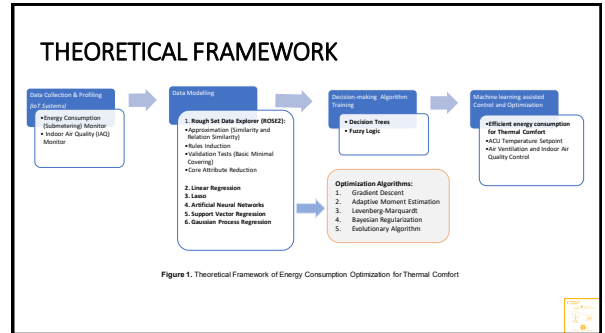
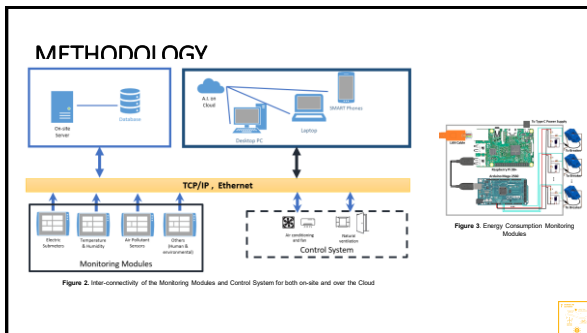


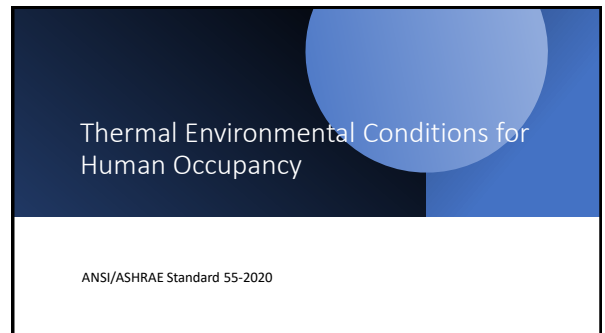
1



2



3



4

Conditions that Provide Thermal Comfort

Metabolic Rate

Clothing Insulation

Air Temperature

Radiant Temperature

Air Speed

Humidity

5

Table 5-1 Metabolic Rate for Typical Tasks (1/2)

Activity	Metabolic Rate		
	met	W/m ²	Btu/hr-ft ²
Resting			
Sleeping	0.7	40	13
Reclining	0.8	45	15
Seated, quiet	1.0	60	18
Standing, relaxed	1.2	70	22
Walking (on level surface)			
0.9 mph, 1.2 km/h, 2.0 mph	2.0	115	37
1.2 mph, 4.3 km/h, 2.7 mph	2.6	150	48
1.8 mph, 6.8 km/h, 4.2 mph	3.8	220	70
Office Activities			
Reading, seated	1.0	55	18
Writing	1.0	60	18
Typing	1.1	65	20
Filing, seated	1.2	70	22
Filing, standing	1.4	80	26
Walking about	1.7	100	31
Lifting/packing	2.1	120	39

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Table 5-1 Metabolic Rate for Typical Tasks (2/2)

Driving/Typing			
Automobile	1.0 to 2.0	60 to 115	18 to 37
Aircraft, cockpit	1.2	70	22
Aircraft, instrument landing	1.8	105	33
Aircraft, combat	2.4	140	44
Heavy vehicle	3.2	185	59
Manufacturing/Occupational Activities			
Cooking	1.6 to 2.0	95 to 115	29 to 37
House cleaning	2.0 to 3.4	115 to 200	37 to 63
Painted, heavy hand movement	2.2	130	41
Machine work			
Sawing (table use)	1.8	105	33
Light (circular industry)	2.0 to 2.4	115 to 140	37 to 44
Heavy	4.0	235	74
Handling 50 kg (100 lb) bags	4.0	235	74
Pick and shovel work	4.0 to 4.8	235 to 280	74 to 88
Manufacturing Leisure Activities			
Dancing, social	2.4 to 4.4	140 to 255	44 to 81
Calisthenics/exercise	3.0 to 4.0	170 to 235	51 to 74
Tennis, single	3.6 to 4.0	210 to 270	60 to 74
Basketball	3.0 to 3.6	200 to 480	60 to 140
Swimming, competitive	7.0 to 9.7	400 to 500	130 to 165

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Table 5-2 Clothing Insulation Values for Typical Ensembles

Clothing Description	Comments Included *	I _{cl} , clo
Trousers	(1) Trousers, short-sleeve shirt	0.57
	(2) Trousers, long-sleeve shirt	0.61
	(3) 65 plus suit jacket	0.96
	(4) 65 plus suit jacket, vest, t-shirt	1.14
	(5) 65 plus long-sleeve trousers, t-shirt	1.01
	(6) 65 plus suit jacket, long-sleeve trousers	1.30
Blouse/shorts	(7) Knee-length skirt, short-sleeve shirt (sundrie)	0.54
	(8) Knee-length skirt, long-sleeve shirt, full slip	0.67
	(9) Knee-length skirt, long-sleeve shirt, half slip, long-sleeve sweater	1.10
	(10) Knee-length skirt, long-sleeve shirt, half slip, suit jacket	1.04
	(11) Bubble-length skirt, long-sleeve shirt, suit jacket	1.10
Shirts	(12) Walking shorts, short-sleeve shirt	0.36
Overall/coveralls	(13) Long-sleeve coveralls, t-shirt	0.72
	(14) Overall, long-sleeve shirt, t-shirt	0.89
	(15) Insulated coveralls, long-sleeve thermal underwear tops and bottoms	1.57
Athletic	(16) Sweat pants, long-sleeve sweatshirt	0.74
Swimsuit	(17) Long-sleeve pigtail tops, long pigtail trousers, short V4 length robe (slippers, no socks)	0.96

* All clothing ensembles, except when otherwise indicated in parentheses, include shoes, socks, and hosiery in pants. All athletic clothing ensembles include socks and no additional shoes.

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Table 6-6 Mixture of Compounds

Upper Respiratory Tract Irritation	Eye Irritation	Central Nervous System
Acetaldehyde	Acetaldehyde	Acetone
Acetone	Acetone	Dichloromethane
Xylene, total	Formaldehyde	Xylene, total
Ozone	Xylene, total	1,1,1-trichloroethane
	Ozone	Toluene

Source: ACGIH (2017) (See Informative Appendix P, "Informative References").

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7.3 Indoor Air Quality Procedure Verification

Table 7-1 Allowed Laboratory Test Methods

Compound	Allowed Test Methods
VOCs except formaldehyde, acetaldehyde and acetone	ISO 16000-6; EPA IP-1; EPA TO-17; ISO 16017-2; ASTM D6445-10
Formaldehyde, acetaldehyde and acetone	ISO 16000-3; EPA TO-11; EPA IP-6; ASTM D5197
Carbon monoxide	ISO 4224; EPA IP-3

Table 7-2 Direct Reading Instruments Minimum Specifications

	Ozone	PM _{2.5}	Carbon Monoxide
Accuracy (%)	5 ppb	Greater of 5 µg/m ³ or 20% of reading	Greater of 3 ppm or 20% of reading
Resolution (a)	1 ppb	5 µg/m ³	1 ppm

Table 7-3 Number of Measurements Points

Total Occupied Floor Area, ft ² (m ²)	Number of Measurements
≤25,000 (2,300)	1
>25,000 (2,300) and ≤50,000 (4,600)	2
>50,000 (4,600) and ≤100,000 (9,300)	4
>100,000 (9,300)	6

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