

§ 56.85-5

46 CFR Ch. I (10-1-10 Edition)

(f) All scale shall be removed from heat treated pipe prior to installation.

(g) Austenitic stainless-steel pipe that has been heated for bending or other forming may be used in the "as-bent" condition unless the design specification requires post-bending heat treatment.

[CGFR 68-62, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9979, June 17, 1970; CGD 73-254, 40 FR 40166, Sept. 2, 1975; USCG-2003-16630, 73 FR 65185, Oct. 31, 2008]

**Subpart 56.85—Heat Treatment of Welds**

**§ 56.85-5 Heating and cooling method.**

Heat treatment may be accomplished by a suitable heating method that will provide the desired heating and cooling rates, the required metal temperature, metal temperature uniformity, and temperature control.

[USCG-2003-16630, 73 FR 65185, Oct. 31, 2008]

**§ 56.85-10 Preheating.**

(a) The minimum preheat temperatures listed in Table 56.85-10 for P-number materials groupings are mandatory minimum pre-heat temperatures. Pre-heat is required for Class I, I-L, I-N, II-N and II-L piping when the ambient temperature is below 50 °F.

(b) During the welding of dissimilar materials, the minimum preheat temperature may not be lower than either the highest temperature listed in Table 56.85-10 for any of the materials to be welded or the temperature established in the qualified welding procedure.

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

TABLE 56.85-10—PREHEAT AND POSTHEAT TREATMENT OF WELDS

ASME Sec IX Nos.	Preheat required			Post heat treatment requirement (1)(2)		
	Minimum wall (3)(4) (inch)	Minimum temperature (5)(6)(°F)	Minimum wall and other (3)(4)(17)(inch)	Temperature (7)(8)(9)(10)(11)(12)(°F)(inch)	Time cycle	
					Hour per inch of wall (3)(4)	Minimum time within range (hour)
P-1(16) .....	All .....	50 (for .30 C. maximum or less) (13).	Over ¾ in .....	1,100 to 1,200 (minimum) (maximum).	1	1
P-1(16) .....	All .....	175 (for over .30 C.) (13) and wall thickness over 1 in.	.....do .....	.....do .....	1	1
P-3(15) .....	All walls .....	175 .....	Over ½ in .....	1,200 to 1,350 (minimum) (maximum).	1	1
P-4(15) .....	Up to ¾ in inclusive.	300 .....	Over ½ in or over 4 in nom. size or.	1,330 to 1,400 (minimum) (maximum).	1	1
	Over ¾ in .....	400 .....	Over .15 C. maximum.	1,300 to 1,425 (minimum) (maximum).		
P-5(15) (less than 5 cr.).	Up to ¾ in inclusive.	300 .....	Over ½ in or over 4 in. nom. size or.		1,300 to 1,425 (minimum) (maximum).	1
	Over ¾ in .....	400 .....	Over 0.15 C. maximum.			
P-5(15) (5 cr. and higher).	Up to ¾ inclusive.	300 .....	All walls .....	.....do .....	1	2
	Over ¾ in .....	400 .....	Over 0.15 C. maximum.	1,400 to 1,500 (minimum) (maximum).		
P-6 .....	All walls .....	300 (14). .....	All walls .....		1,400 to 1,500 (minimum) (maximum).	1
P-8 .....	.....do .....	None required	.....do .....	None required.		

For P-7, P-9A, P-9B, P-10C and other materials not listed the Preheat and Postheat

Treatment is to be in accordance with the qualified procedure.