

TABLE 115. COLD STORAGE PIPING
Ratio of Cubic Feet of Room Space to One Linear Foot of Various Size Ammonia and Brine Pipe

Cubic Feet of Space to Cool	TEMP. 45° F.						TEMP. 40° F.						TEMP. 35° F.						TEMP. 30° F.						TEMP. 25° F.											
	Cu. Ft. to 1 Ft. of Pipe						Cu. Ft. to 1 Ft. of Pipe						Cu. Ft. to 1 Ft. of Pipe						Cu. Ft. to 1 Ft. of Pipe						Cu. Ft. to 1 Ft. of Pipe											
	DI. Ex.			Brine			DI. Ex.			Brine			DI. Ex.			Brine			DI. Ex.			Brine			DI. Ex.			Brine			DI. Ex.			Brine		
	1'	1 1/4"	2"	1'	1 1/4"	2"	1'	1 1/4"	2"	1'	1 1/4"	2"	1'	1 1/4"	2"	1'	1 1/4"	2"	1'	1 1/4"	2"	1'	1 1/4"	2"	1'	1 1/4"	2"	1'	1 1/4"	2"	1'	1 1/4"	2"			
12	160	3.4	5.8	2.8	4.6	160	3.4	5.8	2.8	4.6	140	2.7	4.3	2.2	3.4	130	2.3	3.5	2.1	2.8	120	2.0	3.1	1.9	2.4	110	1.7	2.4	1.7	2.4	100	1.5	2.2	1.5	2.0	
20	220	3.5	5.9	2.9	4.7	200	3.1	5.1	2.6	4.1	180	2.8	4.4	2.3	3.5	160	2.4	3.6	2.2	2.9	150	2.1	3.2	2.0	2.6	140	1.8	2.7	1.7	2.4	130	1.6	2.3	1.5	2.0	
50	325	3.6	6.1	3.1	4.8	300	3.2	5.2	2.7	4.2	275	2.9	4.5	2.4	3.6	250	2.5	3.7	2.1	3.1	225	2.2	3.3	1.8	2.6	200	1.9	2.8	1.7	2.5	180	1.7	2.5	1.5	2.1	
100	700	3.8	6.3	3.1	5.1	600	3.4	5.5	2.8	4.4	500	3.1	4.7	2.5	3.8	400	2.7	3.9	2.2	3.1	375	2.4	3.5	1.9	2.7	350	2.1	3.1	1.8	2.6	325	1.9	2.8	1.6	2.4	
250	1075	7.2	7.2	5.5	5.5	1000	6.3	6.3	4.8	4.8	925	6.4	6.4	4.1	4.1	850	4.5	4.5	3.4	3.4	750	3.7	3.7	2.9	2.9	650	3.0	3.0	2.3	2.3	550	2.5	2.5	1.9	1.9	
500	1550	8.6	8.6	6.4	6.4	1500	7.5	7.5	5.6	5.6	1450	6.5	6.5	4.8	4.8	1400	5.4	5.4	4.1	4.1	1250	4.3	4.3	3.4	3.4	1100	3.4	3.4	2.7	2.7	950	2.9	2.9	2.2	2.2	
1000	2250	9.8	9.8	7.4	7.4	2000	8.7	8.7	6.4	6.4	1750	7.6	7.6	5.5	5.5	1550	6.5	6.5	4.5	4.5	1350	5.2	5.2	3.8	3.8	1150	4.2	4.2	3.4	3.4	1000	3.6	3.6	2.8	2.8	
3000	3250	11.1	11.1	8.5	8.5	3000	10.1	10.1	7.3	7.3	2750	8.3	8.3	6.2	6.2	2500	7.1	7.1	5.1	5.1	2250	6.0	6.0	4.2	4.2	2000	5.0	5.0	3.8	3.8	1750	4.2	4.2	3.2	3.2	
5000	4250	14.1	14.1	11.1	11.1	4000	12.1	12.1	9.1	9.1	3750	11.1	11.1	7.5	7.5	3500	9.1	9.1	6.1	6.1	3250	7.5	7.5	5.1	5.1	3000	6.0	6.0	4.2	4.2	2750	5.0	5.0	3.8	3.8	
10000	5250	17.1	17.1	13.1	13.1	5000	15.1	15.1	11.1	11.1	4500	13.1	13.1	9.1	9.1	4000	11.1	11.1	7.1	7.1	3500	9.1	9.1	6.1	6.1	3000	7.5	7.5	5.1	5.1	2750	6.0	6.0	4.2	4.2	
20000	6250	21.1	21.1	16.1	16.1	6000	18.1	18.1	12.1	12.1	5500	16.1	16.1	10.1	10.1	5000	13.1	13.1	8.1	8.1	4500	11.1	11.1	7.1	7.1	4000	9.1	9.1	6.1	6.1	3500	7.5	7.5	5.1	5.1	
40000	7250	23.1	23.1	18.1	18.1	7000	20.1	20.1	14.1	14.1	6500	18.1	18.1	12.1	12.1	6000	15.1	15.1	10.1	10.1	5500	12.1	12.1	8.1	8.1	5000	10.1	10.1	7.1	7.1	4500	8.1	8.1	6.1	6.1	
70000	8750	29.1	29.1	24.1	24.1	8500	25.1	25.1	17.1	17.1	7500	22.1	22.1	15.1	15.1	7000	18.1	18.1	12.1	12.1	6500	15.1	15.1	10.1	10.1	6000	12.1	12.1	9.1	9.1	5500	10.1	10.1	7.1	7.1	
100000	10250	35.1	35.1	28.1	28.1	10000	30.1	30.1	20.1	20.1	9500	26.1	26.1	17.1	17.1	9000	20.1	20.1	14.1	14.1	8500	17.1	17.1	12.1	12.1	8000	14.1	14.1	11.1	11.1	7500	12.1	12.1	9.1	9.1	

TABLE 116. COLD STORAGE TEMPERATURES

ARTICLES	Deg. Fahr.	ARTICLES	Deg. Fahr.
FRUIT		LIQUIDS	
Apples.....	32-36	Beer, Ale, Porter, etc.....	33
Bananas.....	60	Cider.....	30
Berries, Fresh.....	36	Ginger Ale.....	36
Cranberries.....	33-36	Wines.....	40
Cantaloupes.....	40	Champagne.....	25-30
Dates, Figs, etc.....	50-55		
Fruits, Dried.....	35-40	FLOUR AND MEAL	
Grapes.....	34-36	Buckwheat Flour.....	36-40
Lemons.....	33-36	Corn Meal.....	36-40
Oranges.....	34-36	Oat Meal.....	36-40
Peaches.....	34-36	Wheat Flour.....	36-40
Pears.....	34-36		
Watermelons.....	34-36	VEGETABLES	
MEATS		Asparagus.....	34-35
Brined.....	38	Cabbage.....	34-35
Beef, Fresh.....	33	Carrots.....	34-35
Beef, Dried.....	36-40	Celery.....	34-35
Calves.....	32-33	Dried Beans.....	32-40
Hams, Ribs, Shoulders.....	20	Dried Corn.....	35
Hogs.....	29-32	Dried Peas.....	35-40
Lard.....	38	Onions.....	36
Livers.....	20-30	Parasites.....	34-35
Sheep, Lambs.....	32	Potatoes.....	36-40
Ox-Tails.....	30	Sauerkraut.....	35
Sausage Casings.....	20		
Tenderloin, Butts, etc.....	33	MISCELLANEOUS	
FISH		Cigars, Tobacco.....	35
Fresh Fish.....	20	Furs, Woolens, etc.....	35
Dried Fish.....	36	Honey.....	45
Oysters in Shell.....	30-35	Hops.....	40
Oysters in Tub.....	25	Maple Syrup, Sugar.....	40
CANNED GOODS		Oils.....	35
Sardines.....	35-40	Poultry, Dressed, Iced.....	28-30
Fruits.....	35-40	Poultry, Dry Picked.....	26-28
Meats.....	35-40	Poultry, Scalded.....	20
BUTTER, EGGS, ETC.		Game, To Freeze.....	10-15
Butter.....	15	Game, After Frozen.....	25-28
Butterine.....	15	Poultry, To Freeze.....	10-15
Cheese.....	34	Poultry, After Frozen.....	25-28
Eggs.....	31	Nuts, in Shell.....	35-40
		Chestnuts.....	33

TABLE 117. FREEZING TIME IN HOURS TO FREEZE CAN OF ICE

TEMP. OF BRINE	WIDTH OF CAN							
	4"	5"	6"	7"	8"	9"	10"	12"
10°	5.10	8.00	11.5	15.6	20.4	25.8	31.8	45.8
12°	5.60	8.75	12.6	17.3	22.4	28.4	35.0	50.4
14°	6.22	9.70	14.0	19.0	25.0	31.5	39.0	56.0
16°	7.00	11.00	15.8	21.5	28.0	35.5	43.7	63.0
18°	8.00	12.50	18.0	24.5	32.0	40.5	50.0	72.0
20°	9.30	14.60	21.0	28.5	37.3	47.2	58.3	84.0
22°	11.20	17.50	25.2	34.3	44.8	56.7	70.0	100.0
24°	14.00	21.00	31.5	42.8	56.0	71.0	87.5	126.0

Note.—Above table based on ice freezing from four sides. 11-in. can ice will take about 45 to 50 hr. to close, brine at 15.