This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: E1665 – 95a (Reapproved 2018)

An American National Standard

Standard Classification for Serviceability of an Office Facility for Facility Protection[1,2]

This standard is issued under the fixed designation E1665; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This classification covers pairs of scales for classifying an aspect of the serviceability of an office facility, that is, the capability of an office facility to meet certain possible requirements for protection of a building or site.

1.2 Within that aspect of serviceability, each pair of scales, shown in Figs. 2-7, are for classifying one topic of serviceability. Each paragraph in an Occupant Requirement Scale (see Figs. 2-7) summarizes one level of serviceability on that topic, which occupants might require. The matching entry in the Facility Rating Scale (see Figs. 2-7) is a translation of the requirement into a description of certain features of a facility which, taken in combination, indicate that the facility is likely to meet that level of required serviceability.

1.3 The entries in the Facility Rating Scale (see Figs. 2-7) are indicative and not comprehensive. They are for quick scanning to estimate approximately, quickly, and economically, how well an office facility is likely to meet the needs of one or another type of occupant group over time. The entries are not for measuring, knowing, or evaluating how an office facility is performing.

1.4 This classification can be used to estimate the level of serviceability of an existing facility. It can also be used to estimate the serviceability of a facility that has been planned but not yet built, such as one for which single-line drawings and outline specifications have been prepared.

1.5 This classification indicates what would cause a facility to be rated at a certain level of serviceability but does not state how to conduct a serviceability rating nor how to assign a serviceability score. That information is found in Practice E1334. The scales in this classification are complimentary to and compatible with Practice E1334. Each requires the other.

1.6 The values stated in SI units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[3]

E631 Terminology of Building Constructions

E1334 Practice for Rating the Serviceability of a Building or Building-Related Facility (Withdrawn 2013)[4]

E1679 Practice for Setting the Requirements for the Serviceability of a Building or Building-Related Facility, and for Determining What Serviceability is Provided or Proposed

2.2 *ISO Document:*[5]

ISO 6240 International Standard, Performance Standards in Building—Contents and Presentation

3. Terminology

3.1 *Definitions:*

3.1.1 *facility*—a physical setting used to serve a specific purpose. **E631**

3.1.1.1 *Discussion*—A facility may be within a building, a whole building, or a building with its site and surrounding environment; or it may be a construction that is not a building. The term encompasses both the physical object and its use.

3.1.2 *facility serviceability*—the capability of a facility to perform the function(s) for which it is designed, used, or required to be used.

[1] This classification is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.25 on Whole Buildings and Facilities.

Current edition approved March 1, 2018. Published March 2018. Originally approved in 1995. Last previous edition approved in 2012 as E1665 – 95a (2012). DOI: 10.1520/E1665-95AR18.

[2] Portions of this document are based on material originally prepared by the International Centre for Facilities (ICF) and © 1993 by ICF and Minister of Public Works and Government Services Canada. Their cooperation in the development of this standard is acknowledged.

[3] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[4] The last approved version of this historical standard is referenced on www.astm.org.

[5] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. United States

Documents
Document Sharing Hub

Full document details: ASTM E1665-95a(2018)

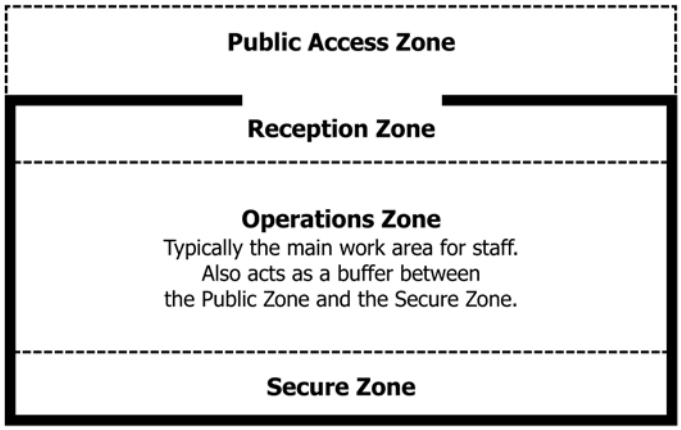

FIG. 1 Zones of Physical Security

3.1.2.1 *Discussion*—The scope of this performance is of the facility as a system, including its subsystems, components and materials and their interactions, such as acoustical, hydrothermal, air purity, and economic; and of the relative importance of each performance requirement. **E631**

3.1.3 *office*—a place, such as a room, suite, or building, in which business, clerical or professional activities are conducted.

3.1.4 For standard definitions of additional terms applicable to this classification, see Terminology E631.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *easement*—a right held by one person in the land of another, such as the right to cross one parcel of land to get to another parcel of land; or to use the land, as for installation and maintenance of public utilities. (See Fig. 1.)

3.2.2 *hours of operation:*

3.2.2.1 *active hours*—the time when a facility is normally fully occupied and operational.

3.2.2.2 *normal working hours*—the time during the day when staff are normally at work, starting with the normal arrival in the morning of first staff and ending with the normal departure time of last staff. Excludes time of an evening or night shift, time when staff are working later than normal, weekends, and legal holidays.

3.2.2.3 *silent hours*—the period when a facility is essentially unoccupied, although security, cleaning, and building operations staff may be present.

3.2.2.4 *transitional hours*—the time in the morning after the first workers normally arrive until a facility is fully operational, and in the evening from the end of normal work until the normal workers have left, although security, cleaning, and building operations staff may be present.

3.2.3 *security functions:*

3.2.3.1 *detection*—devices and methods such as guards, alarms and access control, and monitoring systems designed to indicate, and possibly verify, attempted or actual unauthorized access.

3.2.3.2 *protection*—physical and psychological barriers that will delay or deter someone attempting unauthorized access.

3.2.3.3 *response*—reactions to attempted or actual unauthorized access, such as involvement of guard or police forces, damage assessments, and remedial measures to forestall a repetition of a security breach.

3.2.4 *zones of physical security:*

3.2.4.1 *high-security zone*—an area that is continuously monitored and where access is limited to authorized personnel.

3.2.4.2 *occupant zone*—the occupant's premises, which includes all of the zones listed below. May be the same as the occupied area, if that does not include any public access zone.

3.2.4.3 *operations zone*—an area where access is limited to employees and to visitors with a legitimate reason for being there.

3.2.4.4 *public access zone*—that area to which the public has free access. Normally, these are the grounds of a facility, and the public corridors in multi-tenant buildings.

3.2.4.5 *reception zone*—an area to which the general public's access can be limited. Access could be limited to specific times of day or for specific reasons.

3.2.4.6 *secure zone*—an area that is continuously monitored and where access is controlled.

4. Significance and Use

4.1 Each Facility Rating Scale (see Figs. 2-7) in this classification provides a means to estimate the level of serviceability of a building or facility for one topic of serviceability and to compare that level against the level of any other building or facility.

4.2 This classification can be used for comparing how well different buildings or facilities meet a particular requirement for serviceability. It is applicable despite differences such as location, structure, mechanical systems, age, and building shape.

4.3 This classification can be used to estimate the amount of variance of serviceability from target or from requirement, for a single office facility, or within a group of office facilities.

4.4 This classification can be used to estimate the following:

4.4.1 Serviceability of an existing facility for uses other than its present use.

4.4.2 Serviceability (potential) of a facility that has been planned but not yet built.

4.4.3 Serviceability (potential) of a facility for which remodeling has been planned.

AVA Documents
Document Sharing Hub

Full document details: ASTM E1665-95a(2018)

A.9. Facility Protection

Scale A.9.1. Protection around building

Occupant Requirement Scale		Facility Rating Scale
9 ❑ **LEVEL OF PROTECTION FROM THREATS:** Operations require maximum protection from various threats. **POSSIBLE THREATS:** Entry from adjacent building(s), electronic or acoustic intrusion, overview of site, and activities of undesirable neighbours.	8 ❑	9 ❑ ○ **Electronic or acoustic intrusion:** The distance and terrain are sufficient to prevent acoustic or electronic intrusion. ○ **Overview of site:** There is a good overview from several surrounding buildings where this is desirable, or alternately, surrounding buildings do not permit an overview where there is a security concern. ○ **Information on activities in neighbouring buildings:** Information about activities and visitor traffic in neighbouring buildings is offered to prospective occupants, sufficient that they can assess any security threats and risks before deciding to move in, and take any necessary precautions, or to find alternate accommodation. ○ **Personal safety:** The immediate area is safe at all hours, with many people on foot nearby, or effective surveillance and patrol.
7 ❑ ○ **LEVEL OF PROTECTION FROM THREATS:** Operations require special protection from various threats. ○ **POSSIBLE THREATS:** Entry from adjacent building(s), electronic or acoustic intrusion. Occupants to be warned before move-in of activities of neighbours in the building or immediate area that might increase risks.	6 ❑	7 ❑ ○ **Electronic or acoustic intrusion:** The distance to the adjacent building(s) prevents acoustic intrusion and reduces the possibility of electronic intrusion. ○ **Overview of site:** The surrounding buildings give a partial overview of the site where an overview is desirable, or alternately, give a minimum building overview where an overview is a security concern. ○ **Information on activities in neighbouring buildings:** Information about all relevant activities and visitor traffic is offered at occupant move-in. ○ **Personal safety:** The immediate area is safe at all hours, with many people about.
5 ❑ ○ **LEVEL OF PROTECTION FROM THREATS:** Operations require protection from various threats. ○ **POSSIBLE THREATS:** Entry from adjacent building(s), acoustic intrusion. Description of activities of most neighbours in the building or immediate area to be available to occupants on request.	4 ❑	5 ❑ ○ **Electronic or acoustic intrusion:** The distance from the windows to the windows of adjacent building(s) is sufficient to prevent acoustic intrusion. ○ **Overview of site:** There is a direct view of the street side and rear of the site from adjacent properties. ○ **Information on activities in neighbouring buildings:** Information on most activities in neighbouring buildings, including about visitor traffic, is available at the request of the occupants. ○ **Personal safety:** The immediate area is safe for pedestrians during office hours with no recent history of attack in the area, day or night.
3 ❑ ○ **LEVEL OF PROTECTION FROM THREATS:** Operations require minimum protection from various threats. ○ **POSSIBLE THREATS:** Entry from adjacent building(s), acoustic intrusion, activities of neighbours.	2 ❑	3 ❑ ○ **Electronic or acoustic intrusion:** There is acoustic glazing in windows in proximity to adjacent building(s). ○ **Overview of site:** A view of all parts of the site is normal from adjacent properties. ○ **Information on activities in neighbouring buildings:** There is minimum information on activities in neighbouring building(s), and no information on visitors is generated. ○ **Personal safety:** The immediate area is unsafe to pedestrians outside office hours with some history of attacks at night.

Scale A.9.1. continued on next page

FIG. 2 Scale A.9.1 for Protection Around Building

AVA Documents
Document Sharing Hub

Full document details: ASTM E1665-95a(2018)

A.9. Facility Protection

Scale A.9.1. Protection around building (continued)

Occupant Requirement Scale	Facility Rating Scale
1 ❑ ❍ **LEVEL OF PROTECTION FROM THREATS:** No protection required at this level. ❍ **POSSIBLE THREATS:** No protection required at this level.	1 ❑ ❍ **Electronic or acoustic intrusion:** Close proximity of building windows to adjacent building(s) windows allows easy acoustic or electronic intrusion. ❍ **Overview of site:** View of the site is normal from adjacent properties. ❍ **Information on activities in neighbouring buildings:** No information concerning activities in neighbouring building(s), or on visitors, is generated. ❍ **Personal safety:** The immediate area is dangerous with a history of attacks on pedestrians during day and night.

❑ Exceptionally important. ❑ Important. ❑ Minor Importance.	
Minimum Threshold level =	❑ NA ❑ NR ❑ Zero ❑ DP

NOTES ***Space for handwritten notes on Requirements or Ratings***

FIG. 2 Scale A.9.1 for Protection Around Building *(continued)*

4.5 Use of this classification does not result in building evaluation or diagnosis. Building evaluation or diagnosis generally requires a special expertise in building engineering or technology and the use of instruments, tools, or measurements.

4.6 This classification applies only to facilities that are building constructions, or parts thereof. (While this classification may be useful in rating the serviceability of facilities that are not building constructions, such facilities are outside the scope of this classification.)

4.7 This classification is not intended for, and is not suitable for, use for regulatory purposes, nor for fire hazard assessment nor for fire risk assessment.

5. Basis of Classification

5.1 The scales shown in Figs. 2-7 contain the basis for classification.

5.2 Instructions for the use of this classification are contained in Practices E1334 and E1679.

6. Keywords

6.1 building; building, protection of; facility; facility occupants; function; office; performance; rating; rating scale; requirements; serviceability

AVA Documents
Document Sharing Hub

Full document details: ASTM E1665-95a(2018)

A.9. Facility Protection

Scale A.9.2. Protection from unauthorized access to site and parking

Occupant Requirement Scale		Facility Rating Scale
9 ❑ ❍ **PROTECTION OF SITE:** The entire site needs maximum protection against unauthorized intrusion. Easements through the site cannot be tolerated. Emergency work by utilities must be supervised by security staff. ❍ **CONTROL OF PARKING USE:** The parking area requires control against unauthorized use. ❍ **PROTECTION OF ON-SITE STORED VEHICLES:** Organization's stored vehicles on-site require maximum protection.	**8** ❑	**9** ❑ ❍ **Perimeter control:** The entire site is fenced. The gate is attended during active and transition hours, and has intercom and camera surveillance during silent hours. ❍ **Easements:** There are no easements within the fenced site. ❍ **Permission for access to site:** Utility companies requiring access must obtain prior permission to enter, and must work under the control of the occupant security personnel, even in emergencies. ❍ **Control of access:** Indoor parking with attended control station and no outdoor parking. ❍ **Security of stored vehicles:** Company stored vehicles in indoor parking with TV monitoring in silent hours.
7 ❑ ❍ **PROTECTION OF SITE:** A portion of the site needs special protection against unauthorized intrusion. Easements through the secure area can only be entered with permission of the occupants, and can only perform work under supervision of security staff. ❍ **CONTROL OF PARKING USE:** The parking area requires control against unauthorized use. ❍ **PROTECTION OF ON-SITE STORED VEHICLES:** Organization's stored vehicles on-site require special protection.	**6** ❑	**7** ❑ ❍ **Perimeter control:** Restricted areas of the site are fenced. The gate is attended during active hours, and key control is used at other times. ❍ **Easements:** Easements within the fenced security area require permission of the occupants to enter. ❍ **Permission for access to site:** Utility companies must obtain prior permission to enter, and must work under the control of a building security guard. ❍ **Control of access:** Outdoor parking with attended control station. ❍ **Security of stored vehicles:** Company vehicles in fenced compound, or indoor parking, with card reader access.
5 ❑ ❍ **PROTECTION OF SITE:** A portion of the site needs protection against unauthorized intrusion. Easements within 15 m of the building require that restricted access or work only be performed under supervision of security staff. ❍ **CONTROL OF PARKING USE:** Parking areas require limited control against unauthorized use. ❍ **PROTECTION OF ON-SITE STORED VEHICLES:** Organization's stored vehicles on-site require basic protection.	**4** ❑	**5** ❑ ❍ **Perimeter control:** Restricted areas of the site are fenced and there is a locked gate. ❍ **Easements:** Easements within 15 m of the building require permission of the occupants to enter and crews must work under the control of a building security guard. ❍ **Permission for access to site:** For work beyond 15 m of the building, no permission is required for access by utility crews arriving unannounced. ❍ **Control of access:** Visitor and staff parking in separate areas, with intermittent guard patrol. ❍ **Security of stored vehicles:** Company vehicles in fenced compound, or indoor parking, locked during silent hours with key access.
3 ❑ ❍ **PROTECTION OF SITE:** Portions of the site need minimum protection from public trespass. Work on easements within 15 m of the building require advance notice. ❍ **CONTROL OF PARKING USE:** Parking areas require minimum control against unauthorized use. ❍ **PROTECTION OF ON-SITE STORED VEHICLES:** Organization's stored vehicles on-site require minimum protection.	**2** ❑	**3** ❑ ❍ **Perimeter control:** Signage on the site indicates areas that are public and areas that are restricted from public trespass. ❍ **Easements:** Some easements on the site are within 15 m of the building. ❍ **Permission for access to site:** Utility crews must give one day notice if working within 15 m of the building. ❍ **Control of access:** Parking area controlled by signage. ❍ **Security of stored vehicles:** Company vehicles stored on-site in separate area, illuminated at night.

Scale A.9.2. continued on next page

FIG. 3 Scale A.9.2 for Protection from Unauthorized Access to Site and Parking

AVA Documents
Document Sharing Hub

Full document details: ASTM E1665-95a(2018)