

UNIFIED FACILITIES CRITERIA (UFC)

DoD BUILDING CODE (GENERAL BUILDING REQUIREMENTS)



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U.S. ARMY CORPS OF ENGINEERS

NAVAL FACILITIES ENGINEERING COMMAND (Preparing Activity)

AIR FORCE CIVIL ENGINEER CENTER

Record of Changes (changes are indicated by \1\ ... /1/)

| Change No. | Date | Location |
|-------------------|-------------|-----------------|
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This UFC supersedes UFC 1-200-01, dated 1 July 2013, including change 3, implemented 1 August 2015.

FOREWORD

The Unified Facilities Criteria (UFC) system is prescribed by MIL-STD 3007 and provides planning, design, construction, sustainment, restoration, and modernization criteria, and applies to the Military Departments, the Defense Agencies, and the DoD Field Activities in accordance with [USD \(AT&L\) Memorandum](#) dated 29 May 2002. UFC will be used for all DoD projects and work for other customers where appropriate. All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (HNFA), and in some instances, Bilateral Infrastructure Agreements (BIA.) Therefore, the acquisition team must ensure compliance with the most stringent of the UFC, the SOFA, the HNFA, and the BIA, as applicable.

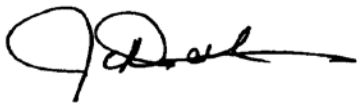
UFC are living documents and will be periodically reviewed, updated, and made available to users as part of the Services' responsibility for providing technical criteria for military construction. Headquarters, U.S. Army Corps of Engineers (HQUSACE), Naval Facilities Engineering Command (NAVFAC), and Air Force Civil Engineer Center (AFCEC) are responsible for administration of the UFC system. Defense agencies should contact the preparing service for document interpretation and improvements. Technical content of UFC is the responsibility of the cognizant DoD working group. Recommended changes with supporting rationale should be sent to the respective service proponent office by the following electronic form: [Criteria Change Request](#). The form is also accessible from the Internet sites listed below.

UFC are effective upon issuance and are distributed only in electronic media from the following source:

- Whole Building Design Guide web site <http://dod.wbdg.org/>.

Hard copies of UFC printed from electronic media should be checked against the current electronic version prior to use to ensure that they are current.

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**UNIFIED FACILITIES CRITERIA (UFC)
SUMMARY SHEET**

Document: UFC 1-200-01, *DoD BUILDING CODE (GENERAL BUILDING REQUIREMENTS)*, dated 1 April 2016.

Superseding: UFC 1-200-01, GENERAL BUILDING REQUIREMENTS, dated 1 July 2013 with Change 3 dated 1 August 2015.

Description: This update to UFC 1-200-01 represents the Tri-Services effort to bring uniformity to the military use of non-government model building codes. Technical representatives of each of the four Services developed requirements in this document to implement the use of the 2015 International Building Code (IBC) consistent with the scope of current military requirements and procedures. This revision of UFC 1-200-01 contains modifications in the following areas:

- DoD criteria guidance approved as late as 6 October 2015 has been cited.

Reasons for Document: The existing guidance was inadequate for the following reasons:

- This document replaces the 2012 IBC with the use of the 2015 IBC revised and replaced in 2015 by the International Code Council.

Impact: The following direct benefits will result from the update of UFC 1-200-01:

- Creation of a single source reference for the latest building code.
- This document reduces interpretation and ambiguity that could lead to design and construction conflicts.
- Costs of DoD facilities are not expected to increase as a result of this revision.

Non-Unified Items: This document contains no non-unified items.

TABLE OF CONTENTS

| | |
|--|----------|
| CHAPTER 1 INTRODUCTION | 1 |
| 1-1 PURPOSE AND SCOPE..... | 1 |
| 1-2 APPLICABILITY..... | 1 |
| 1-3 LEVELS OF CONSTRUCTION..... | 1 |
| 1-3.1 Permanent Construction..... | 1 |
| 1-3.2 Semi-permanent Construction..... | 1 |
| 1-3.3 Temporary Construction..... | 1 |
| 1-4 BUILDING CODES AND MILITARY MODIFICATIONS..... | 2 |
| 1-4.1 Building Codes..... | 2 |
| 1-4.2 Referenced Codes and Substitutions..... | 2 |
| 1-5 IMPLEMENTATION, ADMINISTRATION, AND ENFORCEMENT..... | 3 |
| 1-6 UFC HIERARCHY..... | 3 |
| 1-7 FACILITIES IN SUPPORT OF MILITARY OPERATIONS..... | 4 |
| 1-7.1 UFC 1-201-01..... | 4 |
| 1-7.2 UFC 1-201-02..... | 4 |
| 1-7.3 UFC 1-202-01..... | 4 |
| 1-8 REFERENCES AND DATES OF PUBLICATION..... | 4 |
| CHAPTER 2 MODIFICATIONS TO THE INTERNATIONAL BUILDING CODE (IBC)... | 5 |
| 2-1 CHAPTER 1 – SCOPE AND ADMINISTRATION..... | 5 |
| 2-2 CHAPTER 2 – DEFINITIONS..... | 5 |
| 2-3 CHAPTER 3 – USE AND OCCUPANCY CLASSIFICATION..... | 5 |
| 2-4 CHAPTER 4 – SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY..... | 5 |
| 2-5 CHAPTER 5 – GENERAL BUILDING HEIGHTS AND AREAS..... | 5 |
| 2-6 CHAPTER 6 – TYPES OF CONSTRUCTION..... | 5 |
| 2-7 CHAPTER 7 – FIRE AND SMOKE PROTECTION FEATURES..... | 6 |
| 2-8 CHAPTER 8 – INTERIOR FINISHES..... | 6 |
| 2-9 CHAPTER 9 – FIRE PROTECTION SYSTEMS..... | 6 |
| 2-10 CHAPTER 10 – MEANS OF EGRESS..... | 6 |
| 2-11 CHAPTER 11 – ACCESSIBILITY..... | 6 |
| 2-12 CHAPTER 12 – INTERIOR ENVIRONMENT..... | 6 |
| 2-13 CHAPTER 13 – ENERGY EFFICIENCY..... | 7 |

| | | |
|-----------|--|----|
| 2-14 | CHAPTER 14 – EXTERIOR WALLS..... | 7 |
| 2-15 | CHAPTER 15 – ROOF ASSEMBLIES AND ROOFTOP STRUCTURES. | 7 |
| 2-16 | CHAPTER 16 – STRUCTURAL DESIGN. | 7 |
| 2-17 | CHAPTER 17 – SPECIAL INSPECTIONS AND TESTS..... | 8 |
| 2-18 | CHAPTER 18 – SOILS AND FOUNDATIONS..... | 8 |
| 2-19 | CHAPTER 19 – CONCRETE. | 8 |
| 2-20 | CHAPTER 20 – ALUMINUM. | 8 |
| 2-21 | CHAPTER 21 – MASONRY. | 9 |
| 2-22 | CHAPTER 22 – STEEL..... | 9 |
| 2-23 | CHAPTER 23 – WOOD..... | 9 |
| 2-24 | CHAPTER 24 – GLASS AND GLAZING. | 9 |
| 2-25 | CHAPTER 25 – GYPSUM BOARD, GYPSUM PANEL PRODUCTS AND PLASTER..... | 9 |
| 2-26 | CHAPTER 26 – PLASTIC..... | 10 |
| 2-27 | CHAPTER 27 – ELECTRICAL..... | 10 |
| 2-28 | CHAPTER 28 – MECHANICAL SYSTEMS. | 11 |
| 2-29 | CHAPTER 29 – PLUMBING SYSTEMS. | 11 |
| 2-30 | CHAPTER 30 – ELEVATORS AND CONVEYING SYSTEMS. | 11 |
| 2-31 | CHAPTER 31 – SPECIAL CONSTRUCTION. | 11 |
| 2-32 | CHAPTER 32 – ENCROACHMENTS INTO THE PUBLIC RIGHT-OF- WAY..... | 12 |
| 2-33 | CHAPTER 33 – SAFEGUARDS DURING CONSTRUCTION..... | 12 |
| 2-34 | CHAPTER 34 – RESERVED..... | 12 |
| 2-35 | CHAPTER 35 – REFERENCED STANDARDS. | 12 |
| 2-36 | APPENDICES. | 12 |
| CHAPTER 3 | OTHER CRITERIA | 13 |
| 3-1 | GENERAL..... | 13 |
| 3-2 | HIGHER AUTHORITY MANDATES..... | 13 |
| 3-2.1 | Vending Facilities for the Blind..... | 13 |
| 3-2.2 | Nursing Mothers in Federal Employment..... | 13 |
| 3-3 | UNIFIED FACILITY CRITERIA (UFC)..... | 13 |
| 3-3.1 | Core UFC..... | 14 |
| 3-3.2 | Other UFC. | 15 |
| 3-4 | FACILITY CRITERIA (FC)..... | 15 |

| | | |
|--|--|-----------|
| 3-5 | SPECIFICATION REQUIREMENTS. | 15 |
| 3-6 | OTHER MILITARY CRITERIA. | 15 |
| 3-6.1 | Explosive Safety. | 16 |
| 3-6.2 | Facility Systems Safety..... | 16 |
| 3-6.3 | Antiterrorism. | 16 |
| 3-6.4 | Physical Security. | 17 |
| 3-6.5 | Cybersecurity..... | 17 |
| CHAPTER 4 MODIFICATIONS TO THE INTERNATIONAL EXISTING BUILDING CODE (IEBC)..... | | 19 |
| 4-1 | GENERAL. | 19 |
| APPENDIX A REFERENCES..... | | 21 |

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CHAPTER 1 INTRODUCTION

1-1 PURPOSE AND SCOPE.

This UFC provides general building requirements, establishes the use of consensus building codes and standards, identifies key core UFC, and identifies unique military criteria.

1-2 APPLICABILITY.

This UFC applies to the design and construction of new and renovated Government-owned facilities for the Department of Defense (DoD). It is applicable to all methods of project delivery and levels of construction as defined below. For facilities supporting military operations refer to Paragraph 1-7 of this UFC.

1-3 LEVELS OF CONSTRUCTION.

1-3.1 Permanent Construction.

Buildings and facilities designed and constructed to serve a life expectancy of more than 25 years.

1-3.2 Semi-permanent Construction.

Buildings and facilities designed and constructed to serve a life expectancy of more than 5 years, but less than 25 years. This construction level is typically only used for support of military operations. Expediency of construction and material availability may be a factor. Facilities are intended to have a more enduring presence with operational characteristics and functional performance similar to permanent construction. Maintainability of finishes and systems must be commensurate with facility life expectancy and available maintenance capabilities. A moderate level of energy and water efficiency must be considered.

1-3.3 Temporary Construction.

Buildings and facilities designed and constructed to serve a life expectancy of five years or less using low cost construction. Temporary construction typically cannot be economically converted to a higher level of construction. Temporary facilities have limited flexibility for conversion and re-use.

1-4 BUILDING CODES AND MILITARY MODIFICATIONS.

1-4.1 Building Codes.

Use the 2015 International Building Code (IBC) and the 2015 International Existing Building Code (IEBC) as follows:

- Use the IBC, including all published errata, as the building code for the Department of Defense, except as modified by this UFC. Where a paragraph in any chapter of the IBC references a paragraph in a different chapter, the referenced chapter shall be modified as described in Chapter 2 of this UFC.
- Use the IEBC, including all published errata, except as modified by this UFC. Where a paragraph in any chapter of the IEBC references a paragraph in a different chapter, the referenced chapter shall be modified as described in Chapter 4 of this UFC.

The IBC and IEBC have been modified in Chapters 2, 3, and 4 of this UFC through reference to core UFC, other UFC as identified in Appendix A, *References*, and other listed military criteria. Core UFC provide the unique military building criteria that parallel the building code and apply to building systems found in most DoD facilities. In conflicts between the IBC and military criteria, or between the IEBC and military criteria, use the military criteria.

1-4.2 Referenced Codes and Substitutions.

References in this code to other codes must be treated as follows:

- All references to the International Fuel Gas Code (IFGC) must be considered to be references to NFPA 54 (ANSI Z223.1) and NFPA 58.
- All references to the International Mechanical Code (IMC) must be considered to be references to UFC 3-410-01, which cites the IMC
- All references to the International Plumbing Code (IPC) must be considered to be references to UFC 3-420-01, which cites the IPC.
- The International Property Maintenance Code (IPMC) is not adopted.
- All references to the International Fire Code (IFC) must be considered to be references to UFC 3-600-01, which cites NFPA 1.
- All references to the International Energy Conservation Code (IECC) must be considered to be references to UFC 1-200-02, which cites ASHRAE 90.1 and ASHRAE189.1.
- All references to NFPA 70 must be considered to be references to UFC 3-501-01, which cites NFPA 70.

- All references to the International Residential Code (IRC) must be considered to be references to UFC 3-600-01, which cites the IRC, with the exception of citing NFPA 101 for egress and fire protection requirements.

1-5 IMPLEMENTATION, ADMINISTRATION, AND ENFORCEMENT.

UFC are effective upon issuance for projects as follows:

- Design-Bid-Build projects that have not proceeded beyond 35% design completion.
- Design-Build projects that have not proceeded beyond date of RFP issuance. When an RFP is issued in multiple phases or steps, use the date of the last phase of the RFP issuance.
- Projects that have a delay, either planned or unintentional, of more than 18 months between design completion and the solicitation of offers for construction, must be re-evaluated to determine if any design revision is necessary due to changes in criteria (including codes and standards) or site infrastructure (e.g., water supply for fire department vehicle access). Note: The evaluation must also include retroactive requirements that have been included in the new editions of the criteria.

The terms “Building Official”, “Code Official”, and “Authority Having Jurisdiction” (AHJ) as used in the codes and standards referenced in this UFC mean the component office of responsibility, i.e., U.S. Army, HQ USACE/CECW-CE; U.S. Navy, NAVFACENCOM HQ Code CHE; U.S. Marine Corps, HQMC Code LFF-1; and U.S. Air Force, AFCEC. The enforcement of the codes and standards as they pertain to facility projects can be delegated to the local Components Office’s Chief Engineer’s Technical Representative at the discretion of the components aforementioned office.

1-6 UFC HIERARCHY.

UFC 1-200-01 is the overarching document for buildings and facilities used by DoD. UFC 1-200-01 directs the use of the IBC, the IEBC, Core UFC, other UFC as applicable to the building, facility, structure, or system being designed, and FCs as they pertain to the applicable DoD Component.

- If conflict occurs between UFC 1-200-01 and UFC 3-600-01, the requirements of UFC 3-600-01 take precedence.

The UFC 3- Series provides discipline specific requirements for the various engineering disciplines.

- If conflict occurs between a UFC 3- Series and UFC 3-600-01, the requirements of UFC 3-600-01 take precedence.
- If conflict occurs between two UFC within the UFC 3- Series, the requirements of the UFC that is more detailed pertaining to that specific building, facility, structure, or system take precedence.

The UFC 4- Series and FC 4- Series (simply referred to as UFC 4- Series) provide specific requirements for a particular building, facility, structure, or system.

- If conflict occurs between a UFC 4- Series and UFC 3-600-01, the requirements of UFC 4- Series take precedence.
- If conflict occurs between a UFC 4- Series and a UFC 3- Series, the requirements of the UFC 4- Series take precedence.

1-7 FACILITIES IN SUPPORT OF MILITARY OPERATIONS.

The following UFC are primarily intended for use outside of the United States and its territories and possessions. Also, Joint Publication 3.0, *Joint Operations*, provides typical examples of military operations where uses of these UFC are appropriate.

1-7.1 UFC 1-201-01.

Use UFC 1-201-01 for design of non-permanent facilities constructed for use by DoD personnel in support of military operations.

1-7.2 UFC 1-201-02.

Use UFC 1-201-02 to assess existing facilities for life safety and habitability for use by DoD personnel in support of military operations.

1-7.3 UFC 1-202-01.

Use UFC 1-202-01 for design of host nation facilities that support military operations.

1-8 REFERENCES AND DATES OF PUBLICATION.

Appendix A contains a list of references used in this document. The publication date of the code or standard is not included in this document, except for the International family of codes as referenced within the document and in Appendix A. In general, the latest available issuance of the reference is used.

CHAPTER 2 MODIFICATIONS TO THE INTERNATIONAL BUILDING CODE (IBC)

2-1 CHAPTER 1 – SCOPE AND ADMINISTRATION.

Use IBC Chapter 1, Sections **101 GENERAL**, **102 APPLICABILITY**, **110 INSPECTIONS**, and **112 SERVICE UTILITIES** as modified below. Do not use other sections in IBC Chapter 1. Modify IBC Chapter 1 as follows:

- Delete IBC Section **101.1 Title**, and replace with the following:

101.1 Title. These regulations shall be known as the DoD Building Code, hereinafter referred to as “this code”.

- Delete IBC Section **101.4.4 Property maintenance**.
- Delete IBC Section **102.1 General**, and replace with the following:

102.1 General. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Refer to Paragraph 1-6 of this UFC for hierarchy of UFC.

2-2 CHAPTER 2 – DEFINITIONS.

Use IBC Chapter 2. Definitions in IBC Chapter 2 apply to terms used in the model code and are not intended to replace definitions and terms in military documents. It is essential that the code defined meaning be known to understand the intent and correctly interpret the code.

2-3 CHAPTER 3 – USE AND OCCUPANCY CLASSIFICATION.

Use IBC Chapter 3 and UFC 3-600-01.

2-4 CHAPTER 4 – SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY.

Use UFC 3-600-01 in lieu of IBC Chapter 4.

2-5 CHAPTER 5 – GENERAL BUILDING HEIGHTS AND AREAS.

Use IBC Chapter 5 and UFC 3-600-01. UFC 3-600-01 gives direction concerning the requirements for fire-rated partitions. Note that the building area for funding and planning purposes is calculated differently than the method defined in IBC Chapter 5 for code compliance calculation

2-6 CHAPTER 6 – TYPES OF CONSTRUCTION.

Use IBC Chapter 6 and UFC 3-600-01.

2-7 CHAPTER 7 – FIRE AND SMOKE PROTECTION FEATURES.

Use IBC Chapter 7 and UFC 3-600-01. UFC 3-600-01 gives direction concerning the requirements for fire-rated partitions.

2-8 CHAPTER 8 – INTERIOR FINISHES.

Do not use IBC Chapter 8. Use UFC 3-600-01 in lieu of IBC Chapter 8 in conjunction and coordination with UFC 3-120-10.

2-9 CHAPTER 9 – FIRE PROTECTION SYSTEMS.

Do not use IBC Chapter 9. Use UFC 3-600-01 in lieu of IBC Chapter 9.

2-10 CHAPTER 10 – MEANS OF EGRESS.

Do not use IBC Chapter 10, except when referenced by US Access Board, *Architectural Barriers Act (ABA) Standards*. Use UFC 3-600-01 in lieu of IBC Chapter 10. Where the *ABA Standards* reference the previous versions of the IBC, the applicable requirements of the 2015 IBC are acceptable.

2-11 CHAPTER 11 – ACCESSIBILITY.

Do not use IBC Chapter 11. Use the *ABA Standards* and the special provisions of the Department of Defense Deputy Secretary of Defense Memorandum *Subject: Access for People with Disabilities*, October 31, 2008. Refer to Appendix A for a link to the *ABA Standards* and the DoD policy memorandum. Where the *ABA Standards* reference the previous versions of the IBC, the applicable requirements of the 2015 IBC are acceptable.

2-12 CHAPTER 12 – INTERIOR ENVIRONMENT.

Use IBC Chapter 12 as modified below. IBC Chapter 12 provides the minimum standards for the interior environment of a building by addressing minimum space sizes, and temperature, light, and ventilation levels for occupancy. It also addresses minimum sound transfer, addresses ventilation of attics and under floor spaces, and provides for minimum moisture resistance standards for toilets and bathrooms. Modify IBC Chapter 12 as follows:

- Delete IBC Section **1204.1 Equipment and systems**, including the exception, and replace with the following:
1204.1 Equipment and systems. Use the applicable Unified Facilities Criteria and individual military service standards for temperature control criteria.

- For Navy and Marine Corps Unaccompanied Housing facilities only, delete IBC Sections **1207.2 Air-borne sound**, **1207.3 Structure-borne sound**, **1208.3 Room area**, and **1208.4 Efficiency dwelling units**. Use FC 4-721-10N for air-borne and structure-borne sound transmission criteria, minimum room size criteria, and dwelling unit criteria. Also use UFC 3-101-01 and UFC 3-120-10.

2-13 CHAPTER 13 – ENERGY EFFICIENCY.

Do not use IBC Chapter 13. Use UFC 1-200-02 in lieu of IBC Chapter 13.

2-14 CHAPTER 14 – EXTERIOR WALLS.

Use IBC Chapter 14 as modified below. IBC Chapter 14 addresses requirements for exterior walls of buildings, provides minimum standards for wall covering materials, their installation and their ability to provide weather protection. Modify IBC Chapter 14 as follows:

- Delete IBC Section **1403.5 Vertical and lateral flame propagation**.
- Delete IBC Section **1407.10.4 Full-scale tests**, and replace with the following:

1407.10.4 Full-scale tests. The MCM system shall be tested in accordance with, and comply with, the acceptance criteria of NFPA 285. Such testing shall be performed on the MCM system with the MCM in the maximum thickness intended for use. Where noncombustible materials or combustible materials permitted by Sections 603, 1406, or UFC 3-600-01 differ from assembly to assembly or within an assembly, multiple tests shall not be required.

Exception: The MCM system is not required to be tested in accordance with, and comply with, acceptance criteria of NFPA 285 in buildings equipped throughout with an automatic sprinkler system in accordance with UFC 3-600-01.

2-15 CHAPTER 15 – ROOF ASSEMBLIES AND ROOFTOP STRUCTURES.

Use IBC Chapter 15, UFC 3-110-03, and UFC 3-600-01. IBC Chapter 15 provides standards for roof assemblies as well as rooftop structures. It also provides some requirements for fire resistance in roofing.

2-16 CHAPTER 16 – STRUCTURAL DESIGN.

Use IBC Chapter 16 as modified by UFC 3-301-01. Use IBC Chapter 16 and UFC 3-310-04 for the seismic design of buildings. IBC Chapter 16 describes minimal structural loading requirements, minimum design loads (live and dead, snow and wind, rain, flood and earthquake), as well as load combinations, and permitted design methodologies.

2-17 **CHAPTER 17 – SPECIAL INSPECTIONS AND TESTS.**

Use IBC Chapter 17 as modified by UFC 3-301-01, UFC 3-600-01, and below. The Structural Tests and Special inspections described in IBC Chapter 17 provide a variety of procedures and criteria for testing materials and assemblies, labeling materials and assemblies, and for some special inspection of certain structural assemblies. Some DoD requirements are more stringent and these take precedence as identified in these UFC. Modify IBC Chapter 17 as follows:

- Delete IBC Chapter 17, Section **1704.2 Special inspections and tests**, and replace with the following:

Special inspections and tests. The contractor must employ one or more *approved agencies* to perform inspections during construction on the types of work listed under Section 1705. These inspections are in addition to the inspections defined in Section 110. The inspecting agency must provide reports of the special inspections directly to the government.

2-18 **CHAPTER 18 – SOILS AND FOUNDATIONS.**

Use IBC Chapter 18 as modified by UFC 3-220-01, UFC 3-201-01, UFC 3-301-01, and below. Modify IBC Chapter 18 as follows:

- Supplement to IBC Section **1804.4 Site grading**: Ensure that the grading and associated storm water runoff do not adversely affect surrounding sites. Establish finished floor elevations a minimum of 6 inches (150 mm) above finished grade at the perimeter of the building and provide site grading in accordance with UFC 3-201-01.
- Delete the exception to IBC Section **1804.4 Site grading**.
- Supplement to IBC Section **1808.7.4 Foundation elevation**: Establish finished floor elevations a minimum of 6 inches (150 mm) above finished grade at the perimeter of the building and provide site grading in accordance with UFC 3-201-01.

2-19 **CHAPTER 19 – CONCRETE.**

Use IBC Chapter 19 as modified by UFC 3-301-01 and UFC 1-200-02. IBC Chapter 19 provides only minimum accepted practices for the use of plain concrete and reinforced concrete in construction.

2-20 **CHAPTER 20 – ALUMINUM.**

Use IBC Chapter 20. IBC Chapter 20 contains standards for the use of aluminum; however, only the structural applications of aluminum are addressed. IBC Chapter 20 does not address the use of aluminum in specialty products such as window framing or architectural hardware. For aluminum use in Heating, Ventilation, Air Conditioning (HVAC) systems, use UFC 3-410-01.

2-21 CHAPTER 21 – MASONRY.

Use IBC Chapter 21 as modified by UFC 3-301-01. IBC Chapter 21 addresses comprehensive and practical requirements for masonry, including material specifications, test methods, types of wall construction, and criteria for empirical and engineered designs. Masonry foundations are also addressed in IBC Chapter 18 as modified by Paragraph 2-18 of this UFC.

2-22 CHAPTER 22 – STEEL.

Use IBC Chapter 22 as modified by UFC 3-301-01. IBC Chapter 22 provides the minimum commercial requirements for the design and construction of structural steel, including composite construction, cold-formed steel, steel joists, steel cable structures, and steel storage racks. Steel for structures is generally classified as Type I and Type II construction; however steel is permitted in all types of construction.

2-23 CHAPTER 23 – WOOD.

Use IBC Chapter 23, UFC 3-301-01, and UFC 3-600-01. IBC Chapter 23 provides minimum requirements for the design of buildings and structures that use wood and wood based products in framing and fabrication. In general, only buildings of Type III, Type IV, or Type V construction may be constructed of wood.

2-24 CHAPTER 24 – GLASS AND GLAZING.

Use IBC Chapter 24 as modified by UFC 4-010-01. IBC Chapter 24 establishes regulations for glass and glazing that when properly installed, are able to meet required resistance to wind, snow, and dead loads. The engineering and design requirements are included in the chapter.

2-25 CHAPTER 25 – GYPSUM BOARD, GYPSUM PANEL PRODUCTS AND PLASTER.

Use IBC Chapter 25. IBC Chapter 25 contains the provisions and referenced standards that regulate the design, construction and quality of gypsum board and plaster. They represent the most common interior and exterior finish materials in the commercial building industry and the DoD. IBC Chapter 25 addresses quality control issues, material specifications, and installation requirements, under the control of industry requirements. However, it is the responsibility of the AHJ to inspect and ensure that the appropriate products are used and properly installed for the intended use and location.

2-26 CHAPTER 26 – PLASTIC.

Use IBC Chapter 26 and UFC 3-600-01, as modified below. IBC Chapter 26 addresses the use of plastics in building construction and components for flammable materials such as foam plastic insulation, foam plastics used as exterior and interior trim, and other plastic veneers such as fiberglass reinforced polymers which may be quite flammable and create toxic smoke. The requirements and limitations in UFC 3-600-01 are necessary to control the use of plastic and foam plastic products such that they do not compromise the safety of the building occupants or mission. Modify IBC Chapter 26 as follows:

- Delete IBC Section **2603.5.5 Vertical and lateral fire propagation**, including the exceptions, and replace with the following:

2603.5.5 Vertical and lateral fire propagation. Exterior wall assemblies shall be tested in accordance with, and comply with, acceptance criteria of NFPA 285. Where noncombustible materials or combustible materials permitted by Sections 603, 1406, or UFC 3-600-01 differ from assembly to assembly or within an assembly, multiple tests shall not be required.

Exceptions: Exterior wall assemblies are not required to be tested in accordance with, and comply with, acceptance criteria of NFPA 285 where any of the following conditions are met:

1. One-story buildings complying with Section 2603.4.1.4.
2. Wall assemblies where the foam plastic insulation is covered on each face by a minimum of 1-inch (25 mm) thickness of masonry or concrete complying with either of the following:
 - 2.1. There is no air space between the insulation and the concrete or masonry; or
 - 2.2. The insulation has a flame spread index of not more than 25 as determined in accordance with ASTM E 84 or UL 723 and the maximum air space between the insulation and the concrete or masonry is not more than 1 inch (25 mm).
3. Buildings equipped throughout with an automatic sprinkler system in accordance with UFC 3-600-01.

2-27 CHAPTER 27 – ELECTRICAL.

Use IBC Chapter 27 as modified below. The IBC references NFPA 70, National Electrical Code (NEC). In addition, IBC Chapter 27, Section **2702 EMERGENCY AND STANDBY POWER SYSTEMS**, which addresses emergency and standby power requirements, references the IFC.. Instead of the IFC, use UFC 3-600-01, which cites NFPA 1. Modify IBC Chapter 27 as follows:

- Use UFC 3-501-01 for general electrical requirement criteria.

- Use UFC 3-520-01 for interior electrical systems criteria.
- Use UFC 3-530-01 for interior and exterior lighting and controls criteria.
- Use UFC 3-540-01 for engine-driven generator criteria.
- Use UFC 3-550-01 for exterior power distribution systems criteria.
- Use UFC 3-560-01 for electrical safety and electrical Operations and Maintenance (O&M) criteria.
- Use UFC 3-580-01 for building telecommunications criteria.
- Use UFC 3-600-01 for fire protection criteria.
- Use UFC 4-021-01 for mass notification systems criteria.

2-28 CHAPTER 28 – MECHANICAL SYSTEMS.

Use IBC Chapter 28 as modified by UFC 3-401-01. Use UFC 3-600-01 for Fire Protection features for mechanical systems. IBC Chapter 28 provides references to the IMC which has been modified by UFC 3-410-01. However, the International Fuel Gas Code has not been adopted. The DoD uses NFPA 54 (ANSI Z223.1), National Fuel Gas Code, for the design and installation of fuel gas piping systems.

2-29 CHAPTER 29 – PLUMBING SYSTEMS.

Use IBC Chapter 29 as modified by UFC 3-420-01. IBC Chapter 29 regulates the number of plumbing fixtures that must be provided for each type of building and number of occupants, and it regulates gender separations except for certain types of small buildings.

2-30 CHAPTER 30 – ELEVATORS AND CONVEYING SYSTEMS.

Use IBC Chapter 30 and UFC 3-600-01. For Army and Navy projects, also use ITG FY13-0. If conflict occurs between IBC Chapter 30 and ITG FY13-01, the requirements of ITG FY13-01 take precedence. If conflict occurs between UFC 3-600-01 and ITG FY13-01, the requirements of UFC 3-600-01 take precedence.

2-31 CHAPTER 31 – SPECIAL CONSTRUCTION.

Use IBC Chapter 31. IBC Chapter 31 includes criteria for special building construction, including membrane structures, temporary structures, pedestrian walkways and tunnels, awnings and canopies, marquees, signs, towers and antennas, and automatic vehicular gates.

2-32 CHAPTER 32 – ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY.

Use IBC Chapter 32. Buildings and structures from time to time are designed to extend over a property line or into the public right of way. Local regulations outside the building usually set limits to such encroachments, and government criteria may perform the same function in various locations. Such military criteria should always take precedence over provisions of IBC Chapter 32.

2-33 CHAPTER 33 – SAFEGUARDS DURING CONSTRUCTION.

Use IBC Chapter 33 and UFC 3-600-01. IBC Chapter 33 provides safety requirements during construction and demolition of buildings and structures.

2-34 CHAPTER 34 – RESERVED.

Not used.

2-35 CHAPTER 35 – REFERENCED STANDARDS.

Use IBC Chapter 35. IBC Chapter 35 contains numerous references to standards that are used to regulate materials and methods of construction. It contains a comprehensive list of all standards that are referenced in the IBC. Also refer to IBC Section **102.4 Referenced codes and standards**, and Paragraph 1-4.2 of this UFC for a detailed explanation of the applicability of referenced codes and standards.

2-36 APPENDICES.

Do not use IBC Appendices A through Appendix M.

CHAPTER 3 OTHER CRITERIA

3-1 GENERAL.

In addition to the International Building Code as modified in Chapter 2 of this UFC, and the IEBC as modified in Chapter 4 of this UFC, comply with the following criteria in this chapter.

3-2 HIGHER AUTHORITY MANDATES.

Design and Construction must be in compliance with Public Laws (P.L.), Executive Orders (E.O.), Code of Federal Regulations (CFR), Department of Defense Instructions (DoDI), Department of Defense Manuals (DoDM), and Department of Defense Directives (DoDD) or other higher authority documents as applicable, as listed in MIL-STD-3007F, Appendix B.

3-2.1 Vending Facilities for the Blind.

Verify with the using activity the requirement to provide blind-operated vending facilities in compliance with the Randolph-Sheppard Act and DoDI 1125.03. This requirement generally applies in buildings that are over 1,400 SM (15,000 SF) that will contain over 100 employees, but may also apply in other situations at the discretion of the using activity.

3-2.2 Nursing Mothers in Federal Employment.

For facilities that are places of employment, provide a private space for nursing mothers as recommended by OPM Memorandum for Heads of Executive Departments and Agencies, as detailed in the Guide for Establishing a Federal Nursing Mother's Program. This space may not be a bathroom, and must be shielded from view and free from intrusion of others. A nursing mother's space must be functional, with a private space with a place to sit and a flat surface, other than the floor, to place the breast pump and other supplies. Although there are no size or permanency requirements, this space must provide access to electricity for the use of a breast pump, as well as good lighting, a comfortable temperature, and proper ventilation; and be near a source of hot and cold running water. In addition, comply with any command-specific policy applicable to this requirement or applicable to the establishment of a working mothers program within the facility.

3-3 UNIFIED FACILITY CRITERIA (UFC).

Comply with the UFC (latest version, refer to Paragraph 1-5 of this UFC) as noted herein.

3-3.1 Core UFC.

Core UFC are criteria that provide requirements for the majority of traditional building systems that are prevalent on DoD facility construction projects. Core UFC also identify additional criteria such as Antiterrorism, High Performance, and Sustainable Building requirements mandated by law and policy. Comply with the Core UFC listed here, and other UFC identified in Appendix A as they are applicable.

- 1-200-02, High Performance and Sustainable Building Requirements
- 3-101-01, Architecture
- 3-110-03, Roofing
- 3-120-10, Interior Design
- 3-201-01, Civil Engineering
- 3-201-02, Landscape Architecture
- 3-210-10, Low Impact Development
- 3-220-01, Geotechnical Engineering
- 3-230-01, Water Storage, Distribution, and Transmission
- 3-230-03, Water Treatment
- 3-240-01, Wastewater Collection
- 3-301-01, Structural Engineering
- 3-310-04, Seismic Design for Buildings
- 3-401-01, Mechanical Engineering
- 3-410-01, Heating, Ventilating and Air Conditioning
- 3-420-01, Plumbing Systems
- 3-501-01, Electrical Engineering
- 3-520-01, Interior Electrical Systems
- 3-530-01, Interior and Exterior Lighting Systems and Controls
- 3-540-01, Engine-Driven Generator Systems for Backup Power Applications
- 3-550-01, Exterior Electrical Power Distribution
- 3-560-01, Electrical Safety, O&M
- 3-580-01, Telecommunications Building Cabling Systems Planning and Design
- 3-600-01, Fire Protection Engineering for Facilities
- 4-010-01, DoD Minimum Antiterrorism Standards for Buildings

- 4-010-02, DoD Minimum Antiterrorism Standoff Distances for Buildings (FOUO)
- 4-021-01, Design and O&M: Mass Notification Systems

3-3.2 Other UFC.

In addition to the "Core UFC", comply with other UFC as applicable to the system, structure, or facility type defined in the scope of the construction project.

3-4 FACILITY CRITERIA (FC).

The designation, "Facility Criteria (FC)" has been adopted for criteria that are not applicable to all DoD Components. For example: FC 4-721-10N "Navy and Marine Corps Unaccompanied Housing" has a final "N" designation because it is used by the Navy, including its Component, the U.S. Marine Corps. FC provide functional requirements (i.e., defined in more detail by the users and operational needs of a particular facility type). Differences in functional requirements between DoD Components may exist due to differences in their policies and more specific operational needs. FC are applicable only to the DoD Component(s) indicated in the title, and are intended for use with unified technical requirements published in UFC. Comply with the FC for the designated facility type and the DoD Component.

3-5 SPECIFICATION REQUIREMENTS.

Use Unified Facilities Guide Specifications (UFGS) for all projects, including Design-Build submittals, and in accordance with UFC 1-300-02. Download, use, and edit the most current UFGS database available from the Whole Building Design Guide website at http://www.wbdg.org/ccb/browse_cat.php?c=3. Modify and edit the UFGS as necessary to suit the work required by the specific project, including editing for metric or inch-pound and to reflect the latest proven technology, materials, and methods for the project. Follow Order of Precedence requirements for each Government Design Agent on use of Regional, Agency, Unified, and Other guide specifications. Other guide specifications are only allowed as a basis for information when not available in the UFGS. These developed specifications must be provided in UFGS format and modified to meet the requirements of UFC 1-300-02.

3-6 OTHER MILITARY CRITERIA.

Military criteria other than those listed in this UFC may be applicable to specific types of structures, building systems, or building occupancies. Such structures, systems, or buildings must meet the additional requirements of applicable military criteria.

3-6.1 Explosive Safety.

This document does not contain requirements for explosives safety. Facilities that involve DoD Ammunition and Explosives (AE) storage, handling, maintenance, manufacture or disposal, as well as facilities within the explosives safety quantity distance (ESQD) arcs of AE facilities, must comply with the requirements found in DoD 6055.09-M, as well as implementing Service criteria found in DA PAM 385-64 (Army), NAVSEA OP 5 (Navy and Marine Corps), and AFMAN 91-201 (Air Force). DoD facilities exposed to potential explosion effects from AE belonging to other nations are also required to meet DoD and Service explosives safety criteria.

- It is essential that the planning and design of new facilities, and occupation and renovation of existing AE-related facilities, or other facilities within ESQD arcs be accomplished in close coordination with knowledgeable explosives safety professionals in theater, or with the Services' Explosives Safety Centers. This coordination should occur as early as possible in the planning and design process to avoid issues or problems and to ensure compliance.
- Facility construction or use within ESQD arcs requires review for compliance with explosives safety criteria, and must have either an approved explosives safety site plan or an approved explosives safety deviation. Refer to the DoD Service documents mentioned above for further applicable guidance.

3-6.2 Facility Systems Safety.

Safety is an important component of maintaining and operating DoD facilities, and must be considered during design. Incorporate a hazards review into the regular design review process to ensure systems safety has been considered at the earliest phases of project development to reduce and mitigate unintentional maintenance and operational hazards. Army projects will incorporate the safety engineering practices delineated under the Facilities Systems Safety (FASS) program as prescribed under AR PAM 385-16 *System Safety Management Guide* to the extent practicable and feasible. Air Force projects will incorporate the safety engineering practices delineated in Air Force Instruction (AFI) 91-203, *Air Force Consolidated Occupational Safety Instruction*, to the extent practicable and feasible.

3-6.3 Antiterrorism.

Antiterrorism is defined as defensive measures used to reduce the vulnerability of individuals and property to terrorist acts. UFC 4-010-01 sets the minimum requirements for DoD buildings, and the Geographic Combatant Commander Antiterrorism Construction Standards address unique requirements specific to their area of responsibility. Refer to UFC 4-010-01 and the Geographic Combatant Commander Antiterrorism Construction Standards for the minimum antiterrorism requirements.

3-6.4 Physical Security.

Physical security is defined as that part of security concerned with physical measures designed and placed to safeguard personnel; to prevent unauthorized access to installations, equipment, material and documents, to safeguard them against espionage, sabotage, damage, and theft. Many buildings require some level of physical security. When required, integrate physical measures into the site, building, room(s), or area(s) as applicable. The DoD documents the requirements for physical security related to specific assets in DoD publications, directives, manuals, and instructions. The Services have related documents that implement the DoD policy for the Services. The main DoD documents that contain the physical security requirements for the protection of specific DoD assets are shown in Table 3-1. This does not include the policy documents associated with the protection of nuclear and chemical assets.

Table 3-1 Policy Related to Physical Security

| Asset | Policy and Documents |
|---|---|
| Classified Information | DoDM 5200.01-R, <i>DoD Information Security Program</i> ; http://www.dtic.mil/whs/directives/corres/pub1.html |
| Sensitive Compartmented Information (SCI) | DoDM 5105.21-Volume 1, <i>Sensitive Compartmented Information (SCI) Administrative Security Manual: Administration of Information and Information Systems Security</i> ; http://www.dtic.mil/whs/directives/corres/pub1.html DoDM 5105.21-Volume 2, <i>Sensitive Compartmented Information (SCI) Administrative Security Manual: Administration of Physical Security, Visitor Control, and Technical Security</i> ; http://www.dtic.mil/whs/directives/corres/pub1.html UFC 4-010-05, <i>Sensitive Compartmented Information Facilities Planning, Design, and Construction</i> . https://www.wbdg.org/ccb/DOD/UFC/ufc_4_010_05.pdf |
| Special Access Program (SAP) Information | DoDM 5205.07 Volume 3, <i>DoD Special Access Program (SAP) Security Manual: Physical Security</i> ; http://www.dtic.mil/whs/directives/corres/pub1.html |
| Arms, Ammunition and Explosives | DoDM 5100.76-M, <i>Physical Security of Sensitive Conventional Arms, Ammunition and Explosives (AA&E)</i> ; http://www.dtic.mil/whs/directives/corres/pub1.html |
| Weapons Systems and Platforms | DoD 5200.08-R, <i>Physical Security Program</i> ; http://www.dtic.mil/whs/directives/corres/pub1.html |
| Bulk Petroleum Products | |
| Communications Systems | |
| Controlled Inventory Items | |

3-6.5 Cybersecurity.

All control systems (including systems separate from an energy management control system) must be designed, acquired and executed in accordance with DoDI 8500.01, DoDI 8510.01, and as required by individual Service Implementation Policy.

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CHAPTER 4 MODIFICATIONS TO THE INTERNATIONAL EXISTING BUILDING CODE (IEBC)

4-1 GENERAL.

For existing structures, use IEBC as modified below. Provisions in IEBC Chapter 14 deal with alternative methods of compliance requirements when dealing with existing building constraints. This IEBC chapter allows for a controlled departure from full compliance with the technical codes, without compromising the minimum standards of life safety and fire prevention of the rehabilitated building as required in UFC 3-600-01. An example may be concerning fire escape requirements that differ in UFC 3-600-01. Modify IEBC Chapters 4 and 14 as follows:

- Use IEBC Chapter 4 with UFC 3-310-04 for seismic evaluation and seismic rehabilitation of existing buildings. If conflict occurs between IEBC Chapter 4 and UFC 3-310-04, the requirements of UFC 3-310-04 take precedence.
- Add a third paragraph to the end of IEBC Section **404.5 Flood hazard areas**, stating the following:

In addition to other requirements of this code, for renovations and alterations costing more than \$7.5 million to facilities already located within the 100-year flood plain, assess the vulnerability of mechanical and electrical subsystems to flood hazards and take necessary measures within the project to mitigate those vulnerabilities. Comply with OUSD Memorandum, Floodplain Management on Department of Defense Installations, 11 February, 2014. This policy applies only to permanent installations.
- Use IEBC Chapter 14 with UFC 3-600-01. If conflict occurs between IEBC Chapter 14 and UFC 3-600-01, the requirements of UFC 3-600-01 take precedence.
- Delete IEBC Section **1401.2 Applicability**, and replace with the following:

1401.2 Applicability. Structures existing prior to 1 April 2016, in which there is work involving additions, alterations or changes of occupancy shall be made to conform to the requirements of this chapter or the provisions of Chapter 4. The provisions of Sections 1401.2.1 through 1401.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, I-2, M, R and S. These provisions shall not apply to buildings with occupancies in Group H or I-1, I-3 or I-4.

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APPENDIX A REFERENCES

INTERNATIONAL CODE COUNCIL

<http://www.iccsafe.org>

IBC, International Building Code, 2015

ICC 300-12, Standard for Bleachers, Folding and Telescopic Seating, and Grandstands

IEBC, International Existing Building Code, 2015

IECC, International Energy Conservation Code, 2015

IMC, International Mechanical Code, 2015

IPC, International Plumbing Code, 2015

IRC, International Residential Code, 2015

NATIONAL FIRE PROTECTION ASSOCIATION

<http://www.nfpa.org>

NFPA 1, Fire Code

NFPA 54 (ANSI Z223.1), National Fuel Gas Code

NFPA 58, Liquefied Petroleum Code

NFPA 70, National Electrical Code

NFPA 101, Life Safety Code

NFPA 285, Standard Fire Test Method for Evaluation of Fire Propagation
Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing
Combustible Components

UNITED STATES ACCESS BOARD

Architectural Barriers Act (ABA) Standards,

<http://www.access-board.gov/attachments/article/1029/ABASTandards.pdf>

UNITED STATES AIR FORCE

<http://www.e-publishing.af.mil>

AFMAN 91-201, Explosives Safety Standards

AFI 91-203, Air Force Consolidated Occupational Safety Instruction

UNITED STATES ARMY

DA PAM 385-64, Ammunition and Explosives Standards,
http://www.apd.army.mil/pdffiles/p385_64.pdf

AR PAM 385-16, System Safety Management Guide,
http://www.apd.army.mil/pdffiles/p385_16.pdf

UNITED STATES DEPARTMENT OF DEFENSE

Deputy Secretary of Defense Memorandum for Secretaries of the Military Departments, Chairman of the Joint Chiefs of Staff, Undersecretaries of Defense, Assistant Secretaries of Defense... Subject: Access for People with Disabilities October 31, 2008,
<http://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-aba-standards/background/dod-memorandum>

DoD 5200.08-R, Physical Security Program,
<http://www.dtic.mil/whs/directives/corres/pub1.html>

DoD 6055.09-M, DoD Ammunition and Explosives Safety Standards,
<http://www.dtic.mil/whs/directives/corres/pub1.html>

DoDI 1125.03, Vending Facility Program for the Blind on DoD-Controlled Federal Property,
<http://www.dtic.mil/whs/directives/corres/pdf/112503p.pdf>

DoDI 8500.01, Cybersecurity,
http://www.dtic.mil/whs/directives/corres/pdf/850001_2014.pdf

DoDI 8510.01, Risk Management Framework (RMF) for DoD Information Technology (IT),
http://www.dtic.mil/whs/directives/corres/pdf/851001_2014.pdf

DoDM 5100.76-M, Physical Security of Sensitive Conventional Arms, Ammunition and Explosives (AA&E),
<http://www.dtic.mil/whs/directives/corres/pub1.html>

DoDM 5200.01, DoD Information Security Program,
<http://www.dtic.mil/whs/directives/corres/pub1.html>

DoDM 5205.07 Volume 3, DoD Special Access Program (SAP) Security Manual: Physical Security,
<http://www.dtic.mil/whs/directives/corres/pub1.html>

MIL-STD-3007F, Standard Practice for Unified Facilities Criteria and Unified Facilities Guide Specifications, 13 December 2006,
<http://www.wbdg.org/ccb/FEDMIL/std3007f.pdf>

OUSD Memorandum for Assistant Secretary(s) of the Army (IE&E), Navy (EI&E), Air Force (IE&L), Directors of Defense Agencies, Directors of Defense Activities,

Director, Washington Headquarters Service. Subject: *Floodplain Management on Department of Defense Installations*, 11 February 2014.

UNITED STATES DEPARTMENT OF DEFENSE, UNIFIED FACILITIES CRITERIA (UFC) / FACILITIES CRITERIA (FC)

<http://dod.wbdg.org/>

- UFC 1-200-02, High Performance and Sustainable Building Requirements
- UFC 1-201-01, Non-Permanent DoD Facilities in Support of Military Operations
- UFC 1-201-02, Assessment of Existing Facilities for Use in Military Operations
- UFC 1-202-01, Host Nation Facilities in Support of Military Operations
- UFC 1-300-02, Unified Facilities Guide Specifications (UFGS) Format Standard
- UFC 3-101-01, Architecture
- UFC 3-110-03, Roofing
- UFC 3-120-10, Interior Design
- UFC 3-201-01, Civil Engineering
- UFC 3-201-02, Landscape Architecture
- UFC 3-210-10, Low Impact Development
- UFC 3-220-01, Geotechnical Engineering
- UFC 3-230-01, Water Storage, Distribution, and Transmission
- UFC 3-230-03, Water Treatment
- UFC 3-240-01, Wastewater Collection
- UFC 3-301-01, Structural Engineering
- UFC 3-310-04, Seismic Design for Buildings
- UFC 3-401-01, Mechanical Engineering
- UFC 3-410-01, Heating, Ventilating, and Air Conditioning Systems
- UFC 3-420-01, Plumbing Systems
- UFC 3-501-01, Electrical Engineering
- UFC 3-520-01, Interior Electrical Systems

UFC 3-530-01, Interior and Exterior Lighting Systems and Controls

UFC 3-540-01, Engine-Driven Generator Systems for Backup Power Applications

UFC 3-550-01, Exterior Electrical Power Distribution

UFC 3-560-01, Electrical Safety, O&M

UFC 3-580-01, Telecommunications Building Cabling Systems Planning and Design

UFC 3-600-01, Fire Protection Engineering for Facilities

UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings

UFC 4-010-02, DoD Minimum Antiterrorism Standoff Distances for Buildings (FOUO)

UFC 4-010-05, Sensitive Compartmented Information Facilities Planning, Design, and Construction

UFC 4-021-01, Design and O&M: Mass Notification Systems

FC 4-721-10N, Navy and Marine Corps Unaccompanied Housing

UNITED STATES NAVY

ITG FY13-01, NAVFAC Elevator Design,

https://www.wbdg.org/ccb/NAVFAC/INTCRIT/fy13_01.pdf

NAVSEA OP 5, Ammunition and Explosives Safety Ashore,

<https://acc.dau.mil/CommunityBrowser.aspx?id=278680>

UNITED STATES OFFICE OF PERSONNEL MANAGEMENT

Guide for Establishing a Federal Nursing Mother's Program,

www.opm.gov/policy-data-oversight/worklife/reference-materials/nursing-mother-guide.pdf