
Introduction

The New 2004 ADA

In July 2004, a new version of the *Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities* (ADAAG) was published. This document, not formally revised since the ADA was first enacted in 1990, has new requirements and guidelines, as well as a completely new format that is more consistent with the way information is organized in the building trades.

Means ADA Compliance Pricing Guide has also been completely revised and updated in this edition—not only to include the 2004 ADAAG changes, but to provide current cost estimates for remodeling projects required to meet the ADA. This revised edition also includes new building technologies and materials.

Changes in the 2004 ADA guidelines include:

- A decimal-based, numeric-only numbering system, consistent with building codes. Wherever possible, the ADAAG format also parallels ICC/ANSI A117.1 (*International Code Council's Standard on Accessible & Usable Buildings & Facilities*) in its chapter and section numbering.
- Changes in substance, scoping, and technical provisions—to better meet the needs of people with disabilities, to recognize technological developments, and to reconcile differences from national consensus standards.

- New sections covering accessible residential housing, additional recreational facilities and parks, judicial and legislative facilities, and detention and correctional facilities. New standards have been introduced that set minimum requirements for children's environments.
- Non-mandatory information set off as "advisory," accompanied by information and commentary.
- Fully explained requirements that were formerly covered in illustrations only.
- Scoping requirements that specify what must be made accessible—clearly separated from "technical requirements" (how access is to be achieved).
- Technical sections organized into chapters according to the type of element or space, such as plumbing components, communication elements, and recreation facilities.
- Special occupancy chapters (except for transportation facilities), integrated into the main body of the document.

Note: As of the publication of this book, the new format of the ADAAG was still under review by the U.S. Department of Justice and was thus not considered the law. Full adoption is expected in 2005.

The Purpose of This Publication

Two of the most frequently asked questions about the Americans with

Disabilities Act are: "What do I have to do?" and "How much will it cost?" Not knowing the actual cost of building modifications for accessibility compliance greatly impedes the implementation of ADA, since people often assume they can't afford it. This publication provides that information, to help facility managers, owners, contractors, designers, and building users budget the renovations needed to provide accessibility.

How the Book Is Organized

This book is a guide to typical ADA compliance modifications—what's involved and how much they will cost. Like all renovations, many access modifications require on-site construction estimating or design services in addition to actual construction/installation. The book will help identify these kinds of situations.

The first step in budgeting for ADA compliance projects is to survey the facility to identify barriers to access. Once a survey has been conducted, this book can be used to estimate the cost of barrier removal and to help prioritize the order in which projects will be completed. The model projects in this book not only help identify what needs to be done, but also the construction tasks, materials, labor, and total costs.

The model projects are organized according to the typical route of

travel from the parking lot up to and through a facility. To help correlate your projects with the ADA Accessibility Guidelines (ADAAG), a cross-reference chart is included at the back of the book, showing how each project correlates to specific ADAAG sections.

The main body of the book consists of the model projects with estimates. Each project is a single access modification that might be constructed in a facility. The projects fall into three categories:

- **General Access Modifications:** Typical ADAAG compliance access modifications.
- **Specialized Access Modifications:** Access elements included in specific types of facilities.
- **Case Studies:** Examples of the barrier removal and access construction process. These illustrate how a range of solutions to barrier removal might be devised.

Individual Projects

Each individual project is divided into three parts: illustration, text, and cost estimates—to convey the use of the design element, regulations, construction, and cost information. The illustration shows a typical access element with relevant information, such as installation, dimensions, or use. The text gives an overview of the requirements, design considerations, and level of difficulty involved for that project. The estimate lists the materials and labor involved for construction of the project in a typical situation, often with several variations in design or materials, based on varying site conditions or other options.

All projects contain the following information:

- **ADAAG references:** Where a particular element might be required by ADAAG, the specific

ADAAG technical standards for compliance are listed.

- **Design requirements, suggestions, and discussion of the particular project's application or limits.**
- **Key items:** A summary of materials and/or products necessary to execute the project.
- **Level of difficulty for performing the work required to construct the modification:** A rough approximation of the expense and labor involved in executing a particular access modification in a typical situation.

Low = minimal cost, usually doesn't require a building permit, and may be performed by building maintenance staff.

Moderate = more difficult, possibly involving skilled tradespeople and a building permit.

High = expensive, involving structural and/or utility work, specialized tradespeople, and building permits.

- **Cost estimates for each accessibility project.**

Additional References

Following the model projects with estimates are the **case studies**. These are two complete projects, a bathroom renovation and an entry modification for a historic facility. Each case study shows the evaluation process assessing the ADA requirements and the building site conditions and layout, then devising the best solution.

Part Four, **Unit Costs**, which follows, provides over 75 pages of RSMeans cost data—hundreds of individual construction line items that you can use to make adjustments, if necessary, to the model project estimates in the main part of the book. For example, in project No. 21, "Install New Door," it is assumed that some demolition is required of an exterior wall, which may be constructed of

horizontal wood siding with metal studs and gypsum wallboard on the interior. If, in fact, your particular wall is made of different materials, such as brick or concrete, you can substitute the appropriate demolition line item from the Unit Cost section for the demolition line item in the project. At the beginning of the Unit Cost section is a full explanation of how to find and apply the information you need.

To account for regional variations in construction costs, we have included **Location Factors** for 900 cities throughout the U.S. and Canada. This section provides percentage multipliers that you can apply to the total cost (including contractor's overhead and profit) for each of the model estimates. For example, if the total cost estimate for a project is \$1,000, and you are located in Atlanta, Georgia, your location factor is .89; therefore, your project cost is \$890.

Following the Unit Cost section are **Resources**, government agency addresses and phone numbers for obtaining technical assistance on ADA issues. This section also lists non-government checklists and publications that may be useful in performing facility accessibility surveys and obtaining additional technical assistance.

At the end of the book, a **glossary** of terms defines ADA and access terminology, and an abbreviations list clarifies design and construction terms used in the estimates.

Reminders

Each situation is different. While the most likely projects for ADA compliance are featured, detailed, and estimated based on normal working conditions, it is not possible to cover every circumstance requiring access modifications. The projects included represent the most common building element modifications needed to

bring a facility into compliance with a particular requirement of ADAAG. Additional modifications not included in this book might be necessary to bring a facility into compliance with ADAAG, or to make it more accessible.

State access regulations were already in force in most states when the ADA was passed, and many municipalities have additional accessibility requirements. Some local regulations may be stricter than ADAAG (for instance, requiring ramps to be 48" wide instead of 36"). Some states require a variance for a platform lift; most prohibit them on designated fire egress stairs. Plumbing codes in some localities prohibit a unisex accessible restroom. In case of conflict between regulations, the stricter requirements govern the design. State and local codes must always be investigated prior to executing any construction.

The estimates are intended as a guide to budgeting access modifications. They are not intended to be absolutely comprehensive or definitive. While many alternatives in materials and site conditions have been presented, there are still others that can be used if they comply with ADAAG. More expensive materials, such as those often used in historic situations, will, of course, affect the total installation price.

Prices vary between cities and regions. Use the Location Factors at the back of this book, with its 900 zip code locations, to adjust costs to your area conditions. Material costs vary according to supply and demand, usually up (but occasionally down). Labor costs also vary widely, depending on the difficulty of a

particular renovation, prevailing local wage laws, and the availability of labor.

The size of the job affects the cost. Construction unit costs are always less when renovation is more extensive and more modifications are done at once, due to factors such as bulk purchasing of materials and the contractor's travel and setup time. This should be considered when deciding whether or not to proceed with more than one modification for access. In the long run, hiring a contractor to build a ramp and widen three doorways at the same time is usually less expensive than doing them at separate times.

In the project estimates, where a total unit cost such as *per square foot* or *per linear foot* is given, this price assumes a quantity of work sufficient to cover contractor's costs and a fair profit. For projects of minimal size, the contractor's markup might be significantly higher. As with all renovations, a range of bids from different contractors can help determine the best price. Again, the pricing in the book cannot be absolute; a contractor's estimate can vary considerably from a price obtained from this (or any other) book due to a number of nonquantifiable factors.

The main goal is to eliminate discrimination based on accessibility and to create a facility usable by a larger group of people with a wider range of abilities. Even though ADAAG is not a building code, the same consideration exists when applying the standards as with a building code: these are only minimum requirements. It is often possible, and desirable, to exceed the minimum standards given.

Exceeding the minimum requirement can also make facilities maintenance less critical in ensuring compliance. (Even an inch or less of wear and tear over the years can result in non-compliance.)

The ADA guidelines are not to be interpreted as a design guide, but as the *minimum level of accessibility* compliance. Actual design will be determined by the individual situation.

Above all, input from people with disabilities is key to the successful design of access modifications. It is possible (and all too common) to have an element that is compliant, but does not work for an individual. Whenever possible, a design should be reviewed by potential users who have disabilities to determine if it is, in fact, the optimal solution for removal of a particular barrier.

Summary

The new 2004 ADA guidelines address an ongoing need for enhanced compliance. The model projects in this book show that barrier removal is not complicated, and that removing a barrier for a particular group of people removes it for everyone. Modifications such as curb cuts, ramps, level door handles, paddle sink faucets, audible elevator signals, and visual fire alarms are just some of the accessibility projects that make a facility easier and safer for all users. The access renovation projects included here will help make your facility more compliant with ADAAG, accessible by people with disabilities, and more open to everyone.

Using the Projects for Cost Estimating

Project Budgeting

The model projects in this book cover the most needed modifications for ADA compliance—both large and small. Once an accessibility barrier has been identified, various design solutions should be tested. For instance, if a flight of stairs presents a barrier, several critical questions need to be asked: Can a ramp be built, and if so, is there enough room? Would the ramp block the stairs? Could an electric lift be installed on the stairs, and if so, is there enough room? Would a lift impede required fire egress? Are there other solutions, such as re-grading a sidewalk? There is always more than one way of doing what is needed. The next step is comparing the costs of the various design solutions.

As with any renovation, there are two main influences on the cost of ADA modifications: technical requirements and the design. The design and materials decisions should be made by the facility owner or manager. (The model projects and supplemental cost data in this book cover a range of material alternatives.) For example, while a ramp may be required to have a specific slope, it could be constructed of wood, concrete, or granite—a design decision based on existing conditions and the project budget. As with all renovations, budget is a major factor in determining design.

Applying the Projects

Each model project specifies the standards to which that particular modification needs to be designed. Each includes:

- An **illustration** showing how a modification would be used in a typical application.
- **ADAAG references**—the regulation sections in the 2004 ADAAG that apply to the project.
- **“Where Applicable”**—under what circumstances the modification is required by the ADAAG. For instance, the “Construct New Pathways” project specifies that all new public and common-use pathways must comply with the listed sections of ADAAG.
- **Design requirements**—a summary of the minimum technical standards to which the project must conform to be in compliance with the ADAAG.
- **Design suggestions**—useful recommendations. In some cases, the suggestions may exceed the ADA’s minimum technical requirements, with the aim of ensuring long-term compliance. “Best use” criteria should be considered from the outset, prior to design. For instance, one design suggestion for a ramp would be that it have a slope shallower than 1:12 (the maximum slope allowed by

ADAAG), thereby making it easier to use by a wider range of people. While this modification would increase the ramp’s length, and probably its cost, it may better conform with the existing grades, and hence won’t look as “tacked on.”

The list of design suggestions provided for any project is by no means comprehensive, and should be supplemented by suggestions from potential facility users, who are often the best source. The constraints imposed by both existing conditions and the budget will help determine if it is possible to apply any of the recommendations.

- **Key Items**—the materials and construction tasks needed to execute the design. This list may vary depending on the particulars of the situation. For example, a ramp always needs a slip-resistant surface, structure, and rails, but it may also include a set of steps (this is recommended, since some people find stairs easier to use than a ramp), an overhang either over the entrance or the entire ramp, or a heated surface to melt snow. These features should be evaluated, and a full list of chosen elements completed prior to costing.
- **Level of Difficulty**—how difficult the project is to undertake. This will help determine whether it will

be necessary to hire an outside contractor or consult a design professional. This section also offers guidance on which, if any, specialized trades may be needed. In most cases, a building permit will be necessary prior to making any modifications, and in all cases, the project will need to comply with all local building and fire safety codes, regardless of the level of difficulty or the involvement of a designer on the project. The possible levels of difficulty—low, moderate, and high—are defined below.

Low = minimal cost, usually doesn't require a building permit, and may be performed by building maintenance staff.

Moderate = more difficult, possibly involving skilled tradespeople and a building permit.

High = expensive, involving structural and/or utility work, specialized tradespeople, and building permits.

- **Estimate(s)**—at least one complete cost breakdown with a total cost for the project. There are often several estimates to cover a number of design alternatives. Factored into the cost is an estimate of the overhead and profit a contractor is

likely to apply. (Overhead includes items such as the contractor's time spent visiting the site, planning and estimating the job, and a percentage of the miscellaneous costs of doing business.) The costs can be tailored to your specific location in the country using the "Location Adjustment Factors" section at the end of the book.

In many cases (such as in the estimates for various ramp configurations) a cost per unit is also given, which can be applied to the same project in a different size. For each ramp estimate, for example, a total project installation cost is given. Underneath that cost is a "per linear foot" cost that can be multiplied by the number of feet your ramp requires. For instance, if a ramp will be 24' long and constructed of wood, the total cost per linear foot for this type of ramp would be multiplied by 24.

Other units might also be used, depending on the project. For instance, widening an existing concrete pathway is estimated per square foot of added area. If an existing 60' long pathway is to be widened by 1', multiply the cost per square foot for that modification by 60.

Example

The following example shows how project estimates may be combined to produce a total modification cost.

One item identified in an accessibility survey of an existing public facility is a 60' long concrete pathway from an accessible doorway to a street crossing. The pathway has a running slope of less than 1:20 and a cross-slope of less than 1:50. It is in good condition, but is surprisingly narrow (30") and needs to be widened. Also, there is no curb ramp.

It was decided that the walk should be widened to 48" for its entire length (even though 36" would have met the ADAAG requirement), and a curb ramp installed. To obtain a cost estimate for this task, the relevant model projects from this publication are:

Project 5: Construct Graded Entrance Pathway, Estimate 1: Widen Existing Concrete Pathway, and

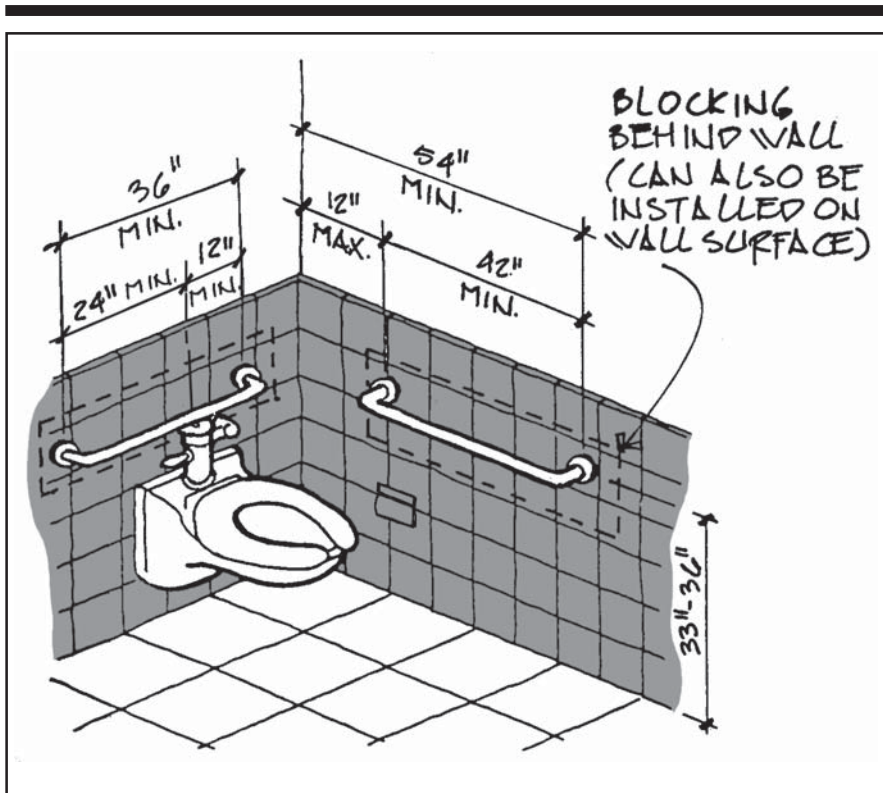
Project 3: Install or Modify Curb Ramps, Estimate 1: Install New Curb Cut (Concrete Sidewalk)

Adjustments to modification totals can be expected, based on a specific site and the total amount of construction work being performed at one time.

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Install or Modify Grab Bars

Grab bars are essential in enabling many people to use toilets, tubs, and showers. They are also one of the simplest access modifications to install. The types of available grab bars have increased, and colored, non-institutional models are available to fit into an existing decor. Different configurations are possible to assist people who might need bars in addition to those required by the ADA.



ADAAG References

604.5, 604.8.1.5, and 604.8.2.3, Grab Bars (at toilets)
607.4, Grab Bars (at tubs)
608.3, Grab Bars (at showers)
609, Grab Bars

Where Applicable

All accessible toilets, tubs, and showers.

Design Requirements

- 1-1/4" to 2" in diameter for circular cross section; 4" to 4.8" perimeter, 2" maximum diameter for non-circular cross section.
- 1-1/2" from wall, 12" minimum from protruding objects above except for shower controls, 1-1/2" minimum from protruding objects below and at ends.
- Smooth surface, free of sharp or abrasive elements behind and adjacent to grab bars.
- Capable of resisting 250 lbs. of vertical or horizontal force—tight in their fittings.
- 33" to 36" a.f.f. mounting height.
- For wheelchair-accessible water closet or toilet compartment: 42" long minimum at side wall starting 12" maximum from rear wall, 36" long minimum at back wall extending 12" from center of water closet or toilet compartment in one direction and 24" in the other.
- For ambulatory-accessible water closet or toilet compartment: 42"

long minimum at each side wall starting 12" maximum from rear wall.

- In transfer showers (typical, 36" deep), extend across control wall and across back wall to a point 18" from the maximum of control wall.
- In roll-in showers, on three walls to within 6" minimum of adjacent walls, but never behind seat.
- For tub with permanent seat: on foot end wall, 24" minimum grab bar at front edge of tub; on back wall, 12" maximum from foot end wall and 15" maximum from head end wall, plus an additional grab bar the same length mounted 9" above the tub rim.
- For tub without a permanent seat: on foot end wall, 24" minimum

grab bar at front edge of tub; on head end wall, 12" minimum grab bar at front edge of tub; on back wall, 24" minimum grab bar 24" maximum from head end wall and 12" maximum from foot end wall, plus an additional grab bar the same length mounted 9" above the tub rim.

Design Suggestions

There are a variety of colors other than standard steel now available for grab bars. Textured grab bars provide a better gripping surface than smooth bars. If studs or blocking are insufficient or difficult to locate, it might be possible to attach to the

studs a painted wood 1 × 6 on the face of the wall, and attach the grab bar to that. In tight spaces, a fold-down grab bar allows flexibility in use, but should be used only in addition to the required fixed grab bars. Grab bars are vital for safety, and installation methods must meet strength requirements.

Key Items

Grab bars, fasteners, either blocking in wall or anchors, and, possibly, finish materials.

Level of Difficulty

Moderate. May require finish work.

Estimates

Install grab bar, gypsum/metal stud wall

Description	Quantity	Unit	Labor-Hours	Material
Cutout demolition of partition	1.000	Ea.	0.333	0.00
2" x 4" blocking	0.005	M.B.F.	0.286	2.33
Miscellaneous materials for gypsum board repair	1.000	Job	0.800	0.14
Labor minimum to repair and paint gypsum board	1.000	Job	2.000	0.00
Grab bars	1.000	Ea.	0.400	51.50
Totals			3.819	53.97

Total per each including general contractor's overhead and profit

\$345

Install grab bar, gypsum/metal stud wall with ceramic tile

Description	Quantity	Unit	Labor-Hours	Material
Cutout demolition of partition	1.000	Ea.	0.333	0.00
2" x 4" blocking	0.005	M.B.F.	0.286	2.33
Misc. materials for gypsum board and ceramic tile repair	1.000	Job	0.800	0.14
Labor minimum to repair gypsum board and ceramic tile	1.000	Job	0.080	0.13
Grab bars	1.000	Ea.	0.400	51.50
Totals			1.899	54.10

Total per each including general contractor's overhead and profit

\$225