

Thickness(a), mm (in.)	Soak time, minutes				Maximum quench delay, s
	Air furnace(b)		Salt bath(c)		
	min	max(d)	min	max(d)	
≤0.41 (0.016)	20	25	10	15	5
0.51 (0.020)	20	30	10	20	7
0.64 (0.025)	25	35	15	25	7
0.81 (0.032)	25	35	15	25	7
1.02 (0.040)	30	40	20	30	10
1.27 (0.050)	30	40	20	30	10
1.35 (0.053)	30	40	20	30	10
1.80 (0.071)	35	45	25	35	10
2.03 (0.080)	35	45	25	35	10
2.29 (0.090)	35	45	25	35	10
2.54 (0.100)	40	55	30	45	15
3.18 (0.125)	40	55	30	45	15
4.06 (0.160)	50	60	35	45	15
4.57 (0.180)	50	60	35	45	15
6.35 (0.250)	55	65	35	45	15
>6.35 (0.250)–12.7 (0.500)	65	75	45	55	15
For each additional 12.7 (½) or fraction	+30	+30	+20	+20	(e)
Rivets (all)	60	...	30	...	5

(a) Minimum dimension of thickest section. (b) Soak time begins when all pyrometer instruments recover to original operating temperature. (c) Soak time begins at time of immersion except when a heavy charge causes bath temperature to drop below specified minimum, in which case soak time begins when bath regains minimum temperature. (d) Applicable to alclad materials only. (e) Increases in thickness above 12.7 mm (½ in.) do not affect maximum quench delay, which remains constant at 15 s.

Source: J.R. Davis, Ed., *Aluminum and Aluminum Alloys*, ASM Specialty Handbook, ASM International, 1993, p 296