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Standard Terminology of Building Constructions¹

This standard is issued under the fixed designation E631; 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 Terminology consists of terms and definitions pertaining to the subject field of buildings, and buildings and building construction, and in particular, terms related to the standards generated by ASTM Committee E06 on Performance of Buildings.

1.2 The purpose of this Terminology is to provide preferred and admitted designations along with the meanings and explanations of technical terms concepts applied in the buildings field, subject field of buildings and construction, written for both the non-expert and the expert user.

1.3 This comprehensive Terminology standard contains all ASTM standardized definitions generated in ASTM Committee E06. ~~There are also subsidiary terminology standards. These special classes of terminology are grouped for convenient use (see Section E06 that are considered general in nature. Beyond this comprehensive terminology, there are also separate terminology standards that have 2). Some subsidiary terminology standards appear in this comprehensive standard been developed within Committee E06 by a number of technical subcommittees.~~

1.3.1 These separate general terminologies are created relative to specific subject fields and the terminological entries have been grouped for convenient use (see Section 2 and Appendix XI). Some terminology data contained in those other subsidiary terminology standards also appear in this comprehensive standard.

1.3.2 The following standards are separate terminologies that have been developed within specific E06 Subcommittees whose term entry lists are provided in Appendix XI:

E833	Terminology of Building Economics
E1480	Terminology of Facility Management (Building-Related)
E1481	Terminology of Railing Systems and Rails for Buildings
E1605	Terminology Relating to Lead in Buildings
E1749	Terminology Relating to Rigid Wall Relocatable Shelters
E2110	Terminology for Exterior Insulation and Finish Systems (EIFS)
E2151	Terminology of Guides for Specifying and Evaluating Performance of Single Family Attached and Detached Dwellings
E2265	Terminology for Anchors and Fasteners in Concrete and Masonry

1.4 Terms are listed in alphabetical sequence. Compound terms appear in the natural spoken order. To show the relationships in certain families of concepts, groups of narrower terms and their definitions are grouped under the definition of the broader term. Each such sub-entry is listed also (*in italics*) with a cross-reference to the special class.

1.5 Certain standard definitions herein are adopted from other sources. Each is an exact copy. The source is identified at the right margin following the definition, and is listed in Section 2.

2. Referenced Documents

2.1 ASTM Standards:²

- C168 Terminology Relating to Thermal Insulation
- C755 Practice for Selection of Water Vapor Retarders for Thermal Insulation
- E73 Practice for Static Load Testing of Truss Assemblies
- E96/E96M Test Methods for Water Vapor Transmission of Materials
- E456 Terminology Relating to Quality and Statistics

¹ This terminology is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.94 on Terminology and Editorial.

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Those terms formerly contained in Definitions E540 – 77 are now contained in this terminology.

² 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.

- E546 Test Method for Frost/Dew Point of Sealed Insulating Glass Units
- E564 Practice for Static Load Test for Shear Resistance of Framed Walls for Buildings
- E621 Practice for Use of Metric (SI) Units in Building Design and Construction (Committee E06 Supplement to E380) (Withdrawn 2008)³
- E774 Specification for the Classification of the Durability of Sealed Insulating Glass Units (Withdrawn 2006)³
- E779 Test Method for Determining Air Leakage Rate by Fan Pressurization
- E859 Test Method for Air Erosion of Sprayed Fire-Resistive Materials (SFRMs) Applied to Structural Members
- E997 Test Method for Evaluating Glass Breakage Probability Under the Influence of Uniform Static Loads by Proof Load Testing
- E998 Test Method for Structural Performance of Glass in Windows, Curtain Walls, and Doors Under the Influence of Uniform Static Loads by Nondestructive Method
- E1186 Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems
- E1334 Practice for Rating the Serviceability of a Building or Building-Related Facility (Withdrawn 2013)³
- E1423 Practice for Determining Steady State Thermal Transmittance of Fenestration Systems
- E1480 Terminology of Facility Management (Building-Related)
- E1553 Practice for Collection of Airborne Particulate Lead During Abatement and Construction Activities (Withdrawn 2002)³
- E1554/E1554M Test Methods for Determining Air Leakage of Air Distribution Systems by Fan Pressurization
- E1613 Test Method for Determination of Lead by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), Flame Atomic Absorption Spectrometry (FAAS), or Graphite Furnace Atomic Absorption Spectrometry (GFAAS) Techniques
- E1644 Practice for Hot Plate Digestion of Dust Wipe Samples for the Determination of Lead
- E1645 Practice for Preparation of Dried Paint Samples by Hotplate or Microwave Digestion for Subsequent Lead Analysis
- E1677 Specification for Air Barrier (AB) Material or System for Low-Rise Framed Building Walls
- 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
- E1726 Practice for Preparation of Soil Samples by Hotplate Digestion for Subsequent Lead Analysis
- E1727 Practice for Field Collection of Soil Samples for Subsequent Lead Determination (Withdrawn 2014)³
- E1728 Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination
- E1729 Practice for Field Collection of Dried Paint Samples for Subsequent Lead Determination (Withdrawn 2014)³
- E1753 Practice for Use of Qualitative Chemical Spot Test Kits for Detection of Lead in Dry Paint Films
- E1775 Guide for Evaluating Performance of On-Site Extraction and Field-Portable Electrochemical or Spectrophotometric Analysis for Lead
- E1783/E1783M Specification for Preformed Architectural Strip Seals for Buildings and Parking Structures
- E1792 Specification for Wipe Sampling Materials for Lead in Surface Dust
- E1796 Guide for Selection and Use of Liquid Coating Encapsulation Products for Leaded Paint in Buildings
- E1827 Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door
- E1828 Practice for Evaluating the Performance Characteristics of Qualitative Chemical Spot Test Kits for Lead in Paint (Withdrawn 2010)³
- E1918 Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field
- E1925 Specification for Engineering and Design Criteria for Rigid Wall Relocatable Structures

3. Terminology

3.1 Symbols:

- a**—height of cantilevered shear wall, in metres (feet).
- b**—length of cantilevered shear wall, in metres (feet).
- C**—initial length of the diagonal $\sqrt{a^2+b^2}$, in metres (feet).
- δ**—diagonal elongation, in millimetres (inches).
- Δ**—total horizontal displacement of the top of the wall measured with respect to the test apparatus, in millimetres (inches). This value includes effects due to panel rotation, translation, and shear.
- E**—modulus of elasticity of flange or web material, depending upon which material is held constant in a transformed section analysis, psi (or MPa)
- G**—shear modulus of the web material, psi (or MPa)
- G'**—shear stiffness of the diaphragm obtained from test (includes shear deformation factor for the connection system), lbf/in. (or N/mm)

³ The last approved version of this historical standard is referenced on www.astm.org.

- G**—shear stiffness obtained from test, in newtons per metre (pound-force per inch).
- G'**—global shear stiffness, includes rotation and translational displacements as well as diaphragm shear displacement.
- G'_{int}**—internal shear stiffness, includes only the shear displacement of the wall in calculation.
- I**—moment of inertia of the transformed section of the diaphragm based on webs or flanges, in.⁴ (or mm⁴)
- L**—total span of a simply supported diaphragm, in. (or mm)
- P**—concentrated load, lbf (or N)
- P**—concentrated load applied at the top edge of the wall at the selected reference displacement, in newtons (pound-force).
- P_u**—highest load level held long enough to record gage measurements, in newtons (pound-force).
- R_u**—maximum diaphragm reaction, lbf (or N)
- S_u**—ultimate shear strength of the diaphragm, lbf/ft (or N/m)
- a**—span length of cantilever diaphragm, in. (or mm)
- b**—depth of diaphragm, in. (or mm)
- t**—thickness of web material, in. (or mm)
- w**—uniform load, lbf/in. (or N/mm)
- Δ_b**—bending deflection of diaphragm, in. (or mm)
- Δ_k**—empirical expression for that portion of the diaphragm deflection contributed by the shear deformation of the connection system, in. (or mm)
- Δ_s**—pure shear deformation of diaphragm, in. (or mm)
- Δ_s'**—apparent total shear deformation of the diaphragm based on test (see 8.1.2.2), in. (or mm). This factor includes both the pure shear deformation and that contributed by distortion of the connection system.
- Δ_t**—total deflection of diaphragm, in. (or mm)
- Δ_{1,2}**—deformation measured at Point 1, 2, - - - , in. (or mm)

3.2 Terms and Their Definitions:

accreditation, *n*—official authorization, approval, or recognition accorded an individual or organization based upon specific qualification.

DISCUSSION—

In specific use, it is necessary to include an identification of the type, scope, and limitations of the accreditation, and by whom granted.

ACH_{50,n}—the ratio of the air leakage rate at 50 Pa (0.2 in. H₂O), corrected for a standard air density, to the volume of the test zone (1/h). **E1827**

acid rain—rain having a pH of less than 5.65.

DISCUSSION—

The pH of distilled water in equilibrium with carbon dioxide under laboratory conditions is 5.6.

active solar energy system—See **building subsystem**.⁴

adapt—See **building modification**.

add—See **building modification**.

aged insulation value—thermal resistance (R-value) of a thermal insulation material as determined after standard conditioning to simulate service exposure.

air-change rate—air-leakage in volume units per hour divided by the building space volume with identical volume units (normally expressed as air changes per hour, ACH or ACPH). **E779**

⁴ Boldface terms are defined in this terminology.

- air exfiltration**—air leakage out of the building driven by negative pressure. **E1677**
negative pressure—air pressure on the outdoor side of a building envelope lower than on the indoor side. **E1677**
- air-handling unit**—the distribution-system fan and portion of the distribution system that is integral to the furnace, air-conditioner, or heat-pump. **E1554/E1554M**
- air infiltration**—air leakage into the building driven by positive pressure. **E1677**
positive pressure—air pressure on the outdoor side of a building envelope higher than on the indoor side. **E1677**
- air leakage, *n*—in buildings**, the passage of uncontrolled air through **cracks** or openings in the building envelope or its **components**, such as ducts, because of air pressure or temperature difference.
- air leakage**—the movement/flow of air through the building envelope, which is driven by either or both positive (infiltration) and negative (exfiltration) pressure differences across the envelope. **E1677**

DISCUSSION—

These pressure differences are caused by wind, mechanical systems, and temperature differences (stack effect).

- air-leakage graph**—the graph that shows the relationship of measured air flow rates to the corresponding measured pressure differences (usually plotted on a log-log scale). **E779**
- air leakage rate, Q_{env} , *n***—the total volume of air passing through the test zone envelope per unit of time (m^3/s , ft^3/min). **E1827**
- air-leakage rate**—the volume of air movement per unit time across the building envelope. **E779**
 NOTE 1—This movement includes flow through joints, cracks, and porous surfaces, or combination thereof. The driving force for such an air leakage in service can be either mechanical pressurization and de-pressurization, natural wind pressures, or air temperatures differentials between the building interior and the outdoors, or combination thereof.
- air leakage rate**—the time rate of air flow across the air retarder. Expressed as cubic feet per minute per square foot of AR surface at a stated pressure differential across the AR expressed in inches of H_2O . (Cubic meters per second per square meter of AR surface at a pressure differential in Pascals.) **E1677**
- air leakage rate**—the volume of air movement per unit time across the building envelope. This movement includes flow through joints, cracks, and porous surfaces or combinations thereof. The driving force for such air leakage in buildings can be either mechanical pressurization or evacuation, natural wind pressures, or air temperature differentials between the building interior and the outdoors, or combinations thereof. **E1186**
- air-leakage rate**—the volume of air movement per unit time across the building envelope or the exterior envelope of the air distribution system. **E1554/E1554M**

DISCUSSION—

This movement includes flow through joints, cracks, and porous surfaces, or combinations thereof. The driving forces for such air leakage in service can be mechanical pressurization and depressurization, natural wind pressures, and air temperature differentials between the building interior and the outdoors.

- air leakage site**—a location on the building envelope where air enters or exits the building causing air leakage to occur. **E1186**
- air retarder (AR)**—a material or system in building construction that is designed and installed to reduce air leakage either into or through the opaque wall. **E1677**
- air sampling pump**—a portable, battery-powered air pump that may be attached to a belt on a worker or to a stationary object. The pump is used to draw air through a filter holder that is placed within the personal breathing zone of a worker. Alternatively, the pump may be attached to a stationary object in order that it may be used for area sampling. **E1553**
- airtightness, *n***—the degree to which a test zone envelope resists the flow of air. **E1827**

NOTE 2— ACH_{50} , air leakage rate, and effective leakage area are examples of measures of building airtightness.

alter—See **building modification**.

- analysis run**—a period of measurement time on a given instrument during which data is calculated from a single calibration curve (or single set of curves). Recalibration of a given instrument produces a new analysis run. **E1613**
- anchor, *n***—a device used to connect securely a **building component** to adjoining construction, to a supporting member, or to the ground.

anchorage, *n*—a means of connecting securely, by using an **anchor**, a **building component** to adjoining construction, supporting member(s), or to the ground.

anchorage system—a group of interacting elements, components, and structures.

anchoring system—a group of interacting anchors and elements.

anodic stripping voltammetry—an electroanalytical technique in which the concentration of analyte metal species dissolved in solution is determined in the following manner. The analyte is first deposited (preconcentrated) electrochemically by reducing the dissolved ion in solution to immobilized metal species at a mercury electrode surface. The metal is deposited in the form of an amalgam (with Hg) at an applied potential (voltage) which is negative of the standard oxidation potential for the metal/ion redox couple. After deposition, the preconcentrated metal species is then “stripped” from the mercury electrode by applying a positive potential sweep, which causes anodic oxidation of the analyte metal species to dissolved ion. The current associated with this reoxidation is measured. The peak current is proportional to the original concentration of dissolved analyte species over a wide range of concentrations. **E1775**

apartment—See **dwelling unit**.

apartment building—See **building**.

architectural strip seal—a preformed membrane or tubular extrusion, manufactured from a fully cured elastomeric alloy, having flanges or other means of mechanically or chemically securing it. **E1783/E1783M**

area samples—air samples that are collected at various stationary sites, but not for a person; area samples are therefore to be distinguished from personal air samples. **E1553**

artifact, *n*—an object (as a tool, ornament, or element of a structure) showing human workmanship or modification.

DISCUSSION—

Examples of building element artifacts are stained glass windows and fine art finishes.

as-built, *adj*—pertaining to the as-constructed, **as-fabricated**, as-manufactured, or as-furnished state of a finished product relating to size, shape, materials, and finish regardless of drawings or specifications.

as-fabricated, *adj*—(1) of a milled metal product, pertaining to the surface appearance and texture or temper produced by the original forming process. (2) of a formed metal product, pertaining to the surface appearance of the product to removal of disfigurements caused by the forming process.

aspect, *n*—of serviceability, a broad component of serviceability, comprising several related topics of serviceability. **E1334**

DISCUSSION—

The serviceability of a building or building-related facility can be rated on each topic for which a scale has been prepared, but not for an aspect.

aspect ratio—a ratio of long side to short side of glass plate. **E998**

attic—See **building space**.

average breaking stress (ABS)—the average maximum principal tensile stress (MPTS) at failure, representative of the glass under test. The ABS is dependent on a number of factors including geometry, time history of load, surface condition, etc. Glasses with residual surface stresses, such as heat-strengthened or fully tempered, must have their residual stresses added to the state of stress at the specified load. As defined for use in the standard, the ABS is for annealed glass. **E998**

average grade—See **grade**.

back bedding—See **windows and doors**.

back putty—See **windows and doors**.

balance—See **windows and doors**.

bar, *n*—a round, square, rectangular, or other polygonal solid member having a length greater than its width or thickness; and usually of rolled, drawn, or extruded metal (if of steel, having dimensions of 0.204 in. (5.2 mm) or more in thickness, and 8.0 in. (20.3 mm) or less in width).

bar-size section—a hot-rolled steel angle, channel, tee, or zee having a maximum cross-section dimension of less than (76 mm) (3.0 in.)

base substrate—a material upon which films, treatments, adhesives, sealants, membranes, and coatings are applied. The base substrate can also be considered to be the actual material of construction that the surface is attached to. This does not refer to the layers of paint under the outermost or surface layer. **E1796**

basement—See **building space**.

batch—a group of samples ($n > 2$) that are obtained in a similar environment (for example, a set of area or personal samples) and are processed together using the same reagents and equipment. **E1553**

bathroom—See **building space**.

bead—See **windows and doors**.

beadboard, n—molded **expanded polystyrene thermal insulation board**; also called **MEPS**.

beam, n—a structural member intended primarily to resist transverse forces, and subject to bending by these forces.

bearing wall—See **wall**.

bias, n—systematic error that contributes to the difference between a population mean of the measurements or test results and an accepted reference or true value. **E456**

bite—See **windows and doors**.

blow hole—a unintended hole or void in a metal casting resulting from entrained gases.

blower door, n—a fan pressurization device incorporating a controllable fan and instruments for airflow measurement and building pressure difference measurement that mounts securely in a door or other opening. **E1827**

bracket, n—projecting element or hardware attached to the surface of a member to support other members.

breather finish—coating system allowing the passage of water vapor.

DISCUSSION—

A breather finish has **water-vapor permeance** greater than that acceptable for a **water-vapor retarder**.

builder's model, n—a reference standard of quality for specific building **components**, denoting by example, the level of quality adopted by a builder.

DISCUSSION—

The examples, or samples of construction materials, permit examination of quality level.

building, n—(1) a shelter comprising a partially or totally enclosed space, erected by means of a planned process of forming and combining materials. (2) the act or process of constructing.

apartment building—a **building** containing more than two **dwelling units** not intended for individual unit ownership.

condominium, n—an **apartment building**, group of townhouses, or single dwellings in which each **dwelling unit** is individually owned and each owner holds an interest in common areas. Also commonly used to denote an individual unit.

house, n—a **building** intended in its entirety as a **dwelling**.

split-level house—one divided vertically so that the floor level of rooms in one part is approximately midway between the levels of two successive stories in an adjoining part.

industrialized building—a **manufactured building** (preferred term).

manufactured building—a structure wholly or substantially made in a manufacturing plant for installation or assembly at the building site.

manufactured home—a **manufactured building** intended to be used as a **dwelling**.

DISCUSSION—

The U.S. Department of Housing and Urban Development (HUD) defines this term as “A structure, transportable in one or more sections, which, in the traveling mode, is eight body feet or more in length, or, when erected on site, is three hundred twenty or more square feet; and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and

includes the plumbing, heating, air conditioning, and electrical systems contained therein.” (42USC5402). The 1980 Housing and Community Development Act changed the term, mobile home, to manufactured home.

packaged building—Use **manufactured building** or **precut building**.

precut building—a **manufactured building** produced largely of elements cut to size in a factory and transported for assembly at the erection site.

prefabricated building—Use **manufactured building**.

building code—See **code**.

building component, *n*—a building element using industrial products that are manufactured as independent units capable of being joined with other elements.

building construction, *n*—(1) the act or process of making or forming a **building** by assembling or combining elements, **components**, or systems. (2) the structure or part thereof so formed.

closed construction—a method by which a **building**, **system**, assembly, or **component** is manufactured, in such a manner that portions cannot be readily inspected at the installation site without disassembly or destruction.

industrialized building process—the process of constructing manufactured **buildings**.

open construction—a method by which a **building**, **component**, assembly or system is manufactured in such a manner that all portions can be readily inspected on site without disassembly or destruction.

panelized construction—a building method using **panels** as major elements.

building enclosure—Use **building envelope**.

building envelope—the outer elements of a **building**, both above and below ground, that divide the external from the internal environments.

building envelope—the boundary or barrier separating the interior volume of a building from the outside environment. **E1554/E1554M**

building fabric—(1) elements, components, parts, materials, or systems of a building separately or in combination; (2) loadbearing part of a structure without windows, doors, interior or exterior finishes.

building modification—change or activity affecting the materials, structure, operations, or appearance of a building or its systems.

adapt, *v*—*in building*, to make suitable for a particular purpose by means of change or modification.

add, *v*—*in building*, to extend by means of new construction, or by enclosing an existing structure.

alter, *v*—*in building*, to make different, or to rearrange the layout.

improve, *v*—to enhance the quality or value of land or property.

maintain, *v*—to keep in working order, or to preserve from decline or failure.

modernize, *v*—*in building*, to adapt to current needs, tastes, or usage by **remodeling** or **repair**.

rebuild, *v*—to return to **building** to its previous state or condition.

reconstruct, *v*—to reproduce in the exact form and detail a **building**, structure, or **artifact** as it appeared at a specific period in time.

reconstruction, *n*—the act or process of reproducing by new construction the exact form and detail of a vanished **building**, other structure, or **artifact** as it appeared at a specific period in time.

remodel, *v*—to replace or **improve** a **building** or its parts.

repair, *v*—to replace or correct damaged or faulty **components** or **subsystems** of a **building** to **maintain** operating capability.

retrofit, *v*—*in building*, to add new materials or equipment not provided at the time of original construction.

building performance, *n*—the behavior in service of a construction as a whole, or of the **building components**.

durability, *n*—the capability of a **building**, assembly, **component**, product, or construction to maintain **serviceability** over at least a specified time.

serviceability, *n*—the capability of a **building**, assembly, **component**, product, or construction to perform the function(s) for which it is designed and used.

building permit, *n*—an authorization granted by the agency having jurisdiction to an applicant to proceed with construction on a specific project.

building preservation, *n*—measures taken to conserve, protect, rehabilitate, restore, or stabilize a building. See **preservation**.

building pressure difference, *P*, *n*—the pressure difference across the test zone envelope (Pa, in. H₂O). **E1827**

building pressure difference—the pressure difference across the building envelope, expressed in pascals (inches of water, pounds-force per square foot, or inches of mercury). **E1554/E1554M**

building space:

attic, *n*—an accessible enclosed space immediately below the roof and wholly or partly within the roof framing.

basement—a space partly below **average grade** having less than one half of its clear height (measured from floor level to ceiling level) below **average grade**.

bathroom—a room containing a bathtub or shower, or both, and usually a lavatory (wash basin) and toilet (water closet).

cellar—a space wholly or partly below **average grade** having more than one half of its clear height (measured from floor level to ceiling level) below **average grade**.

environmental chamber, *n*—an enclosed space, used for testing designed and constructed to provide control of interior atmosphere to specified conditions.

habitable space—**occupiable space** normally used for living, including such activities as sleeping, eating, and cooking.

DISCUSSION—

Bath, lavatory, and toilet rooms are excluded.

half bath—a room containing a lavatory (wash basin) and a toilet (water closet).

kitchen—a space containing facilities primarily for the preparation of food.

occupiable space—space normally used by people.

DISCUSSION—

Corridors, stairways, and spaces used for storage, equipment, heating, cooling, and general maintenance are excluded.

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

open-plan workstation—office workspace for one person, not enclosed by full-height walls.

primary circulation area—portion of building area dedicated to public corridor, lobby, or atrium; or required for access to stairs, elevators, restroom facilities, or building exits.

secondary circulation area—portion of building area not defined as **primary circulation area**, but required for access to some subdivision of space, whether or not bounded by **walls**.

DISCUSSION—

An example may be a circulation area within a tenant or occupant space.

story, *n*—a space excluding **attics**, **basements**, and **cellars**, between successive floor levels or between **floor** and roof.

first story—the lowermost **story** of a **building** entirely above the **average grade** (also used as a synonym for **ground floor**).

top story—the uppermost **story** of a building.

building subsystem—a complete, integrated set of parts that functions as a unit within the finished **building**. See also **cladding system**, **hard-coat system**.

solar energy system—a **building subsystem** to convert solar energy into thermal energy for space heating or cooling, water heating, or process energy.

active solar energy system—a **building subsystem** in which solar energy is collected and transferred predominantly by mechanical power not derived from solar radiation.

passive solar energy system—a **building subsystem** in which solar energy is collected and transferred predominantly by natural means, namely, conduction, convection, radiation, or evaporation.

building system—(1) group of structural or non-structural components or assemblies, or both, of a building interacting to serve a common purpose; (2) method for fabricating or erecting an entire structure. See also **anchorage system, anchoring system, hard-coat system, structural system, exterior installation, finish system**.

closed system—a building system having interchangeability of only its own **subsystems**, subassemblies, and **components**.

industrialized building system—the integration of **subsystems** and **components** into an overall process, utilizing factors of production, transportation, and on-site assembly techniques.

open system—a building system, designed to have interchangeability of its **subsystems**, subassemblies, **components**, or building elements with like **subsystems**, subassemblies, **components**, or elements of other systems.

prefabricated panel system—building-panel system fabricated away from its ultimate position on a building.

DISCUSSION—

One example is a system consisting of an **EIFS**, internal integral structural framing, connections, internal sealant, when required, and installation accessories.

butt joint—See **joint**.

cantilever, *n*—an overhanging portion or a member or slab projecting beyond support(s) sufficiently to induce bending and shear stresses in projecting part(s) when subjected to transverse loading including uniform, concentrated, or other load types.

capillary migration—*of water*, movement of water induced by the force of molecular attraction (surface tension) between the water and the material it contacts. Compare **rising damp**.

carbonation, *n*—*building(s)*, a process of chemical weathering whereby minerals that contain sodium oxide, calcium oxide, potassium oxide, or other basic oxides are changed to carbonates by the action of carbonic acid derived from atmospheric carbon dioxide and water.

caulk, *v*—to fill joints, **cracks**, or crevices in order to prevent the passage of air or water.

cellar—See **building space**.

cellular polystyrene, *n*—polymerized styrene resin processed to form a rigid foam having a predominately closed-cell structure making it suitable as thermal insulation.

<https://standards.iteh.ai/catalog/standards/sist/acd088da-9d8e-4ab6-ae3d-1c3bfe2402d8/astm-e631-15>

DISCUSSION—

The manufacturing process can be an expansion of foamable beads under heat and pressure within a mold, or in-situ foaming of molten resin in an extrusion mode. See also **rigid cellular polystyrene thermal insulation board**.

cement, *n*—a general term for a binding element. See specific terms such as Portland cement, Keene's cement, and adhesive cement.

certification, *n*—a written declaration that a particular product or service complies with stated criteria.

DISCUSSION—

In specific use, it is necessary to include the scope and limitations of the certification; usually it is provided by the manufacturer, producer, or vendor.

cladding system, *n*—material assembly applied to a building as a non-load-bearing wall, or attached to a wall surface as a protective and ornamental covering.

clip, *n*—a small fastening device, usually of metal, designed to hold an element or **component** in place.

closed construction—See **building construction**.

closed system—See **building system**.

coating, *n*—a liquid, liquefiable, or mastic composition that, after application as a thin layer, is converted to a solid protective, or decorative, or functional adherent film.

DISCUSSION—

Such coatings are one form of protective or decorative finish for building purposes. Other forms include gold leaf and metals deposited by electroplating or hot dipping.

code, n (in the Law)—a collection of laws (regulations, ordinances, or statutory requirements) adopted by governmental (legislative) authority.

building code, n—a **code** applicable to **buildings**, adopted and administered with the primary intent of protecting public health, safety, and welfare.

model code, n—a proposed **code** that is established within the procedural framework of a group of knowledgeable people, and is designed for adoption by governmental authority.

coefficient of variation—the ratio (decimal fraction) of the standard deviation of the maximum principal tensile stress (MPTS) at failure to the ABS. **E998**

coefficient of variation, v —ratio of the standard deviation of the failure load to the mean failure load. **E997**

coherent unit system—system in which relations between units contain as numerical factor only the number “one” or “unity,” because all derived units have a unity relationship to the constituent base and supplementary units.

cold joint—See **joint**.

colorimetry—an analytical technique that is similar to spectrophotometry except that ultraviolet-visible light of a single, narrow wavelength range is passed through a sample cell containing dissolved analyte, and the absorption measured. **E1775**

column, n—a building member, usually structural and vertical, subjected to longitudinal (axial) compression and also to lateral forces such as bending.

combination of features, n—*of a facility*, two or more features which, when present together in a facility, affect a level of serviceability of that facility. **E1334**

component—See **building component**.

condominium—See **building**.

connection—device or method used to fasten together two or more components of a structural system using mechanical means, welding, adhesives, or a combination of them.

DISCUSSION—

connection usually implies a junction of structural members to make a safe, load-carrying system, for example, a truss. Traditionally the term **joint** has been used in place of the term **connection**.

consensus, n—substantial agreement achieved through a **consensus process**, but not necessarily unanimity.

consensus process, n—a formal procedure for reaching **consensus** that includes the elements of due process.

DISCUSSION—

An example of due process requirements in a consensus procedure is found in 1.4 of the “Regulations Governing ASTM Technical Committees” (September 1982).

conservation—See **preservation**.

construction joint—See **joints**.

control joint—See **joint**.

core module—See **module**.

core sample—a fragment of a dry paint film removed from the substrate with a coring tool which is designed to remove a specified area (that is, a square centimetre) of dry paint film. **E1753**

cover plate—Synonym for **escutcheon**.

crack (building defect), *n*—a flaw consisting of complete or incomplete separation within a single element or between contiguous elements of constructions.

DISCUSSION—

Occasionally the basic design, or the material characteristics, of a building element will be such that minor cracking may occur. Such cracks are not flaws or defects.

criterion, *n*—an established precedent, rule, measure, norm, or **code** upon which a decision may be based.

curing, *n*—chemical process of developing ultimate properties of a finish or other material over a specified period of time. Compare **drying**.

curtain wall—See **wall**.

delamination—separation into constituent layers.

E1925

denier, *n*—the number of grams per 9000 m.

E859

detached dwelling—See **dwelling**.

deterministic design, *n*—design based on the physical and mechanical properties of the materials, elements, and structures involved (compare **probabilistic design**).

DISCUSSION—

In this method of design, load and resistance to load are assigned values for each particular situation as provided in the codes for given conditions. Existing variability in and range of these values, probability of failure, residual deformation, shock absorption, damping capacity, as well as load-sharing and torsional rigidity may or may not be given direct consideration. Under given conditions, deterministic design is applicable to statically and dynamically exposed, relatively rigid materials, elements, and structures; but not to those that can absorb the surge of high external forces and return to their original shape without permanent failure, or appearance of failure.

digestate—an acidified aqueous solution that results from digestion of the sample.

E1644

digestion—the sample preparation process that will solubilize (extract) targeted analytes present in the sample and results in an acidified aqueous solution called the digestate.

E1613

distribution-system pressure difference—the pressure difference across the exterior air-distribution envelope, expressed in pascals (inches of water, pounds-force per square foot, or inches of mercury).

E1554/E1554M

door, *n*—usually swinging or sliding barrier by which an entry is closed and opened.

drainage hole—an opening in a construction provided for the escape of unwanted liquid, as in a retaining wall. Compare **vent hole**, **weep hole**.

drawing, *n*—an architectural, structural, mechanical, or electrical plan, elevation, or section indicating in isometric perspective or in axonometric perspective the detailed location, dimension, quantity, or extent of material, product, or member to be furnished. Compare **shop drawing**, **working drawing**.

duplicate sample—a second portion of a homogenized sample carried through sample digestion. Analysis results for these samples are used to provide information on the precision of the homogenization process.

E1726

drying, *n*—process of developing, solely by evaporation of volatile ingredients, ultimate properties of a finish or other material over a specified period of time. Compare **curing**.

duplex dwelling—See **dwelling**.

dust wipe sample—a settled dust sample collected on a moistened disposable towel.

E1644

dwelling, *n*—a **building** designed or occupied as the living quarters for one or more families or households.

apartment—a separate part of a **building** intended as a **dwelling unit** for an individual, family, group, or small household (also used as a synonym for **apartment building**).

detached dwelling—a **dwelling unit** standing by itself.

duplex dwelling—one of a pair of **dwelling units**, generally joined by a common floor/ceiling.

modular dwelling—a manufactured **home** consisting completely or in part of **modules**.

semi-detached dwelling—one of a group of **dwelling units** joined by a common sidewall and occasionally by a garage, carport, or similar structure.

dwelling unit—a unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. (See also **house**.)

environmental chamber—See **building space**.

EPS, *n*—expanded polystyrene. See **rigid cellular polystyrene thermal insulation board**. See also **cellular polystyrene**.

equivalent design load—a magnitude of 60-s duration uniform load selected by specifying authority to represent design loads. **E997**

expansion joint—See **joints**.

exterior air-distribution envelope—the boundary or barrier separating the interior volume of the air distribution system from the outside environment or unconditioned spaces. **E1554/E1554M**

DISCUSSION—

For the purpose of these test methods, the interior volume is the deliberately conditioned space within a building, generally not including the attic space, basement space, and attached structures, unless such spaces are part of the heating and air conditioning system, such as a crawl space that acts as a plenum.

extraction—the dissolution of target analytes from a solid matrix into a liquid form. During sample digestion, target analytes are extracted (solubilized) into an acid solution. **E1644**

fabricate, *v*—to manufacture, form, construct, or assemble a product or **component**.

facility, *n*—a physical setting used to serve a specific purpose.

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.

facility durability, *n*—the capability of a **facility** to maintain serviceability for a specified time.

DISCUSSION—

It may be important that regular maintenance be provided as appropriate, to assist in attaining the desired durability. <https://www.astm.org/standards/e631-15>

facility evaluation, *n*—comparison of the qualitative and quantitative results of observations, measurements, analyses, or other tests against criteria established for a specified purpose and to a specified precision and reliability.

facility function, *n*—the purpose or activity for which the **facility** is designed, used, or required to be used.

facility management—practice of planning and managing workplaces.

DISCUSSION—

Included are financial forecasting and budgeting; strategic and tactical (short term) facility planning; real estate acquisition or disposal, or both; architectural and engineering planning and design; new construction or renovation work, or both; interior space planning; workplace specifications, installation, and space management; telecommunications integration; security; maintenance and operations management of the physical plant.

facility performance, *n*—the behavior in service of a **facility** for a specified use.

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 the relative importance of each performance requirement.

facility project brief (statement of work)—document describing services to be provided by the design consultant (architect, engineer, or interior designer) for a **facility**, in detail sufficient for the design to proceed.

DISCUSSION—

In included is general project information specifically related to the project, such as functional, technical, and design requirements; time plan; cost plan; and technical design data.

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

facility use, n—the functions and activities that take place in a **facility**.

facility serviceability profile, n—a graphic representation, usually as a bar chart, of the level of serviceability for each topic of serviceability. **E1679**

fan airflow rate, Q_{fan} , n—the volume of airflow through the blower door per unit of time (m^3/s , ft^3/min). **E1827**

feature, n—of a facility, a physical element of a building, building component, building subsystem, unit of furnishing or equipment, or of a location, or of an aspect of design, arrangement, form or color, which helps or hinders the satisfaction of a requirement for serviceability. **E1334**

DISCUSSION—

A feature may be a physical feature or design feature, or both. For example, a particular sound absorbency in a ceiling may be adequate in a carpeted space but may be inadequate in a space with a hard floor covering.

feature, n—of a facility, a building element, building component, building subsystem, unit of furnishing or equipment, or aspects of design, arrangement, form of color, which helps or hinders the satisfaction of a requirement for serviceability. **E1334**

DISCUSSION—

A feature may be a physical feature or design feature, or both. It may only have effect on meeting a requirement when some other feature is also present; for example, a wall with a specified sound transmission coefficient may only have effect on meeting a requirement when sound above a specified level is produced in an adjacent space.

combination of features, n—of a facility, features which, when present together in a facility, affect satisfying a requirement for serviceability. **E1334**

field blank—a wipe that is exposed to the same handling as field samples except that no sample is collected (no surface is actually wiped). Analysis results from field blanks provide information on the analyte background level in the wipe combined with the potential contamination experienced by samples collected within the batch resulting from handling. **E1728**

field blank—a sample that is handled in exactly the same way that field samples are handled, except that no air is drawn through it. **E1553**

field check—(1) a survey of existing conditions at a construction site (also called *field observation*). (2) verification of an existing structure and its dimensions compared with those shown on drawings (also called *field measure*).

field joint—See **joints**.

field measure—See **field check**.

fieldstone, n—natural building stone as found in the field.

filter holder—a plastic holder that supports the filter medium upon which airborne particulate matter is collected. **E1553**

finish, n—(1) the final treatment or **coating** of a surface, (2) the fine or decorative work required to make a **building** or its parts complete.

finished grade—See **grade**.

fire resistance—as applied to buildings, the property of a material or assembly to withstand fire or to give protection from it, characterized by the ability to confine a fire or to continue to perform a structural function, or both.

first floor—See **floor**.

first story—See **building space**.

fixed—See **windows and doors**.

flat, n—a rectangular metal bar of width greater than thickness.

floor, n—in a building, a supporting structure (generally horizontal) and constituting the bottom level of each **story**.

first floor—in a building, (1) (in the United States) the floor of a **building** that is at, or closest to, **finished grade** (also used as a synonym for **ground floor**). (2) (except in the United States) the **floor** of a **building** that is next above the **floor** at, or closest to, **finished grade**.

flooring, n—a material used to construct the uppermost layer of a **floor**.

sub-floor, n—a part of a **floor** over which one or more components may be added to complete the **floor**.

sub-flooring, n—the material used in constructing a **sub-floor**.

underlayment, n—in *flooring*, a layer of material usually placed upon the **sub-floor** that provides a smooth, even base for **flooring**.

flooring:

gross floor area—the entire area within the inside perimeter of the exterior **walls**.

DISCUSSION—

Only courts and shafts not under roof are excluded.

net floor area—that part of the **gross floor area** located within **occupiable space**.

DISCUSSION—

Accessory areas and thicknesses of walls are excluded.

frame—See **windows and doors**.

frost point—the temperature at which visible frost begins to deposit on the lower air space glass surface of a sealed insulating glass unit in contact with the measuring surface of the frost point apparatus. **E546**

frost state—the case where the frost point of a sealed insulating glass unit is above the test temperature specified by the purchaser or user. **E546**

gage (also *gauge*), *n*—(1) in *metal products*, a number designating a specific thickness of metal sheet, or diameter of wire, cable, or fastener shank tabulated in a standardized series, each of which represents a decimal fraction of an inch (or millimetre). (2) distance in inches (or millimetres) between adjacent lines of holes or fasteners.

galvanic corrosion—the corrosion of metallic objects in the presence of moisture, caused by electrolytic action. **E1925**

glass specimen—the glass to be tested, for example, a single pane, an insulating glass unit, laminated glass, etc. (does not include test frame). **E997**

glass specimen failure—the fracture or cracking of any glass component of a glass specimen. **E997**

glaze—See **windows and doors**.

glazing—See **windows and doors**.

glazing bead—See **windows and doors**.

glazing material—See **windows and doors**.

glazing, n—material instilled in a window sash, ventilator, or panel such as glass, plastic.

grade, n—a level or elevation of a land or water surface.

average grade—the arithmetic mean of the elevations of various ground surfaces within a stated area of **building construction**.

finished grade—the surface elevation of lawns, walks, drives, or other improved surfaces after completion of construction or grading operations.

natural grade—the elevation of the original or undisturbed surface of the ground.

sub-grade—the ground elevation established to receive an additional surfacing.

ground floor—See **floor**. (Synonym for **first floor, first story**.)

guideline, n—a written statement or outline of policy, practice, or conduct.

DISCUSSION—