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Standard Classification for Serviceability of an Office Facility for Special Facilities and Technologies^{1,2}

This standard is issued under the fixed designation E1694; 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-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 special facilities and technologies.
- 1.2 Each pair of scales, shown in Figs. 1-46 printed side-by-side on a page, are , is for classifying one topic of serviceability within that aspect of serviceability. Each paragraph in an Occupant Requirement Scale (see (DEMAND Scale see Figs. 1-64) summarizes one level of requirement for serviceability on that topic that which occupants might require. The matching entryparagraph in the Facility Rating Scale (See (SUPPLY Scale see Figs. 1-64) is a translationan interpretation of the requirement into a description of certain features of a facility that, 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. 1-64) 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, and 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 it does not state how to conduct a serviceability rating nor how to assign a serviceability score. That information is found in Practice E1334E1679. The scales in this classification are complementary to and compatible with Practice E1334E1679. Each requires the other.
- 1.6 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this 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.

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.

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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.



A.13.1 Group or shared conference center Subject Matter: location and capacity of needed conference rooms or spaces 1. Amenity area (ASTM E1836/E1836M-09 (2016)), item 3.2.1: "portion of a building that provides a convenience to an occupant or occupants of a building or group of buildings" relating directly to group and shared conference center spaces. 2. Service area (ASTM E1836/E1836M-09 (2016)), item 3.2.24: "portion of a building that provides services that enable occupants to work in a building" relating directly to group and shared conference center spaces. From the options below, please select the level that best describes the REQUIREMENT Rating **DEMAND** A.13.1 Group or shared conference center Level 9 0 **Location of meeting space:** A conference center for the organization is provided in the same building. Size of meetings: Space is provided for a variety of small groups plus large meetings, for example, 25 to 200 Amenities: A full range of convenience functions are contiguous and readily available. Services: Comfortable building environment (that is, temperature, humidity, ventilation) for all occupant load situations. Conveniently located adjustable lighting controls. Frequent electrical outlets plus charging stations. 8 0 Location of meeting space: A conference center for the organization is provided in the same building or 7 0 Size of meetings: Space for large meetings in the same building, for example, 100 people, plus group meeting spaces. Amenities: A full range of convenience functions are readily available within a short walking distance. Services: Comfortable building environment (that is, temperature, humidity, ventilation) for most occupant load situations. Multiple switched lighting controls are conveniently located. Frequent electrical outlets and some charging locations. 6 0 Location of meeting space: Can utilize company conference space or open plan space adjacent to main **5** O circulation areas in the same building or complex. **Size of meetings:** Space for large meetings in the same building, for example, 100 people. Amenities: Most convenience functions are readily available, but some are at a substantial walking distance. Services: Comfortable building environment (that is, temperature, humidity, ventilation) for main meeting spaces. Conveniently located electrical outlets. Multiple switched lighting controls are located within the space. 4 0 Location of meeting space: No perceived present or future need for a company or departmental 3 0 conference in the same building or complex. **Size of meetings:** Space for small meetings is limited in the same building. **Amenities**: Convenience functions can be established through makeshift temporary arrangements. Services: Comfortable building temperatures. Lighting controls are not readily available and are controlled in large banks of fixtures. Electrical outlets are provided. 2 0 1 0 **Location of meeting space:** There is no requirement at this level. Size of meetings: There is no requirement at this level. Amenities: There is no requirement at this level. **Services:** There are no requirements at this level. 0 0 No information is available. If unable to choose scale level, select OTHER and indicate reason below: □In-depth evaluation required □ Not applicable ☐ Postpone decision □ Lack Information ☐ Refer question to someone else: Whom? e-mail or phone?

FIG. 1 Demand Scale A.13.1 for Group or Shared Conference Center



A.13	.1		Group or shared conference center				
		From the options b	elow, please select the level that best describes the RATING.				
Requirement Level		SUPPLY	A.13.1. Group or shared conference center				
9	A departmental conference center exists. For example, large enough to handle a 200 people plus several breakout groups of 25 to 50 people at tables in adjacent coat-check area, food services, adequate washrooms, and agile small group meeting conferencing spaces and readily available. All amenities are fully accessible. The and ventilation levels quickly adjust to varying occupant loads. Ventilation is very rical outlets and charging stations are readily available for occupant use. Lighting able to occupant requirements.						
8		cond or 13 quickly dajast	able to occupant requirements.				
7	0	meetings of 100 people. areas, or in a portion of AMENITIES: Security, group meeting areas are SERVICES: Temperatur quiet in operation. Elect	I: A departmental conference center is provided. For example, large enough to handle. Several breakout groups can be handled in meeting rooms, display areas, or work a food service eating area is utilized without disruption. coat-check area, food services, full accessibility, adequate washrooms, and agile smale readily available within a short walking distance. The and ventilation levels adjust to varying occupant loads. Ventilation is reasonably rical outlets are readily available for occupant use but may require extension cords. table to occupant requirements.				
6							
5		PRESENT PROVISION: A company-shared conference center is provided. For example, large enough to nandle meetings of 100 people. Several breakout groups can be handled in meeting rooms, display areas, or work areas, or in a portion of a food service eating area is utilized with only minimal disruption to their function AMENITIES: Security, coat-check area or space, food services, adequate washrooms, and agile small group meeting areas are readily available but can be at a substantial walking distance. All features are fully accessible SERVICES: Temperature, humidity, and ventilation can be adjusted to varying occupant loads. Ventilation noise is apparent. Electrical outlets are in excess of local codes, but minimal use of extension cords may be required. Lighting control is located within the space.					
4	0						
3 ps://sta		handle meetings of 25 p substantial disruption to AMENITIES: Amenity s temporary arrangement	I: No current provision of designated conference space. A large enough space to ecople in work areas or underutilized areas such as a lunchroom is only possible with furniture and work functions. Services such as a coat-check area or space, are not available without makeshift so. Adequate accessible washrooms can be at a very substantial walking distance.				
			re and ventilation provide varying hot and cold areas. Ventilation noise is very eviden local codes. Lighting control is specifically switched for original space function.				
2		Licerical outlets are to i	ocal codes, Eighting control is specifically systemed for original space fullcuoti.				
1	0	group meeting space wi AMENITIES: Convenie SERVICES: Comfortable without assistance. Only	N: No current provision of designated conference space and it is difficult to arrange ithout disruption to work areas. nce functions are not provided. le building temperature in most spaces. Lighting controls are not readily available y Code required electrical outlets for intended function are provided.				
0	0	No requirement.					
		e Importance of scale	Extremely important Important Minor importan				
			: First, indicate whether Threshold Level of scale is a R, if there is NO Maximum or Minimum Threshold level, then select O None				
Then, (unless	there is none) select the	Threshold Level of this scale 08 07 06 05 04 03 02 01				
If una	ble to	choose scale level. se	lect ☐ OTHER and indicate reason below:				
□ Lack	Infor	mation Postpo	ne decision				

FIG. 61 Supply Scale A.13.6 for Telecommunications A.13.1 for Group or Shared Conference Center (continued)



A.13.2 Video Conferencing Provision

Subject Matter: quality of video conferencing. Notes:

- Video conferencing can now occur anywhere from a mobile device to a conference center consequently the scale now focuses on telecommunications systems.
- Mean Opinion Score (MOS), International Telecommunications Union, Methods for objective and subjective assessment of speech and video quality Union (ITU-T, P.800.2 (07/2016) is a scale of the user's opinion of the quality of the internet to provide communications. This rating Scale is a simple 1- to 5-point scale and can be described as 1 BAD - very difficult to maintain communication; 2 POOR - unreliable communication; 3 Fair - various issues or a persistent issue makes the communication difficult to follow; 4 Good - clear like a typical mobile phone; and 5 Excellent - similar to in-
- Lag is described as a delay in any aspect of the audio or visual media. Retrieved from https://www.ibm.com/cloud/blog/network-latency?mhsrc=ibmsearch_a&mhq=latency
- Megabytes per second rating (Mbps) rating based on TechTarget E-Guide, "Video Conferencing Buyer Guide.pdf", April 24, 2017, page 7 for bandwidth and resolution quality.
- Bandwidth is the amount of data that can be transmitted in a given period of time or speed.
- Telephone references any type of direct wired or handheld communication device.

From the options below, please select the level that best describes the REQUIREMENT.

	rement vel	DE	MAND				A.1	3.2 V	ideo (Confere	encing Provisio	n
9	0	1.	VIDEO QUALITY: Must	be sharp, n	no fragme	entation	(blurr	riness)	of infor	mation.		
		2.	LAG (delay): seems like									
		3.	MEAN OPINION SCOR	R E : 5 – simil	lar to in-p	erson	commu	unicatio	n.			
8	0											
7	0	1.	VIDEO QUALITY: in fo	cus, minor fi	ragmenta	ation of	inform	nation.				
		2.	LAG (delay): seems like	e a typical m	nobile pho	one cor	versat	ion and	scree	n rarely	freezes.	
		3.	MEAN OPINION SCOR	E: 4 – clear	r similar t	o a typ	ical mo	obile ph	none.			
6	0											
5	0	1.	VIDEO QUALITY: beco	ming fragm	ented. Vi	ewer be	ecomir	ng distr	acted.			
		2.	LAG (delay) causes mis screen freezes for minim									he
		3.	MEAN OPINION SCORE: 3 – bothersome to communicate, routine need to repeat aspects of the communication. ASTM F1694-22									
4	0											
ps://3	aodard	1.1te	VIDEO QUALITY: is fra	gmented. Ir	nformatio	n diffic	ult to f	follow.	Viewer	stops er	ngaging.astm-eli	694-
		2.	LAG (delay): causes ne freezes causing commun			parts o	f the o	commu	nicatio	n. Screer	n repeatedly	
2	0	3.	MEAN OPINION SCOR	RE: 2 – diffic	cult to co	mmunio	ate ef	ficiently	/.			
1	0	1.	VIDEO QUALITY: non-	existent. Vie	ewer disc	onnects	S.					
		2.	LAG (DELAY): causes r freezes causing commun									edly
		3.	MEAN OPINION SCOR	E: of 1 – di	fficult to	maintai	n the	commu	ınicatio	n conne	ction.	
0	0	No	requirement.									
<u> </u>						0				0	0	
Select	Relativ	e Iı	nportance of scale =	:	Extrem	ely Im	portar	nt	Imp	ortant	Minor Import	ance
			Level of scale: First, Maximum OR, if the								hen select O No i	ıe.
Then	(unless	the	e is none) select the T	hreshold	Level o	f this	scale					
111011,	(4111035	crici	09 08	07 06		04	03	O 2	01			
If una	ble to cl	hoos	se scale level, select \square	OTHER and	l indicate	reason	below	/:				
□Lack	Inform	atio	n □ Postpone dec	ision [] In-dept	h eval	uatior	n requ	ired	□Not	applicable	
			o someone else: Whon									
					•			6	,			
		FIG.	2 Demand Scale A.13.2	tor Video	Teleconf	erence	Facil	ities Co	onferer	ncing Pr	rovision	

A.13.2		Video Conferencing Provision				
	From the options	below, please select the level that best describes the RATING.				
Rating Level	SUPPLY	A.13.2 Video Conferencing Provision				
9 0	 Bandwidth: Pro Internet conne 	 Viewing resolution: Can provide a high definition 1080 (HD1080) viewing resolution. Bandwidth: Provides a bandwidth of 6 Mbps (megabytes per second) per user. Internet connection: Facility has provision of direct connected internet network and wireless internet (Wi-Fi) within all work and common areas. 				
8 0	4. Telephone serv	rice: Very rarely requires a telephone service to facilitate audio.				
7 0	 Bandwidth: Pro Internet conne 	tion: Can provide a high-definition 720 (HD720) viewing resolution. wides a bandwidth of 4 Mbps per user. ection: Facility has provision of direct connected internet network and Wi-Fi in d most common areas.				
6 O		rice: Rarely requires telephone service to facilitate audio.				
5 0	 Bandwidth: Pro Internet conne 	tion : Can provide a high definition 720 (HD720) viewing resolution. wides a bandwidth of 1 Mbps user. ection : Facility has provision of direct connected internet network and Wi-Fi in some common areas				
4 0	4. Telephone serv	rice: Occasionally requires telephone service to facilitate audio.				
3 0	 Bandwidth: Pro Internet connermost work areas 					
2 0	4. <u>Telephone serv</u>	rice: Frequently requires telephone service to facilitate audio and video.				
1 0	2. Bandwidth : Pro	tion: Can provide a very low-quality viewing resolution. vides a bandwidth of 384 Kbps per user				
tps://standa	4. Telephone Serv	action : Facility has limited provision of plugin internet network or Wi-Fi vice: Very frequently requires telephone service to facilitate audio and video.				
0 0	No information is av					
	choose scale level, select					
□ Lack Info □ Refer que		one decision				

FIG. 2 Supply Scale A.13.2 for Video Conferencing Provision (continued)

2. Referenced Documents

2.1 ASTM Standards:³

E631 Terminology of Building Constructions

E1334E1663 PracticeClassification for Rating the Serviceability of a Building or Building-Related FacilityServiceability of an Office Facility for Typical Office Information Technology (Withdrawn 2013)

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

E1836/E1836M Practice for Building Floor Area Measurements for Facility Management

2.2 ISO Documents:⁴

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

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

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



	From the options belo	ow, please select the level that best describes the RATING.					
Rating Level	DEMAND	A.13.3 Simultaneous interpretati					
9 0	in at least one large conf	pretation facility : Operations require permanent interpretation facilities ference or meeting room. y : Currently provides facilities for interpretation is determined to meet					
8 0							
7 0	<u>Present need for interpretation facility</u> : Occasional need for permanent interpretation facilities. Can tolerate using meeting rooms with portable booths for translators. <u>Future need for facility</u> : There is a certain future need for permanent interpretation facilities in the building or complex.						
6 O	are banding or complexi						
5 0	Present need for interpretation facility ; No present need for permanent interpretation facilities. Can tolerate using meeting rooms with portable booths for interpreters. Future need for facility : There is a conceivable future need for permanent interpretation facilities in the building or complex.						
4 0	rasmass in the banancy o						
3 O	Present need for interpretation facility : No present need for permanent interpretation facilities. Can tolerate makeshift arrangements for interpreters. Future need for facility : There is no predictable need for permanent interpretation facilities in the building or complex.						
2 0	the ballang of complexi						
1 0		pretation facility : No current need for interpretation facilities. y : There is no perceived future need for permanent interpretation or complex.					
0 0	No information is availab	de Cument Preview					

FIG. 3 Demand Scale A.13.3 for Simultaneous TranslationInterpretation

ISO/DIS 7162 Draft International Standard, Performance Standards in Building—Contents and Format of Standards for Evaluation of Performance

ISO/DIS 7164 Draft International Standard, Performance Standards in Building—Definitions and Means of Expression for the Performance of a Whole Building

3. Terminology

- 3.1 Definitions:
- 3.1.1 For standard definitions of terms applicable to this classification, see Terminology E631.
- 3.1.2 facility, n—a physical setting used to serve a specific purpose.

E631



	From the options below, ple	ase select the level that best describes the REQUIREMENT.					
Requiremei Level	SUPPLY	A.13.3 Simultaneous interpretation					
9 0	conference and meeting rooms. electronic equipment are installe conferencing Provision.	anent interpretation facilities are provided in one or two of the largest Space is available in several meeting rooms for portable booths. Cables and ed to "supply" a conferencing provision of Level 9 based on A.13.2 Video TER FACILITIES: The building provides permanent facilities to a high ventilated and good acoustics.					
8 0							
7 0	PRESENT PROVISION: Permanent interpretation booths are provided in one or two of the largest conference and meeting rooms. Translators bring their own equipment and cabling. Some existing meeting rooms are suitable for portable booths for interpreters. Cables and electronic equipment are installed to "supply" a conferencing provision of Level 7 based on A.13.2 Video conferencing Provision. POTENTIAL FOR INTERPRETER FACILITIES: The building could easily be fitted up to provide permanent facilities to a high standard, at a low cost, for example, fit cable under carpet tile, enhanced ventilation, and good acoustics.						
6 0	, -						
5 0	PRESENT PROVISION: No permanent accommodation exists for on-site simultaneous interpretation. Some existing meeting rooms are suitable for portable booths for interpreters. Cables and electronic equipment are installed to "supply" a conferencing provision of Level 5 based on A.13.2 Video conferencing Provision. Video conferencing infrastructure should be adequate for remote simultaneous interpretation. POTENTIAL FOR INTERPRETER FACILITIES: The building could be fitted up to provide permanent facilities for interpreters at moderate cost and difficulty to provide adequate quality; for example, cables in combination with surface conduit and ceiling space, and booth ventilation the same as for meeting rooms.						
4 0							
3 O	PRESENT PROVISION: No permanent accommodation exists for simultaneous interpretation. Some existing meeting rooms are marginally suitable for portable booths for interpreters. Cables and electronic equipment are installed to "supply" a conferencing provision of Level 3 based on A.13.2 and may not support video conferencing. Video conferencing infrastructure may not support efficient remote simultaneous interpretation resulting in the need for the use of the local cellular (mobile) telephone network. POTENTIAL FOR INTERPRETER FACILITIES: The building could be fitted up to provide technical facilities for translators, but with marginal quality, for example, surface run cables, ventilation the same as for open office, or, very costly and difficult.						
2 0							
10	rooms exist, they are not suitab installed to "supply" a conference	ermanent accommodation exists for simultaneous interpretation. If meeting le for portable booths for interpreters. Cables and electronic equipment are cing provision of Level 1 based on A.13.2 Video Conferencing Provision. The y maintaining the connection for remote simultaneous interpretation requiring one network.					
	potential for interpreta- interpreters, for example, a boo	TER FACILITIES : No capability exists to provide technical facilities for th with ventilation and cables.					
0 0	No requirement.						
Select Rela	tive Importance of scale =	O O O					
		Extremely Important Important Minor Important indicate whether Threshold Level of scale is a re is NO Maximum or Minimum Threshold level, then select O None					
Then, (unle	-	hreshold Level of this scale 07 06 05 04 03 02 01					
76 1.1. 1.		OTHER and indicate reason below:					

FIG. 3 Supply Scale A.13.3 for Simultaneous Interpretation (continued)

3.1.2.1 Discussion—