

Standard Classification for Serviceability of an Office Facility for Structure and Building Envelope^{1,2}

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1. Scope

- 1.1 This classification covers matched sets of scales (see Figs. 1-24) 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 structure and building envelope.
- 1.2 Within that aspect of serviceability, each matched set of scales (see Figs. 1-24) is for classifying one topic of serviceability. Each topic is typically broken down into two more demand functions and supply features. Each paragraph in an Occupant Requirement Scale summarizes one level of serviceability on that function, which occupants might require. The matching entry in the Facility Rating Scale 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. 1-24) 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

 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.

serviceability score. That information is found in Practice E1679. The scales in Figs. 1-24 are complimentary to and compatible with Practice E1679. Each requires the other.

- 1.6 The scales are intended to identify the levels of various requirements unique to a particular user, and the serviceability (capability) of a building to meet those requirements. The scales thus supplement rather than include code requirements. It remains the responsibility of designers, builders, and building managers to meet applicable code requirements relative to their respective roles in facility design, construction, and ongoing management.
- 1.7 The values stated in inch-pound 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.

2. Referenced Documents

2.1 ASTM Standards:³

E631 Terminology of Building Constructions

E1660 Classification for Serviceability of an Office Facility for Support for Office Work

E1665 Classification for Serviceability of an Office Facility for Facility Protection

E1667 Classification for Serviceability of an Office Facility for Image to the Public and Occupants

E1669 Classification for Serviceability of an Office Facility for Location, Access and Wayfinding

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 Documents*:⁴

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

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

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

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 *facility, n*—a physical setting used to serve a specific purpose.
- 3.1.1.1 *Discussion*—A facility may be within a building, or 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.
- 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.
- 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, as well as those in 3.1.1 3.1.3, see Terminology E631.

4. Significance and Use

- 4.1 Each Facility Rating Scale in this classification (see Figs. 1-24) provides a means to estimate the level of service-ability 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 a remodeling has been planned.
- 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.)

5. Basis of Classification

- 5.1 The scales in Figs. 1-24 contain the basis for classification
- 5.2 Instructions for use of this classification are contained in Practice E1679.

6. Keywords

6.1 basements; buildings; building envelope and structures; facility; facility occupants; functions; offices; performances; ratings; rating scales; requirements; roofs; serviceability; serviceability of; structure and building envelopes; walls (external) and projections



DEMAND B.1.1. Typical Office floors

Demand Scales in this Topic: B.1.1. Information on allowable loading

Subject Matter: Occupants' requirements for information on the ability of existing office floors to support special load conditions, their extent, and location.

Notes: Related occupant requirement scales for floor loading, levelness, and evenness are found in Topic A.1.5 of E1660.

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Requirement Level		DEMAND B.1.1. Information on allowable loading				
A24470	0	Occupants require very easy access to information, e.g. original structural drawings, calculations, specifications, and special engineering studies.				
	0					
7	0	Occupants require <i>easy</i> access to information, e.g. essential data in an Asset Management Plan.				
6	0					
	0	Occupants require reasonable ac jurisdiction having authority.	ccess to information, e.ç	g. by request fro	om the local	
4	0					
3	0	Occupants accept difficult access engineering services that can rely		e cost, time, an	d effort of	
2	0	,				
	0	Occupants accept very difficult engineering services require destr			ne, and effort of	
0	0	No requirement.	, 5, 5			
H2 W 61		E 6 12 2	0	0	0	
Select	Relativ	e Importance of scale =	Extremely Important	Important	Minor Importance	
	Select Threshold Level of Scale : First, indicate whether Threshold Level of scale is a O Minimum OR O Maximum OR, if there is NO Maximum or Minimum Threshold level, then select O None .					
Then,	Then, (unless there is none) select the Threshold Level of this scale O9 O8 O7 O6 O5 O4 O3 O2 O1					
If una	ble to	choose scale level, select OTHE	R and indicate reason belo	ow:		
□Lack	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable					
S- 965500 SS	☐ Refer question to someone else: Whom? e-mail or phone?					
	The state of the s					

FIG. 1 Demand Scale B.1.1 for Information on Allowable Loading

SUPPLY B.1.1. Typical office floors

Supply Scales in this Topic: B.1.1. Information on allowable loading

Subject Matter: The availability of information on the ability of existing office floors to support special load conditions, their extent, and location.

Notes: Related rating scales for floor loading, levelness, and evenness are found in Topic A.1.5 of E1660.

Rating Level		SUPPLY B.1.1. Information on allowable loading				
9	0	Information is very easy to obtain, e.g. original construction documents are available onsite to occupants.				
8	0					
7	0	Information is easy to obtain, e.g. essential data can be found in an Asset Management Plan.				
6	0					
5	0	Information is reasonable to obtain, e.g. the local jurisdiction having authority has construction documents archived.				
4	0					
3	0	Information is <i>difficult</i> to obtain, e.g. engineering services that can rely on drawings and direct inspection are required.				
2	0					
1	0	Information is very difficult to obtain, e.g. engineering services require destructive sampling, testing, and repairs.				
0	0	No information is available.				
If unable to choose scale level, select OTHER and indicate reason below:						
□ Lac	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable					
☐ Ref	☐ Refer question to someone else: Whom? e-mail or phone?					
100						

FIG. 2 Supply Scale B.1.1 for Information on Allowable Loading



DEMAND B.1.2 External walls and projections

Demand Scales in this Topic:

- B.1.2.1 Permanence of exterior finishes
- . B.1.2.2 Weathertightness at exterior walls
- B.1.2.3 Condition of exterior walls and projections

Subject Matter: Occupants' requirements for the physical condition of the exterior of a building, as distinct from the perceived quality of the exterior.

Notes:

- 1. Perceived quality of the exterior is dealt with in Topic A.11 Image to public and occupants of E1667.
- 2. Related occupant requirement scales for the weathertightness of exterior doors and windows and the roof are dealt with in scales B.1.3.1 and B.1.4 respectively.

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

100						
Requirement Level		DEMAND B.1.2.1. Permanence of exterior finishes				
9	0	The expected replacement life of exterior finishes must be greater than 75 years.				
8	0					
7	0	The expected replacement life of exterior finishes must be greater than 50 years up to 75 years.				
6	0	Est s				
5	0	The expected replacement life of exterior finishes should be greater than 40 years up to 50 years.				
4	0					
3	0	The expected replacement life of exterior finishes can be greater than 30 years up to 40 years.				
2	0					
1	0	The expected replacement life of exterior finishes does not have to exceed 30 years.				
1025	0	No requirement.				
Calaat I	D - I - Air	0 0 0				
Select I	Relativ	e Importance of scale = Extremely Important Important Minor Importance				
		Shold Level of Scale : First, indicate whether Threshold Level of scale is a OR O Maximum OR, 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				
		09 08 07 06 05 04 03 02 01				
If unal	If unable to choose scale level, select □ OTHER and indicate reason below:					
25772	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable					
		ion to someone else: Whom? e-mail or phone?				
LI Kele	There question to someone eiger whom: e mail or phone:					

FIG. 3 Demand Scale B.1.2.1 for Permanence of Exterior Finishes

Requirement Level		DEMAND B.1.2.2. Weathertightness at exterior walls					
	0	Occupants <i>cannot accept any</i> signs of moisture penetration at the inside surface of exterior walls.					
8							
7	0	Occupants can accept isolated signs of minor moisture penetration at the inside surface of exterior walls.					
6	0						
5	0	Occupants can accept some minor signs of moisture penetration at the inside surface of exterior walls.					
4	0						
3	0	Occupants can <i>accept noticeable</i> signs of moisture penetration at the inside surface of exterior walls.					
2	0						
	0	Occupants can accept signs of moisture penetration at the inside surface of exterior walls provided there is no mositure damage to work products, furnishings, or equipment or negative health impacts from associated mold. No requirement.					
Select	Relative	Extremely Important Important Minor Importance					
Select O Min	Select Threshold Level of Scale : First, indicate whether Threshold Level of scale is a O Minimum OR O Maximum OR, if there is NO Maximum or Minimum Threshold level, then select O None .						
Then,	Then, (unless there is none) select the Threshold Level of this scale O9 O8 O7 O6 O5 O4 O3 O2 O1						
If una	If unable to choose scale level, select OTHER and indicate reason below:						
Lack	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable						
		on to someone else: Whom? e-mail or phone?					

FIG. 4 Demand Scale B.1.2.2 for Weathertightness at Exterior Walls

Requirement Level		DEMAND B.1.2.3. Condition of exterior walls and projections				
	0	Occupants require exterior to be in <i>like-new</i> condition.				
8	0					
7	•	Occupants require exterior to be in <i>good</i> condition.				
6	0					
5	0.00	Occupants can accept exterior with some minor signs of deterioration.				
4	0					
3	0	Occupants can accept exterior with <i>noticeable</i> signs of deterioration.				
2						
1	0	Occupants can accept exterior with extensive signs of deterioration.				
0	0	No requirement.				
Select	Relativ	e Importance of scale = OOOOO Extremely Important Important Minor Importance				
	Select Threshold Level of Scale : First, indicate whether Threshold Level of scale is a O Minimum OR O Maximum OR, if there is NO Maximum or Minimum Threshold level, then select O None .					
Then,	Then, (unless there is none) select the Threshold Level of this scale O9 O8 O7 O6 O5 O4 O3 O2 O1					
If una	If unable to choose scale level, select □ OTHER and indicate reason below:					
□Lack	□ Lack Information □ Postpone decision □ In-depth evaluation required □ Not applicable					
□Refe	□ Refer question to someone else: Whom? e-mail or phone?					

FIG. 5 Demand Scale B.1.2.3 for Condition of Exterior Walls and Projections

SUPPLY B.1.2. External walls and projections

Supply Scales in this Topic:

- B.1.2.1 Permanence of exterior finishes
- B.1.2.2 Water penetration
- . B.1.2.3 Condition of exterior walls and projections

Subject Matter: This topic deals with the physical condition of the exterior of a building, as distinct from the perceived quality of the exterior.

Notes: Building features affecting the perceived quality of the exterior are dealt with in Topic A.11 Image to public and occupants of E1667.

Rating Level		SUPPLY B.1.2.1. Permanence of exterior finishes			
	0	he expected replacement life of exterior finishes is greater than 75 years (e.g. 8 in. cast- n-place concrete walls).			
8	0				
7	0	The expected replacement life of exterior finishes must be greater than 50 years up to 75 years (e.g. 4 in. masonry veneer).			
6	0	A STATE OF THE STA			
5	0	The expected replacement life of exterior finishes should be greater than 40 years up to 50 years (e.g. aluminum curtain wall).			
4	0				
3	0	The expected replacement life of exterior finishes can be greater than 30 years up to 40 years (e.g. cement plaster or cedar siding).			
2	0				
1	0	The expected replacement life of exterior finishes does not have to exceed 30 years (e.g. T1-11 plywood).			
0	0	No information is available.			
If unable to choose scale level, select OTHER and indicate reason below:					
□ Lac	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable				
☐ Ref	☐ Refer question to someone else: Whom? e-mail or phone?				

FIG. 6 Supply Scale B.1.2.1 for Permanence of Exterior Finishes

	ing vel	SUPPLY B.1.2.2. Weathertightness at exterior walls			
	0	Sealants in wall joints are in new or as-new watertight condition. There are no concentrations of residual moisture after most exterior wall surfaces are dry. There is no evidence of moisture penetration to inside surfaces of exterior walls.			
	0	Sealants in surface-sealed joints are in sound watertight condition. There are isolated concentrations of residual moisture after most exterior wall surfaces are dry. There is isolated evidence of minor moisture penetration to inside surfaces of exterior walls.			
6	0				
5	0	Sealants in surface-sealed joints are in <i>generally</i> watertight condition. There are <i>some</i> concentrations of residual moisture after most exterior wall surfaces are dry. There is			
4	0	some evidence of minor moisture penetration to inside surfaces of exterior walls.			
	0	Surface-sealed joints in walls are not fully watertight and need repair. There are noticeable concentrations of residual moisture after most exterior wall surfaces are dry. There is noticeable evidence of moisture penetration to inside surfaces of exterior walls.			
2	0	F			
1	0	Surface-sealed joints in walls are not watertight and need replacement. There are extensive concentrations of residual moisture after most exterior wall surfaces are dry. There is evidence of extensive moisture penetration to inside surfaces of exterior walls.			
0	0	No information is available.			
If un	If unable to choose scale level, select OTHER and indicate reason below:				
□Lac	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable				
□ Ref	er que	stion to someone else: Whom? e-mail or phone?			

FIG. 7 Supply Scale B.1.2.2 for Weathertightness at Exterior Walls

	ing vel	SUPPLY B.1.2.3. Condition of exterior walls and projections				
50,000,00	0	There are <i>no visible defects</i> or failure in external walls or projections.				
	0	There are <i>minor defects</i> , e.g. minor discoloration, stains, or efflorescence adjacent to the tops of walls, wall joints, or weeps; indicating past problems with flashings that may have been corrected. Some minor repair is needed to sealants in external wall joints or wall flashings. Exterior projections are understood by building management to be structurally sound.				
5	0	There are some defects , e.g. minor discoloration, stains, or efflorescence adjacent to the tops of walls, wall joints, or weeps. Some repair or periodic replacement is needed to sealants in external wall joints or wall flashings. Exterior projections show localized evidence of structural distress e.g. sagging, cracks, or other required maintenance.				
3	0	There are <i>many defects</i> , e.g. discoloration, stains, or efflorescence adjacent to the tops of walls, wall joints, or weeps. Exterior projections show general evidence of structural distress e.g. sagging, cracks, or other required maintenance and localized risk.				
1	0 0	There are extensive defects , e.g. many areas of discoloration, stains, or efflorescence, or, in cold winter conditions icicles and moisture adjacent to the tops of walls, wall joints, or weeps. Exterior projections show widespread evidence of structural distress e.g. sagging, cracks, rusted anchors, or looseness and widespread risk. No information is available.				
		To choose scale level, select OTHER and indicate reason below:				
□Lac	k Info	rmation				

FIG. 8 Supply Scale B.1.2.3 for Condition of Exterior Walls and Projections



DEMAND B.1.3. External windows and doors

Demand Scales in this Topic:

- B.1.3.1 Weathertightness at windows and doors
- B.1.3.2 Ease of operation of windows and doors

Subject Matter: Occupants' requirements for the physical condition of exterior doors and windows as distinct from the surrounding exterior wall surfaces.

Notes: Related occupant requirement scales for the weathertightness of exterior walls and the roof are dealt with in scales B.1.2.2 and B.1.4 respectively.

90,000						
Requirement Level		DEMAND B.1.3.1. Weathertightness at windows and doors				
	0	Occupants <i>cannot accept any</i> signs of moisture penetration around exterior windows or doors.				
8	0					
7	0	Occupants can accept isolated signs of minor moisture penetration around exterior windows or doors.				
6	0					
5	0	Occupants can <i>accept some minor</i> signs of moisture penetration around exterior windows or doors.				
4	0					
3	0	Occupants can <i>accept noticeable</i> signs of moisture penetration around exterior window or doors.				
2	0					
	0	Occupants can accept signs of moisture penetration around exterior windows or doors provided there is no moisture damage to work products, furnishings, or equipment or negative health impacts from associated mold.				
0	0	No requirement.				
Select	Relativ	re Importance of scale = OOOOO Extremely Important Important Minor Importance				
		hold Level of Scale: First, indicate whether Threshold Level of scale is a ORO Maximum OR, 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 O9 O8 O7 O6 O5 O4 O3 O2 O1						
If una	ble to d	choose scale level, select OTHER and indicate reason below:				
☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable						
	☐ Refer question to someone else: Whom? e-mail or phone?					
	. questi	on to someone clost financial phone.				
		FIG. 0 Demand Cools D.4.0.4 for Weathersticktones at Windows and Dears				

FIG. 9 Demand Scale B.1.3.1 for Weathertightness at Windows and Doors

From the options below, please select the level that best describes the REQUIREMENT. Requirement **DEMAND** B.1.3.2. Ease of operation of windows and doors Level 9 0 Occupants expect all doors and windows must operate normally. 8 0 0 Occupants can *accept isolated* doors and windows with *minor* operating defects. 7 6 0 **5** 0 Occupants can *accept a few* doors and windows that *may be difficult* to operate. 4 0 3 0 Occupants can accept a noticeable number of doors and windows that are difficult to operate. 2 0 1 0 Occupants can *accept many* doors and windows that *are difficult* to operate. 0 0 No requirement. 0 0 0 Select Relative Importance of scale = **Extremely Important** Important Minor Importance Select Threshold Level of Scale: First, indicate whether Threshold Level of scale is a O Minimum OR O Maximum OR, 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 09 08 07 06 05 04 03 02 01 If unable to choose scale level, select ☐ OTHER and indicate reason below: ☐ Postpone decision ☐ Not applicable ☐ Lack Information ☐ In-depth evaluation required ☐ Refer guestion to someone else: Whom? e-mail or phone?

FIG. 10 Demand Scale B.1.3.2 for Ease of Operation of Windows and Doors

SUPPLY B.1.3. External windows and doors

Supply Scales in this Topic:

- . B.1.3.1 Weathertightness at windows and doors
- B.1.3.2 Ease of operation of windows and doors

Subject Matter: This topic deals with the physical condition of exterior doors and windows as distinct from the surrounding exterior wall surfaces.

Notes: The weathertightness of exterior wall surfaces is addressed in scale B.1.2.2 Water penetration.

375,039	ting evel	SUPPLY B.1.3.1. Weathertightness at windows and doors			
9	0	Exterior windows and doors are completely weathertight, with no visible defects or history of leaks or signs of discoloration, stains, or efflorescence in surfaces adjacent to wall openings. There is full adhesion of perimeter sealants around openings. There has been a recent full inspection, test, and repair.			
8	0				
7	0	Exterior windows and doors show isolated signs of minor moisture penetration e.g. minor discoloration, stains, or efflorescence in surfaces adjacent to wall openings. Some isolated and minor repairs are needed to sealants in external wall joints or wall flashings.			
6	0				
5	0	Exterior windows and doors show some minor signs of moisture penetration, e.g. minor discoloration, stains, or efflorescence in surfaces adjacent to wall openings. Some repairs are needed to sealants in external wall joints or wall flashings.			
4	0				
3	0	Exterior windows and doors show noticeable signs of moisture penetration, e.g. discoloration, stains, or efflorescence in surfaces adjacent to wall openings. Many repairs are needed to sealants in external wall joints or wall flashings.			
2	0				
1	0	Exterior windows and doors show extensive signs of moisture penetration, e.g. discoloration, stains, or efflorescence in surfaces adjacent to wall openings. Extensive repairs are needed to sealants in external wall joints or wall flashings.			
0	0	No information in available.			
If unable to choose scale level, select OTHER and indicate reason below:					
□ Lac	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable				
□ Ref	er que	stion to someone else: Whom? e-mail or phone?			
8					

FIG. 11 Supply Scale B.1.3.1 for Weathertightness at Windows and Doors

Rating Level	SUPPLY B.1.3.2. Ease of operation of windows and doors					
9 0	All doors and windows operate normally.					
8 0						
7 0	Isolated doors and windows have minor operating defects.					
6 0						
5 0	A few doors and windows may be difficult to operate.					
4 0						
3 0	A noticeable number of doors and windows are difficult to operate.					
2 0						
10	Many doors and windows are difficult to operate.					
0 0	No information is available.					
If unable t	If unable to choose scale level, select OTHER and indicate reason below:					
☐ Lack Info	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable					
☐ Refer que	stion to someone else: Whom? e-mail or phone?					

FIG. 12 Supply Scale B.1.3.2 for Ease of Operation of Windows and Doors

DEMAND B.1.4. Roof

Demand Scales in this Topic: B.1.4. Weathertightness of roofing

Subject Matter: Occupants' requirements for the weathertightness of roofing.

Notes: Related occupant requirement scales for the weathertightness of exterior walls and exterior doors and windows are dealt with in scales B.1.2.2 and B.1.3.1 respectively.

FIC	From the options below, please select the level that best describes the REQUIREMENT.						
Requirement Level		DEMAND	B.1.4. Weathertightness of roofing				
	0	Occupants <i>cannot accept</i> finishes.	any signs of moisture penetr	ration at occupi	ed areas or interior		
8	0						
7	0	Occupants can accept isola interior finishes.	ated signs of minor moistur	e penetration a	t occupied areas or		
6	0						
5	0	Occupants can accept som interior finishes.	ne minor signs of moisture p	enetration at o	ccupied areas or		
4	0						
3	0	Occupants can accept not interior finishes.	iceable signs of moisture per	netration at occ	cupied areas or		
2	0						
	0	interior finishes provided the	sistent signs of moisture per ere are no negative health im roducts, furnishings, or equip	pacts from asse			
0	0	No requirement.					
Select	Relativ	e Importance of scale =	O Extremely Important	O Important	O Minor Importance		
			indicate whether Threshold L s NO Maximum or Minimum Th				
Then,	Then, (unless there is none) select the Threshold Level of this scale O9 O8 O7 O6 O5 O4 O3 O2 O1						
If una	ble to d	choose scale level, select	OTHER and indicate reason below	ow:			
□Lack	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable						
		on to someone else: Whom? e-r		1454	арриссионе		
LI Kele	i questi	on to someone else. Whom: e-i	nan or priorie:				
	FIG. 13 Demand Scale B.1.4 for Weathertightness of Roofing						

FIG. 13 Demand Scale B.1.4 for Weathertightness of Roofing

	ing vel	SUPPLY B.1.4. Weathertightness at roofing		
9	0	There are no signs of moisture penetration at occupied areas or interior finishes; or of cracking, blistering, ponding, or opening of roofing seams, or corrosion of flashings at the roof. Experience would indicate 90 % of expected roofing life remaining.		
8	0	•		
7	0	There are isolated signs of minor moisture penetration at occupied areas or interior finishes; or of cracking, blistering, ponding, or opening of roofing seams, or corrosion of flashings at the roof. Experience would indicate 75 % of expected roofing life remaining.		
6	0	1707 1740 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,		
5	0	There are some minor signs of moisture penetration at occupied areas or interior finishes; or of cracking, blistering, ponding, or opening of roofing seams, or corrosion of flashings at the roof. Experience would indicate 50 % of expected roofing life remaining.		
4	0			
3	0	There are noticeable signs of moisture penetration at occupied areas or interior finishes; or of cracking, blistering, ponding, or opening of roofing seams, or corrosion of flashings at the roof. Experience would indicate 25 % of expected roofing life remaining.		
2	0			
2	0	There are consistent signs of moisture penetration at occupied areas or interior finishes but no mold or damage to work products, furnishings, or equipment; and/or cracking, blistering, ponding, or opening of roofing seams, or corrosion of flashings at the roof. Experience would indicate no roofing life remaining. No requirement.		
	1990 TITO TOVES SPOOM DECOMPRISED			
If un	able t	to choose scale level, select OTHER and indicate reason below:		
□Lac	k Infor	rmation Postpone decision DIn-depth evaluation required Not applicable		
□Refe	er que	stion to someone else: Whom? e-mail or phone?		

FIG. 14 Supply Scale B.1.4 for Weathertightness of Roofing

DEMAND B.1.5. Basement

Demand Scales in this Topic:

- B.1.5.1 Use of basement
- B.1.5.2 Required environmental conditions
- B.1.5.3 Acceptable physical condition

Subject Matter: Occupants' requirements for the use of basement space and the ambient conditions necessary to support that use.

Notes: The demand for parking in below grade levels is addressed in Topic A.14.3 found in E1669.

	Trom the options below, please select the level that best describes the NEQOINE IEIVII			
Requirement Level		DEMAND		B.1.5.1 Use of basemen
9	0	Multiple below grade levels are need	ed every day for stora	ge.
8	0			
7	0	At least two below grade levels are n	eeded every day for st	orage.
6	0			
5	0	A below grade level is needed every	day for storage.	
4	0			
3	0	A below grade level is occasionally	needed.	
2	0			
1	0	A below grade level is not needed.		
0	0	No requirement.		
Select	Relative	Importance of scale = Ex	O tremely Important	O O Important Minor Important
		old Level of Scale: First, indicate whe R O Maximum OR, if there is NO Maxi		
Then,	Then, (unless there is none) select the Threshold Level of this scale O9 O8 O7 O6 O5 O4 O3 O2 O1			
If una	If unable to choose scale level, select OTHER and indicate reason below:			
□ Lack Information □ Postpone decision □ In-depth eva				red □ Not applicable
□Refe	r questic	n to someone else: Whom? e-mail or ph	one?	And the second s

FIG. 15 Demand Scale B.1.5.1 for Use of Basement

	Requirement Level		DEMAND B.1.3.2 Required environmental conditions	
	9	_	Users of storage areas require very stable and dry temperature and humidity conditions consistent with occupied areas of office floors.	
	8	0		
1	7		Users of storage areas require stable and dry temperature and humidity conditions close to comfort levels for people.	
	6	0		
	5		Users of storage areas require moderately variable temperature and humidity suitable for the storage of computers and office equipment not-in-use.	
1	4	0		
	3	•	Users of storage areas can accept variable and elevated temperature and humidity conditions suitable for the storage of items not readily affected by temperature and humidity.	
	2	0		
}	1		Users of storage areas can accept variable and extreme temperature and humidity conditions above freezing.	
	0	0	No requirement.	
Sele	ect F	Relative	E Importance of scale = OOOOO Extremely Important Important Minor Importance	
			Included Level of Scale : First, indicate whether Threshold Level of scale is a DR O Maximum OR, if there is NO Maximum or Minimum Threshold level, then select O None .	
The	Then, (unless there is none) select the Threshold Level of this scale O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1			
If u	ına	ble to	choose scale level, select OTHER and indicate reason below:	
	ack	Inform	ation ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable	
□R	efe	r questi	on to someone else: Whom? e-mail or phone?	

FIG. 16 Demand Scale B.1.5.2 for Required Environmental Conditions

Req	uir Lev	ement vel	DEMAND B.1.5.3 Acceptable physical condition
	9		Items in storage areas require regular surfaces with no significant moisture penetration or alkalinity. Users of parking areas require very good drainage at parking spaces and the path to office areas.
	8	0	
	7		Items in storage areas can withstand some <i>isolated</i> and <i>minor</i> moisture penetration or alkalinity. Users of parking areas require <i>good</i> drainage at parking spaces and the path to office areas.
	6	0	
	5		Items in storage areas can withstand some small amounts of moisture penetration or alkalinity. Users of parking areas require reasonable drainage at parking spaces and the path to office areas.
	4	0	
	3		Items in storage areas are not affected by moisture penetration or alkalinity. Users of parking areas require sufficient drainage to avoid standing water at parking spaces and the path to office areas.
	2	0	
	1		The availability of basement storage and parking are completely unimportant so conditions are equally unimportant.
	0	0	No requirement.
Sele	ect F	Relativ	e Importance of scale = OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
			hold Level of Scale: First, indicate whether Threshold Level of scale is a OR O Maximum OR, if there is NO Maximum or Minimum Threshold level, then select O None.
The	en, ((unless	there is none) select the Threshold Level of this scale O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1
Ifι	ına	ble to	choose scale level, select OTHER and indicate reason below:
	ack	Inform	nation ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable
□R	lefe	r quest	ion to someone else: Whom? e-mail or phone?
1		- 10	

FIG. 17 Demand Scale B.1.5.3 for Acceptable Physical Condition

SUPPLY B.1.5. Basement

Supply Scales in this Topic:

- · B.1.5.1 Availability of basement
- · B.1.5.2 Basement's environmental conditions
- B.1.5.3 Basement's physical condition

Subject Matter: The availability and condition of basement space for occupants use.

Notes: The rating of parking in below grade levels is addressed in Topic A.14.3 found in E1669. Supply scales B.1.5.2 and B.1.5.3 are limited to the environmental and physical conditions that may support parking as well as storage.

Rating Level		SUPPLY B.1.5.1. Availability of Basement		
9	0	There are <i>multiple</i> below grade levels available for storage <i>every day</i> .		
8	0			
7	0	At least <i>two</i> below grade levels are available for storage <i>every day</i> .		
6	0			
5	0	A below grade level is available for storage every day.		
4	0			
3	0	A below grade level is <i>occasionally</i> available for storage.		
2	0			
1	0	There are no below grade levels available for occupant use.		
0	0	No information is available.		
If un	If unable to choose scale level, select OTHER and indicate reason below:			
☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable				
☐ Ref	fer que	stion to someone else: Whom? e-mail or phone?		

FIG. 18 Supply Scale B1.5.1 for Availability of Basement

Rating Level		SUPPLY B.1.5.2 Required environmental conditions	
9	0	Basement storage areas are very stable and dry , with temperatures 68° to 74°F (20° to 23°C) and 40 to 60 % relative humidity.	
8	0		
7	0	Basement storage areas are stable and dry , with temperatures 60° to 72°F (16° to 22°C) and 30 to 70 % relative humidity.	
6	0		
5	0	Basement storage areas are <i>moderately variable</i> , with temperatures 50° to 70°F (10° to 21°C) and 20 to 80% relative humidity.	
4	0		
3	0	Basement storage areas are variable and elevated , with temperatures 45° to 90°F (7° to 32°C) and up to 60 % relative humidity.	
2	0		
1	0	Basement storage areas are variable and extreme , with temperatures below 45°F (7°C) and/or above 90°F (32°C) and above 60 % relative humidity.	
0	0	No information is available.	
If un	If unable to choose scale level, select OTHER and indicate reason below:		
□Lac	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable		
□ Ref	☐ Refer question to someone else: Whom? e-mail or phone?		

FIG. 19 Supply Scale B.1.5.2 for Required Environmental Conditions

Rating Level	SUPPLY B.1.5.3 Acceptable physical condition		
9 ()	There are no significant deficiencies in storage or parking areas. Storage area surfaces are regular with only normal minor hairline cracking, there is no evidence of moisture penetration or alkalinity. Parking areas drain very well.		
8 0			
7 0	There are <i>isolated</i> and <i>minor</i> deficiencies in storage or parking areas. Storage area floor surfaces are mostly regular with a few minor cracks, there is evidence of only a little moisture penetration or alkalinity. Parking areas drain well.		
6 0			
5 ()	There are some small deficiencies in storage or parking areas. Storage area floor surfaces are regular, the only evidence of moisture penetration or alkalinity would not affect stored items. Parking areas drain reasonably.		
4 0	AND STEP STORE SANDARD OF THE STORE		
3 ()	There are noticeable deficiencies in storage or parking areas. Storage areas have some irregular floor surfaces, moisture penetration, or alkalinity. Parking areas have incomplete drainage but no standing water at parking spaces or the path to office areas.		
2 0	55 SRC 500 STOP 19 AV		
1 0	There are consistent deficiencies in storage or parking areas: irregular floor surfaces, moisture penetration, alkalinity, or poor drainage that present significant problems to parking or storage use.		
0 0	No information is available.		
If unable t	o choose scale level, select OTHER and indicate reason below:		
☐ Lack Infor	88		
	stion to someone else: Whom? e-mail or phone?		

FIG. 20 Supply Scale B.1.5.3 for Acceptable Physical Condition

DEMAND B.1.6. Grounds

Demand Scales in this Topic:

- B.1.6.1. Required level of grounds maintenance
- B.1.6.2. Acceptable condition of site improvements

Subject Matter: Occupants' requirements for the maintainability and ongoing condition of site improvements. **Notes:** Related occupant requirement scale for the performance of site illumination is found in Topic A.9.3 of E1665. Related occupant requirement scale for the appearance of site improvements is found in Topic A.11.7 of E1667.

Pogui:	Requirement DEMAND B161 Beguired level of anounds are interested				
Level		DEMAND	B.1.6.1. Required	level of groun	ds maintenance
9	0	The grounds must be very easy plants and materials for local con		he appropriate s	election of
8	0				
7	0	The grounds must be easy to materials for local conditions.	aintain by virtue of the ap	propriate selection	on of plants and
6	0				
5	0	The grounds must be reasonabl plants and materials for local con	이 것 같은데 하는 데이터 이 회사의 사람들이 되었다. 하는데 하는데 바다 그는 그를 모르는데 하게 되었다.	the appropriate	selection of
4	0				
3	0	The grounds can be difficult to important and/or the cost of mor	e easily maintained plants		
2	_	inconsistent with the building and	d vicinity.		
2 1		T			•
1	0	The grounds can be very difficu important and/or the cost of mor	e easily maintained plants		
•	^	inconsistent with the building and	d vicinity.		
U	0	No requirement.			
Select I	Relative	Importance of scale =	O Extremely Important	O Important	O Minor Importance
		old Level of Scale : First, indicate OR O Maximum OR, if there is NO			select O None.
Then, (unless there is none) select the Threshold Level of this scale O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1					
If una	ble to c	hoose scale level, select 🗆 OTHE	R and indicate reason belo	ow:	
□ Lack Information □ Postpone decision □ In-depth evaluation required □ Not applicable					
□Refe	□ Refer question to someone else: Whom? e-mail or phone?				
	*****	FIG. 21 Domand Scalo B 1 6 1	· ·		

FIG. 21 Demand Scale B.1.6.1 for Required Level of Grounds Maintenance



Requirement Level		DEMAND B.1.6.2. Acceptable condition of site improvements
9	0	Paving, curbs, and walks; trees shrubs and lawns; site furnishings; and exterior lighting are expected to be in very good condition; with no noticeable defects.
8	0	
7	0	Paving, curbs, and walks; trees shrubs and lawns; site furnishings; and exterior lighting are expected to be in <i>good</i> condition; with minor defects.
6	0	Some of the state
5	0	Paving, curbs, and walks; trees shrubs and lawns; site furnishings; and exterior lighting are expected to be in <i>reasonable</i> condition; with some defects acceptable provided site improvements are fully useable.
4	0	
3	0	Paving, curbs, and walks; trees shrubs and lawns; site furnishings; and exterior lighting are expected to be in <i>sufficient</i> condition; with many defects acceptable provided site improvements are useable and do not pose a hazard to people.
2	0	improvements are useable and do not pose a nazard to people.
-	0	The condition of paving, curbs, and walks; trees shrubs and lawns; site furnishings; and exterior lighting is <i>unimportant</i> ; with operations and safety unaffected by extensive defects.
0	0	No requirement.
Select I	Relative	E Importance of scale = OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
		old Level of Scale : First, indicate whether Threshold Level of scale is a OR O Maximum OR, if there is NO Maximum or Minimum Threshold level, then select O None .
Then,	(unless t	there is none) select the Threshold Level of this scale O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1
If una	ble to c	hoose scale level, select OTHER and indicate reason below:
□ Lack Information □ Postpone decision □ In-depth evaluation required □ Not applicable □ Refer question to someone else: Whom? e-mail or phone?		

FIG. 22 Demand Scale B.1.6.2 for Acceptable Condition of Site Improvements

SUPPLY B.1.6. Grounds

Supply Scales in this Topic:

- B.1.6.1. Ease of grounds maintenance
- B.1.6.2. Condition of site improvements

Subject Matter: Occupants' requirements for the maintainability and ongoing condition of site improvements. **Notes:** Related rating scale for the performance of site illumination is found in Topic A.9.3 of E1665. Related rating scale for the appearance of site improvements is found in Topic A.11.7 of E1667.

150		
Ra Le	ting vel	SUPPLY B.1.6.1. Ease of grounds maintenance
9	0	The grounds are very easy to maintain: Paving, curbs, and walks require inspection and treatment every seven to ten years; mature trees, shrubs, and ground covers require annual inspection and light pruning; where applicable snow can be completely cleared with equipment and stockpiles pose no inconvenience; site furnishings and exterior lighting require annual inspection and isolated repairs; luminaires are very accessible for replacing lamps.
-	-	The average are accepted assistation. Desired assistance and coefficients in constitution and
	0	The grounds are <i>easy</i> to maintain: Paving, curbs, and walks require inspection and treatment every six to seven years; mature trees, shrubs, and most ground covers require biannual pruning and feeding and there are limited lawns requiring weekly mowing; where applicable snow can be cleared mostly with equipment supplemented by limited manual effort and stockpiles pose a minor inconvenience; site furnishings and exterior lighting require annual inspection and a few minor repairs; luminaires are easily accessible for replacing lamps.
6	0	
5	0	The grounds are <i>reasonable</i> to maintain: Paving, curbs, and walks require inspection and treatment every four to six years; all landscaping requires preparation for each season and lawns require weekly mowing; where applicable snow can be cleared with equipment supplemented by some manual effort and stockpiles pose a moderate inconvenience; site furnishings and exterior lighting require annual inspection and some minor repairs; luminaires are accessible for replacing lamps.
2	0	The grounds are <i>difficult</i> to maintain: Paving, curbs, and walks require inspection and treatment every two to four years; all landscaping requires preparation for each season and weekly pruning and mowing throughout; where applicable most snow can be cleared with equipment supplemented by much manual effort and stockpiles pose an inconvenience; site furnishings and exterior lighting require annual inspection and many repairs; luminaires are inconvenient to access for replacing lamps.

FIG. 23 Supply Scale B.1.6.1 for Ease of Grounds Maintenance

1 0 0 0	treatment ev applicable sr stockpile; sit repairs; lumi	very year or two; landsc now clearing requires ex e furnishings and exteri	naintain: Paving, curbs, and walk cape maintenance requires ongoir ctensive manual effort and is ofte for lighting require annual inspect ccess for replacing lamps.	ng effort; where n challenging to
If unable	e to choose sca	le level, select □OTHE	ER and indicate reason below:	
□ Lack In	nformation	☐ Postpone decision	☐ In-depth evaluation required	☐ Not applicable
□ Refer q	Refer question to someone else: Whom? e-mail or phone?			

FIG. 23 Supply Scale B.1.6.1 for Ease of Grounds Maintenance (continued)

	ting vel	SUPPLY B.1.6.2. Condition of site improvements		
9	0	Paving, curbs, and walks; trees shrubs and lawns; site furnishings; and exterior lighting are in very good condition; with no noticeable detects.		
8	0			
7	0	Paving, curbs, and walks; trees shrubs and lawns; site furnishings; and exterior lighting are in good condition; with minor defects.		
6	0			
5	0	Paving, curbs, and walks; trees shrubs and lawns; site furnishings; and exterior lighting are in <i>reasonable</i> condition; with some defects but site improvements are fully useable.		
4	0			
3	0	Paving, curbs, and walks; trees shrubs and lawns; site furnishings; and exterior lighting are in <i>sufficient</i> condition; with many defects but site improvements are useable and do not pose a hazard to people.		
2	0			
1	0			
0	0	No information is available.		
If un	If unable to choose scale level, select OTHER and indicate reason below:			
□ Lac	☐ Lack Information ☐ Postpone decision ☐ In-depth evaluation required ☐ Not applicable			
□ Ref	er que	stion to someone else: Whom? e-mail or phone?		

FIG. 24 Supply Scale B.1.6.2 for Conditions of Site Improvements

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