



SYSTEM DESIGN CALCULATIONS AND DATA

TDCD
15.201

AVERAGE EARTH TEMPERATURES

1.11.07

AVERAGE EARTH TEMPERATURES

THIS LIST PRESENTS THE AVERAGE EARTH TEMPERATURES 0 TO 10 FEET BENEATH THE SURFACE FOR THE FOUR SEASONS. THESE TEMPERATURES WERE RECORDED BY THE AIRPORTS IN THE VICINITY OF THE LISTED CITIES. THIS LIST WAS COMPILED FROM THE FEDERAL GUIDE SPECIFICATION 15705; SECTION E, PARAGRAPH 4.3.

	WINTER	SPRING	SUMMER	AUTUMN		WINTER	SPRING	SUMMER	AUTUMN
ALABAMA									
ANNISTON	55	58	70	67	COLORADO				
BIRMINGHAM	54	58	71	68	COLORADO SPRINGS	39	43	59	55
MOBILE	61	63	74	71	DENVER	39	43	60	56
MONTGOMERY	58	61	73	70	GRAND JUNCTION	39	44	65	58
ALASKA									
ANCHORAGE	25	29	46	42	PUEBLO	41	45	62	58
ANNETTE	40	42	51	49	CONNECTICUT				
BARROW	4	7	16	14	BRIDGEPORT	40	44	61	57
BETHEL	18	25	41	37	HARTFORD	39	43	61	57
COLD BAY	33	35	43	41	NEW HAVEN	40	44	60	56
CORDOVA	32	35	45	43	DELAWARE				
FAIRBANKS	14	19	38	34	WILMINGTON	44	48	64	60
GALENA	13	18	37	33	FLORIDA				
GAMBELL	15	19	34	30	DAYTONA BEACH	65	67	75	74
JUNEAU	34	36	47	45	FORT MYERS	70	71	78	76
KING SALMON	25	28	44	40	JACKSONVILLE	63	66	75	71
KOTZEBUE	10	14	31	27	KEY WEST	74	75	80	79
MCGRATH	14	18	37	33	MELBOURNE	68	70	77	75
NOME	16	20	37	33	MIAMI	72	74	79	78
NORTHWAY	12	16	32	29	ORLANDO	68	70	77	75
ST PAUL ISLAND	31	32	40	38	TALLAHASSEE	61	64	74	72
YUKUTAT	33	36	45	43	TAMPA	68	69	77	75
ARIZONA									
BISBEE	55	58	70	67	WEST PALM BEACH	71	73	79	77
FLAGSTAFF	35	39	54	50	GEORGIA				
FT HUACHUCA	55	58	71	68	ALBANY	60	63	75	72
PHOENIX	60	64	79	75	ATHENS	54	58	71	68
PRESCOTT	46	49	65	61	ATLANTA	54	57	70	67
TUCSON	59	62	76	73	AUGUSTA	56	59	72	69
WINSLOW	45	49	65	61	COLUMBUS	56	59	72	69
YUMA	65	69	84	80	MACON	58	61	74	71
ARKANSAS									
FT SMITH	52	56	72	68	ROME	53	56	70	67
LITTLE ROCK	53	57	72	68	SAVANNAH	60	63	74	71
TEXARKANA	56	60	74	71	VALDOSTA	61	64	74	75
CALIFORNIA									
BAKERSFIELD	56	60	74	70	HAWAII				
BEAUMONT	47	56	67	64	HILO	72	72	74	74
BLUE CANYON	43	46	58	55	HONOLULU	74	75	77	77
BURBANK	58	60	68	66	LIHUE	72	73	76	75
FRESNO	54	58	72	68	IDAHO				
LOS ANGELES	58	59	64	63	BOISE	40	44	62	58
MOUNT SHASTA	41	44	57	54	IDAHO FALLS	28	33	54	49
OAKLAND	53	54	60	59	LEWISTON	42	46	63	59
RED BLUFF	59	58	72	69	POCATELLO	35	40	59	55
SACRAMENTO	53	56	67	64	ILLINOIS				
SAN DIEGO	59	60	66	65	CHICAGO	38	43	62	57
SAN FRANCISCO	53	54	59	57	JOLIET	37	42	61	56
SANTA CATALINA	57	58	64	62	MOLINE	38	43	62	58
SANTA MARIA	54	55	60	59	PEORIA	39	44	63	58
					SPRINGFIELD	41	45	64	60



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	WINTER	SPRING	SUMMER	AUTUMN		WINTER	SPRING	SUMMER	AUTUMN
INDIANA					MISSISSIPPI				
EVANSVILLE	47	51	67	63	JACKSON	57	61	73	70
FORT WAYNE	39	43	61	57	MERIDIAN	57	60	72	69
INDIANAPOLIS	41	46	64	59	MISSOURI				
SOUTH BEND	38	42	61	56	COLUMBIA	43	48	66	62
TERRE HAUTE	42	48	65	60	KANSAS CITY	44	49	68	64
IOWA					SAINT JOSEPH	42	47	67	62
BURLINGTON	39	44	64	59	SAINT LOUIS	45	49	67	63
DES MOINES	37	42	63	58	SPRINGFIELD	45	49	66	62
DUBUQUE	34	39	60	55	MONTANA				
SIOUX CITY	35	40	62	57	BILLINGS	35	40	59	55
WATERLOO	35	40	61	56	BUTTE	27	31	50	45
KANSAS					GLASGOW	27	33	56	51
DODGE CITY	43	48	67	62	GREAT FALLS	34	38	56	52
GOODLAND	38	43	62	57	HELENA	31	36	55	50
TOPEKA	43	47	66	62	KALISPELL	32	37	54	50
WICHITA	45	50	68	64	MILES CITY	32	37	59	54
KENTUCKY					MISSOULA	33	37	56	51
BOWLING GREEN	47	51	67	63	NEBRASKA				
LEXINGTON	44	48	65	61	GRAND ISLAND	38	43	64	59
LOUISVILLE	46	50	67	63	LINCOLN	39	44	64	60
LOUISIANA					NORFOLK	35	40	62	57
BATON ROUGE	61	63	74	72	NORTH PLATTE	37	42	62	57
LAKE CHARLES	61	64	75	73	OMAHA	39	44	65	60
NEW ORLEANS	63	65	75	73	SCOTTLUFF	36	41	60	56
SHREVEPORT	58	61	75	72	NEVADA				
MAINE					ELKO	34	39	57	53
CARIBOU	24	29	50	45	ELY	35	39	56	52
PORTLAND	33	38	56	51	LAS VEGAS	56	60	78	74
MARYLAND					RENO	40	44	58	55
BALTIMORE	45	49	65	61	WINNEMUCCA	38	42	60	56
FREDERICK	44	48	65	61	NEW HAMPSHIRE				
MASSACHUSETTS					CONCORD	33	38	56	52
BOSTON	41	44	61	57	NEW JERSEY				
NANTUCKET	41	44	57	54	NEWARK	43	47	63	59
PITTSFIELD	34	38	55	51	NEW MEXICO				
WORCESTER	36	40	58	54	ALBUQUERQUE	46	50	67	63
MICHIGAN					CLAYTON	43	47	63	59
DETROIT WILLOW RUN	38	42	60	56	RATON	38	42	58	54
DETROIT CITY	38	43	60	56	ROSWELL	51	54	69	66
FLINT	36	40	58	54	NEW YORK				
GRAND RAPIDS	36	40	58	54	ALBANY	36	40	59	54
MUSKECON	36	40	57	53	BINGHAMPTON	34	38	56	52
SAULT SITE MARIE	28	32	51	47	BUFFALO	37	41	58	54
MINNESOTA					NEW YORK	44	48	64	60
DULUTH	25	30	52	47	ROCHESTER	37	41	58	54
INTERNATIONAL FALLS	22	27	51	45	SYRACUSE	38	42	60	56
MINNEAPOLIS	32	37	60	54	NORTH CAROLINA				
ROCHESTER	31	36	58	53	CHARLOTTE	52	55	69	66
SAINT CLOUD	28	33	56	51	GREENSBORO	49	53	67	64
SAINT PAUL	32	37	60	54	RALEIGH	51	55	69	65
					WILMINGTON	56	59	71	69
					WINSTON SALEM	50	53	67	64



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	WINTER	SPRING	SUMMER	AUTUMN		WINTER	SPRING	SUMMER	AUTUMN
NORTH DAKOTA					TEXAS				
BISMARCK	27	33	56	51	ABILENE	55	58	73	70
FARGO	26	32	56	50	AMARILLO	47	50	67	63
MINOT	25	31	54	49	AUSTIN	60	63	76	73
OHIO					BIG SPRINGS	56	59	74	70
AKRON-CANTON	39	43	60	56	BROWNSVILLE	68	70	79	77
CINCINNATI	43	47	64	60	CORPUS CHRISTI	65	68	78	76
CLEVELAND	40	44	61	57	DALLAS	57	61	76	72
COLUMBUS	41	46	62	59	DEL RIO	62	65	77	75
DAYTON	42	46	63	59	EL PASO	54	58	72	69
TOLEDO	38	43	60	56	FORT WORTH	57	60	75	72
YOUNGSTOWN	39	43	60	56	GALVESTON	63	66	77	74
OKLAHOMA					HOUSTON	62	65	76	73
OKLAHOMA CITY	50	54	71	67	LAREDO	67	70	81	79
TULSA	50	54	71	67	LUBBUCK	50	54	59	65
OREGON					MIDLAND	55	59	73	70
ASTORIA	47	48	56	54	PORT ARTHUR	61	64	75	72
EUGENE	46	48	59	57	SAN ANGELO	58	61	74	71
MEACHAM	34	38	52	49	SAN ANTONIO	61	64	77	74
MEDFORD	46	49	65	59	VICTORIA	64	67	78	76
PENDELTON	42	46	63	59	WACO	58	62	76	73
PORTLAND	46	49	60	57	WICHITA FALLS	53	57	73	69
ROSEBURG	47	49	60	57	UTAH				
SALEM	46	49	60	57	MILFORD	37	42	61	56
TROUTDALE	45	48	59	57	SALT LAKE CITY	40	44	63	59
PENNSYLVANIA					VERMONT				
ALLENTOWN	40	44	62	58	BURLINGTON	32	37	57	52
ERIE	38	42	58	55	VIRGINIA				
HARRISBURG	43	47	63	59	LYNCHBURG	48	51	66	62
PHILADELPHIA	44	48	64	61	NORFOLK	51	54	68	64
WILLIAMSPORT	40	44	61	57	RICHMOND	48	52	67	63
RHODE ISLAND					ROANOKE	48	51	66	62
BLOCK ISLAND	41	45	59	55	WASHINGTON				
PROVIDENCE	39	43	59	56	ELLENSBURG	37	41	59	55
SOUTH CAROLINA					KELSO	45	47	57	54
CHARLESTON	58	61	72	70	OLYMPIA	44	46	56	54
COLUMBIA	56	59	72	69	PORT ANGELES	45	46	53	52
FLORENCE	55	59	72	69	SEATTLE	46	48	58	56
GREENVILLE	53	56	69	66	SEATTLE-TACOMA	44	47	57	55
SPARTANBURG	53	56	70	66	SPOKANE	37	41	58	54
SOUTH DAKOTA					YAKIMA	40	44	61	57
HURON	31	37	60	55	WEST VIRGINIA				
RAPID CITY	34	39	58	54	CHARLESTON	47	50	65	61
SIOUX FALLS	32	37	60	55	ELKINS	41	45	59	56
TENNESSEE					WISCONSIN				
BRISTOL	48	51	65	62	GREEN BAY	31	36	56	51
CHATTANOOGA	51	55	69	65	LA CROSSE	32	38	60	55
KNOXVILLE	50	54	68	65	MADISON	34	39	59	54
MEMPHIS	52	56	71	68	MILWAUKEE	35	40	58	54
NASHVILLE	51	54	69	66	WYOMING				
					CASPER	34	38	57	52
					CHEYENNE	35	39	55	51
					LANDER	31	35	56	51
					ROCK SPRINGS	31	35	54	50
					SHERIDAN	33	37	56	52