130 REQUIREMENTS FOR FABRICATING AND ATTACHING PIPE SUPPORTS

130.1 Pipe Supports

Standard pipe hangers and supports shall be fabricated in accordance with the requirements of MSS SP-58. Welders, welding operators, and WPSs shall be qualified in accordance with the requirements of ASME BPVC, Section IX.

130.2 Alternate Pipe Supports

Special hangers, supports, anchors, and guides, not defined as standard types of hanger components in MSS SP-58, shall be welded in accordance with the requirements of para. 127 (para. 132 is not applicable except as required by the weld procedure used) and inspected in accordance with the requirements of para. 136.4.2.

130.3 Pipe Support Welds

Welds attaching hangers, supports, guides, and anchors to the piping system shall conform to the requirements of Chapters V and VI of this Code.

131 WELDING PREHEAT

131.1 Minimum Preheat Requirements

The preheat requirements listed herein are mandatory minimum values.

The base metal temperature for the parts to be welded shall be at or above the minimum temperature specified in Table 131.4.1-1 in all directions from the point of welding for a distance of the greater of 3 in. (75 mm) or 1.5 times the greater nominal thickness (as defined in para. 132.4.3).

The base metal temperature for tack welds shall be at or above the specified minimum temperature for a distance not less than 1 in. (25 mm) in all directions from the point of welding.

ASME B31P may be used as an alternative in accordance with para. 127.4.10.

131.2 Different P-Number Materials

When welding two different P-Number materials, the minimum preheat temperature required shall be the higher temperature for the material to be welded as shown in Table 131.4.1-1.

131.3 Preheat Temperature Verification

(a) The preheat temperature shall be checked by use of temperature-indicating crayons, thermocouple pyrometers, or other suitable methods to ensure that the required preheat temperature is obtained prior to, and uniformly maintained during, the welding operation.

(b) Thermocouples may be temporarily attached directly to pressure-containing parts using the low-energy capacitor discharge method of welding in accordance with the requirements of para. 127.4.9(b).

131.4 Preheat Temperature

131.4.1 The minimum preheat temperature shall be as stated in Table 131.4.1-1.

131.4.2 Higher minimum preheat temperatures may be required by the WPS or by the designer.

131.6 Interruption of Welding

131.6.1 Interruption of Welding. After weld commencement, the interruption of preheat is discouraged prior to weld completion. The minimum preheat temperature shall be maintained until any required PWHT is performed on P-Nos. 3, 4, 5A, 5B, 6, and 15E, except when all of the following conditions are satisfied:

(a) A minimum of at least 3/8 in. (10 mm) thickness of weld is deposited or 25% of the welding groove is filled, whichever is less (the weldment shall be sufficiently supported to prevent overstressing the weld if the weldment is to be moved or otherwise loaded). Caution is advised that the surface condition prior to cooling should be smooth and free of sharp discontinuities.

(c) For P-No. 5B materials (with a chromium content greater than 3.0%), P-No. 6, and P-No. 15E materials, the weld is subjected to a postweld hydrogen bakeout at 500°F to 750°F (260°C to 400°C) for 1 hr/in. (25 mm) of deposited weld thickness and an adequate intermediate heat treat-ment with a controlled rate of cooling and is maintained in a dry environment. The preheat temperature may be reduced to 200°F (95°C) (minimum) for root examination without performing a postweld hydrogen bakeout.

(d) After cooling and before welding is resumed, visual examination of the weld shall be performed to ensure that no cracks have formed.

(e) Required preheat shall be applied before welding is resumed.

131.6.2 Completion of Welding. After weld completion and prior to PWHT, P-Nos. 5B, 6, and 15E shall satisfy the following conditions:

(a) The weld shall undergo a postweld hydrogen bakeout at 500°F to 750°F (260°C to 400°C) for 1 hr/ in. (25 mm) of deposited weld thickness with a controlled rate of cooling and be maintained in a dry environment. Postweld hydrogen bakeout for P-No. 5B or P-No. 15E materials may be omitted entirely when the following condition applies:

(1) use of low-hydrogen electrodes and filler metals classified by the filler metal specification with an optional supplemental diffusible hydrogen designator of H4 or