

Accessibility Technology Requirements for Cinema

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The United States [Americans with Disabilities Act](#) (ADA) was [signed into law in 1990](#). The Act [defines a “motion picture house” as a public accommodation](#) and prohibits discrimination by a public accommodation on the basis of disability. Discrimination against an individual by failing to provide “auxiliary aids” (unless provision would fundamentally alter the good or service or would impose an undue burden) is prohibited. The [Civil Rights Division of the Department of Justice](#) writes regulations implementing the ADA. In 2010, the DOJ issued revised regulations that included the [“2010 Standards for Accessible Design.”](#) In December 2016, the DOJ issued regulations requiring closed captioning and audio description in movie theaters. This document summarizes the requirements set forth in the regulations and standards. While efforts have been made to ensure accuracy, this document is not authoritative and is not to be interpreted as legal advice.

Captioning and Audio Description

On December 2, 2016, the Federal Register published [regulations](#) requiring captioning and “audio description” in movie theaters. These new rules do not apply to drive-in theaters (see definition of “movie theater” at [28 CFR 36.303\(g\)\(1\)\(vii\)](#)). Further, the new rules apply only when a “digital movie” that contains captions or descriptive audio is exhibited. Auditoriums that can only exhibit movies from photographic film (“analog movies”) are not required to install equipment for captioning or audio description ([36.303\(g\)\(2\)](#)). A “digital movie” is defined as one that is exhibited in “digital cinema format.” Though DVD and Blu-ray are digital, the discussion in the final rule appears to exclude these from the captioning and descriptive audio requirement when used in cinema (“[Digital cinema captures images, data, and sound as a digital cinema “package” \(DCP\)...](#)”).

Captioning

Captions are similar to subtitles. Subtitles show dialog as text to allow people who do not understand the spoken language of the movie to understand the movie. Captions include the dialog of the movie, but also include descriptions of sounds to aid those with a hearing impairment to understand the movie. A caption would include “phone rings” while a subtitle would not.

Captions and subtitles can be “open” or “closed.” Open captions or subtitles appear on the movie screen where they are visible to the entire audience. Closed captions or subtitles are visible only to those audience members who wish to view them, typically by providing the individual members with an individual display.

Captioning Requirements

By the effective date of the rule (see below), “movie theaters” must make captions delivered in digital movies available to members of the audience. A theater may satisfy this requirement by providing “open captions” in all movie showings or upon receiving a request prior to the start of the movie

[\(36.303\(g\)\(6\)\(ii\)\)](#). A theater may also satisfy this requirement by providing closed captioning devices [\(36.303\(g\)\(2\)\)](#).

Unlike assistive listening systems (discussed below), the required number of closed captioning devices is based on the number of auditoriums a theater has instead of the number of seats. The required number of closed caption devices is shown in the table below (from [36.303\(g\)\(3\)](#)).

Number of auditoriums showing digital movies	Minimum required number of captioning devices
1	4
2-7	6
8-15	8
16+	12

Audio Description

Audio Description (often called VI-N, Visually Impaired Narrative in the cinema industry) provides the visually impaired patron with an audio description of the action on the screen. The audio description audio is provided as a separate audio track in a digital cinema package. It is typically routed through the cinema sound processor to a transmitter (typically IR (infrared) or RF (radio frequency)) that drives individual audio description receivers in the auditorium. Audio Description receivers are often the same receivers that are used for the assistive listening system (described below). The user may choose to listen to the hearing impaired (assistive listening) audio, the descriptive audio, or a mix of the two. If the assistive listening receivers have two or more channels (one for assistive listening, one for audio description), no additional audio description receivers are required. If, however, the existing assistive listening system receivers cannot carry audio description, a theater is required to have at least one audio description receiver for every two auditoriums with a fraction rounded up (a theater with seven auditoriums needs four receivers). In addition, a theater is required to have a minimum of two audio description receivers.

Assistive Listening Systems

The current assistive listening system requirements are contained in the [2010 ADA Standards for Accessible Design, Section 219](#) lists the requirement for “public assembly areas.” The ALS requirements may be met with an inductive loop system or with IR or RF transmitters driving receivers for each patron.

Inductive loop systems consist of a loop of wire surrounding the auditorium. The loop is driven by the hearing impaired audio. The audio is inductively coupled into the “telecoil” of a hearing aid. Hearing aids include telecoils to provide clear sound from a telephone by using magnetic induction to couple the sound into the hearing aid instead of acoustic coupling. [Section 219.3 exception 2](#) eliminates the requirement for a facility to provide “hearing aid compatible” assistive listening receivers if the auditorium is served by an inductive loop. The overall number of receivers requirement still applies, however (the exception eliminates the need for a portion of the receivers to be “hearing aid compatible”). The installation cost of inductive loop systems is relatively high. In addition, they are “single channel,” so they cannot serve the audio description requirements. There is also a tendency for the loop audio from one

auditorium to leak into another. For these reasons, inductive loops are not widely used in cinema in the U.S. (though they are used more widely in Europe).

[Table 219.3](#), summarized below, specifies the number of assistive listening receivers required based on the seat count in the theater. [Section 219.3 exception 1](#) allows the receivers to be shared among the auditoriums instead of requiring a number of receivers per auditorium if the receivers are compatible with the transmitters for each auditorium. A specified portion of the receivers are required to be “hearing aid compatible” as described below.

Number of Seats	Minimum Number of Receivers	Minimum Number of Hearing Aid Compatible Receivers
50 or less	2	2
51 to 200	2, plus 1 per 25 seats over 50 seats ¹	2
201 to 500	2, plus 1 per 25 seats over 50 seats ¹	1 per 4 receivers ¹
501 to 1000	20, plus 1 per 33 seats over 500 seats ¹	1 per 4 receivers ¹
1001 to 2000	35, plus 1 per 50 seats over 1000 seats ¹	1 per 4 receivers ¹
2001 and over	55 plus 1 per 100 seats over 2000 seats ¹	1 per 4 receivers ¹

¹. Or fraction thereof.

Assistive Listening System Requirements

[Section 706](#) of the [2010 ADA Standards for Accessible Design](#) defines the technical requirements for assistive listening systems.

[Section 706.2](#) requires receivers to have a 1/8 inch monaural output jack. Users may use this jack to drive “neck loops” or “direct audio inputs” on hearing aids or cochlear implants. A neck loop is necklace worn around the neck of the user. It is connected to the assistive listening receiver to generate a magnetic field that drives the telecoil in a hearing aid. This is a private inductive loop as compared to a loop around the room. Adding a neck loop to an assistive listening system receiver makes the receiver “hearing aid compatible.” Note that about 25% of the assistive listening receivers are required to be hearing aid compatible (as shown in the table above).

[Advisory 706.3](#) states “Neckloops and headsets that can be worn as neckloops are compatible with hearing aids. Receivers that are not compatible include earbuds, which may require removal of hearing aids, earphones, and headsets that must be worn over the ear, which can create disruptive interference in the transmission and can be uncomfortable for people wearing hearing aids.”

The remainder of [section 706](#) specifies the sound pressure level, signal to noise ratio, and peak clipping level.

Staff Requirements

[28 CFR 36.303\(g\)\(9\)](#) requires at least one trained employee be available to assist customers with closed captioning and descriptive audio. That employee must locate the required equipment and activate it and address any problems before or during the movie. If a theater is using open captions in lieu of closed captions, that employee must enable the open captions upon request. Finally, the employee must “communicate effectively with individuals with disabilities, including those who are deaf or hard of hearing

or who are blind or have low vision, about how to use, operate, and resolve problems with captioning devices and audio description devices.”

Advertising Requirements

[28 CFR 36.303\(g\)\(8\)](#) requires that all theater-generated notices indicate which movies are available with closed captioning and which are available with audio description. This information is to be available at the box office, other ticketing locations, web sites, mobile applications, and over the telephone. This rule does not impose a requirement on third party web sites (that are not controlled by the theater). Royalty-free symbols for closed captioning and audio description are available from [WGBH](#).

Deadlines

- **Assistive Listening Systems** are required to be operational now (rules requiring them are more than 20 years old).
- **Staff Requirements** are effective January 17, 2017, if a theater is providing closed captioning or audio description.
- **Advertising Requirements** are effective January 17, 2017, if a theater is providing closed captioning or audio description.
- **Closed Captioning and Audio Description** equipment is to be operational by June 2, 2018. However, if a theater converts from film to digital after December 2, 2016, closed captioning and audio description equipment must be installed within 6 months of the conversion or December 2, 2018, whichever is later.

References

- 28 CFR 36 - NONDISCRIMINATION ON THE BASIS OF DISABILITY BY PUBLIC ACCOMMODATIONS AND IN COMMERCIAL FACILITIES - <http://www.ecfr.gov/cgi-bin/text-idx?node=pt28.1.36&rgn=div5>
- 81 FR 87348 (2016) - Nondiscrimination on the Basis of Disability by Public Accommodations—Movie Theaters; Movie Captioning and Audio Description - <https://www.gpo.gov/fdsys/pkg/FR-2016-12-02/pdf/2016-28644.pdf>
- 2010 ADA Standards for Accessible Design - https://www.ada.gov/regs2010/2010ADAStandards/2010ADAStandards_prt.pdf
- WGBH Access Symbols - <http://main.wgbh.org/wgbh/hire/symbols.html>