ANNEALING SCHEDULE FOR ACRYLIC CASTINGS

Table 15.2 Shrinking heat treatment for plastic sheets and plates prior to machining

Thickness Range (in)	Maximum oven heating rate	Holding time in hours at temperature (maximum)	Maximum oven cooling rate to	Holding time in hours at temperature (minimum)	Maximum oven cooling rate to	Holding time in hours at temperature (minimum)	Maximum cooling rate at 15°F above ambient
	°F/hr (°C)	266°F (130°C)	176°F (80°C)	176°F (80°C)	95°F (35°C)	95°F (35°C)	°F/hr (°C)
0.500	100 (56)	4	100 (56)	2	50 (28)	1	25 (14)
0.625-1.00	100 (56)	5	100 (56)	2	36 (20)	1	18 (10)
1.125-2.00	100 (56)	6	50 (28)	2	20 (11)	1	10 (5.5)
2.125-3.00	50 (28)	7	50 (28)	3	14 (8)	1	7 (4)
3.25-4.25	50 (28)	8	50 (28)	3	10 (6)	1	5 (3)

Notes:
1. The shrinking heat treatment is to be used primarily on cell cast monomer castings in the form of sheets and plates.
2. Windows machined from shrunk plates and sheets must be annealed after machining and polishing.
3. The oven is to be maintained at the set temperature within ±5°F (2.8°C).

ANNEALING SCHEDULE FOR ACRYLIC WINDOWS

Table 15.3 Part A Minimum heating times for elevated temperature annealing of acrylic windows

Thickness, in (mm)	Hold Times*, hr, for acrylic placed in a forced-circulation air oven maintained at the set temperature within ± 5°F (2.8°C)				
	Maximum oven heating rate °F/hr (C°/hr)	230°F (max) (110°C)	212°F (min) (100°C)	195°F (min) (90°C)	185° (max) (85°C)
0.250 to 0.375, incl. (6 to 10, incl.)	100 (56)	2.5	3.5	5.5	10
0.500 to 0.750, incl. (13 to 19, incl.)	100 (56)	3	4	6	11
0.875 to 1.125, incl. (22 to 28, incl.)	100 (56)	3.5	4.5	6.5	11.5
1.250 to 1.500, incl. (32 to 38, incl.)	100 (56)	4	5	7	12
≥ 1.750 (44)	100 (56)	5	5.5	7.5	12.5
≥ 2.000 (50)	100 (56)	6	6	8	13
≥ 2.250 (57)	50 (28)	7	7	9	14
≥ 2.500 (64)	50 (28)	8	9	11	15
≥ 3.000 (75)	50 (28)	10	11	12	17
≥ 3.250 (82)	50 (28)	12	12	14	18
≥ 3.500 (89)	50 (28)	13	13	15	19
≥ 3.750 (92)	50 (28)	14	14	16	20
4.000 (100)	50 (28)	16	17	18	22
> 4.000 to 6.000, incl. (> 100 to 152, incl.)	25 (14)	28	31	34	40
> 6.000 to 8.000, incl. (> 152 to 203, incl.)	15 (8)	40	45	50	58
> 8.000 to 10.000, incl. (> 203 to 254, incl.)	10 (6)	52	59	66	76
> 10.000 to 12.000, incl. (> 254 to 305, incl.)	5 (3)	64	73	82	94
> 12.000 to 14.000, incl. (> 305 to 356, incl.)	2 (1)	76	87	98	112
> 14.000 to 16.000, incl. (> 356 to 406, incl.)	1 (0.5)	88	101	114	130

* Does not include the period of time required to raise the oven temperature from ambient room temperature to the set annealing temperature.

ANNEALING SCHEDULE FOR ACRYLIC WINDOWS

Table 15.3 Part B Typical heating times for elevated temperature annealing of acrylic windows

Thickness, in (mm)	Hold times*, hr, for acrylic placed in a forced-circulation air oven maintained at the set temperature within ± 5°F (2.8°C)				
	Maximum oven heating rate °F/hr (C°/hr)	230°F (max) (110°C)	212°F (min) (100°C)	195°F (min) (90°C)	185° (min) (85°C)
0.250 to 0.375, incl. (6 to 10, incl.)	100 (56)	2.5	8	11	13
0.500 to 0.750, incl. (13 to 19, incl.)	100 (56)	5	9	12	14
0.875 to 1.125, incl. (22 to 28, incl.)	100 (56)	7.5	10	13	15
1.250 to 1.500, incl. (32 to 38, incl.)	100 (56)	10	11	14	16
≥ 1.750 (44)	100 (56)	12	13	16	18
≥ 2.000 (50)	100 (56)	13	15	18	20
≥ 2.250 (57)	50 (28)	15	17	20	22
≥ 2.500 (64)	50 (28)	16.5	18	21	23
≥ 3.000 (75)	50 (28)	20	21	24	26
≥ 3.250 (82)	50 (29)	21.5	23	26	28
≥ 3.500 (89)	50 (28)	23	25	28	30
≥ 3.750 (92)	50 (28)	25	27	30	32
4.000 (100)	50 (28)	26	29	32	35
> 4.000 to 6.000, incl. (> 100 to 152, incl.)	25 (14)	37	44	49	53
> 6.000 to 8.000, inlc. (> 152 to 203, incl.)	15 (8)	53	59	65	71
> 8.000 to 10.000, incl. (> 203 to 254, incl.)	10 (6)	66	74	81	88
> 10.000 to 12.000, incl. (> 254 to 305, incl.)	5 (3)	79	88	97	107
> 12.000 to 14.000, incl. (> 305 to 356, incl.)	2 (1)	90	103	114	124
> 14.000 to 16.000, incl. (> 356 to 406, incl.)	1 (0.5)	106	118	130	142

* Does not include the period of time required to raise the oven temperature from ambient room temperature to the set annealing temperature.