

Appendix 1.**Heat Dissipation Requirement To Maintain Stable Core Body Temperature
For Subjects of Different Height Weight and For Various Activities****A.**

Height ---	158 Cms.	Weight -- 50 Kg.		Skin Area 1.49 m.sq.
Heat Dissipation Requirement. Kj/hr.				
Clothing	Naked	Mini Skirt / Shorts &Shirt	Fully Clothed	
Activity				
A1	250	300	325	
A2	340	408	442	
A3	410	492	533	
A4	495	594	643	
B1	425	510	552	
B2	495	594	643	
B3	410	492	533	
B4	595	713	773	
C1	820	983	1065	
C2	1189	1427	1546	
C3	1499	1799	1949	
C4	174	209	227	
C5	699	839	908	
C6	1249	1498	1623	
C7	499	599	649	
C8	1748	2097	2272	
C9	2996	3596	3895	

B.

Height ---	158 cms	Weight -- 60kg		Skin Area	1.6 sq.m.
Heat Dissipation Requirement. Kj/hr.					
Clothing	Naked	Mini Skirt / Shorts & Shirt	Fully Clothed		
Activity					
A1	269	323	349		
A2	365	438	474		
A3	440	528	572		
A4	531	637	691		
B1	456	547	593		
B2	531	637	691		
B3	440	528	572		
B4	638	766	830		
C1	880	1056	1144		
C2	1277	1532	1660		
C3	1610	1932	2092		
C4	187	225	243		
C5	750	900	976		
C6	1341	1609	1743		
C7	536	643	697		
C8	1877	2252	2440		
C9	3218	3861	4183		

Appendix 1.

**Heat Dissipation Requirement To Maintain Stable Core Body Temperature
For Subjects of Different Height Weight and For Various Activities**

C.

Height ---	158 cms	Weight. 70kg		Skin Area 1.73 sq.m.
Heat Dissipation Requirement. Kj/hr.				
Clothing	Naked	Mini Skirt /	Fully	
		Shorts &Shirt	Clothed	
Activity				
A1	291	349	378	
A2	394	473	513	
A3	476	571	618	
A4	574	689	747	
B1	493	592	641	
B2	574	689	747	
B3	476	571	618	
B4	690	828	897	
C1	952	1142	1237	
C2	1381	1657	1795	
C3	1740	2088	2262	
C4	202	243	263	
C5	811	974	1055	
C6	1450	1740	1885	
C7	580	695	753	
C8	2029	2435	2638	
C9	3479	4175	4523	

D.

Height - 178 cms		Weight - 60 kg.		Skin Area 1.75 sq.m.
Heat Dissipation Requirement. Kj/hr.				
Clothing	Naked	Mini Skirt /	Fully	
		Shorts &Shirt	Clothed	
Activity				
A1	294	353	382	
A2	399	479	519	
A3	481	578	626	
A4	581	697	755	
B1	499	599	648	
B2	581	697	755	
B3	481	578	626	
B4	698	838	908	
C1	963	1155	1251	
C2	1397	1676	1815	
C3	1761	2113	2289	
C4	205	246	266	
C5	821	985	1067	
C6	1467	1760	1906	
C7	586	704	762	
C8	2053	2463	2669	
C9	3519	4223	4575	

Appendix 1.

**Heat Dissipation Requirement To Maintain Stable Core Body Temperature
For Subjects of Different Height Weight and For Various Activities**

E.

Height - 178cms		Weight - 70 kg.		Skin Area 1.87 sq.m.
Heat Dissipation Requirement. Kj/hr.				
Clothing	Naked	Mini Skirt /	Fully	
		Shorts &Shirt	Clothed	
Activity				
A1	314	377	408	
A2	426	512	554	
A3	514	617	669	
A4	621	745	807	
B1	533	640	693	
B2	621	745	807	
B3	514	617	669	
B4	746	895	970	
C1	1029	1234	1337	
C2	1492	1791	1940	
C3	1881	2257	2446	
C4	219	263	284	
C5	877	1052	1140	
C6	1567	1880	2037	
C7	626	752	814	
C8	2194	2632	2852	
C9	3761	4513	4889	

F.

Height - 178 cms.		Weight - 88 kg.		Skin Area 2.08 sq.m.
Heat Dissipation Requirement. Kj/hr.				
Clothing	Naked	Mini Skirt /	Fully	
		Shorts &Shirt	Clothed	
Activity				
A1	349	419	454	
A2	474	569	617	
A3	572	686	744	
A4	691	829	898	
B1	593	711	771	
B2	691	829	898	
B3	572	686	744	
B4	830	996	1079	
C1	1144	1373	1487	
C2	1660	1992	2158	
C3	2092	2511	2720	
C4	243	292	316	
C5	976	1171	1268	
C6	1743	2092	2266	
C7	697	836	906	
C8	2440	2928	3172	
C9	4183	5019	5438	

Appendix 1.**Heat Dissipation Requirement To Maintain Stable Core Body Temperature
For Subjects of Different Height Weight and For Various Activities****G.**

Height - 194 cms.		Weight - 70 kg.		Skin Area 1.99 sq.m.
Heat Dissipation Requirement. Kj/hr.				
Clothing	Naked	Mini Skirt /	Fully	
		Shorts &Shirt	Clothed	
Activity				
A1	334	401	435	
A2	454	544	590	
A3	547	657	711	
A4	661	793	859	
B1	567	681	737	
B2	661	793	859	
B3	547	657	711	
B4	794	953	1032	
C1	1095	1313	1423	
C2	1588	1906	2064	
C3	2002	2402	2603	
C4	233	279	303	
C5	933	1120	1213	
C6	1668	2001	2168	
C7	667	800	867	
C8	2334	2801	3035	
C9	4002	4802	5202	

H.

Height - 194 cms.		Weight - 90 kg.		Skin Area 2.22 sq.m.
Heat Dissipation Requirement. Kj/hr.				
Clothing	Naked	Mini Skirt /	Fully	
		Shorts &Shirt	Clothed	
Activity				
A1	373	448	485	
A2	506	607	658	
A3	611	733	794	
A4	737	884	958	
B1	633	759	823	
B2	737	884	958	
B3	611	733	794	
B4	886	1063	1152	
C1	1221	1465	1587	
C2	1772	2126	2303	
C3	2233	2680	2903	
C4	260	312	338	
C5	1041	1249	1354	
C6	1860	2232	2418	
C7	744	892	967	
C8	2604	3125	3385	
C9	4464	5357	5804	

Appendix 1.

**Heat Dissipation Requirement To Maintain Stable Core Body Temperature
For Subjects of Different Height Weight and For Various Activities**

I.

Height - 194 cms.		Weight - 100 kg.		Skin Area 2.32 sq.m.
Heat Dissipation Requirement. Kj/hr.				
Clothing	Naked	Mini Skirt /	Fully	
		Shorts &Shirt	Clothed	
Activity				
A1	390	468	507	
A2	529	635	688	
A3	638	766	829	
A4	770	924	1001	
B1	661	793	860	
B2	770	924	1001	
B3	638	766	829	
B4	926	1111	1203	
C1	1276	1531	1659	
C2	1851	2222	2407	
C3	2334	2801	3034	
C4	271	326	353	
C5	1088	1306	1415	
C6	1944	2333	2527	
C7	777	933	1010	
C8	2721	3266	3538	
C9	4666	5599	6065	

APPENDIX. 2. - SOLAR RADIATIVE HEAT LOADS

(A) Albedo = 0.15

CITY	Total Radiative Heat Loads k.joules/hr.								
	Skin		Area		sq/m.				
	2.32	2.22	2.08	1.99	1.98	1.75	1.73	1.6	1.49
Perth	2009	1920	1800	1725	1715	1515	1500	1385	1290
Sydney	2040	1950	1830	1750	1740	1540	1520	1410	1310
Liverpool	2040	1950	1830	1750	1740	1540	1520	1410	1310
Melbourne	2120	2030	1900	1820	1810	1600	1580	1460	1360
Port Hedland	1930	1850	1730	1660	1650	1460	1440	1330	1240
Alice Springs	1945	1860	1745	1670	1660	1470	1450	1340	1250
Townsville	1920	1840	1720	1650	1640	1450	1430	1325	1235

(B) Albedo = 0.20

CITY	Total Radiative Heat Loads k.joules/hr.								
	Skin		Area		sq/m.				
	2.32	2.22	2.08	1.99	1.98	1.75	1.73	1.6	1.49
Perth	2130	2040	1910	1830	1820	1610	1590	1470	1370
Sydney	2160	2070	1940	1850	1840	1630	1610	1490	1390
Liverpool	2160	2070	1940	1850	1840	1630	1610	1490	1390
Melbourne	2250	2150	2010	1930	1920	1690	1675	1550	1440
Port Hedland	2040	1955	1830	1750	1740	1540	1525	1410	1310
Alice Springs	2060	1970	1840	1760	1755	1550	1535	1420	1320
Townsville	2030	1940	1820	1740	1730	1530	1515	1400	1300

(C) Albedo = 0.25

CITY	Total Radiative Heat Loads k.joules/hr.								
	Skin		Area		sq/m.				
	2.32	2.22	2.08	1.99	1.98	1.75	1.73	1.6	1.49
Perth	2265	2165	2030	1940	1930	1710	1690	1560	1455
Sydney	2280	2180	2045	1955	1945	1720	1700	1570	1465
Liverpool	2280	2180	2045	1955	1945	1720	1700	1570	1465
Melbourne	2345	2245	2100	2010	2000	1770	1750	1615	1505
Port Hedland	2155	2060	1930	1850	1840	1625	1605	1485	1385
Alice Springs	2175	2080	1950	1865	1855	1640	1620	1500	1395
Townsville	2140	2050	1920	1840	1830	1615	1600	1480	1375

(D) Albedo = 0.30

CITY	Total Radiative Heat Loads k.joules/hr.								
	Skin		Area		sq/m.				
	2.32	2.22	2.08	1.99	1.98	1.75	1.73	1.6	1.49
Perth	2375	2275	2130	2035	1925	1790	1770	1640	1525
Sydney	2400	2300	2155	2060	1945	1810	1790	1655	1545
Liverpool	2400	2300	2155	2060	1945	1810	1790	1655	1545
Melbourne	2460	2350	2205	2110	1990	1855	1830	1695	1570
Port Hedland	2265	2165	2030	1940	1835	1710	1690	1560	1455
Alice Springs	2290	2190	2050	1960	1855	1725	1705	1580	1470
Townsville	2255	2155	2021	1935	1825	1700	1680	1555	1450

Appendix.3. Some Measured Total and Evaporated Sweat Rates.

Subject.	Unacclimated	Women - shirt+shorts.		Subject.	Acclimated	Women - shirt+shorts.	
Ambient Temp.degC	Evap.Sweat g/min.sq.m.	Total Sweat g/min.sq.m.	Wet Kata C.P. g/min.sq.m.	Ambient Temp.degC	Evap.Sweat g/min.sq.m.	Total Sweat g/min.sq.m.	Wet Kata C.P. g/min.sq.m.
34	4.4	4.4	7.43	34			
35				35		Sweat	
36	4.4	4.3	8.16	36	3.75	rate	8.2
37				37		not	
38	4.8	4.63	9.2	38	4.42	reported.	8.04
39				39		Stated	
40				40	5	that	7.2
41	4.2	4.13	9.94	41		Total Sweat	
42	4.1	4.1	10.56	42	5.74	exceeded	7.42
43				43		evaporated	
44				44	6.5	sweat by	7.12
45	4.3	4.2	9.31	45		51% in all	
46				46	7.2	cases up to	7.63
47				47		42degC.Amb,	
48				48	7.7	reducing to	7
49				49		20-30%	
50				50		at 52 deg.C.	
51				51			
52				52	8.77		3.33
Core Body Temp.degC	Not reported approximately 37.5.			Core Body Temp.degC	37.79		

Subject.	Acclimated	Women - fully clothed		Subject.	Unacclimated	Men - shirt and shorts	
Ambient Temp.degC	Evap.Sweat g/min.sq.m.	Total Sweat g/min.sq.m.	Wet Kata C.P. g/min.sq.m.	Ambient Temp.degC	Evap.Sweat g/min.sq.m.	Total Sweat g/min.sq.m.	Wet Kata C.P. g/min.sq.m.
34				34	5.2	5.1	9.94
35				35			
36	5.1	7.4	10.5	36	6.1	6	10.88
37				37			
38	6.7	9.1	10.9	38	6.7	6.6	11.3
39				39			
40	6.5	7.6	11.1	40			
41				41	6	5.9	10.15
42				42	4.7	4.7	10.77
43				43			
44	8.1	8.7	10.5	44	5.4	5.3	10.88
45				45			
46	7.5	8.4	9.1	46			
47				47			
48	7.5	8.3	8	48			
49				49			
50				50			
51				51			
52	8.45	9.5	4.1	52			
Core Body Temp.degC	38.02			Core Body Temp.degC	Not reported approximately 37.5		

Appendix.3. Some Measured Total and Evaporated Sweat Rates.

Subject.	Acclimated	Men - shorts.		Subject.	Acclimated	Men - fully clothed	
Ambient Temp.degC	Evap.Sweat g/min.sq.m.	Total Sweat g/min.sq.m.	Wet Kata C.P. g/min.sq.m.	Ambient Temp.degC	Evap.Sweat g/min.sq.m.	Total Sweat g/min.sq.m.	Wet Kata C.P. g/min.sq.m.
34				34			
35				35			
36				36	5.2	8.87	10.7
37				37			
38				38	5.4	9.7	10.4
39				39			
40				40	5.6	9	9.5
41				41			
42				42			
43				43			
44				44	6.2	8.8	9.2
45				45			
46				46	8.7	11.2	8.9
47				47			
48		10.7		48	8.9	11.2	7.3
49				49			
50				50			
51				51			
52				52	9.2	11.2	4.1
Core Body Temp.degC	38			Core Body Temp.degC	37.94		