

A vibrant green field of wheat under a bright blue sky with scattered white clouds. The wheat stalks are in sharp focus in the foreground, creating a sense of depth. The sky is a clear, bright blue, and the clouds are soft and white, adding to the overall serene and natural atmosphere of the image.

SABALANCO.
Air Conditioning Technology

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- **Fiber Glass
Cooling Towers**

Main Features:

SABALAN GOSTAR TAHVIEH Fiber Glass Cooling Towers are available in a range of 10 to 1400 tons of refrigeration. These structures are designed on the basis of counter-flow heat transmitted between inlet water and the inlet air. The application fields include food production industry, chemical row production industry, fixed internal combustion engines, air compressors and melting & welding machineries.

Durability

Due to the Fiber Glass structure these types of towers do not oxidize or deform.

Economical Design

Cylindrical shape of Cooling Towers result in smaller electromotor and about 30% of cooling operation is performed by natural air suction and resulting in cost saving including primary costs and energy cost.

Low Noise &Vibration

Dynamic & static balance of these fans reduces noise and vibration of the tower.

Ease of Transportation & Installation

All parts and components of these Cooling Towers are supplied separately so that the transportation & installation processes are safer and it takes a short time.

Maintenance & service

The Maintenance & services of Cooling Towers are easy and through turning a number of bolts & nuts all its internal parts are accessible.

TABLE 1
Towers Specification

Specification			Models									
			CTF-8	CTF-10	CTF-15	CTF-20	CTF-25	CTF-30	CTF-40	CTF-50	CTF-60	CTF-80
Nominal Water Flow (GPM)			28	35	53	71	88	105	141	176	212	282
Electro Motor Power (HP)			1/4	1/4	1/2	1/2	1/2	1	1	1 1/2	2	2
Electro Motor Nominal Speed (rpm)			750	750	750	900	900	900	900	900	1450	1450
Fan	Dimensions (m)		0.6	0.6	0.8	0.8	0.8	0.9	0.9	0.9	1.2	1.2
	Nominal Air Flow (CFM)		3000	3180	6360	7000	7770	8480	9410	11300	14500	17100
Dimensions (m)	Standard and Low Noise Type	Hight	1.4	1.63	1.68	1.78	2.02	1.89	2	2.34	2.37	2.48
		Dia	0.93	0.93	1.17	1.38	1.38	1.63	1.78	1.78	1.99	2.1
	Super Low Noise Type	Hight	2.1	2.34	2.38	2.49	2.72	2.69	2.79	3.15	3.3	3.43
		Dia	1.29	1.29	1.54	1.73	1.73	2.01	2.13	2.25	2.49	2.59
Weight (kg)	Standard Type	Dry	52	56	83	110	115	160	171	215	399	431
		Oper	120	138	218	264	329	363	410	515	708	792
	Low Noise Type	Dry	54	58	85	113	118	164	175	219	405	437
		Oper	122	142	220	268	332	367	414	519	714	798
	Super Low Noise Type	Dry	76	80	110	138	143	190	201	246	435	469
		Oper	144	161	244	293	357	393	441	547	743	830

TABLE 1 (Continued)
Towers Specification

Specification			Models									
			CTF-8	CTF-10	CTF-15	CTF-20	CTF-25	CTF-30	CTF-40	CTF-50	CTF-60	CTF-80
Noise Level (dba)	Standard	1	45	45	46	46	46	47	48	48	50	52
		2	55	55	58	59	59	61	61	61	62	62
		3	58	58	62	63	63	65	66	66	68	68
	Low Noise	1	43	43	44	44	44	45	46	47	48	50
		2	53	53	56	57	57	58	58	59	59	59
		3	57	57	60	61	61	63	64	64	66	66
	Super Low Noise	1	40	40	41	41	41	42	43	44	44	45
		2	50	50	53	54	54	55	55	56	56	56
		3	54	54	57	58	58	60	61	61	62	62

TABLE 1 (Continued)
Towers Specification

Specification			Models									
			CTF-90	CTF-100	CTF-125	CTF-150	CTF-175	CTF-200	CTF-225	CTF-250	CTF-300	CTF-350
Nominal Water Flow (GPM)			318	352	442	528	618	705	795	880	1050	1230
Electro Motor Power (HP)			2	2	3	5	5	5	7 1/2	7 1/2	7 1/2	10
Electro Motor Nominal Speed (rpm)			1450	1450	1450	1450	1450	1450	1450	1450	1450	1450
Fan	Dimensions (m)		1.2	1.2	1.5	1.5	1.8	1.8	1.8	2.4	2.4	2.4
	Nominal Air Flow (CFM)		21800	24100	27500	29700	32900	47100	57100	66500	76900	83500
Dimensions (m)	Standard and Low Noise Type	Hight	2.35	2.57	3.38	2.62	2.62	2.92	3.15	3.28	3.66	3.45
		Dia.	2.59	2.59	2.95	2.95	3.33	3.71	3.71	4.39	4.39	4.85
	Super Low Noise Type	Height	3.3	3.53	3.3	3.56	3.56	3.89	4.11	4.6	4.62	4.8
		Dia.	3.1	3.1	3.28	3.28	3.66	4.09	4.09	4.98	4.98	5.36
Weight (kg)	Standard Type	Dry	459	519	629	789	874	1342	1462	1657	1766	1861
		Oper.	854	943	1053	1468	1553	3043	3162	3357	3473	3861
	Low Noise Type	Dry	471	529	644	804	890	1360	1480	1678	1788	1885
		Oper.	864	953	1068	1483	1569	3060	3118	3379	3494	3885
	Super Low Noise Type	Dry	507	565	685	846	937	1410	1530	1738	1852	1959
		Oper.	900	989	1109	1525	1616	3110	3230	3439	3558	3958

TABLE 1 (Continued)
Towers Specification

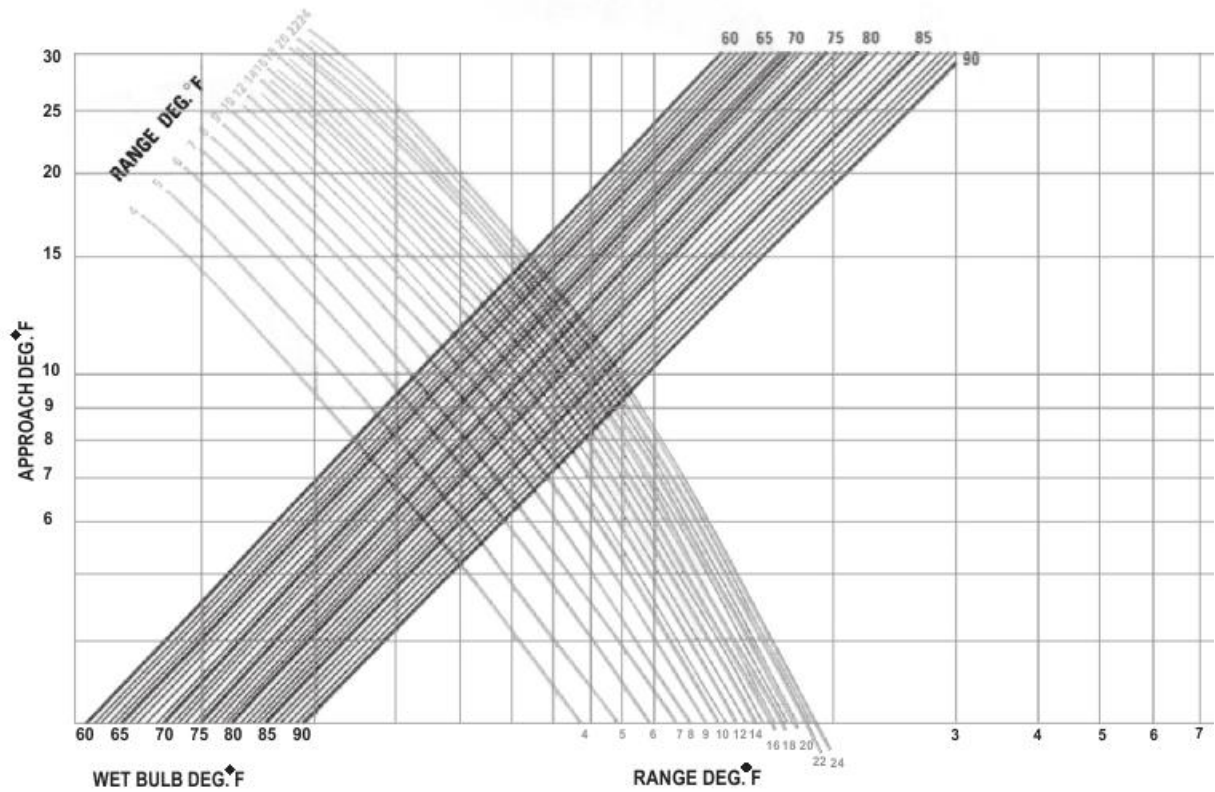
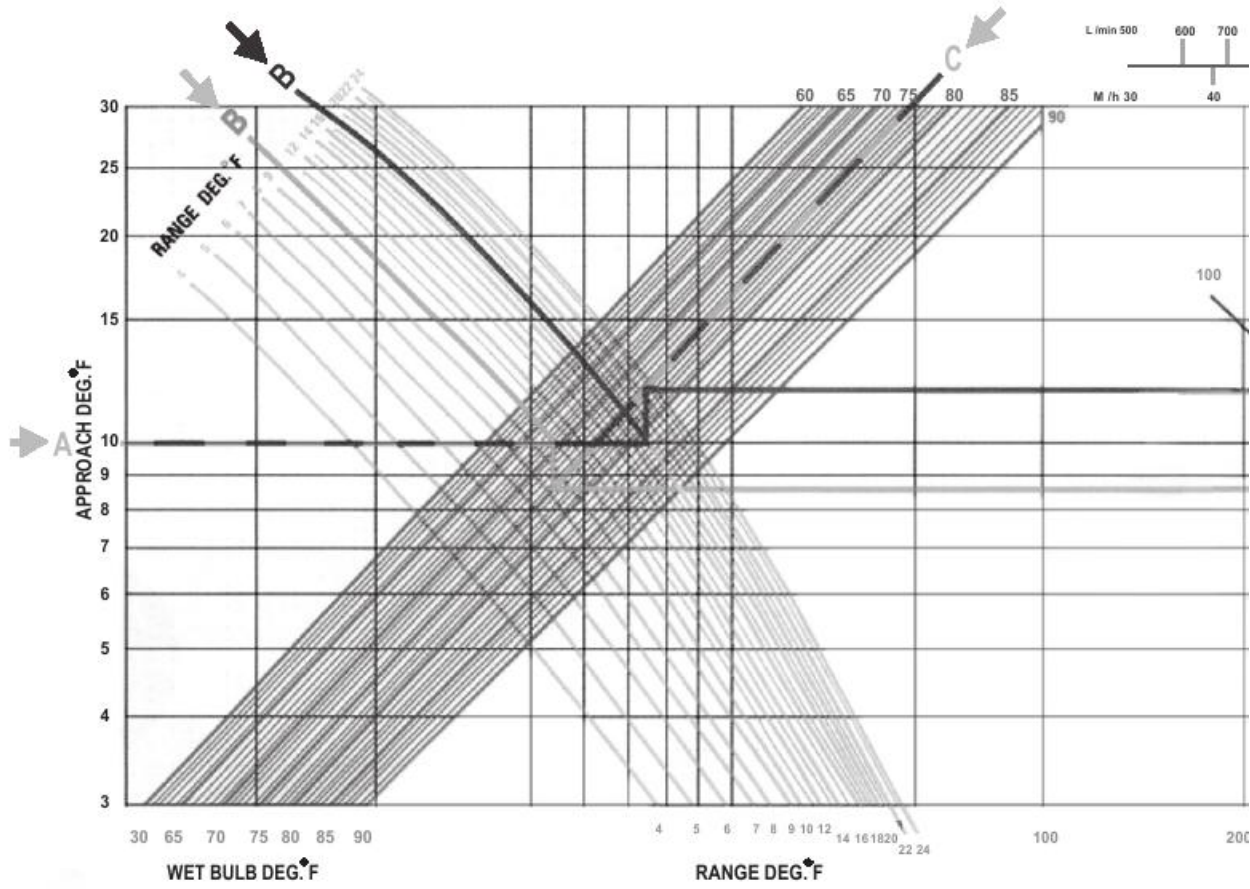
Specification			Models									
			CTF-90	CTF-100	CTF-125	CTF-150	CTF-175	CTF-200	CTF-225	CTF-250	CTF-300	CTF-350
Noise Level (dba)	Standard	1	53	53	56	56	58	59	59	60	60	62
		2	63	63	66	66	67	67	68	69	70	71
		3	70	70	73	74	75	76	77	77	78	80
	Low Noise	1	51	51	53	53	54	55	55	56	56	57
		2	60	60	63	63	64	65	66	66	67	68
		3	67	67	70	70	72	73	74	74	75	76
	Super Low Noise	1	46	46	49	49	49	50	50	51	51	53
		2	57	57	59	59	61	62	62	63	63	63
		3	63	63	66	66	68	69	70	70	71	72

TABLE 1 (Continued)
Towers Specification

Specification			Models								
			CTF-400	CTF-450	CTF-500	CTF-600	CTF-700	CTF-800	CTF-1000	CTF-1250	CTF-1400
Nominal Water Flow (GPM)			1410	1580	1770	2120	2460	2830	3520	4400	4700
Electro Motor Power (HP)			15	15	15	15	20	25	30	30	40
Electro Motor Nominal Speed (rpm)			1450	1450	1450	1450	1450	1450	1450	1450	1450
Fan	Dimensions (m)		2.4	3	3	3.3	3.3	3.6	3.6	4.2	4.2
	Nominal Air Flow (CFM)		90700	106500	119500	139500	171000	197100	217700	27700	310500
Dimensions (m)	Standard and Low Noise Type	Height	3.68	4.04	4.27	4.6	4.83	5	5.23	5.56	5.86
		Dia.	4.85	5.51	5.51	6.53	6.53	7.59	7.59	8.79	8.79
	Super Low Noise Type	Height	5.03	5.18	5.41	5.64	5.89	6.27	6.5	6.86	7.16
		Dia.	5.36	6.07	6.07	7.34	7.34	8.41	8.41	9.6	9.6
Weight (kg)	Standard Type	Dry	2305	2535	2590	3493	3652	5229	5449	6476	6635
		Oper.	4305	5818	7155	10588	10747	12808	13247	15458	16236
	Low Noise Type	Dry	2329	2565	2619	3524	3684	5264	5483	6516	6775
		Oper.	4329	5848	7185	10619	10779	12843	13282	15497	16275
	Super Low Noise Type	Dry	2403	2644	2699	3614	3774	5364	5583	6626	6885
		Oper.	4403	5928	7265	10709	10869	12943	13382	15607	16385

TABLE 1 (Continued)
Towers Specification

Specification			Models								
			CTF-400	CTF-450	CTF-500	CTF-600	CTF-700	CTF-800	CTF-1000	CTF-1250	CTF-1400
Noise Level (dba)	Standard	1	62	63	64	65	58	59	59	60	60
		2	72	73	74	75	67	67	68	69	70
		3	80	81	83	83	75	76	77	77	78
	Low Noise	1	57	58	59	60	54	55	55	56	56
		2	68	69	70	71	64	65	66	66	67
		3	77	78	79	80	72	73	74	74	75
	Super Low Noise	1	53	54	54	55	49	50	50	51	51
		2	63	64	65	66	61	62	62	63	63
		3	72	73	74	75	68	69	70	70	71



Fiber Glass Cooling Towers

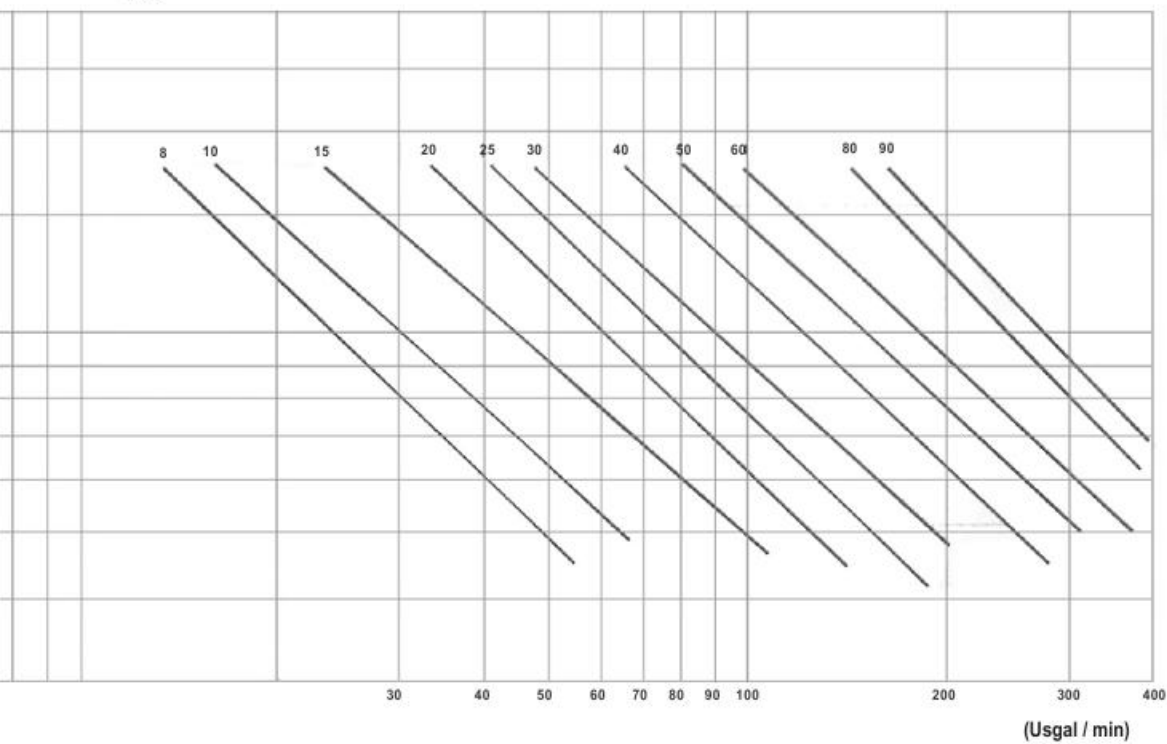
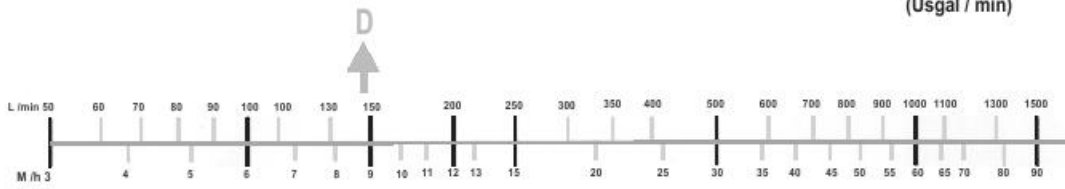
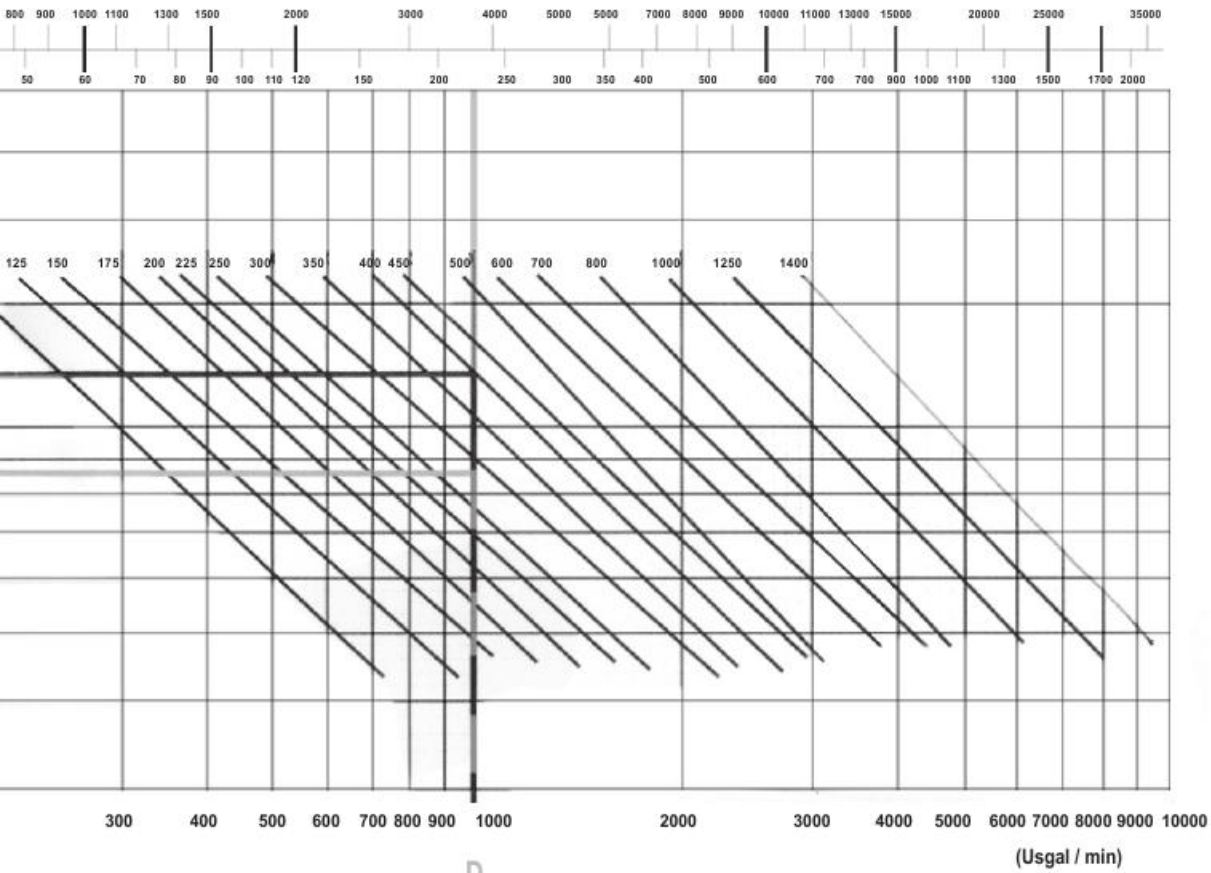


TABLE 2
Connection Size

Models		CTF-8	CTF-10	CTF-15	CTF-20	CTF-25	CTF-30	CTF-40	CTF-50	CTF-60	CTF-80
Specification											
Pipe Connections (inch)	Inlet	1 1/2	1 1/2	2	2	2	3	3	3	4	4
	Outlet	1 1/2	1 1/2	2	2	2	3	3	3	4	4
	Over Flow	1	1	1	1	1	1	1	1	1 1/2	1 1/2
	Drain	1	1	1	1	1	1	1	1	1 1/2	1 1/2
	Float Valve	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	1	1
	Quick Film	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pump Head (m-water)		1.3	1.3	1.6	1.6	1.8	2	2	2.2	2.5	2.5

TABLE 2
Connection Size

Models		CTF-90	CTF-100	CTF-125	CTF-150	CTF-175	CTF-200	CTF-225	CTF-250	CTF-300	CTF-350
Specification											
Pipe Connections (inch)	Inlet	4	4	5	5	6	6	6	6	8	8
	Outlet	4	4	5	5	6	6	6	6	4	8
	Over Flow	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	3	3	3	3	3
	Drain	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
	Float Valve	1	1	1	1	1	2	2	2	2	2
	Quick Film	.....	.....	3/4	3/4	3/4	1	1	1	1	1
Pump Head (m-water)		3.1	3.1	3.5	3.5	1.8	4.4	4.4	4.7	4.7	5

TABLE 2
Connection Size Table

Models		CTF-400	CTF-450	CTF-500	CTF-600	CTF-700	CTF-800	CTF-1000	CTF-1250	CTF-1400
Specification										
Pipe Connections (inch)	Inlet	8	8	8	10	10	12	12	12	12
	Outlet	8	8	8	10	10	12	12	12	12
	Over Flow	3	4	4	4	4	4	4	4	4
	Drain	1 1/2	3	3	3	3	3	3	3	3
	Float Valve	2	2	2	2	2	3	3	3	3
	Quick Film	1	2	2	2	2	3	3	3	3
Pump Head (m-water)		5	5.3	5.3	5.6	5.6	6.2	6.2	6.5	6.8

COOLING TOWER SELECTION

To select this machinery, one should define its construction characteristics as well as its capacity. Cooling tower capacity is calculated regarding information such as COP and the other features of chiller. However, it is obvious that in most projects only the actual capacity of chiller which is also called building's cooling load is available. In order to choose a water chiller for a cooling tower, it's necessary to attend to the best state when the tower's debit is equal to water condenser's debit. This happens when The temperature of input water is 92° F, The temperature of output water is 82° F, and wet bulb temperature of the space is 70°F, or The input water temperature is 95° F, The output water temperature is 85° F, and wet bulb temperature of The space is 74° F. In circumstances other than The two above-mentioned states, The amount of the debit of water chiller condenser is calculated, and then divided to the correction ratio, obtained from The following table; The result is The amount of water flowing in the cooling tower.

Input water temperature(°F)	Output water temperature (°F)	Space humidity temperature (°F)	Correction ratio
90	80	70	0.85
92	82	70	1
95	85	70	1.24
90	80	70	0.74
92	82	72	0.88
95	85	72	1.22
95	85	74	1
95	85	76	0.88
95	85	78	0.75
95	85	80	0.62