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# ASHRAE TECHNICAL COMMITTEES, TASK GROUPS, AND TECHNICAL RESOURCE GROUPS

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## SECTION 1.0—FUNDAMENTALS AND GENERAL

- 1.1 Thermodynamics and Psychrometrics
- 1.2 Instruments and Measurements
- 1.3 Heat Transfer and Fluid Flow
- 1.4 Control Theory and Application
- 1.5 Computer Applications
- 1.6 Terminology
- 1.7 Business, Management & General Legal Education
- 1.8 Mechanical Systems Insulation
- 1.9 Electrical Systems
- 1.10 Combined Heat and Power Systems
- 1.11 Electric Motors and Motor Control
- 1.12 Moisture Management in Buildings
- 1.13 Optimization

## SECTION 2.0—ENVIRONMENTAL QUALITY

- 2.1 Physiology and Human Environment
- 2.2 Plant and Animal Environment
- 2.3 Gaseous Air Contaminants and Gas Contaminant Removal Equipment
- 2.4 Particulate Air Contaminants and Particulate Contaminant Removal Equipment
- 2.5 Global Climate Change
- 2.6 Sound and Vibration
- 2.7 Seismic, Wind, and Flood Resistant Design
- 2.8 Building Environmental Impacts and Sustainability
- 2.9 Ultraviolet Air and Surface Treatment
- 2.10 Resilience and Security
- TG2 Reactive Air and Surface Disinfection

## SECTION 3.0—MATERIALS AND PROCESSES

- 3.1 Refrigerants and Secondary Coolants
- 3.2 Refrigerant System Chemistry and Contaminant Control
- 3.4 Lubrication
- 3.6 Water Treatment
- 3.8 Refrigerant Containment

## SECTION 4.0—LOAD CALCULATIONS AND ENERGY REQUIREMENTS

- 4.1 Load Calculation Data and Procedures
- 4.2 Climatic Information

- 4.3 Ventilation Requirements and Infiltration
- 4.4 Building Materials and Building Envelope Performance
- 4.5 Fenestration
- 4.7 Energy Calculations
- 4.10 Indoor Environmental Modeling

TRG4 Indoor Air Quality Procedure Development

## **SECTION 5.0—VENTILATION AND AIR DISTRIBUTION**

- 5.1 Fans
- 5.2 Duct Design
- 5.3 Room Air Distribution
- 5.4 Industrial Process Air Cleaning (Air Pollution Control)
- 5.5 Air-to-Air Energy Recovery
- 5.6 Control of Fire and Smoke
- 5.7 Evaporative Cooling
- 5.9 Enclosed Vehicular Facilities
- 5.10 Kitchen Ventilation
- 5.11 Humidifying Equipment

## **SECTION 6.0—HEATING EQUIPMENT, HEATING AND COOLING SYSTEMS AND APPLICATIONS**

- 6.1 Hydronic and Steam Equipment and Systems
- 6.2 District Energy
- 6.3 Central Forced Air Heating and Cooling Systems
- 6.5 Radiant Heating and Cooling
- 6.6 Service Water Heating Systems
- 6.7 Solar and Other Renewable Energies
- 6.8 Geothermal Heat Pump and Energy Recovery Applications
- 6.9 Thermal Storage
- 6.10 Fuels and Combustion

## **SECTION 7.0—BUILDING PERFORMANCE**

- 7.1 Integrated Building Design
- 7.2 HVAC&R Construction & Design Build Technologies
- 7.3 Operation, Maintenance, and Cost Management
- 7.4 Exergy Analysis for Sustainable Buildings (EXER)
- 7.5 Smart Building Systems
- 7.6 Building Energy Performance
- 7.7 Testing and Balancing
- 7.9 Building Commissioning

## **SECTION 8.0—AIR-CONDITIONING AND REFRIGERATION SYSTEM COMPONENTS**

- 8.1 Positive Displacement Compressors
- 8.2 Centrifugal Machines
- 8.3 Absorption and Heat Operated Machines

8.4 Air-to-Refrigerant Heat Transfer Equipment

8.5 Liquid-to-Refrigerant Heat Exchangers

8.6 Cooling Towers and Evaporative Condensers

8.7 Variable Refrigerant Flow (VRF)

8.8 Refrigerant System Controls and Accessories

8.9 Residential Refrigerators and Food Freezers

8.10 Mechanical and Desiccant Dehumidification Equipment, Heat Pipes and Components

8.11 Unitary and Room Air Conditioners and Heat Pumps

## **SECTION 9.0—BUILDING APPLICATIONS**

9.1 Large Building Air-Conditioning Systems

9.2 Industrial Air Conditioning and Ventilation

9.3 Transportation Air Conditioning

9.6 Healthcare Facilities

9.7 Educational Facilities

9.8 Large Building Air-Conditioning Applications

9.9 Mission Critical Facilities, Data Centers, Technology Spaces and Electronic Equipment

9.10 Laboratory Systems

9.11 Clean Spaces

9.12 Tall Buildings

TRG9 Cold Climate Design

## **SECTION 10.0—REFRIGERATION SYSTEMS**

10.1 Custom Engineered Refrigeration Systems

10.2 Refrigeration Applications

10.3 Refrigerant Piping, Controls, and Accessories

10.6 Transport Refrigeration

10.7 Commercial Food and Beverage Refrigeration Equipment

## **SECTION MTG—MULTIDISCIPLINARY TASK GROUPS**

MTG.ACR Air Change Rate

MTG.BIM Building Information Modeling

MTG.CEA Controlled Environmental Agriculture

MTG.CYB Cybersecurity for HVAC Systems and Related Infrastructure

MTG.EBO Effective Building Operations

MTG.HCDG Hot Climate Design Guide

MTG.HWBE Health and Wellness in the Built Environment

MTG.IAST Impact of ASHRAE Standards and Technology on Energy Savings/Performance