



Technical Discussion on Pressure Vessel Post Weld Heat Treatment

The Heat Exchange Institute's Standards for Tray type Deaerators specifies that carbon steel deaerator and storage tank pressure vessels shall undergo post weld heat treatment. This requirement is in accordance with NACE (National Association of Corrosion Engineers) recommendations as specified in NACE Standard RP0590-96.

Post weld heat treatment is the process of heating a vessel to a sufficient temperature to relieve the residual stresses resulting from mechanical forming and welding. This process is typically accomplished by heating the vessel to 1100° F - 1200° F. The length of time is determined by the ASME code and will vary depending on the thickness of the material. Relieving these stresses will minimize, if not eliminate the formation of stress cracks during the life of the pressure vessel.

Post weld heat treatment is performed after all welding and fabrication is complete. Typically a notice is stenciled on the vessel to alert the owner or installing contractor that the vessel has been heat treated and no further welding should be done on the vessel.