

STANDARD



ANSI/ASHRAE Standard 55-2023
(Supersedes ANSI/ASHRAE Standard 55-2020)
Includes ANSI/ASHRAE addenda listed in Appendix N

Thermal Environmental Conditions for Human Occupancy

See Appendix N for dates of approval by ASHRAE and the American National Standards Institute.

This Standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the Standard. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

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Includes online access to the Compliance Documentation Template for Thermal Comfort (requires Microsoft® Excel®)



Ashrae 55

Rohinton Emmanuel

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Standards for Thermal Comfort M. Humphreys, F. Nicol, S. Roaf, O. Sykes, 2015-12-22 Current Standards for Indoor Air Temperature are inappropriate in many regions of the world This forces designers to use highly serviced buildings to achieve air temperatures that accord with the standards to the detriment of the local and global environment Standards for Thermal Comfort brings together contributions from around the world reflecting new approaches to the setting of standards which can apply to all climates and cultures

Thermal Comfort Assessment of Buildings Salvatore Carlucci, 2013-05-24 A number of metrics for assessing human thermal response to climatic conditions have been proposed in scientific literature over the last decades They aim at describing human thermal perception of the thermal environment to which an individual or a group of people is exposed More recently a new type of discomfort index has been proposed for describing in a synthetic way long term phenomena Starting from a systematic review of a number of long term global discomfort indices they are then contrasted and compared on a reference case study in order to identify their similarities and differences and strengths and weaknesses Based on this analysis a new short term local discomfort index is proposed for the American Adaptive comfort model Finally a new and reliable long term general discomfort index is presented It is delivered in three versions and each of them is suitable to be respectively coupled with the Fanger the European Adaptive and the American Adaptive comfort models

LEED Practices, Certification, and Accreditation Handbook Sam Kubba, 2009-09-23 Adopted in the United States and a number of other countries LEED certification is the recognized standard for measuring building sustainability Achieving LEED personal certification or project certification is the best way to demonstrate that the project is truly green Written by an architect with over 30 years of international experience this book provides architects designers building owners and construction engineers with an easy to understand guide to the nuts and bolts of LEED project and personal certification Written in plain and easy to understand language this hands on book is designed to assist readers with all aspects of LEED certification The handbook follows the rigorous third party commissioning process beginning with basic LEED concepts and then carefully explains LEED documentation and technical requirements along with its standards professional accreditation and codes The handbook provides readers with design strategies for sustainable site selection and design process for high performance building and commissioning Other important topics include green materials and products selection as well as strategies for ensuring Indoor Environmental Quality IEQ water efficiency and sanitary waste disposal This handbook also offers readers a multitude of forms with expert guidance for their completion Clear and authoritative in scope LEED Practices Certification and Accreditation Handbook provides architects builders owners construction managers and engineers with a reference that will help them to offer their clients peers and the public at large compelling proof that they have achieved their projects environmental goals and that the building is performing as designed Instruction for completing LEED checklist and forms Detailed explanation of the third party commissioning process Explains

LEED documentation technical requirements Topics include green materials and products selection **The Future of Thermal Comfort in an Energy- Constrained World** Tim Law,2013-04-19 The dissertation investigates the scientific and business factors that have resulted in air conditioning being a major contributor to climate change With his architectural background the author demonstrates how a design methodology not commonly adopted in scientific studies may actually be a suitable way of dealing with a complex problem the business as usual scenario involving building science sociological values and consumer behavior Using his innovations as case studies the author shows how good ideas cannot be evaluated on scientific merit alone and demonstrates why commercialization may have a pivotal role in deployment of research based technology He advances the theory of personalized thermal comfort which can potentially resolve the air conditioning conundrum *An Urban Approach To Climate Sensitive Design* Rohinton Emmanuel,2012-08-06 The need to respond to the rapidly changing city climate is particularly urgent in the tropics where the urban transition is currently at its peak While the need is clearly felt by the tropical urban dwellers texts that provide an overview of the problem and indicate possible design solutions are rare This comprehensive reference will be welcomed by student and practising architects as well as other built environment professionals engaged with the environmental effects of building in worldwide warm and humid climates

Forensic Engineering Stephen E. Petty,2017-12-19 A comprehensive resource that builds a bridge between engineering disciplines and the building sciences and trades Forensic Engineering Damage Assessments for Residential and Commercial Structures provides an extensive look into the world of forensic engineering With a focus on investigations associated with insurance industry claims the book describes methodologies for performing insurance related investigations including the causation and origin of damage to residential and commercial structures and or unhealthy interior environments and adverse effects on the occupants of these structures Edited by an industry expert with more than 30 years of experience and authors with more than 100 years of experience in the field the book takes the technical aspects of engineering and scientific principles and applies them to real world issues in a non technical manner It provides readers with the experiences investigation methodologies and investigation protocols used in and derived from completing thousands of forensic engineering investigations It begins with providing a baseline methodology for completing forensic investigations and closes with advice on testifying as an expert witness Much of what must be known in this field is not learned in school but is based upon experience since recognizing the cause of a building system failure requires a blending of skills from the white collar and blue collar worlds Such knowledge can be vital since failures e g water entry often result from construction activities completed out of sequence This book details proven methodologies based on over 7 000 field investigations methodologies which can be followed by both professionals and laymen alike **Environmental Ergonomics - The Ergonomics of Human Comfort, Health, and Performance in the Thermal Environment** Yutaka Tochihara,Tadakatsu Ohnaka,2005-04-02 Environmental Ergonomics addresses the problems of maintaining human comfort activity and health in

stressful environments Its subject areas include thermal environments illumination noise and hypo and hyperbaric environments The book concentrates fundamentally on the way the thermal environment has affected human comfort health and performance from the age of cave dwellings to our age of skyscrapers This book contains only papers selected from the 10th ICEE held in Japan 23 27 September 2002 The ICEE has been held biannually since 1982 and has firmly established itself as the world s most distinguished conference in its field offering the ideal forum for research scientists medical doctors engineers administrators technicians healthcare professionals and students to share their work and ideas Selected papers from the 10th International Conference on Environmental Ergonomics held in Japan 23 27 September 2002 They have been revised and peer reviewed Papers included in this text have been widely recognised as the catalyst for the recent advances witnessed in Environmental Ergonomics in Asia They strike a balance between academia and industries views on environmental ergonomics Add this volume to your copy of the Elsevier Ergonomics Book Series **Energy Efficient**

Buildings Zhiqiang John Zhai,2022-10-04 Energy Efficient Buildings A complete and authoritative discussion of the fundamentals of designing and engineering energy efficient buildings In Energy Efficient Buildings Fundamentals of Building Science and Thermal Systems distinguished engineer and architect Dr John Zhai delivers a comprehensive exploration of the design and engineering fundamentals of energy efficient buildings The book introduces the fundamental knowledge calculations analyses and principles used by designers of energy efficient buildings and addresses all essential elements of the discipline An essential guide for students studying civil architectural mechanical and electrical engineering with a focus on energy building systems and building science the book provides practical in class materials examples and actual design practices as well as end of chapter questions with solutions and sample group projects Readers will find A thorough introduction to the cross disciplinary approach to the design of energy efficient buildings Comprehensive explorations of all critical elements of energy efficient building design including standards and codes psychometrics microclimate thermal comfort indoor air quality HVAC systems and more In depth discussions of the foundational knowledge calculations analysis and principles needed to design energy efficient buildings Practical in class examples and end of chapter questions with solutions for students and design guidance and sample group projects for use in course lectures and actual design practices Perfect for graduate and advanced undergraduate students studying building environmental systems building systems in construction and mechanical and electrical systems in construction Energy Efficient Buildings Fundamentals of Building Science and Thermal Systems will also earn a place in the libraries of practicing civil architectural and mechanical engineers

Proceedings of the Canadian Society for Civil Engineering Annual Conference 2023, Volume 1 Serge Desjardins,Gérard J. Poitras,2024-10-01 This book comprises the proceedings of the Annual Conference of the Canadian Society for Civil Engineering 2023 The contents of this volume focus on the general conference with topics on transportation climate adaptability sustainable design green buildings cold regions and civil engineering education among others This volume will

prove a valuable resource for researchers and professionals Personal Comfort Systems for Improving Indoor Thermal Comfort and Air Quality Faming Wang,Bin Yang,Qihong Deng,Maohui Luo,2023-05-31 This book first describes fundamental knowledge on human thermal comfort adaptive thermal comfort thermal comfort in sleeping environments modeling of human thermal comfort and thermal comfort assessment using human trials Next it presents an in depth review of concept progress and evaluation of various personal comfort system summarizes important findings and feasible applications current gaps as well as future research needs The seven chapters included in this section are task ambient conditioning systems personalized ventilation systems electric fans personal comfort systems thermoelectric systems personal thermal management systems and wearable personal thermal comfort systems This book provides valuable guidance for personal comfort system design and further improvement on the personal comfort performance It will be a valuable resource for academic researchers engineers in industry and government regulators in the field of sustainable buildings and built environment

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