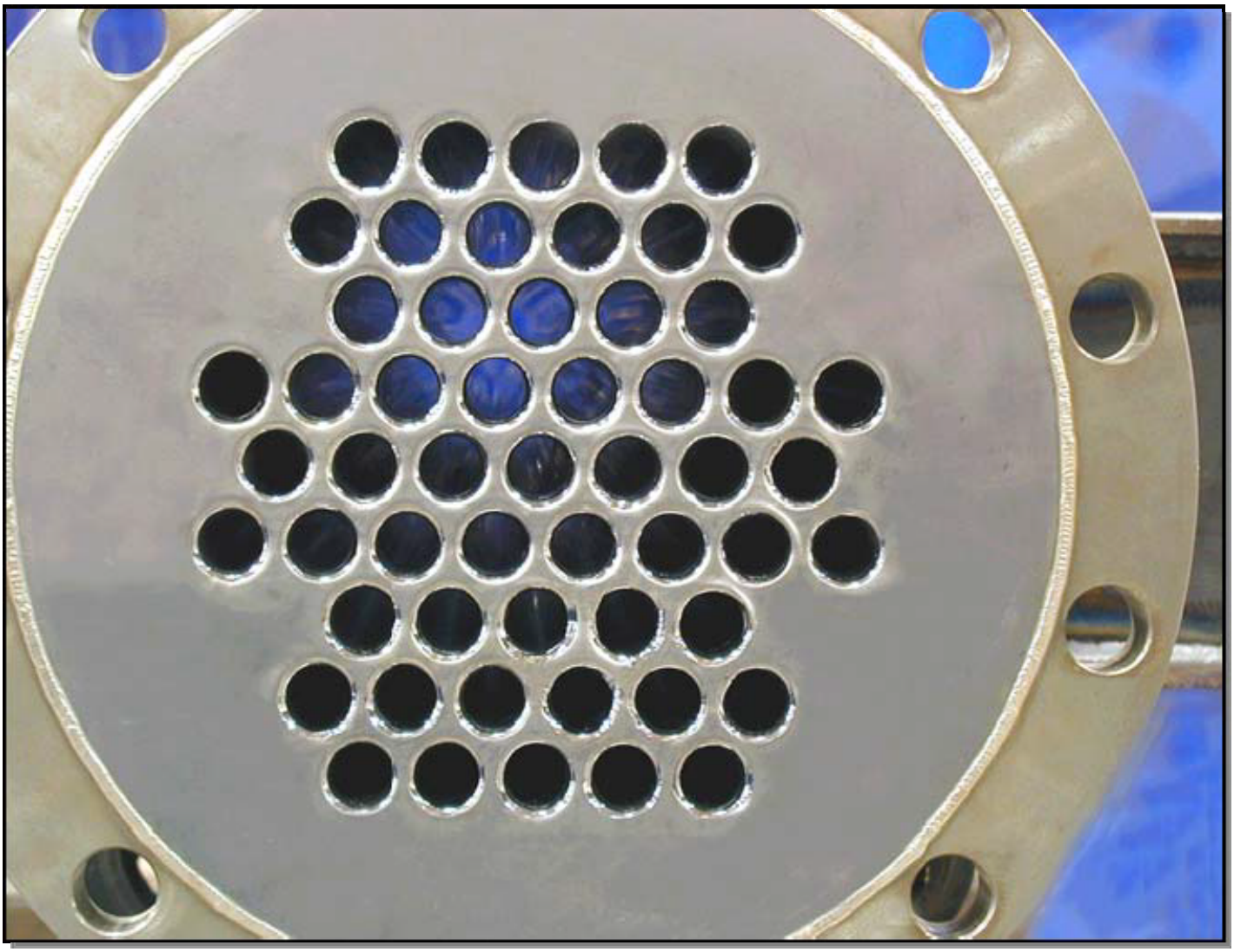

TITAN'S FLUSH FACE TUBESHEET DEISGN IS WELDED BELOW THE FACE OF THE TUBESHEET TO ENSURE FULL DRAINABLITY AND EASY CLEANING

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