

CSDA Best Practice

Title: Diamond Cutting Tools for ADA
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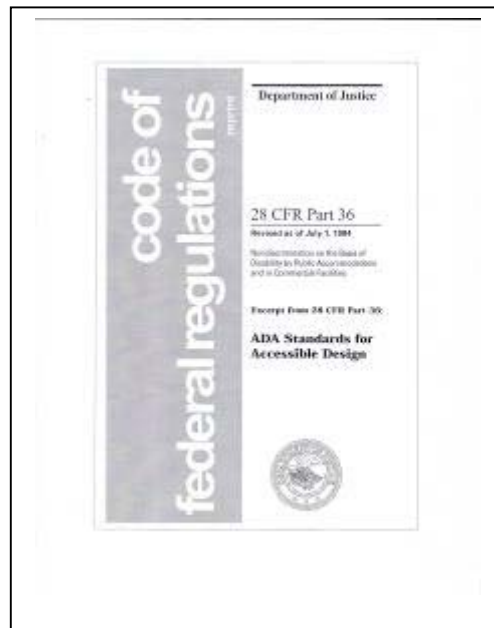


Purpose

The purpose of this document is to provide a quick overview of the Americans with Disabilities Act (ADA) standard as it applies to the sawing and drilling industry and to outline the types of cutting machines that could be employed to perform the tasks necessary to be in compliance to the standard.

Introduction

The United States Government has issued a series of guidelines and regulations in order to allow a standard level of accessibility by individuals with disabilities. These guidelines are to be followed during the design, construction and alteration of buildings as required by regulations issued by Federal government agencies, including the Department of Justice. These guidelines have been written as a result of the Americans with Disabilities Act (ADA) of 1990.



These guidelines are titled: *Code of Federal Regulations – ADA Standards for Accessible Design – 28 CFR Part 36* and can be viewed in their entirety via the Internet. Certain specifications in this standard (technical specifications 4.2 and 4.35) are similar to the American National Standard Institute's document A117.1-1980. Sections 4.1.1 through 4.1.7 and sections 5 through 10 are different from the ANSI document.

The standards have been developed to allow safe and convenient access to areas and structured for persons with disabilities. When performing work related to these standards, one should be familiar with the regulations in their entirety. This document will highlight the requirements and examine diamond cutting tools that could be used in specific applications.

Section 4.1.1 of the standard states which types of structures must meet these requirements.

Section 4.1.2 of the standard deals with exterior features and requirements for handicap accessibility. The standard specifically states the number and type of handicap accessible parking spaces that are required for various applications.

In order to achieve this compliance, curbs may need to be cut or ground and the parking lot itself may need to be altered. If altering a flat surface a flat or slab saw could be used. When altering curbing there are a number of tools can be employed. Curb-cutters are machines specifically designed for this purpose. These machines are very efficient at cutting openings into curbs.

A track mounted wall saw could also be employed to cut an access opening into a curb. These wall saws could be hydraulically or electrically powered.

A floor grinder could then be employed to remove any high spots or inconsistencies in the surface.



Flat saw making a cut.

The standard is broken down into sections dealing with different types of construction:

Section 4.1.3 addresses the application of this standard to new construction.

Section 4.1.5 addresses the application of this standard to additions.

Section 4.1.6 addresses the application of this standard to alterations.

Section 4.1.7 addresses the application of this standard to historic preservation.

These sections make specific references to feature requirements that are outlined in Section 4.2 Space Allowance and Reach Ranges.

- 4.2.1. Wheelchair passage Width. The minimum clear width for a single wheelchair passage shall be 32 inch (815 mm) at a point and 36 inch (915mm) continuously.

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- 4.2.2. Width for Wheelchair passing. The minimum width for two wheelchairs to pass is 60 inch (1525 mm).
- 4.2.3. Wheelchair Turning Space. The space required for a wheelchair to make a 180-degree turn is a clear space of 60 inch (1525 mm) diameter or a T-shaped space.
- 4.2.4. Clear Floor or Ground Space for Wheelchairs.
 - 4.2.4.1. Size and Approach. The minimum clear floor space required to accommodate a single, stationary wheelchair and occupant is 30 inch by 48 inch (760 mm by 1220 mm).
- 4.3. Accessible Route.
 - 4.3.1. General. All walks, halls, corridors, aisles, skywalks, tunnels, and other spaces that are part of an accessible route shall comply with 4.3.
 - 4.3.2. Location. At least one accessible route shall connect parking lots with all buildings, dwellings, etc.
 - 4.3.3. Width. The minimum clear width of an accessible route shall be 36 inch (915 mm) except at doors.
 - 4.3.4. Passing Space. If an accessible route has less than 60 inch (1525 mm) clear width, then passing spaces at least 60 inch by 60 inch (1525 mm by 1525 mm) shall be located at reasonable intervals not to exceed 200 feet (61 m).

In order to make changes to a structure that would ensure compliance, walls may need to be removed or doorways and accesses may need to be increased. This could be accomplished by using the following:

- ◆ A track mounted wall saw could be employed to make the cuts. To avoid over-cutting, corners would be completed with the use of a track mounted or hand held chain saw. A flush cutting saw would be needed to make the cut along the floor on a doorway in order to minimize grinding afterwards.
- ◆ A wire saw could be employed to make the cut. A core drill or a rotary hammer would be employed to drill holes to start the wire. The wire saw has the advantage of cutting square corners as well as being quieter, causing less structural damage and being able to cut deeper than a wall saw. This is sometimes important in environments such as hospitals. The wire saw is generally more expensive to operate.

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Wall saw preparing to make a cut



Corner cut chain saw preparing to finish the cut



The finished product – a clean cut



For making the flush cut along the floor, a flush cut hand saw on a cart could be used instead of a flush cut wall saw.



A wire saw could be used to create an opening in concrete instead of a wall saw.

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4.3.8 Changes in Levels. Changes in levels along an accessible route shall comply with 4.5.2.

4.5 Ground and Floor Surfaces

4.5.2 Changes in level. Changes in level up to ¼ inch (6 mm) may be vertical and without edge treatment. Changes in level between ¼ inch and ½ inch (6 mm and 13 mm) shall be beveled with a slope no greater than 1:2. Changes in level greater than ½ inch (13 mm) shall be accomplished by means of a ramp that complies with 4.7 or 4.8.

In order to make changes to a structure or facility that would ensure compliance, floors may need to be ground to eliminate any changes in level that may cause a hazard. This could be accomplished by using the following:

- ◆ A floor grinder could be employed to minimize any changes in floor level.



Floor Grinders can be used to quickly fix high spots on a variety surfaces.

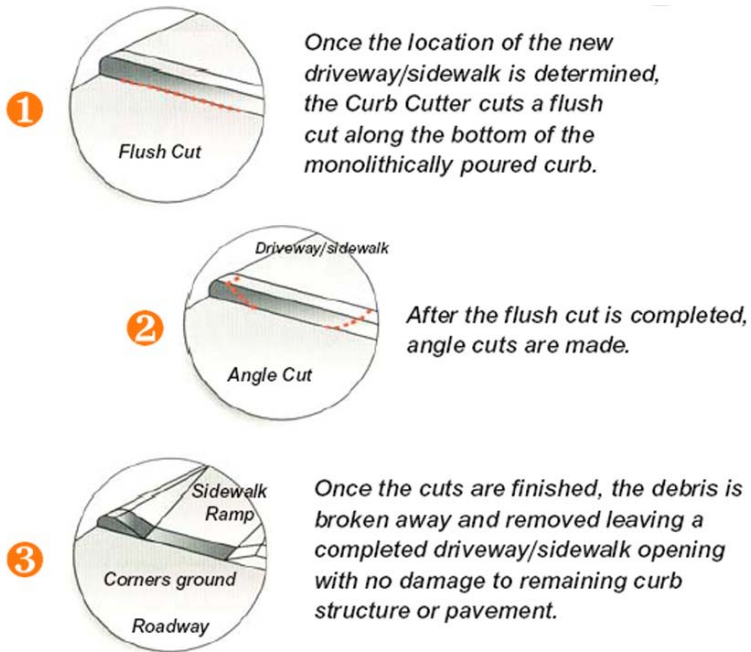
4.8 Ramps.

To make a ramp in an existing sidewalk and curb, the existing sidewalk would be cut out and removed using a flat saw. The curb could be cut with a curb cutter or wall saw. The concrete would then be poured to comply with the maximum slope of 1:12 along the center and 1:10 to the sides with a minimum center width of 36 inch.

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A curb cutting machine quickly and efficiently cuts curbs.



How a curb cutting machine makes curbs.

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Remember to always check for the latest updates to this standard and any other standard prior to quoting or starting any project. Also check for any local regulations that may be applicable to this type of work.

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