

GP 18-04-01	Postweld Heat Treatment of Equipment Handling Alkaline Solutions	March 2002
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Postweld Heat Treatment of Equipment Handling Alkaline Solutions

GP 18-04-01

Scope

- 1) [I] This Global Practice (GP) addresses the need for Postweld Heat Treatment and the performance thereof, for the prevention of alkaline embrittlement of all welded carbon steel equipment.
 - 2) [I] An asterisk (*) indicates that a decision by Purchaser is required or that additional information is furnished by Purchaser.
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1. Required References

This Section lists Practices and Standards that are generically referenced and assumed to be a part of this document. Unless otherwise specified herein, use the latest edition.

1.1. API—American Petroleum Institute

API RP 945	Avoiding Environmental Cracking in Amine Units
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1.2. ASME—American Society of Mechanical Engineers

ASME B31.3	Process Piping
ASME SEC VIII D1	BPVC Section VIII - Rules for Construction of Pressure Vessels - Division 1

2. Definitions

- 1) [I] Metal temperature—used herein to determine Postweld Heat Treatment (PWHT) requirements, shall take into account all heat sources (e.g., process, heat tracing, solar radiation) and all operating conditions including transient conditions (i.e., steaming out).
- 2) [I] Alkaline solutions referred to herein shall be specified as:
 - a) Caustics defined as all alkali metal hydroxides, such as sodium hydroxide and potassium hydroxide
 - b) Amines defined as solutions for acid gas absorption or removal of acidic components (i.e., H₂S, CO₂) from hydrocarbons and hydrogen streams. These include monoethanolamine (MEA), diethanolamine (DEA), methyl diethanolamine (MDEA) and FLEXSORB amines.
 - c) Potassium carbonate.
 - d) Ammonium carbonate/bicarbonate defined as the mixture formed from ammonia and CO₂ in process stream.

3. Equipment Subject to Heat Treatment

- 1) * [S] The following equipment for handling of caustic solutions shall be postweld heat treated:
 - a) All equipment provided with heat tracing, with the exception of piping that is heat traced for winterization purposes using temperature controlled electrical tracing that will not cause the pipe metal temperature to increase beyond the limits shown in Figure 1 in the event of controller or tracing malfunction.
 - b) All equipment that contains heating coils with no high temperature alarm.

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