

CHAPTER 39

SECURITY & THE DISABLED

Overview of Chapter 39

Part I reviews the laws as they relate to forms of prohibited discrimination, which include failure to hire, promote, transfer, or otherwise create or modify terms and conditions of employment on the basis of disability. The laws also cover the requirements to make public transportation facilities readily accessible to the handicapped, make places of public accommodation and commercial facilities of all types readily accessible to and usable by the handicapped, and to provide means of accommodation for the handicapped using public communications.

Operative portions of the federal laws and regulations are set out together with the dates by which their requirements must be implemented. Definitions of “disabled” are given and sources of information for resolving problems are provided.

Part II discusses the specific types of structural and procedural accommodations which must be made to render the workplace accessible to the disabled. Wheelchair requirements are studied, as are regulations concerning ramps and walks, doors and corridors, windows and switches, outlets and telephones, bathroom fixtures and working areas. The needs for special displays, enunciation and signage are noted. Special attention is paid to the effect that laws and regulations will have on access control, security alarm systems, and their monitoring. By the last effective date of all its provisions, the Americans with Disabilities Act of 1990 will cover the vast majority of U.S. public facilities and places of employment.

CHAPTER 39

Part I

SECURITY AND THE DISABLED

INTRODUCTION

In the past, the physically disabled have been denied their fullest possible participation in the life of their community because of barriers. These barriers may be architectural or attitudinal. Architectural barriers are easier to visualize. They are entrances, exits, aisles and passageways, elevators, work stations or other structural features which do not accommodate individuals with physical disabilities who require the use of wheelchairs, crutches, walkers or other aids. Attitudinal barriers are illustrated by the employer who feels that the disabled will not make effective employees or that the cost of accommodation would be too high.

The situation changed in the late 1960s and early 1970s when federal legislation was enacted mandating that disabled people were not to be hampered by barriers so that they could become independent and self-supporting. This earlier legislation had far-reaching effects in the U.S., but the passage of the Americans With Disabilities Act (ADA) of 1990 has provided the most comprehensive legislation on the subject.

The extent and breadth of those affected is much larger than was at first perceived. For example, it was estimated in 1981 that almost half of U.S. businesses—about 3 million—were affected, and that 35 million disabled people would benefit from remedial legislation. Nine years later in the legislative findings for the ADA, Congress found that 43 million individuals

in the U.S. had been isolated or segregated in some way and that such discrimination continues to be persistent and represents a serious disadvantage to those affected.

Earlier federal legislation to assist the disabled consisted primarily of the Architectural Barriers Act of 1968 and the Rehabilitation Act of 1973. States also adopted legislation to implement the federal requirements. The federal laws generally were directed toward organizations doing business with or receiving financial aid from the federal government. Because so many entities fell into one of these classes, the impact of the 1968 and 1973 laws was quite broad. The passage in 1990 of the ADA, however, greatly extended the area of federal influence to virtually every business engaged in or affecting interstate commerce. Most states have enacted laws similar to the ADA and in some cases are more stringent.

We will provide a brief discussion of the earlier federal laws, particularly the Rehabilitation Act of 1973, because much of its contents was carried forward to the ADA of 1990. Following this we will present an extended examination of the 1990 Act with emphasis upon those sections with the most significance for the private sector.

WORLDWIDE CONCERN

Interest in the disabled has not been limited to the U.S. World attention was focused on the problem when the United Nations General Assembly designated 1981 as the International Year of Disabled Persons (IYDP). At that time, there were at least 500 million disabled people around the world, and in every country at least one person in ten was disabled by physical, mental, or sensory impairments. Every country was urged by the UN to prepare a comprehensive plan to cope with the problem by:

- helping disabled people in their physical and psychological adjustment to society;
- promoting national and international efforts to provide disabled people with proper assistance, training, care, and guidance, to make suitable work opportunities available and ensure their full integration in society;
- encouraging study and research projects designed to facilitate the practical participation of disabled people in daily life;
- educating and informing the public of the rights of the disabled to participate in and contribute to various aspects of economic, social, and political life; and
- promoting effective measures for the prevention of disability and for the rehabilitation of disabled people.

U.S. FEDERAL LEGISLATION

Three laws provide the greatest benefits for the disabled—the Architectural Barriers Act of 1968 (Public Law 90-480), the Rehabilitation Act of 1973 (Public Law 93-112, as amended), and the Americans With Disabilities Act of 1990 (Public Law 101-336).

ARCHITECTURAL BARRIERS ACT OF 1968

Passed by Congress on August 12, 1968, the Architectural Barriers Act of 1968 directed the federal government to set a national example of accessibility for everyone. It specified that buildings and facilities designed, constructed, altered, or leased with federal funds were to be accessible and usable by physically disabled individuals. This Act, however, did not establish any executive body charged with enforcement of its provisions.

REHABILITATION ACT OF 1973

The Rehabilitation Act of 1973 was intended, in the words of the Congressional findings:

to develop and implement, through research, training, services and the guarantees of equal opportunity, comprehensive and coordinated programs of vocational rehabilitation and independent living for individuals with handicaps in order to maximize their employability, independence and integration into the workplace and community.

Since its first passage the original Act has been amended in 1974, 1976, 1984 and 1986. There are three significant sections to the Act that directly affect the welfare of the disabled—sections 502, 503 and 504.

Regulations were originally issued in 1978 by the acting Department of Health, Education and Welfare of the time to implement the provisions of the 1973 Act. By a 1981 executive order, responsibility for coordinating enforcement of the regulations was reassigned to the Department of Justice and the implementing regulations were recodified at 28 CFR Part 41. Both the regulations and the provisions of the Act should be consulted for a complete understanding of the requirements.

Section 502¹

This section created the Architectural and Transportation Barriers Compliance Board (ATBCB) to enforce requirements of the Architectural and Barriers Act of 1968. It thus made operational the goals set in the Barriers Act.

¹ This section is codified at 29 U.S.C. 792.

The ATBCB is an independent federal agency with 23 board members. Eleven are federal agency heads or their representatives and twelve are members of the general public. Six of the public members must be handicapped individuals. Their terms are for three years. Federal members represent the departments of Health and Human Services, Transportation, Housing and Urban Development, Labor, Interior, Defense, Justice, Education, Veterans Affairs, the General Services Administration, and the U.S. Postal Service. An executive director heads four staff divisions: 1) policy, planning and program development; 2) enforcement and compliance; 3) public information; and 4) technical services.

The ATBCB may conduct investigations, hold public hearings, and issue orders to comply with the Architectural Barriers Act with reference to all buildings and facilities involving federal funds constructed after September 1969. It is also authorized to and has issued Accessibility Guidelines for Buildings and Facilities under the ADA. An order of the ATBCB is final and binding on any federal department, agency, or agent of the U.S. The primary goal of the Board is to ensure that all buildings and facilities covered are usable by the disabled. Other functions are to:

1. Investigate and examine alternative approaches to barriers facing handicapped people in housing, transportation, communications, education, recreation and attitudes, particularly with regard to telecommunications devices, public buildings and transportation, and residential and institutional housing.
2. Determine what federal, state, and local governments and other public or nonprofit agencies and groups are doing to eliminate barriers.
3. Promote the use of the International Accessibility Symbol in all public facilities in compliance with current standards.
4. Report to the President and Congress on the results of its investigations under "1." and "2." above, and recommend legislative and administrative ways to eliminate barriers.
5. Establish minimum guidelines and requirements for standards prescribed under the Architectural Barriers Act.
6. Assure that public conveyances are readily accessible to and usable by handicapped people.
7. Determine how transportation barriers impede mobility of the handicapped and consider ways in which travel expenses of the handicapped to and from work can be met or subsidized.
8. Consider housing needs of the handicapped.
9. Determine what public and non-profit agencies are doing to:

- a. eliminate barriers from public transportation systems and prevent their incorporation in new or expanded systems;
 - b. make housing available to the handicapped.
10. Prepare plans for adequate transportation and housing for handicapped people, including proposals to cooperate with other agencies, organizations, and individuals working toward such goals.

As part of its promotion and public awareness activity, the ATBCB has adopted and uses widely a logo representing the theme of improved access. (Please see Figure 1.)



FIGURE 1

Trademark of the U.S. Architectural and Transportation Barriers Compliance Board (ATBCB)

The regulations concerning this Act can be found at 28 CFR 41.7. They require the concerned federal agencies to coordinate with the ATBCB when prescribing access standards for new construction.

To obtain additional information regarding the Architectural and Transportation Barriers Compliance Board, contact the board at 1111 18th Street, N.W., Suite 501, Washington, DC 20036-3894; telephone: (202) 653-7834; fax: (202) 653-7863.

Section 503²

This section of the Rehabilitation Act of 1973, as amended, requires that an affirmative action program be established for the hiring and advancement in employment of handicapped people by every enterprise doing business with the federal government under a contract or sub-contract for \$2,500 or more. About one-half of all business organizations in the U.S. are covered by this section. The Office of Federal Contract Compliance Programs has the responsibility for enforcing the affirmative action obligations of federal contractors, including those covering the handicapped. The relevant regulations are found at 41 CFR 60-741.1, et seq. Decisions in matters involving alleged violations are reported in administrative hearing reports of the OFCC and as judicial decisions in the U.S. courts.

² This section is codified at 29 U.S.C. 793.

Federal contracts for suppliers or services, for the use of real or personal property, or for construction, are covered by the Act. Services include such items as utilities, transportation, research and insurance. Construction not only refers to the erection of buildings, but to their repair, alteration, extension, and demolition. Every contractor and subcontractor covered by this section must agree not to discriminate against any disabled person qualified to perform a job and, in addition, must agree to take affirmative action to treat a disabled person without discrimination.

Organizations with government contracts or subcontracts amounting to \$50,000 or more and that have at least 50 employees, are required to develop and maintain written affirmative action programs that set forth their policies and practices with reference to disabled workers. A disabled person or individual with handicap(s) is defined in section 7(8) of the 1973 Act (29 U.S.C. 706(8)) as:

any individual who (i) has a physical or mental disability which for such individual constitutes or results in a substantial handicap to employment and (ii) can be reasonably expected to benefit in terms of employability from vocational rehabilitation services provided pursuant to sub-chapters I and III of this chapter.

(It will be noted in the later discussion of the Regulations implementing this Act that the definition of a handicapped person has been modified to more clearly define exactly what constitutes a handicap. The 1990 Act then picked-up the expanded definition.)

Traditionally, individuals with visible impairments—such as people using wheelchairs—have been considered disabled. However, the law recognizes that people with nonvisible impairments have also been denied employment or otherwise discriminated against. Those who have had cancer, a history of mental illness, epilepsy, or diabetes, as well as those with a prior history of alcoholism or drug abuse are protected. The 1990 Act amended the 1973 Act in regard to current drug users and alcoholics. It must be noted that individuals currently using drugs illegally or who are alcoholics whose current use prevents performance of the required job duties or amounts to a direct threat to property or the safety of others, are not considered individuals with handicaps.³

Only *qualified* individuals are entitled to protection. The term qualified includes a handicapped person capable of performing the particular job or task, with reasonable accommodation to the disability of the individual. Jobs must be reviewed to determine whether any

³ Section 512 of the Americans With Disabilities Act of 1990 (29 U.S.C. 706) amended Section 7 of the 1973 Act to exclude current illegal users of drugs and alcoholics. It also defined *drug* for purposes of the 1973 Act as “a controlled substance, as defined in schedules I through V of section 202 of the Controlled Substances Act,” and defined *illegal use of drugs* as “the use of drugs, the possession or distribution of which is unlawful under the Controlled Substances Act.” (This excludes drugs taken under the supervision of a licensed health care professional or otherwise permitted by the Controlled Substances Act.)

physical or mental requirements disqualify the disabled and, if so, the requirement must be clearly job-related and consistent with business necessity and safe performance.

For example, a disabled person in a wheelchair may not be physically qualified for patrol duties where checking fire stairs or apprehending a fleeing perpetrator are a requirement. However, the same person may be an ideal candidate, if mentally and educationally qualified, for a fixed security system monitoring post. Employers are not required to lower standards of work excellence, attendance, or job behavior. A disabled person, like other employees, must be able to meet the reasonable attendance and work standards that have been established. Any inquiry into the mental or physical condition of a worker is permitted but it must be based on job requirements, and any information developed must be kept confidential.

All levels of a work force, including executives, are covered by this section. Also covered are such employment practices as recruiting, hiring, promotion, transfer, demotion, layoff and termination. Employers are expected to make reasonable accommodations to cope with the physical and mental disabilities of an otherwise qualified applicant or employee so that the individual can perform on a job. Such accommodations might include, but are not limited to, revision of a work schedule or alterations in the job task or job site.

The Office of Federal Contract Compliance Programs (OFCCP) of the U.S. Department of Labor is responsible for the enforcement of this section of the law. The main headquarters of OFCCP are at 200 Constitution Avenue, N.W., Washington, DC 20210; telephone: (202) 523-9476. There are ten regional offices covering the U.S., the U.S. Virgin Islands and Puerto Rico.

Section 504⁴

This section requires that no individual shall be excluded solely by reason of a handicap from participation in, or denied the benefits of, or subjected to discrimination under **any program or activity that receives federal assistance, or under any program conducted by any federal executive agency or by the U.S. Postal Service.** (The definition of the disabled used in this section is the same as that used in Section 503.)

The words “program or activity” are defined as all the operations of:

- departments or agencies of state or local government;
- colleges, universities or other post-secondary institutions or systems of higher education; and
- an entire corporation, partnership, or other private organization, or an entire sole proprietorship, if assistance is extended to such entities, as a whole, or if such entity is principally

⁴ This section is codified at 29 U.S.C. 794.

engaged in the business of providing education, health care, housing, social services, or maintaining parks or providing recreation.

Detailed implementation of the requirements of this section are found in the regulations at 28 CFR Part 41. The following are summaries of the general requirements:

1. "Handicapped person" is defined as:

any person who has a physical or mental impairment that substantially limits one or more major life activities, has a record of such impairment or is regarded as having such an impairment. [28 C.F.R. 41.31 (a)]

Notice the difference here from the definition in Sections 503 and 504 of the 1973 Act itself. The definition in the regulations is more explicit on what constitutes a handicap.

2. "Physical or mental impairment" means:

(i) any physiological disorder or condition, cosmetic disfigurement, or anatomical loss affecting one or more of the following bodily systems: neurological; musculoskeletal; special sense organs; respiratory, including speech organs; cardiovascular; reproductive; digestive; genito-urinary; hemic and lymphatic; skin; and endocrine; or

(ii) any mental or psychological disorder, such as mental retardation, organic brain syndrome, emotional or mental illness, and any specific learning disabilities. [28 C.F.R. 41.31(b)(1)]

3. "Major life activities" means:

Functions such as caring for one's self, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, and working. [28 C.F.R. 41.31(b)(2)]

4. No qualified handicapped person, on the basis of the handicap, shall be excluded from or subjected to discrimination under any program which receives federal financial assistance. [28 C.F.R. 41.51 (a)]
5. No qualified handicapped person shall be discriminated in or denied employment under any federally assisted program. (28 C.F.R. 41.52)
6. Recipients [of federal assistance] shall make reasonable accommodation to the known physical or mental limitations of an otherwise qualified handicapped applicant or employee unless the accommodation would prove an undue hardship on the operation of the program. (28 C.F.R. 41.53)
7. A recipient shall not use employment tests or criteria that discriminate against handicapped individuals. (28 C.F.R. 41.54)

8. Recipients may not conduct a pre-employment medical examination or make a pre-employment inquiry as to whether the applicant is a handicapped person or as to the nature or severity of a handicap. (28 C.F.R. 41.55)
9. No qualified handicapped person shall be denied the benefits of or excluded from participation or discriminated against in any federally assisted program on the basis of a recipient's facilities being inaccessible or unusable. (28 C.F.R. 41.56)
10. Recipients shall operate programs or activities so that they are usable by and accessible to handicapped individuals. If structural changes are necessary they shall be made not later than three years after the effective date of the agency regulation. [Extension is permitted for transportation facilities.] (28 C.F.R. 41.57)
11. New construction and alterations in existing facilities shall be designed to be readily accessible to and usable by handicapped individuals.

AMERICANS WITH DISABILITIES ACT OF 1990

This Act was passed on July 26, 1990 and is codified at 42 U.S.C. 12101 et seq. It is the single most comprehensive U.S. law affecting handicapped people. It has five titles:

1. Title I—Employment.
2. Title II—Public Services (including public transportation).
3. Title III—Public Accommodations and Services Operated By Private Entities.
4. Title IV—Telecommunications.
5. Title V—Miscellaneous Provisions.

Titles I and III will be the farthest reaching because they cover all private employers in industries affecting commerce who have fifteen or more employees (25 or more from July 1992 until July 1994), and all owners, lessees or operators of public accommodations.

Title I creates a scheme of statutory control over discrimination based on handicap very similar to the 1964 Civil Rights Act's control of discrimination based on minority status. Enforcement of this Title is assigned to the Equal Employment Opportunity Commission. Title III sets up requirements for facilities which are intended for public accommodation or which are non-residential and which affect commerce. ("Affecting commerce" is the language used in federal laws having their constitutional basis in the interstate commerce clause, when the broadest possible sweep is intended by Congress.) A vast majority of business facilities in the U.S. will be subject to Title III regulation and it is in Title III that the requirements are found to remove or modify architectural barriers which impede access by the handicapped.

Because security operations will typically embrace pre-employment screening activities and the control of access to premises for both applicants and employees, Titles I and III are of importance to the assets protection professional and will be discussed at length in this and the following sub-chapter. Titles II and IV are highly specialized and will not be discussed here. Title V requires the ATBCB to issue new, supplemental guidelines for application under Titles II and III. Title V also excludes from coverage transvestites, homosexuals, bisexuals and individuals with sexual behavior problems, as well as the illegal use of drugs as a disability.

The Act requires various departments and agencies of the U.S. government to issue regulations implementing its provisions. The final regulations have all been issued and must be consulted together with the Act, itself, for an understanding of the requirements. The regulations and issuing authorities are:

1. **For Title I:** 29 CFR Parts 1602, 1607 and 1630, issued by the Equal Employment Opportunity Commission, first published at 56 F.R. 35726, 7/26/91, effective 7/26/92.
2. **For Title II:** (Sub-title A) 28 CFR Part 35 issued by the Attorney General, first published at 56 F.R. 35693, effective 1/26/92. (Regulations have been issued by the Secretary of Transportation covering sub-title B which deal with government-operated public transportation facilities. This sub-title is not discussed in this chapter of the *Manual*.)
3. **For Title III:** 28 CFR Part 36, issued by the Attorney General, first published at 56 F.R. 35544, 7/26/91, effective 1/26/92.
4. **For Title IV:** This title amended the Communications Act of 1934 and deals with facilities for hearing and speech impaired individuals. Regulations have been issued by the Federal Communications Commission. (Neither this title nor the FCC regulations are discussed in this chapter of the *Manual*.)
5. **For Title V:** This Title directed the ATBCB to issue supplemental accessibility guidelines for buildings and facilities. These were first published at 56 F.R. 35455, effective 7/26/91. (Those will be covered extensively in this sub-chapter and sub-chapter II.)

In the discussion that follows, brief statements will be made of the provisions of the Act which are significant for assets protection. These will be followed by discussions of the matching provisions of the regulations, with citations to their locations in the CFR.

KEY PROVISIONS OF THE ADA OF 1990 AND RELATED REGULATIONS

TITLE I—EMPLOYMENT

Discrimination Prohibited

Section 102 of the Act prohibits discrimination by any person or organization covered by the Act against a *qualified individual with a disability* in regard to job application, hiring, advancement, discharge, compensation, training or other terms or conditions of employment.

A *qualified individual with a disability* is defined elsewhere in the Act as a person who can perform the essential functions of the job held or sought, with or without *reasonable accommodation*.

Reasonable accommodation is defined elsewhere in the Act as making existing facilities readily accessible to and usable by individuals with disabilities, and job restructuring, part-time or modified schedules, reassignments, acquisition or modification of equipment or devices, adjustment or modifications of examinations, training materials or policies, the provision of qualified readers or interpreters, and other, similar accommodations.

Discrimination includes:

1. Limiting, segregating or classifying a job applicant or employee, on the basis of a disability, in a way that adversely affects opportunities or status.
2. Participating in a contract or other arrangement or relationship which subjects qualified applicants or employees to discrimination on the basis of a disability.
3. Utilizing standards, criteria or methods of administration which discriminate on the basis of disability or perpetuate the discrimination of others subject to common administrative control.
4. Discriminating or denying equal job benefits to a qualified person because of the known disability of one with whom that person associates.
5. Not making reasonable accommodation to the known mental or physical limitation of an otherwise qualified person.

The regulations on this section are at 29 CFR 1630.4 through 1630.12. In brief, they correspond closely to the language of the Act but make the following additional points:

1. Collective bargaining agreements are included among forms of contract that may not discriminate on the basis of disability.
2. Associations with people of known disability—which may not be used as a basis for discrimination—include family, business, social or other relationships.
3. Tests given to people with impaired sensory, manual or speaking skills must be administered so they effectively reflect the qualities or skills, being tested rather than the impaired skill, unless the test is specifically for the impaired skill.

Prohibited Practices

Medical examinations and inquiries of job applicants or employees as to disabilities or their nature or severity are prohibited by the Act unless the employer can show that the inquiry is **job related** and consistent with business necessity. Employers may enquire into an applicant's or employee's **ability to perform job related functions**. Medical examinations may be given *after an employment offer has been made*, provided that all applicants or entering employees are so examined and that the records of the examination are maintained confidential. The confidentiality requirement does permit disclosure of disability data to supervisors and managers if accommodations must be made, and to safety personnel if the disability might require emergency treatment. An employer may also maintain voluntary medical examinations and collect voluntary medical histories as part of an employee health program available to workers at the site.

The regulations on medical inquiries and exams are at 29 CFR 1630.13 and 1620.14. They do not require that medical exams be job related or consistent with business necessity but, if criteria are used to screen out people with disabilities as a result of such exams, then the criteria for exclusion must be job related and consistent with business necessity.

Illegal Use of Drugs and Alcohol

An employee or applicant who is currently engaged in the illegal use of drugs is not protected by the Act. But, employees who have successfully completed or are currently participating in a supervised drug rehabilitation program and are no longer using drugs illegally, or who are erroneously regarded as illegally using drugs but are not actually using them, are protected.

An employer may prohibit the illegal use of drugs and the use of alcohol at the workplace by all employees and may require that employees not be under the influence of alcohol or engage in the illegal use of drugs at the workplace.

The regulations on drug and alcohol use are at 29 CFR 1630.16. They expressly do not prohibit, authorize or encourage drug testing and do not consider drug testing a medical examination.

The net result of this ambiguous treatment of the controversial subject of drug testing is that it is not illegal under the ADA and may be utilized by employers.

The regulations permit a covered employer to prohibit the illegal use of drugs and the use of alcohol at the workplace by all employees, to require that employees not be under the influence of alcohol or be engaging in the illegal use of drugs at the workplace, and to require that all employees conform to the requirements of the Drug-Free Workplace Act of 1988. Employers may also require employees to comply with regulations of the Nuclear Regulatory Commission (NRC), the Department of Transportation (DOT) and the Department of Defense (DOD) with regard to alcohol and the illegal use of drugs at the workplace, and with regulations of the DOD and DOT affecting employees in sensitive positions. Employers may also prohibit smoking at the workplace.

Interpretive Guidance to Title I

As an appendix to 29 CFR 1630, the EEOC has published an interpretive guidance document for Title I of the ADA. It explains the rationale underlying the implementing regulations and states the Commission's position that because the definition of "disability" is the same in the ADA as in the Rehabilitation Act of 1973, the prior case law developed under the 1973 Act is intended to be applied to the 1990 Act.

The Commission publishes a Technical Assistance Manual that is designed to assist in making practical applications of legal requirements to specific employment activities. The Manual also provides a directory of resources to aid compliance. (It is available from the EEOC.)

TITLE III—PUBLIC ACCOMMODATION AND SERVICES OPERATED BY PRIVATE ENTITIES

Places of Public Accommodation

In Section 301, the Act defines two categories of covered buildings and facilities: 1) *public accommodations*, and 2) *commercial facilities*. The following are listed as places in its definition of public accommodation:

- hotels, motels, and other places of lodging;
- restaurants, bars or other places serving food or drink;
- theaters, stadiums, concert halls or places of exhibition or entertainment;
- auditorium, convention center lecture hall or other place of public assembly;
- retail stores and establishments;

- professional offices of lawyers, accountants and health care providers;
- public transportation terminals;
- parks, zoos, museums, libraries and places of exercise or recreation;
- schools and places of education at all levels; and
- care centers and other social services establishments.

Public accommodations must meet ADA requirements for the removal of barriers and for the provision of auxiliary aids as well as the technical requirements for alteration and new construction.

Commercial facilities is intended for non-residential use by a private entity whose operations affect commerce—such as office buildings, warehouses, factories, and other buildings where employment may occur.

The removal of barriers and the provision of auxiliary aids do not apply to commercial buildings. However, reasonable accommodations must be made for disabled employees to enter and use the facility, and any part of the facility intended for public use—like a reception area.

Section 302 prohibits discrimination on the basis of disability by owners, lessees or operators of any of the facilities noted above. Specifically prohibited are:

1. Imposition of eligibility criteria which screen out individuals with disabilities.
2. Failure to make reasonable modifications in policies, procedures or practices necessary to accommodate individuals with disabilities.
3. Failure to take steps to prevent exclusion of the disabled due to the lack of auxiliary aids and services, unless taking such steps would fundamentally alter the goods or services or result in an undue burden.
4. Failure to remove architectural and communications barriers structural in nature in *existing facilities*, where such removal is readily achievable.
5. Failure to provide goods or services through readily achievable alternatives when barrier removal cannot be readily achieved.

“*Readily achievable*” is defined in the Act as *easily accomplished and able to be carried out without much difficulty or expense*. Factors considered are the nature and cost of the needed measure, the character and size of the facility at which it is needed, the size and overall financial position of the entity which operates the facility, and the character of the operations of the entity operating the facility.

New and Altered Construction

Section 303 deals with new construction and alterations. It states that discrimination consists in the failure to design and construct facilities for places of public accommodation and commercial facilities—when the facility is newly occupied later than 30 months after passage of the Act, such as later than 1/26/93—that are *readily accessible to and usable by individuals with disabilities*. Any facility that is altered after the effective date must be altered so that it is readily accessible to and usable by individuals with disabilities, including those with wheelchairs.

Private entities that provide public transportation services must not discriminate on the basis of disability. Discrimination will be found if such entities fail to make reasonable accommodations, provide auxiliary aids and services, and remove barriers.

Not later than one year after the Act, the Secretary of Transportation was required to issue regulations concerning the transportation provisions of Title III and the Attorney General was required to issue regulations concerning the other provisions of the title. Both sets of regulations must be consistent with the minimum guidelines issued by the ATBCB. Both sets of regulations have been issued, as noted previously. The DOJ included the ATBCB Guidelines as an appendix to its regulations.

TITLE V—MISCELLANEOUS PROVISIONS

Standards Not Less Than for the 1973 Act

Section 501 states that standards and requirements under the ADA of 1990 shall not be less than those established under the Rehabilitation Act of 1973. This generally means that everyone now regulated under either the ADA or the Rehabilitation Act will meet the same standards.

This section also permits states to make laws and adopt regulations that are more strict than those in the ADA. It is important to check the provisions of state and local law, if any, in addition to the ADA or the Rehabilitation Act and respective regulations.

Accessibility Guidelines for Buildings and Facilities

Section 504 requires the Architectural and Transportation Barriers Compliance Board to issue minimum guidelines to supplement existing guidelines for access. The Board did issue such guidelines on July 26, 1991, and amended them on September 6, 1991. They are codified at 36 CFR Part 1191. The actual structural requirements for new and altered facilities covered by the Act will be spelled out in those guidelines, particularly in their Appendix A.

The guidelines are the primary resource for determining how to achieve compliance. Compliance includes the acceptable design of security countermeasures which may create or extend limitations upon ready access. (Chapter 39, Part II of the *Manual* will consider the specific relevant provisions of the guidelines.)

Exclusion of Certain Classes of People

Section 508 excludes transvestites as disabled people. Section 510 excludes from the Act's protection people that are currently using illegal drugs. Section 511 excludes homosexuality, bisexuality, sexual behavior disorders, kleptomania, pyromania and compulsive gambling disorders as disabilities.

ADDITIONAL SOURCES OF GUIDANCE AND INFORMATION

Listed below are some sources that can be contacted to obtain additional information on designing accessible buildings and facilities, and otherwise complying with both the 1973 and 1990 Acts.

American Institute of Architects

1735 New York Avenue, N.W.
Washington, DC 20006
tel: (202) 626-7300

American National Standards Institute

11 West 42nd Street, 13th Floor
New York, NY 10036
tel: (212) 642-4900
(ANSI Standard #117.1-1986)

Building Owners & Managers Association (BOMA) International

1201 New York Avenue N.W., Suite 300
Washington, DC 20005
tel: (202) 408-2662

Civil Rights Division, Office on the ADA

U.S. Department of Justice, P.O. Box 66118
Washington, DC 20035-6118
tel: (202) 514-0301; TDD numbers: (202) 514-0381 or -0383

U.S. DOJ Electronic Bulletin Board System (BBS)

tel: (202) 514-6193

Clearinghouse on the Handicapped, Office for Handicapped Individuals

U.S. Department of Health and Human Services
Hubert H. Humphrey Building, Room 338D
Washington, DC 20201

Equal Employment Opportunity Commission

1801 L Street, NW
Washington, DC 20507
tel: (202) 663-4900 or (202) 296-6312 (for 202 area).

General Services Administration

Public Buildings Service
Washington, DC 20405

National Library Services for the Blind and Physically Handicapped

U.S. Library of Congress
1291 Taylor Street, N.W.
Washington, DC 20542

Office for Civil Rights

U.S. Department of Health and Human Services
330 Independence Avenue, S.W.
Washington, DC 20201

(Information also available from the regional offices for Civil Rights in Boston, New York, Philadelphia, Atlanta, Chicago, Dallas, Kansas City, Denver, San Francisco, and Seattle.)

President's Committee on Employment of People With Disabilities

1331 F Street, N.W., 3rd Floor
Washington, DC 20004
tel: (202) 376-6200; fax: (202) 376-6219

(Materials also available from the State Governors' Committee on Employment of the Handicapped)

U.S. Architectural and Transportation Barriers Compliance Board

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CHAPTER 39

Part II

THE WORKPLACE ENVIRONMENT AND THE DISABLED

In Part I of this Chapter we discuss the laws enacted to prevent discrimination and to promote solutions to provide those with disabilities better access to public and commercial facilities. Part II looks at some of the practical aspects of design to meet the requirements for new construction and renovation. In particular, it discusses design concepts related to the implementation of security control and monitoring systems.

Accessibility is a key factor in developing plans to accommodate the disabled. In general, the term accessibility as utilized in this Chapter means free of barriers that could prevent an individual with impaired mobility from getting to a desired location in a facility, as well as being able to use lavatories, lounges, lunchrooms, public telephones, drinking fountains or other amenities.

According to the Architectural and Transportation Barrier Compliance Board (ATBCB) *accessible* describes a site, building, facility, or portion thereof that complies with the ATBCB guidelines.¹ An accessible route, is a continuous unobstructed path connecting accessible elements and spaces in a building or facility. Interior accessible routes may include corridors, floors,

¹“Accessibility Guidelines for Buildings and Facilities” issued by the ATBCB, 7/26/91, 56 F.R. 35455, as Appendix to 39 CFR Part 1190, section 3.5. (Hereafter in this sub-chapter reference will be to “Guidelines.”)

ramps, elevators, lifts, and clear floor space at fixtures. Exterior accessible routes may include parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps and lifts.²

Eliminating barriers is essential. Barriers, however, are not limited to structural items such as doors, aisles, walls and stairs, but may include attitudinal barriers. (Refer to Chapter 39, Part I for a discussion of attitudinal barriers.) Restaurant menus not offered in braille or elevator numbers that are not raised are communication barriers to blind people. For the deaf, such barriers include films without captions, classes without sign language interpreters, and alarms that only signal audibly. Transportation barriers include such items as narrow doors on buses and parking spaces that are too small or that are not usable because of their location. Turnstiles or revolving doors represent impassible barriers for those using wheelchairs.

Making accommodations to eliminate attitudinal barriers is mandated by Title I of the Americans with Disabilities Act (ADA) of 1990 and is enforced by the Equal Employment Opportunities Commission (EEOC). Titles II and III of the Act mandate eliminating physical barriers. For public accommodations and commercial facilities, it is required that new or altered construction conform with the ATBCB Guidelines. This sub-chapter will discuss the sections of the Guidelines that are of particular significance to security.

WHO IS A PERSON WITH A DISABILITY?

Throughout this discussion, it will be noted that the term *disabled* rather than *handicapped* has been used. Disabled is now the preferred term and the one used in statutes and regulations. The use of disabled was encouraged in the 1980s. The United Nations followed this practice when it designated 1981 as the International Year of Disabled Persons.

In a 1981 publication, the World Health Organization listed an international classification of impairments, disabilities and handicaps. The following definition were adopted:

1. **Impairment.** A permanent or transitory psychological, physiological, or anatomical loss or abnormality of structure or function—such as an amputated limb, paralysis after polio, diabetes, mental retardation, impaired hearing, near-sightedness, etc.
2. **Disability.** Refers to restrictions on, or prevention of, carrying out an activity because of an impairment in the manner or within the range considered normal for a human—such as difficulty in walking, seeing, speaking, hearing, counting, lifting, reading, writing, etc. A disability may last for a long or short time, be permanent or reversible, progressive or regressive, and may vary in its impact from one situation to another.

² Ibid.

Under the ADA, a disability—with respect to an individual—is defined as a physical or mental impairment that substantially limits one or more of the major life activities of such an individual, having a record of such an impairment or being regarded as having such an impairment.³

3. **Handicap.** Used to denote a disability that interferes with what is expected at a particular time in one's life—for example an inability to care for oneself, communicating thoughts and concerns, for developing a capacity for independent economic activity.

Disabilities and their resulting functional limitations include both physical and mental problems. The more obvious disabling conditions are: blindness or severe visual impairments; deafness or severe hearing loss; and orthopedic problems requiring the use of a wheelchair, walker, braces, crutches, canes, or other such devices that are used to compensate for functional losses. In addition, there are other disabilities that may not be visible. These include but are not limited to: cerebral palsy; epilepsy; muscular dystrophy; multiple sclerosis; cancer; diabetes; heart disease; mental retardation; respiratory problems; emotional illness; and learning problems such as perceptual handicaps, dyslexia, minimal brain dysfunction and development aphasia. In general, disabilities can be grouped into five basic categories:

1. Disabilities relating to physical function.
2. Disabilities related to mental function.
3. Disabilities related to motor function.
4. Disabilities related to the senses.
5. Disabilities that are hidden.

Although disabilities in the second, fourth and fifth categories recognized in the Act and regulations, for the most part the ATBCB Guidelines used under Titles II and III are addressed to the first and third categories. They apply mainly to architectural and structural barriers that will interfere with or impede a person using a wheelchair. The dimensions of aisles, entrances and exits, and the elevation of door hardware, elevator controls and communications facilities are based upon the effective reach of a person in a wheelchair.

Before considering the actual Guideline requirements, it will be helpful to review some basic data about wheelchairs.

³ 42 U.S.C. 12101(2)

WHEELCHAIR REQUIREMENTS

Wheelchair dimensional and accommodation requirements are central to the Guidelines. In general, minimum clearances and reaches are developed from the standard wheelchair's geometry and operational characteristics.

The most commonly used wheelchair is a collapsible model of tubular metal construction with plastic upholstery for the back and seat. The width of the wheelchair can usually be adjusted to suit the user. The seat height can vary and may be altered by the addition of a cushion and the footrests can be fixed or adjustable. Some footrests are hinged to swing to the side which allows the user to approach furniture or fixtures more closely. The armrests on some wheelchairs are removable. This feature is necessary to accommodate side or parallel transfer of the user. Most wheelchairs collapse to a width of approximately 11 inches to allow convenient storage or transfer to an automobile. Additional attachments, such as electric motors, will have a significant effect on the overall dimensions and weight. The width of an average wheelchair may vary from 27 to 29 inches, and the length is approximately 42 inches (see Figure 1).

The turning radius of a wheelchair varies with the width and length of the chair and the technique employed by the user. The most common method for turning is accomplished by simultaneously moving one rear wheel forward and the other rear wheel backward. This results in the wheelchair pivoting about its center.

A wheelchair can be turned in a smaller space by using a constant series of backing and turning movements. An alternate method of turning is accomplished by locking one rear wheel and allowing the other to turn freely. This requires a turning space of approximately 72 inches. In computing space requirements, the vertical characteristics of a wheelchair must also be considered. For example, the height of the footrest (to the top of the toe) is usually about 8 inches in order to allow the footrest and feet to pass under fixtures, such as lavatories.

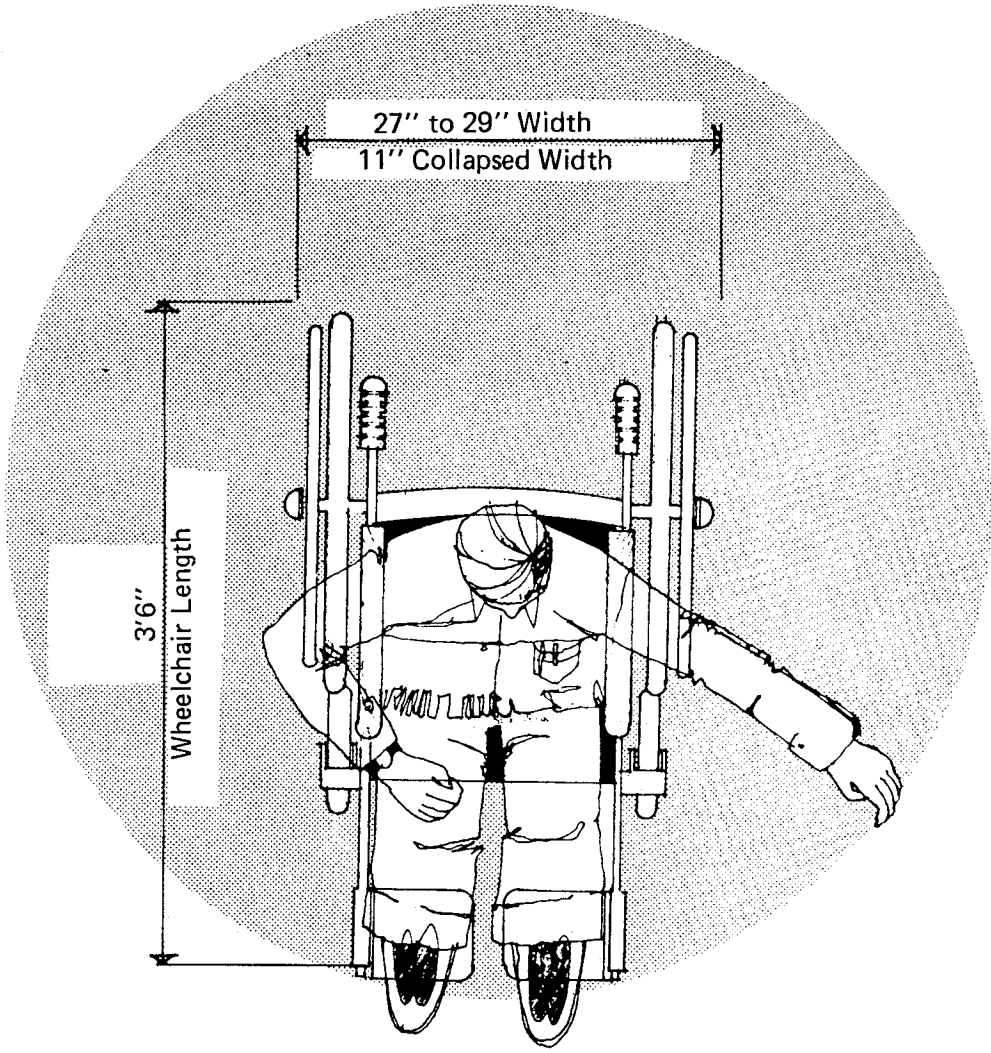


FIGURE 1
Wheelchair Dimensions

Dimensional data relating to the average adult male wheelchair user are shown in Figures 2 and 3.

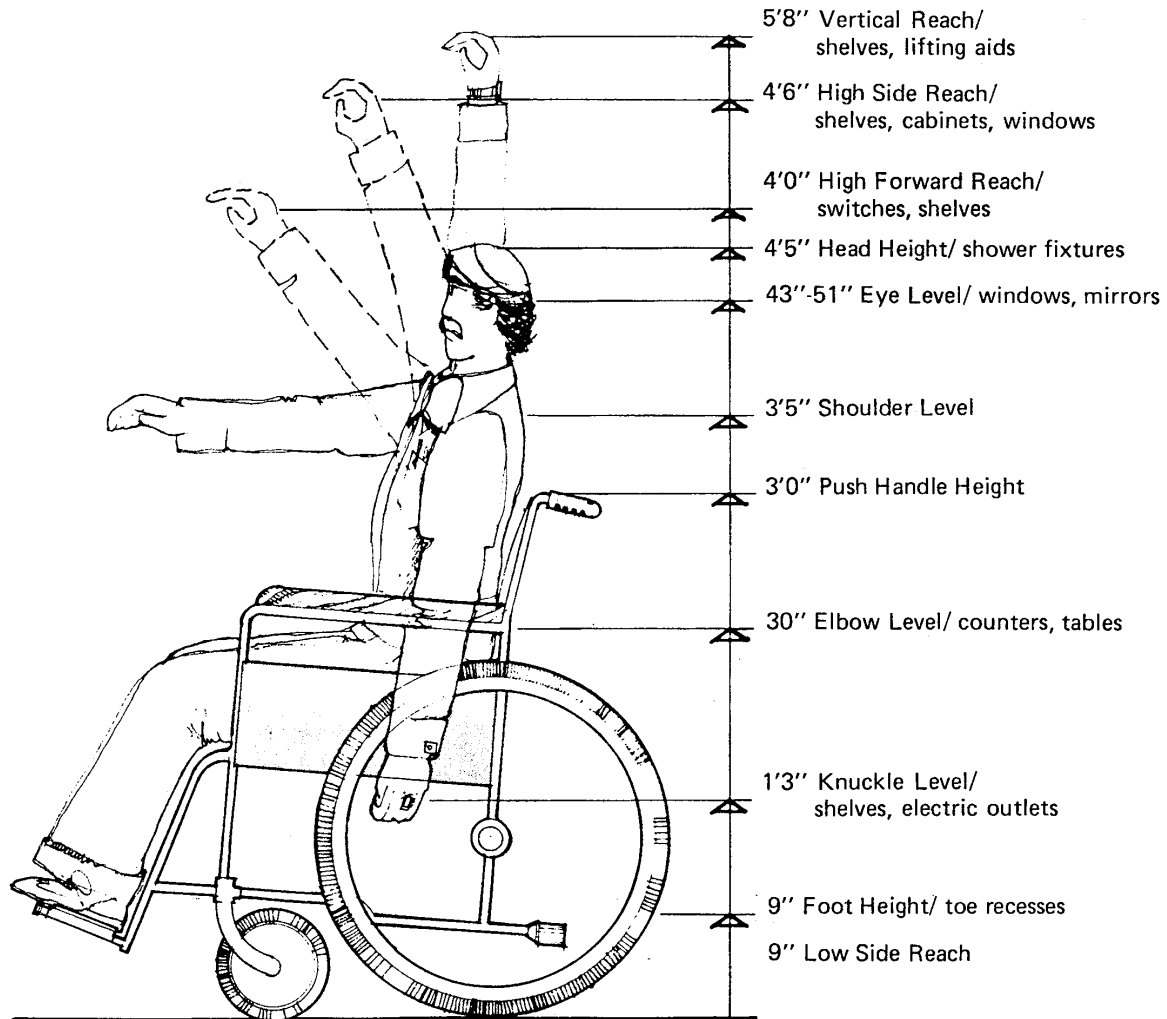


FIGURE 2
Typical Dimensions

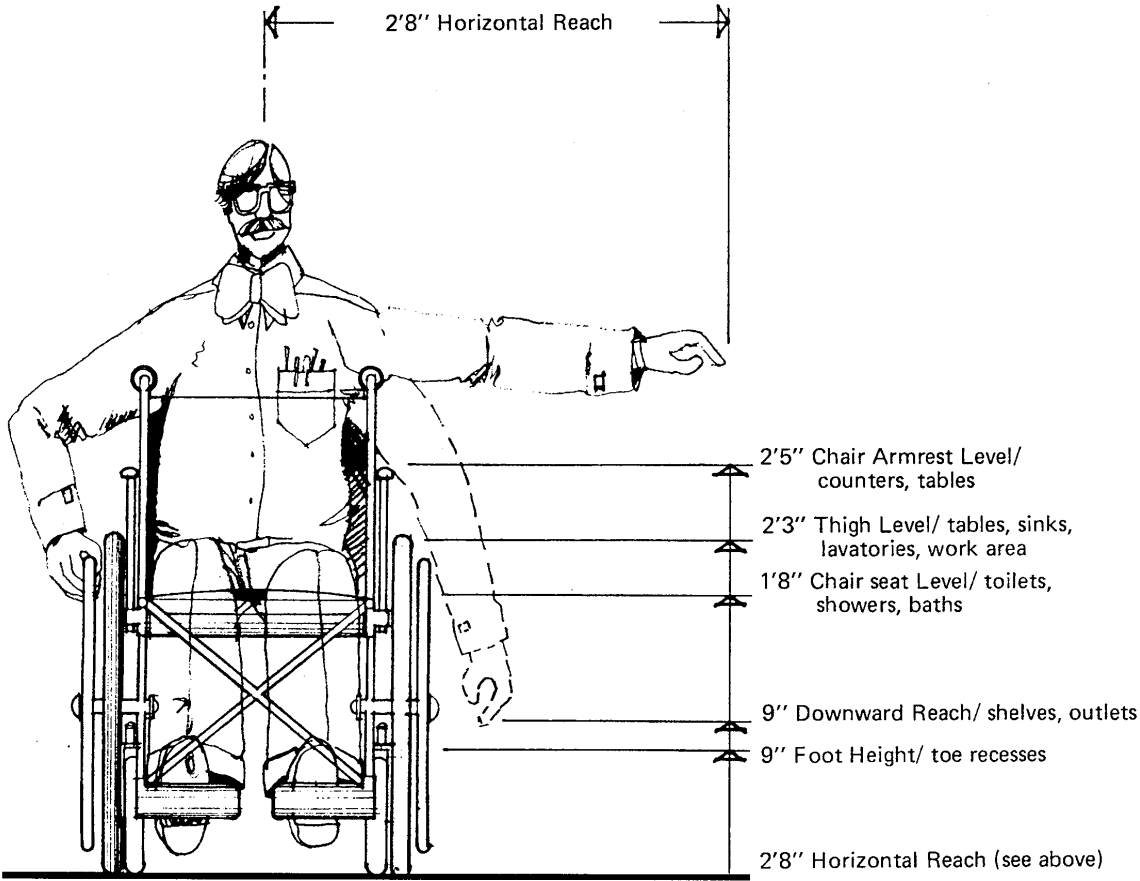


FIGURE 3
Typical Dimensions

Significant variations are possible as a result of wheelchair dimensions and a user's anthropometric characteristics, but the minimum clearances and other dimensions noted in the Guidelines will allow for effective compliance.

Wheelchair Minimums Required by the Guidelines

The following table summarizes minimum clearance and space requirements established in Section 4.2 of the Guidelines. Specific subsection references are provided later.

Clearance/Space Feature	Condition	Dimension	Ref: Fig.
Passage Width	Continuous Aisle/Corridor Width	min. 36"	4.a
	Clear Doorway Width	min. 32"	4.b
	Passage Restriction up to 24" deep	min. 32"	4.c
	Passage Restriction greater than 24" deep	min. 36"	
Passing Width*	For two wheelchairs to pass	min. 60"	4.d
Turning Space*	Space for 180° turn	min. 60" ; or "T" junction	4.e
Clear Floor Space	Area for a single wheelchair	30" x 48"	
Forward Approach**	Height for clear high reach	max. 48"	5.a
	Height for clear low reach	min. 15"	5.a
	Height for high reach obstructed by shelf/desktop less than 20" deep	max. 48"	5.b
	Height for high reach obstructed by shelf/desktop from 20" up to 25" deep	max. 44"	5.b
Side/Parallel Approach***	Height for clear high reach	max. 54"	5.c
	Height for clear low reach	min. 9"	5.c
	Height for high reach obstructed by object 24" deep x maximum 34" high	max. 46"	5.d
Elevator Controls	Height hall call button (& card readers)	42"	6.a
	Height interior cab controls	max. 54" min. 35"	6.b

* Passing width or turning space is required every 200 feet.

** Forward reach is an important consideration for the layout of security monitoring consoles.

*** Maximum side reach restricts the mounting height of security equipment such as intercoms.

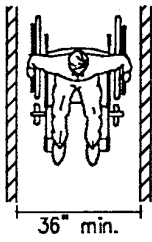


Fig. 4.a

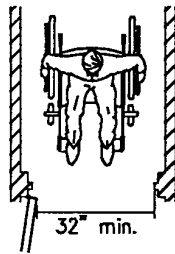


Fig. 4.b

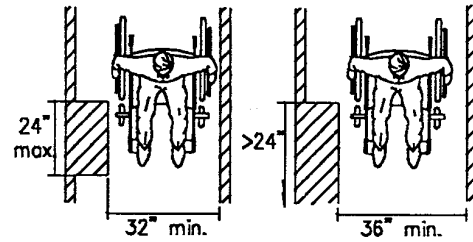


Fig. 4.c

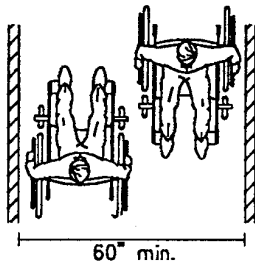


Fig. 4.d

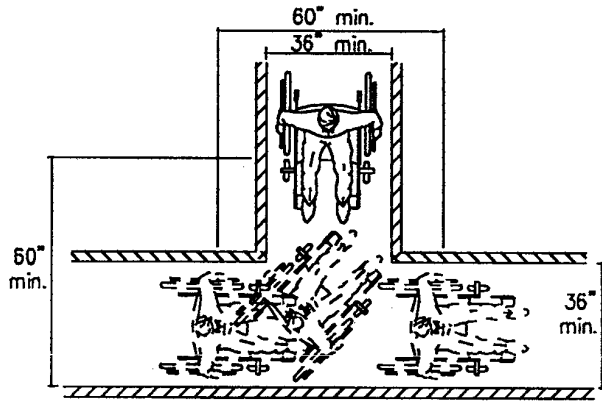


Fig. 4.e

FIGURE 4
Passage Dimensions

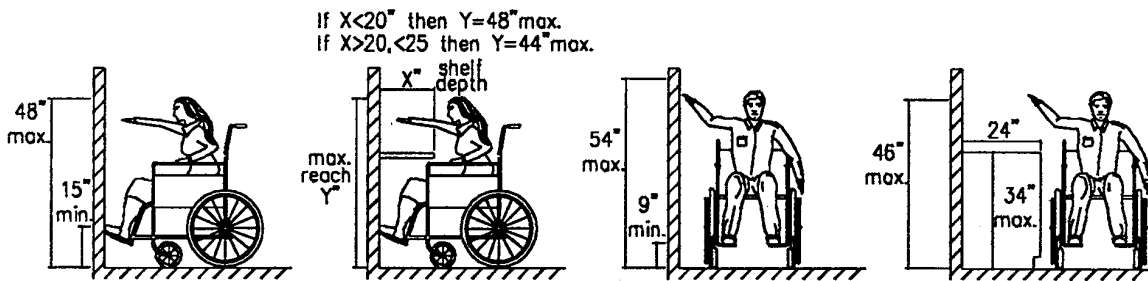


Fig. 5.a

Fig. 5.b

Fig. 5.c

Fig. 5.d

FIGURE 5
Reach Dimensions

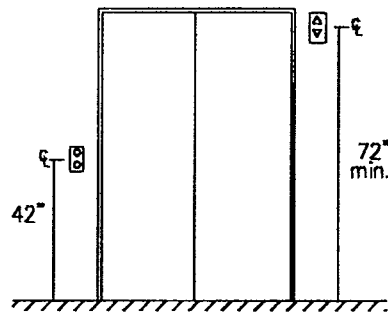


Fig. 6.a

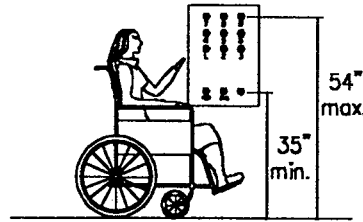


Fig. 6.b

FIGURE 6

Elevator Control Equipment Heights

REQUIREMENTS OF THE ATBCB GUIDELINES

The current Guidelines are based largely upon the pre-existing ANSI Standard 117.1-1980.⁴ They were issued earlier in connection with the Rehabilitation Act of 1973 and, for firms and organizations covered by that Act, the earlier Guidelines are still operative. However, new material has been included in Section 4.1.1. through 4.1.7 and sections 5 through 10 of the new ADA Guidelines. Sections 5 through 10 deal with specialized occupancies and Section 7 deals specifically with business and mercantile.

The Guidelines are based upon adult dimensions and anthropometrics. They allow the use of alternative designs and technologies when the alternatives provide equal or greater access and usability. There is an Appendix to the Guidelines that provides advisory and explanatory material to make the intent of the mandatory sections clearer. When useful, comments on the Guidelines Appendix will be included.

The official document contains illustrations and graphics that clarify the Guideline requirements. The illustrations and graphics were originally developed for the ANSI standard. Readers who have a specific requirement for applications that are not clear from the text summaries in this Chapter should obtain copies of the official Guidelines from the ATBCB or the Department of Justice (DOJ). Both organizations can be contacted at the addresses and telephone numbers listed at the end of Chapter 39, Part I.

⁴ A design standard published by the American National Standards Institute, Inc. (ANSI), titled "Specifications for Making Buildings and Facilities Accessible to and Usable by the Physically Handicapped," is mentioned in the various sections of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 in reference to the minimal requirements of the Acts. A number of states have also adopted the ANSI specifications. ANSI is a private institution not connected with the federal government that provides a mechanism for creating voluntary consensus standards. The latest version of the standard is ANSI 117.1-1986. Copies may be obtained from the American Standards Institute, Inc., 1430 Broadway, New York, NY 10018.

Table of Titles of the ADA Guidelines Sections

Following is a list of Section titles for all operative Sections in the new Guidelines. This sub-chapter does not comment on every section, only on those of primary security interest. (The section of primary interest is listed in bold face.)

<u>NUMBER</u>	<u>TITLE</u>
1.	Purpose
2.	General
3.	Miscellaneous Instructions and Definitions
4.1	Minimum Requirements
4.2	Space Allowance and Reach Ranges
4.3	Accessible Route
4.4	Protruding Objects
4.5	Ground and Floor Surfaces
4.6	Parking and Passenger Loading Zones
4.7	Curb Ramps
4.8	Ramps
4.9	Stairs
4.10	Elevators
4.11	Platform Lifts (Wheelchair Lifts)
4.12	Windows [material reserved]
4.13	Doors
4.14	Entrances
4.15	Drinking Fountains and Water Coolers
4.16	Water Closets
4.17	Toilet Stalls
4.18	Urinals
4.19	Lavatories and Mirrors
4.20	Bathtubs
4.21	Shower Stalls
4.22	Toilet Rooms
4.23	Bathrooms, Bathing Facilities, & Shower Rooms
4.24	Sinks

<u>NUMBER</u>	<u>TITLE</u>
4.25	Storage
4.26	Handrails, Grab Bars, and Tub and Shower Seats
4.27	Controls and Operating Mechanisms
4.28	Alarms
4.29	Detectable Warnings
4.30	Signage
4.31	Telephones
4.32	Fixed or Built-in Tables and Seating
4.33	Assembly Areas
4.34	Automated Teller Machines
4.35	Dressing and Fitting Rooms
5.	Restaurants and Cafeterias
6.	Medical Care Facilities
7.	Business and Mercantile
8.	Libraries
9.	Accessible Transient Lodging
10.	Transportation Facilities

Appendix

SPECIFIC REQUIREMENTS

The material presented here has been selected from the 1991 Guidelines as being of the greatest relevance to security operations. Direct quotations are shown within quotation marks. For the full text of referenced sections, the Guidelines themselves should be consulted. Readers operating under the 1973 Act should consult the earlier Guidelines included under that Act.

Selected Definitions (Section 3.)

Access aisle. An accessible pedestrian space between elements—such as parking spaces, seating and desks—that provides clearances appropriate for use of the elements.

Accessible route. A continuous unobstructed path connecting all accessible elements and spaces of a building or facility. Interior accessible routes may include corridors, floors, ramps, elevators, lifts, and clear floor space at fixtures. Exterior accessible routes may include parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps and lifts.

Assembly area. A room or space accommodating a group of individuals for recreational; educational, political, social or amusement purposes, or for the consumption of food and drink.

Building. Any structure used and intended for supporting or sheltering any use or occupancy.

Clear floor space. The minimum unobstructed floor or ground space required to accommodate a single, stationary wheelchair and occupant.

Closed circuit telephone. A telephone with dedicated line(s) such as a house phone, courtesy phone or phone that must be used to gain entrance to a facility.

Egress, means of. A continuous and unobstructed way of exit travel from any point in a building or facility to a public way. A means of egress comprises vertical and horizontal travel and may include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, horizontal exits, courts and yards. An accessible means of egress is one that complies with these guidelines and does not include stairs, steps, or escalators. *Areas of rescue assistance or evacuation elevators may be included as part of accessible means of egress.*

Element. Any architectural or mechanical component of a building, facility, space or site—for example telephone, curb ramp, door, drinking fountain, seating, or water closet.

Entrance. Any access point to a building or portion of a building or facility used for the purpose of entering. An entrance includes the approach walk, the vertical access leading to the entrance platform, the entrance platform itself, vestibules if provided, the entry door(s) or gate(s), and the hardware of the entry door(s) or gate(s).

Facility. All or any portion of buildings, structures, site improvements, complexes, equipment, roads, walks, passageways, parking lots, or other real or personal property located on a site.

Signage. Displayed verbal, symbolic, tactile, and pictorial information.

Site. A parcel of land bounded by a property line or a designated portion of a public right-of-way.

Space. A definable area such as a room, toilet room, hall, assembly area, entrance, storage room, alcove, courtyard or lobby.

Accessible Elements and Spaces: Scope and Technical Requirements; Minimum Requirements. (Section 4.1.)

The minimum requirements are stated briefly in this section of the Guidelines, but each topic is covered at greater length in Sections 4.2 through 4.35. (The security-relevant provisions of all sections will be discussed in this Chapter.) Both the General Requirements of 4.1 and the detailed requirements of 4.2 through 4.35 must be read together for each topic.

Areas used only by employees as work areas must permit individuals with disabilities to approach, enter and exit. They do not have to permit maneuvering within the area, or be constructed or equipped to be accessible. (Section 4.1.1.(3).) The Appendix notes that if multiple adjacent work stations exist, at least one of each type should permit maneuvering. If multiple offices exist, then all must meet the door and accessible route requirements but not permit maneuvering around individual desks.)

Accessibility is not required to observation galleries used primarily for security purposes or to non-occupiable spaces accessed only by ladders, catwalks, crawl spaces, very narrow passageways or freight (non-passenger) elevators, and frequented only by service personnel for repair purposes. Such spaces include, but are not limited to, elevator pits, elevator penthouses, piping or equipment catwalks. (Section 4.1.1.(5)(b).) This also applies to security equipment maintenance spaces such as riser closets and areas behind a security console. (Also refer to section 4.8.)

At least one accessible route must be provided within the site boundaries from public transportation stops, accessible parking spaces, passenger loading zones, and public streets or sidewalks to an accessible building entrance. (Section 4.1.2.(1).)

At least one accessible route must connect accessible buildings, accessible facilities, accessible elements, and accessible spaces on the same site. (Section 4.1.2.(2).)

If parking spaces are provided for employees or visitors, then accessible spaces must be provided at the following rate (refer to Section 4.1.2.(5)(a)):

- one for each 25 spaces up to 500;
- two percent of the total between 501 and 1,000; and
- for 1,001 or more, 20 plus one for each 100 over 1,000.

In an accessible route connecting entrances with interior accessible spaces, accessible ramps may be used in lieu of an elevator. At least one passenger elevator that complies with Section 4.10 and serving all levels, including mezzanine, must be included in each new accessible building. The following is an exception; No elevator is required for a building of less than

three stories or less than 3,000 square feet per story, unless the building is a shopping mall, a shopping center or the office of a professional health care provider. (Section 4.1.3.(5).)

Wheelchair lifts may be used in lieu of required elevators only for limited access applications in places of public assembly. The lifts may be used to provide access to incidental spaces not open to the general public, not occupied by more than five people and provide access in buildings where existing constraints make ramps or elevators infeasible. (Section 4.1.3.(5).)

At least one door must meet the requirements (discussed later) for doors at the following locations: each accessible entrance to a building or facility; each accessible space within a building or facility; each door that is an element of an accessible route; and each required egress point. (Section 4.1.3.(7).)

In new construction, at least 50 percent of all public entrances must be accessible, and at least one must be on the ground floor. There must be at least as many accessible entrances as there are exits required by local building/fire codes. An accessible entrance must be provided for each tenant in a facility. It is preferable, but not required, that all entrances be accessible. (Section 4.1.3.(8)(a) and (b).)

There must be as many accessible means of egress as there are exist required by local building/life safety regulations. Where required exit(s) from an occupiable level above or below a level of accessible exit discharge is/are not accessible, the number of areas of rescue assistance must be equal to the number of inaccessible required exits. A horizontal exit that complies with local codes is acceptable as an area of rescue assistance.

Areas of rescue assistance are not required in buildings or facilities with supervised, automatic sprinkler systems. (Section 4.1.3.(9).) The Appendix indicates that a supervised sprinkler system is one in which water flow, valve status and power supplies are monitored.

If emergency warning systems are provided, they must include both audible and visible alarms. (Section 4.1.3.(14).)

Controls and operating mechanisms in accessible spaces or along accessible routes or as parts or an accessible element must meet minimum installation requirements. (This topic is discussed later.) (Section 4.1.3(13).)

If public, pay, closed circuit or other telephones are provided, then either one per floor, if only one phone or one bank of phones is provided, or one per bank, if more than one bank is provided on a floor, must comply with the following requirements:

1. The phone must be forward reach unless it is an exterior phone that offers dial tone first service, in which case, it may be side reach.

2. Accessible phones and 25 percent (never less than 1) of all other phones must be volume controlled and designated by appropriate signage.
3. If there are more than four pay phones, and at least one is interior, then at least one interior phone must be a public text phone.
4. If a bank of three or more public phones is provided in a bank, at least one must be equipped with a shelf and an outlet.
5. If an interior public pay phone is provided in a stadium, arena, convention center, hotel with convention center or a covered mall, at least one interior public text phone must be provided. (Section 4.1.3(17).)

When alternations of single elements amount to an alteration of a room or space, the entire room or space must be made accessible. (Section 4.1.6.(c).)

Space Allowances and Reach Ranges (Section 4.2)

Minimum clear width for single wheelchair passage must be 32 inches continuously. (Section 4.2.1.)

Minimum width for two wheelchairs to pass is 60 inches. (Section 4.2.3.)

A wheelchair requires a clear space of 60 inches or a “T” shaped space to make a turn of 180 degrees. (Section 4.2.3.)

Minimum clear floor space required for a single, stationary wheelchair and occupant is 30-by-48 inches. (Section 4.2.4.1.)

One full, unobstructed side of the clear floor or ground space for a wheelchair must adjoin or overlap an accessible route or adjoin another wheelchair space. (Section 4.2.4.2.)

Maximum high forward reach in a forward wheelchair approach to an object must be 48 inches. Minimum low forward reach is 15 inches. (Section 4.2.5.)

Maximum high side reach for a parallel wheelchair approach must be 54 inches, and the low side reach must not be less than 9 inches. (Section 4.2.6.)

(The Appendix contains illustrated, explanatory material on wheelchair accommodation.)

Accessible Routes (Section 4.3)

There must be at least one accessible route:

- within the site, from public transportation, parking or passenger loading zones;
- connecting accessible buildings or facilities on the same site; and
- connecting each accessible building or facility entrance with all accessible interior space in that building or facility.

To the maximum extent possible, the accessible route must coincide with the route for the general public.

The minimum width for an accessible route must be 36 inches except at doors—where it must be 32 inches.

If an accessible route has less than 60 inches clear width, there must be passing spaces at least 60-by-60 inches reasonable intervals, not to exceed 200 feet.

An accessible route must have a minimum clear head room of 80 inches. If an adjoining route is less than 80 inches, there must be a barrier to warn blind or visually impaired people.

The surface of the route must be firm, stable and slip-resistant.

An accessible route with a running slope—one parallel to the route—greater than 1:20 is a ramp and must comply with ramp requirements. A cross slope—one at right angles to the route—of an accessible route shall not exceed 1:50.

Changes in level up to $\frac{1}{4}$ inch may be vertical and without edge treatment. Between $\frac{1}{4}$ and $\frac{1}{2}$ inch, the edge must be beveled with a slope that does not exceed 1:2. Changes over $\frac{1}{2}$ inch must be ramped.

Accessible routes must also serve as a means of egress for emergencies to connect to an accessible area of rescue assistance.

Areas of Rescue Assistance (Section 4.3.11)

Areas of rescue assistance shall be one of the following:

1. A portion of a stairway within a smoke-proof enclosure that complies with local requirements.
2. A portion of an exterior balcony immediately adjacent to an exit stairway if the balcony complies with local law on exterior exit balconies. Openings to the interior of the building within 20 feet of the area must be protected with fire assemblies rated for 3/4 hour.

3. A portion of a one-hour fire-rated corridor that complies with local codes, located immediately adjacent to an exit enclosure.
4. A vestibule located immediately adjacent to an exit enclosure and having the same fire rating as required for corridors and openings.
5. A portion of a stairway landing within an exit enclosure that is vented to the exterior and separated from the building interior by not less than one-hour fire-rated doors.
6. If approved by local authority, an area or room separated from the rest of the building by a two-hour fire-rated smoke barrier that completely encloses the room or area. Doors to the area must be fire-rated not less than 20 minutes and shall be automatic or self-closing draft controlled type. The area must be provided with an exit directly adjacent to an exit enclosure. If the exit enclosure is required to be fire-rated at more than one hour, the rescue assistance room or area must have the same rating and the same opening protection.
7. An elevator lobby—when the elevator shafts and adjacent lobbies are pressurized according to local law and meet the Guidelines requirements for size, communications and signage. Pressurization systems must be actuated by floor smoke detectors and installed in compliance with local code. Pressurization equipment and ductwork must be separated from the rest of the building by two-hour fire-rated construction.

Each area of rescue assistance must provide at least two accessible areas—each not less than 30-by-48 inches—that must not encroach on any required exit width. The total number of an area that is 30-by-48 inches per story must not be less than one for every 200 people of calculated occupant load served by the rescue assistance area.

Each stairway adjacent to an area of rescue assistance must have a minimum clear width of 48 inches between handrails.

A method of two-way communication—with both visible and audible signals—must be provided between each area of rescue assistance and the primary entry. The local authorities may approve a location other than the primary entry. (The main lobby near the principal entry door(s) is usually designated under local codes as the place for the Fire Command Station or other equivalent unit for total life safety and building evacuation control. It would be to the Fire Command Station that the Areas of Rescue Assistance would communicate.)

A sign that reads: “AREA OF RESCUE ASSISTANCE” and displays the international symbol of accessibility—profile of a wheelchair with occupant—must identify each area of rescue assistance. The sign must be illuminated when exit sign illumination is required. Other signage must be installed at all inaccessible exits and where otherwise necessary to indicate the direction of areas of rescue assistance. In each rescue assistance area, instructions that explain the use of the area under emergency conditions must be posted adjoining the two-way communications system.

Parking and Passenger Loading Zones (Section 4.6)

Parking for an accessible structure must be on the shortest accessible route from adjacent parking to an accessible entrance. Common parking for multiple structures must be located on the shortest accessible route of travel to an accessible pedestrian entrance of the parking area. In structures with multiple accessible entrances, parking must be dispersed and located closest to the accessible entrances.

Accessible parking spaces must be at least 96 inches wide. Parking access aisles must be part of an accessible route to an accessible building entrance. Two accessible parking spaces may share a common access aisle. Parking places must be level, with no slope over 1:50 in any direction.

Accessible parking spaces must be designated with a sign depicting the international accessibility symbol.

Minimum vertical clearance of 114 inches is required at accessible passenger loading zones and along at least one vehicle access route to site entrances and exits. Minimum vertical clearance of 98 inches is required at each van parking space and along at least one vehicle access route to the space from the site entrances and exits.

Curb Ramps (Section 4.7)

Curb ramps must be provided wherever an accessible route crosses a curb. Slopes must be the minimum possible. The maximum slope for new construction is 1:12.

The minimum required width is 36 inches, not including flared sides. Where pedestrians must cross a ramp or handrails do not protect the ramp, it must have flared sides with a maximum slope of 1:10.

Curb ramps must have detectable warnings (raised, truncated domes contrasting visibly with adjoining surfaces) for the full width and depth of the ramp. The ramps must be located or protected to prevent obstruction by parked vehicles. If ramps are located at marked crossings, they must be wholly within the markings.

Raised islands in crossings must be level with the street or have ramps at both sides and a level area of at least 48 inches between the ramps.

Other Ramps (Section 4.8)

Maximum slopes for new construction is 1:12 and maximum rise for any run is 30 inches. Minimum clear width shall be 36 inches. There must be landings—resting spaces—at the top and bottom of each ramp. Landings must be at least as wide as the ramp and a minimum length

of 60 inches. If ramps change directions at landings, a minimum landing size of 60-by-60 inches is required. This equates to a maximum ramp length of 30 feet before a landing is required.

Ramp dimensions and the area they require are important design considerations for access to the security monitoring and control room, and must be provided with raised floors for concealing cable. Even a moderate raised floor of 8 inches will require an 8-foot long ramp for access. However, if a raised floor is provided only for the area behind the console—where security cable usually enters—no ramp is required since this is classified as a maintenance space that does not need accessibility.

Handrails are required on both sides if a ramp has a rise greater than 6 inches or a horizontal projection greater than 72 inches. The inside rail on switchback or dogleg ramps must be continuous. Non-continuous handrails must extend at least 12 inches beyond the ramp segment and parallel with the floor or ground. Clear space between handrail and wall must be at least 1½ inches. The top of a handrail must be between 34 and 38 inches above the ramp surface. Ends of handrails must be rounded or returned smoothly to floor, wall or post. Handrails must not rotate within their fittings.

Cross slopes on ramp surfaces shall not exceed 1:50. Ramps and landings with drop-offs must have curbs, walls, railings or protecting surfaces to prevent slipping off the ramp. Curbs must be a minimum of 2 inches high and outside ramps must not accumulate water.

Figures 7 and 8 illustrate proper ramp dimensions and installation.

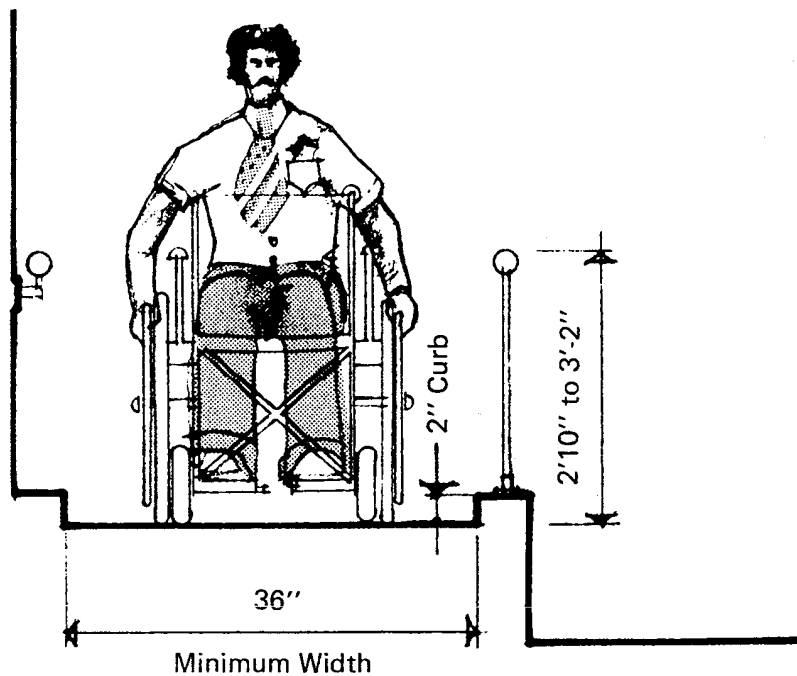


FIGURE 7
Width of Ramps and Walks

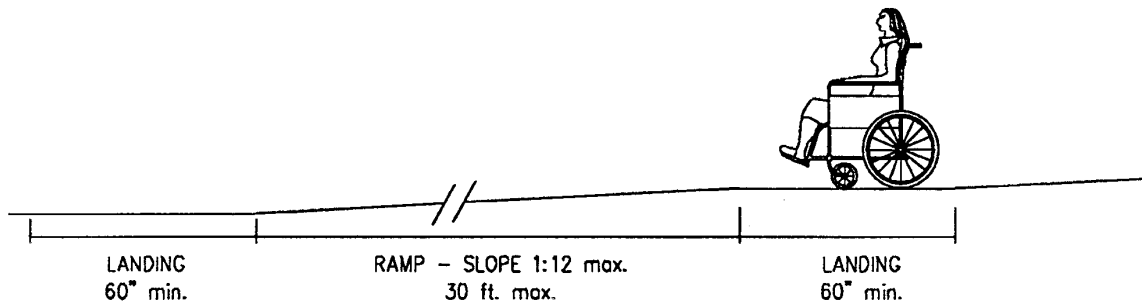


FIGURE 8
Ramp Dimensions

Stairs (Section 4.9)

All steps on any given stair must have uniform heights and tread widths. Treads must be at least 11 inches wide from riser to riser. Open risers are not permitted.

Stairs must have handrails on both sides. The inside rail on a switchback or dogleg stair must be continuous. Non-continuous handrails must extend at least 12 inches beyond the top riser and at least 12 inches plus the width of one tread beyond the bottom riser. Extensions must be parallel with the floor or ground. Clear space between handrails and wall must be 1½ inches. Gripping surfaces must not be interrupted by newel posts or other obstructions. Handrails must be mounted between 34 and 38 inches above stair noses. Handrail ends must be returned to the wall, floor or post.

(The Appendix notes that only stairs connecting levels that are not connected by an elevator, ramp or other means of accessible vertical access must comply with Section 4.9.)

Elevators (Section 4. 10)

Accessible elevators must be on an accessible route and must comply with ASME (American Society of Mechanical Engineers Standard A-17.1) A-17.1-1990 as well as the Guidelines. Freight elevators are not required to meet the standard unless the only elevators in the building are a combination freight and passenger and used for the public and for employees.

Hall call buttons must be raised or flush and centered at 42 inches above the floor. They must have visual signals to indicate when each call is registered and answered. The “up” button must be on top. The buttons must be a minimum of ¾ inch in the smallest dimension. Objects beneath the hall call buttons must not project more than 4 inches into the elevator lobby.

The Guidelines do not mention the use of card readers or keyed switches as hall call devices in either the mandatory or Appendix sections. However, if they are used, they should probably

be installed at the same height as conventional hall call buttons. It is not clear whether the ¾ inch smallest dimension requirement would apply to individual keys on a card reader or digital keypad. This may ultimately have to be clarified in an administrative hearing or by an amendment to the Guidelines. (ADA does not require minimum dimensions for public telephone keypad.)

Car control buttons must be raised or flush and at least ¾ inches in their smallest dimensions. They must be no higher than 54 inches above the finish floor for side approach and 48 inches for front approach elevators. All buttons shall be designated by braille and by raised standard alphabet characters for letters, Arabic characters must be used for numerals or standard symbols. (ASME A17.1-1990.)

The same security problem exists for car controls as for hall call buttons. It is not clear that a card reader or keyed switch would comply. In a somewhat ambiguous provision in Section 4.27, the Guidelines exempt “special equipment” from the installation height requirement.

Voice communications systems for elevators are not required by the Guidelines. However, if they are provided, they must meet certain minimums. They must comply with ASME A17.1-1990. The highest operable part must not be more than 48 inches from the car floor and must be identified with raised symbols and lettering. If the system uses a handset, the length of the cord from the control panel to the handset must be at least 29 inches.

(The Appendix notes that a voice communication system cannot be the only means of emergency communication because it is not accessible to a hearing impaired person. It suggests that such a system should have both an audible and visible means of indicating that rescue is on the way.)

Doors (Section 4.13)

Revolving doors and turnstiles must not be the only means of passage at an accessible entrance or along an accessible route. An accessible gate or door must be placed adjacent to the turnstile or revolving door.

Design of the accessible entrance needs to be coordinated with code requirements for egress. Although revolving doors can have hinged, “break-away” leaves that permit free egress, they do not provide an adequate width for wheelchair width compliance. It is common to incorporate a compliant hinged door alongside a revolving door, but—to control the interior temperature and humidity—use of the hinged door for entry is discouraged. If automated access control is used for the building, the hinged door can be controlled by a reader that is programmed to recognize the credentials of only disabled employees. An intercom or video

intercom can be installed outside the entry to identify disabled visitors and to remotely release the door lock for them.

Where special accessible doors are installed, it is common to include automatic opening devices to assist the disabled. The opener can be activated by a push pad or by an initial manual opening motion. To save wear and tear and maintenance cost, some of these devices are designed such that the door can be opened manually or can be power assisted as required. Most state-of-the-art access control systems can be programmed to initiate one output, for example to unlock the door lock, for a validated regular credential, and another output, for example to unlock the door and activate the automatic opener, for a disabled employee's credential.

Doors with independent double leaves must have an active leaf that meets the Guidelines. All doorways must have a minimum clear opening of 32 inches with the door open at 90 degrees. If the doorway is more than 24 inches deep, it will be considered a passageway and must be 36 inches wide.

The minimum space between two hinged doors in series must be 48 inches, plus the width of any door swinging into the space. (Figure 9.) Doors in series must swing either in the same direction or away from the space between.

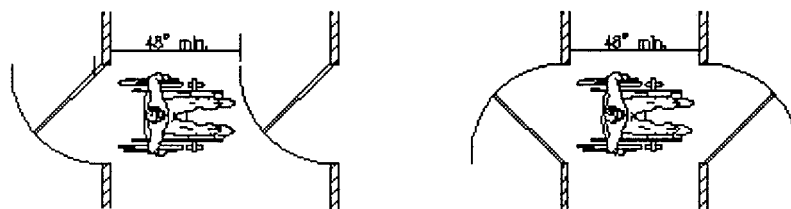


FIGURE 9
Hinged Doors in Series

Figure 9 illustrates the arrangement typically used for a high security “mantrap,” where those entering must be processed singly to prevent additional people from “piggy backing.” Note that the minimum space required between doors to achieve *positive* access control if the doors open in the same direction is about 7 feet—4 feet plus the door width. The means of egress from the secure space will also need to be coordinated with the fire code.

Door hardware—such as handles, pulls, latches, locks and other operating devices—on accessible doors must have a shape that is easy to grasp with one hand without requiring a tight grasp or squeeze, or twisting of the wrist to operate. For new construction or renovation, old style doorknobs must be replaced with levers; push type mechanisms and U shaped handles

are acceptable. On sliding doors that are fully open, operating hardware shall be exposed and usable from both sides. Hardware for accessible doors shall be no higher than 48 inches. (Most doors have handle hardware installed at between 38 and 42 inches.) Vertical or horizontal pull handles on the inside of a door will enable a wheelchair user to pull a door closed when passing through. (Figure 10.)

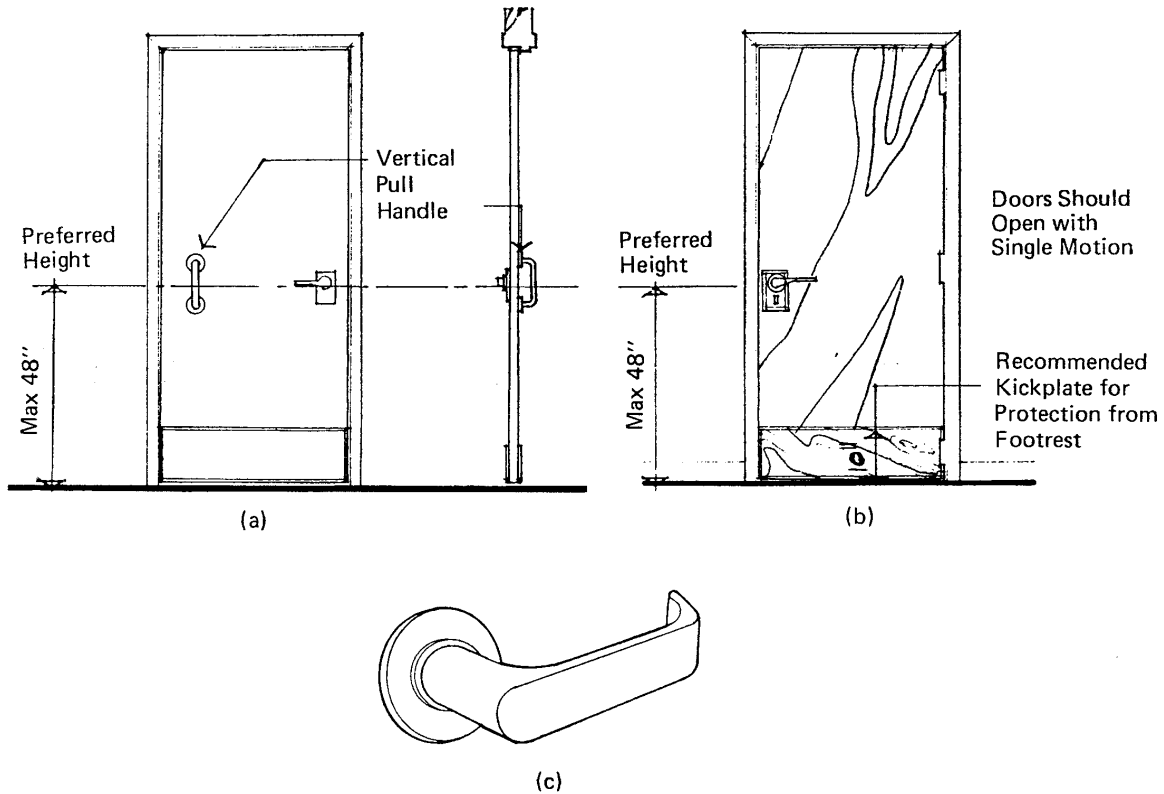


FIGURE 10
Door Hardware

The Guidelines do not require it, but doors to confined spaces should swing out because the doors that swing in pose a potential danger if a disabled person should fall and block the door. Sliding doors or “breakaway” hardware may be used as alternatives.

Maximum opening force shall not exceed 5 pounds force (lbf) for interior hinged doors and sliding or folding doors, except that fire rated doors shall meet the local code requirement. In high rise office buildings, many local codes require that the stair towers be pressurized to keep fire stair doors closed against the pressure of expanding fire gases within the building. Combined with the automatic door closing mechanism, the maximum opening force is often exceeded.

No standard has yet been established for exterior hinged doors. The force requirements do not apply to force required to retract latches or bolts, but the restriction on single-handed operation without grasping or twisting still apply.

Thresholds at accessible doors may not exceed $\frac{3}{4}$ inch for exterior sliding doors and $\frac{1}{2}$ inch for all other doors. Thresholds higher than $\frac{1}{4}$ inch must be beveled with a slope no greater than 1:2.

Automatic and power assisted doors must not open to their backcheck position in faster than three seconds and must require no more than 15 lbf to stop door movement. Power assisted doors must require no more than 5 lbf to open and must close in conformance to ANSI Standard A156. 19-1984. (See discussion on automatic doors in section 4.13.)

Entrances (Section 4.14)

Required accessible entrances must be part of an accessible route that includes accessible connections to parking areas, transportation stops, passenger loading zones, and public streets or sidewalks.

A service entrance—one intended primarily for goods or services—must not be the sole accessible entrance unless it is the only entrance to the facility or building.

Control and Operating Mechanisms (Section 4.27)

Control and operating mechanisms that are required to be accessible must be provided minimum clear floor space of 30 by 48 inches to allow for forward or parallel wheelchair access. Such devices must be installed no higher than 48 inches or lower than 15 inches for forward access, and no higher than 54 inches or lower than 9 inches for parallel access. Controls shall be operable with one hand without tight squeezing and without using more than 5 lbf.

This section is particularly applicable to the selection of mounting heights for security equipment requiring user interaction and to the design of security monitoring and control consoles.

Card readers, key locks and switches, push-for-exit buttons, emergency break-glass devices, etc., all need to be installed at heights that are in compliance. The mounting heights of video intercom units that are used by both ambulatory and wheelchair-bound individuals can be problematic since the integral camera needs to be able to view the faces of people in both postures. The push-to-talk button should be located at the highest level possible—54 inches for side accessible reach or 48 inches for a forward accessible reach. (Eye height typically ranges from 57 to 65 inches for a standing person and 43 to 51 inches for a person seated)

in a wheelchair.) It should also be noted that the 54-inch height for side accessibility brings the disabled person's face closer to the camera. If possible, select a camera lens with the widest possible angle and a video intercom with a pan/tilt feature.

A wheelchair-bound person may perform monitoring and control operations at a security console. (Many such individuals have the patience and attention to detail that make them ideally suited to this function.) It is important to ensure that all regularly required adjustment and controls, such as alarm acknowledgement keys or key-boards and intercom selection switches, be arranged to comply with forward reach restrictions. A design detail to consider in maximizing reach is the depth of any work surface/desktop at the front of the console—it should be kept to less than 20 inches.

Alarms (Section 4.28)

The Guidelines do not require alarm systems to be installed. However, if warning alarm systems are installed, they must meet the criteria noted below for the type and location of devices and character of the warning signals. The language specifically refers to “emergency warning systems” thus it also applies to fire detection and alarm, and life safety/evacuation type systems. But even with these systems, a presignal type fire alarm is not covered. Only the general warning or evacuation alarm is described in the Guidelines. Conventional security alarms that will display or enunciate at security control points are also not included. The only alternative is to use a combined or integrated system that has both fire/life safety/evacuation and security elements to be in compliance.

If installed, emergency warning alarm systems must meet the following requirements:

1. Audible alarms are not required but, if supplied, must produce a signal that is the louder of either:
 - a) a signal that exceeds the ambient sound level in the room or space by at least 15 dbA (15 decibels measured on the “A” scale); or
 - b) exceeds any maximum sound with a duration of 60 seconds by 5 dbA. Sound levels for alarm signals must not exceed 120 dbA.

(EDITORS NOTE: This last seems an absolute requirement, for example, if a covered building installs a life safety/evacuation alarm system, audible signals from that system may not exceed 120 dbA.)

2. Visual signal appliances must be integrated into the building or facility alarm system. If single station audible alarms are provided, single station visual alarms must also be provided.
3. Visual Alarm Signals must have the following minimum features:

- a. the lamp must be a xenon strobe or equivalent;
- b. the color must be clear or nominal white;
- c. maximum pulse duration 0.2 (two-tenths) of one second; maximum duty cycle 40%;
- d. the light intensity shall be a minimum of 75 candela;
- e. flash rate: 1 Hz min. and 3 Hz max.;
- f. the visual device is to be the lower of either 80 inches above the highest floor level within the space or 6 inches below the ceiling;
- g. no place in any room or space requiring a visual signal is to be more than 50 feet from the signal in the horizontal plane. (Devices may be placed 100 feet apart around the perimeter of rooms 100 feet or more across that do not have obstructions 6 feet above the finish floor.)
- h. no place in any common corridor or hallway requiring visual signal devices shall be more than 50 feet from the signal.

Although not strictly applicable under this section, it is suggested that card readers that provide a visual indication that access has been granted or denied (colored or flashing LED) should also provide an audible output to differentiate between these conditions.

4. Auxiliary alarms, integrated into or which can be plugged into and actuated by the building system, are required in all units (the term is not defined) and sleeping accommodations. Auxiliary alarms must be visible from all points in the unit or space.

Signage (Section 4.30)

Signs which designate permanent rooms and spaces are required to be accessible. They must be installed as follows:

1. If letters and numerals are used, they must be raised $\frac{1}{32}$ inch, in upper case sans serif or simple serif and must be accompanied by Grade 2 braille.
2. Raised characters must be between $\frac{5}{8}$ inch and 2 inches high.
3. Pictograms must be accompanied by the equivalent verbal description directly below the pictogram.
4. Characters and background of signs shall be eggshell, matte, or other non-glare finish, with dark characters on light background or vice versa.
5. Signs shall be installed on the wall adjacent to the latch side of the door, at a height of 60 inches from floor to center line and in such a way that individuals may approach

within 3 feet of the sign without encountering obstructions or standing within the swing of the door.

Other signs that provide directions to or information about functional spaces of the building are required to be accessible. They must be installed as follows:

1. Letters and numbers must have a width-to-height ratio of 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10.
2. Characters and numbers on signs must be sized according to the distance at which they are read. Minimum character height for suspended or projected overhead signs is 3 inches.
3. Characters and background of signs shall be eggshell, matte, or other non-glare finish, with dark characters on light background or vice versa.

(The Appendix contains further explanatory matter and notes that the best readability is achieved by light colored symbols or characters on a dark background.)

Telephones (Section 4.31)

If public telephones are provided, they must meet the following requirements:

1. A clear floor space that is at least 30-by-48 inches that will allow either a forward or parallel approach, must be provided.
2. The highest operable part of the phone must be mounted not lower than 15 inches or higher than 48 inches for a forward reach access, and not lower than nine inches or higher than 54 inches for a side reach access.
3. Required hearing aid compatible telephones must have a minimum volume of 12 dbA and a maximum of 18 dbA above normal. If an automatic reset is provided, then 18 dbA may be exceeded.
4. Telephones must have push button (touch-tone) controls, where available.
5. The cord from the telephone to the hand set must be at least 29 inches long.
6. Required text telephones must:
 - a. be permanently affixed within or adjacent to the telephone enclosure;
 - b. be equipped with a shelf and an electrical outlet within or adjacent to the enclosure; and
 - c. have a handset capable of being placed flush on the shelf, which must support a text telephone and have a minimum 6 inch vertical clearance.

Assembly Areas (Section 4.33)

Assembly areas that are required to be accessible must provide the required number of wheelchair locations, each of which is 48 inches deep by 60 inches wide—for forward or rear access—or 60 inches deep by 66 inches wide—for side access. An exception is permitted for balconies or bleachers or other areas that have sight lines requiring slopes greater than 5 percent. In such locations, the wheelchair positions may be clustered or located on levels that have accessible egress.

An accessible route must connect wheelchair positions and the performing area.

If the listening system serves individual fixed seats, then such seats must be within a 50 feet viewing distance of the stage or playing area and must have a complete view of the stage or playing area.

Assistive listening systems to augment standard public address or audio systems must be provided. The systems are to be appropriate to the nature of the assembly area. (The Appendix contains illustrations of appropriate assistive systems.)

Automated Teller Machines (Section 4.34)

Automated teller machines must meet the requirements stated earlier in Section 4.27 for Controls and Operating mechanisms. Instructions and all information for use must be made accessible to and independently usable by individuals who are visually impaired.

Most ATM installations are designed to make use of the customer's body as a security screen to prevent others from observing the input of personal identification numbers (PINs)—a practice known as “shoulder surfing.” A disabled person in a wheelchair may not be able to effectively screen the ATM keypad. Although the Act does not address this issue, there may be a requirement in the future to provide an alternative form of screen for disabled customers.

BUSINESS AND MERCANTILE OCCUPANCIES (Section 7)

Section 7 of the Guidelines provides additional requirements for business and mercantile occupancies. These are summarized as follows.

Sales and Service Counters, Teller Windows, Information Counters

In department and miscellaneous retail stores where counters have cash registers, at least one of each type of counter provided must have a space 36 inches long and not more than 36 inches above the floor, and must be on an accessible route. Such counters must be

dispersed throughout the building or facility. In situations where it is not feasible to provide an accessible counter, an auxiliary counter meeting the requirements must be provided.

At ticketing counters, teller stations in a bank, registration counters in hotels and motels, box office ticket counters, and other counters that may not have a cash register but at which goods or services are sold or distributed must have:

- a portion of the main counter be 36 inches long and not more than 36 inches above the floor;
- an auxiliary counter with a maximum height of 36 inches and in close proximity to the main counter; or
- an equivalent of the facilities provided.

All accessible sales and service counters must be on an accessible route.

This requirement is applicable to main entry security and reception desks, particularly if functions such as visitor sign-in are required. Most reception desks—especially those with security monitoring equipment—have a counter height of approximately 42 inches. For new design, a portion—that is 36 inches wide—needs to be at a maximum height of 36 inches. Where equipment space is at a premium—such as lobby desks that often have elevator and fire alarm monitors and controls in addition to those for security—good design is imperative for optimum use of the available space. Consider also that a disabled person may staff the desk.

Check-out Aisles

In new construction, accessible check-out aisles must be provided in the following numbers:

- one, where one to four total aisles are provided;
- two, where five to eight total aisles are provided;
- three, where eight to 15 total aisles are provided; and
- three plus 20 percent of additional aisles, where over 15 total aisles are provided. There is an exception: Only one accessible aisle is required in new construction and alterations where selling space is less than 5,000 square feet.

Clear aisle width for accessible check-out aisles must be 36 inches continuously—32 inches at any single point—and maximum adjoining counter height must not exceed 38 inches above the finish floor. The top of the lip must not exceed 40 inches above the finish floor.

Signage must identify accessible check-out aisles and must be mounted above the aisle in the same place as the check-out aisle number or type is displayed.

(The Appendix contains additional explanatory material covering assistive listening devices and check-out aisles.)

Other Aisles Considerations

In some high-crime urban areas, it is common to see security bollards outside supermarkets to prevent the theft of shopping carts. The Act requires the bollards to be spaced with a minimum of 32 inches of clear passage—36 inches if the restriction is 24 or more inches in depth. This will also allow free passage for carts.

Similarly, personnel screening devices, such as walk-through metal and explosives detectors and electronic article surveillance (EAS) portals, must have at least one passageway that conforms to the Act.

EMERGENCY EVACUATION

All of the legislative requirements that have been discussed, as well as the ANSI standards mentioned earlier, generally provide for accessibility. They do not contain material dealing specifically with evacuation and rescue. The ADA Guidelines do cover “rescue assistance”⁵ but do not explain how such assistance is to be rendered. The Appendix refers to evacuation but only to encourage planning for it.⁶

Although adequate provisions have been made for barrier-free designs to allow disabled persons to have access to facilities and for fire resistive shelter or rescue areas to protect them while awaiting rescue, actual evacuation in an emergency has not been addressed. Security administrators must be aware that merely meeting the requirements for accessibility and rescue assistance areas might still expose a disabled person to life threatening situations during an emergency. Evacuation plans for such personnel should also be developed and implemented. Because of the special character of this population, evacuation and rescue efforts will be somewhat different from those utilized for individuals that do not have disabilities. Some examples of evacuation situations that would need attention in an emergency are outlined below.

Wheelchair Evacuation

In an emergency, elevators are usually not operable so a disabled person using a wheelchair might be trapped on an upper floor. Evacuation of individuals in wheelchairs has always

⁵ Sections 4.1.3.(9) and 4.3.(11).

⁶ Appendix Section A3.10 Egress, reads: “Because people with disabilities may visit, be employed or be a (sic) resident in any building, emergency management plans with specific provisions to ensure their safe evacuation also play an essential role in fire safety and life safety.”

been a difficult problem because a wheelchair is difficult to negotiate on stairs. Platforms in fire exit areas are sometimes not wide enough to accommodate a wheelchair rapidly. However, attention has been given to the problem in recent years and one manufacturer now markets a lightweight, easily stored wheelchair designed specifically for use in evacuating the disabled down steps in a high-rise fire exit. (See Figure 11.)

Another situation might involve a mentally challenged person or one with a learning problem. Such individuals might not be able to follow instructions under pressure, or might not be able to remember evacuation instructions given to them. Under normal circumstances, such individuals may function adequately with little assistance or direction but will probably need help in an emergency.

A blind or visually impaired person is another disabled individual who, assured access for normal day-to-day functioning, might require special assistance and guidance in an emergency.

Obese individuals and senior citizens with health problems might also require special assistance because of the difficulty navigating stairs or moving quickly to a safe area in an emergency. Also, the hearing impaired should not be overlooked. Although the Guidelines require both visual and audible displays for installed life/safety and evacuation alarm systems, security or public safety emergency personnel may attempt to give additional verbal instructions which would not be received. Company security and emergency service personnel must be trained for this possibility.

The current Guidelines require rescue assistance areas and mandate a minimum number of them based upon population. (The Guidelines issued in connection with the 1973 Act did not cover this subject.) In an emergency, the disabled would be directed to congregate at these sites and remain there until they could be rescued. However, it is quite likely that a large number of disabled individuals on the upper floors of a high-rise building could not be accommodated quickly if it were necessary to evacuate the building. Special response plans for the areas of rescue assistance need to be developed. Closed circuit TV might be used efficiently to determine if such areas were in actual use. An “open line” arrangement for the required two-way communication would also permit monitoring the area during emergencies, even if something happened to the people in that area, or they were unable to use the communication devices.

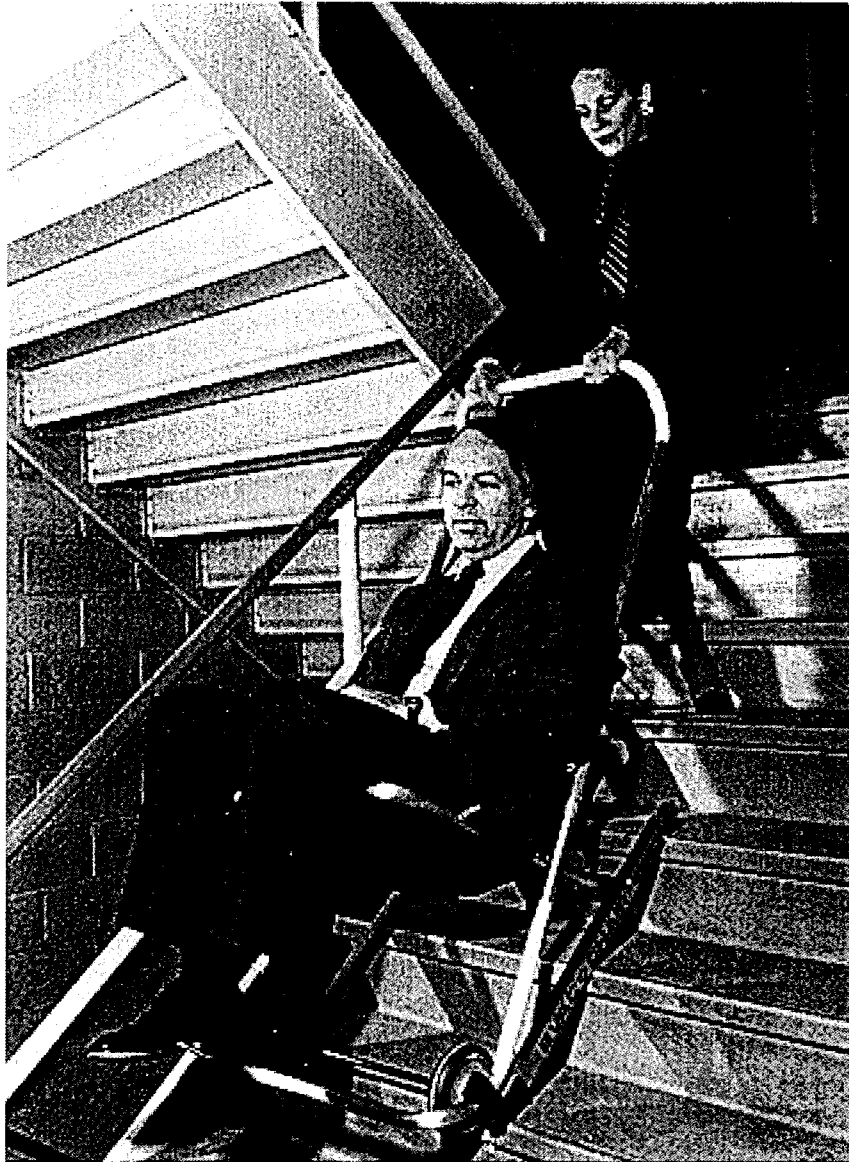


FIGURE 11

An emergency descent chair designed to provide an escape for the disabled when elevators are shut down. This new solution to an old problem received the 1982 Design Achievement Award from the Industrial Designers Society of America and in 1990 was given an "Design of the Decade" award. The unique belted-traction carriages ride over stairs under the guidance of a "buddy" or co-worker at walking speed. This braking/traction system of friction belts slows descent proportionally to the weight of the passenger and allows gravity and friction to do 90 percent of the work. The unit weighs less than 15 pounds and has a capacity of 300 pounds. Designated EVAC + CHAIR by the manufacturer, the name is a registered U.S. and foreign trademark of Evac Chair Corporation, 17 E. 67th Street, New York, NY 10021; telephone (212) 734-6222.

(Photograph and descriptive material courtesy of Evac Company.)

Whenever a disabled individual is hired, the security executive responsible for protection in the facility must be notified. This ensures that the appropriate plans can be made to protect the individual in an emergency and to ensure preparation for any needed evacuation plans. Such provision of disability data is specifically permitted by Section 102.c.(3) of the ADA.

A common method adopted by many facilities to ensure that the disabled are properly evacuated in an emergency is to provide for a “buddy system.” Fellow workers in an area are assigned the responsibility of seeing that the disabled individual receives necessary assistance during an evacuation. They are also responsible for ensuring that all disabled people in are accounted for upon completion of an evacuation. The “two-person rule” is followed by many organizations. This rule specifies that a disabled person may never work in an area alone and that there must be at least one other person there at all times. Because this rule usually seeks to prohibit a disabled individual from coming to work during non-working hours unless someone else is present to assist in an emergency, it will have to be considered carefully lest the effort to help becomes unlawful discrimination on account of a handicap. (For additional information concerning emergency planning in general, refer to Chapter 10 of the *Manual*.)

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