



The Industry Voice for Workplace Solutions

# **Mechanical Test Standards – Compiled Definitions**

**FOREWORD:** The industry definitions presented herein are an accumulation of definitions used in existing voluntary product standards as developed by BIFMA International. Product standards have been completed for general purpose office chairs, desk/table products, lounge seating, panel systems, SOHO (small office home office) and storage units, as listed in the Table of Contents.

The intention of this publication is to provide an alphabetical listing of common definitions and terms that can be used by consumers, designers, specifiers and test laboratories when describing or evaluating industry products covered by these definitions.

**NOTE:** In the case of a conflict of the definitions within this document and any of the standards mentioned within this list, the definitions in the individual standard take precedence.

Suggestions for additions, deletions or improvements to this publication will be welcome. For ordering instructions and pricing information, please contact:

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## **Standards**

**ANSI/BIFMA X5.1-2002- American National Standard for Office Furnishings -  
General Purpose Office Chairs - Tests**

**ANSI/BIFMA X5.3-2007 - American National Standard for Office Furnishings -  
Vertical Files - Tests**

**ANSI/BIFMA X5.4-2005 - American National Standard for Office Furnishings -  
Lounge Seating - Tests**

**ANSI/BIFMA X5.5-2008 - American National Standard for Office Furnishings -  
Desk/Table Products - Tests**

**ANSI/BIFMA X5.6-2010 - American National Standard for Office Furnishings -  
Panel Systems - Tests**

**ANSI/BIFMA X5.9-2004 - American National Standard for Office Furnishings -  
Storage Units – Tests**

**ANSI/BIFMA S6.5-2008 - American National Standard for Office Furnishings -  
Small Office/Home Office Furniture - Tests**

## A

**acoustical panel:** A panel having an acoustical function and rating.

**acceptance level:** The performance level required to pass the test.

**accessory item:** Items such as hanging rail bars, divider plates, and other items supplied by manufacturers for the convenience of the users of the products.

**adjustable glides:** Support devices for leveling, and/or stabilizing products. (Alternately referred to as glides, levelers, adjustable supports or height adjusters.)

**anti-rebound:** The feature that ensures that an extendible element will stay closed and will not roll or bounce out of the compartment.

**appropriate rate:** Any rate that avoids resonant frequencies or excessive heating.

## B

**backrest or back position:** The back of each seating position.

**back stop position:** The position of the unit when the unit's tilt mechanism first contacts its rearward mechanical stop, regardless of the force on the back.

## C

**CMD:** The BIFMA Chair Measurement Device used for the measurement of seating products.

**CMD-1 Chair Measurement Procedure:** A universal procedure for the BIFMA chair measuring device.

**cabinet:** The case and the full complement of extendible elements.

**case:** The cabinet shell and all structural parts, including the sides, back, top plate, bottom plate, front framing, vertical uprights and any other fixed member, excluding extendible elements.

**caster:** A wheel or set of wheels mounted in a swivel frame and fixed to the leg or base of a piece of furniture, used for supporting and easily moving furniture.

**categories of desks or tables:**

**category I:** Units with surfaces greater than 610 mm (24 inches) in height and have a total work surface area greater than 0.46 m<sup>2</sup> (5 ft.<sup>2</sup>).

**category II:** Units with surfaces which are always less than or equal to 610 mm (24 inches) in height.

**category III:** Units with surfaces greater than 610 mm (24 inches) in height and have a total work surface area less than or equal to 0.46 m<sup>2</sup> (5 ft.<sup>2</sup>).

**center/pencil drawers:** A drawer, with a clear height less than 76 mm (3 in.), attached to a desk or table or is part of a pedestal which is primarily intended for the storage of light office supplies (such as pencils, pens, erasers, staples, etc.).

**clear dimensions:** The clear dimensions of the extendible element or storage component are defined by the sides of the largest rectilinear box that fits into the space. For extendible elements, the box must clear all stationary elements as the extendible element is taken through its full range of travel.

**clear depth:** The horizontal dimension of the box in the direction of travel. The clear depth is not reduced by the presence of a compressor.

**clear height:** The vertical dimension of the box. Exception: In the case where there is no bottom for the extendible element, the clear height shall not exceed 305 mm (12 in.).

**clear width:** The horizontal dimension of the box from side-to-side.

**clear space:** The volume defined by the product of the clear dimensions, e.g., clear space = clear depth x clear width x clear height.

**closed:** The extendible elements of the unit are fully retracted into the case and/or doors are in the position, blocking entry into the desk/table product.

**compartments:** The areas into which the unit is divided.

**compressor:** An adjustable device used to restrict the movement of the filed material.

**counterbalancing force:** A force or influence that offsets an opposing force.

**counterweights:** A device or material used to improve resistance to tipping of a unit. These items may be supplied as original manufacturer's equipment, or as a manufacturer's option, installed according to the manufacturer's instructions.

**cpm:** Abbreviation for cycles per minute.

**credenza:** A desk height cabinet, generally 457 mm to 610 mm (18 in. to 24 in.) deep, containing various combinations of extendible elements and storage compartments.

**cycle:** A complete operation of loading and unloading or of stress reversal; to open and close; one complete revolution; to operate in a cyclic manner.

## **D**

**depth:** The horizontal dimension from front to rear. This may be applied to either the unit or to the drawers, so it shall be specifically identified and described.

**desk:** An article of furniture having a primary work surface that is between 660 mm (26 in.) and 965 mm (38 in.) high and is supported by legs and/or storage component(s) with or without extendible element(s) and with a knee space.

**desk extension:** A unit that is attached to a desk to create a work surface that extends from the desk workstation.

**desk/table product:** Freestanding furniture articles including but not limited to, single and double pedestal desks, extended desk units, credenzas, and tables. Also included are items such as overhead storage units, hutches, screens, etc., that are either attached to, placed on or supported by the desk/table unit. Paper management products (horizontal, vertical and diagonal paper trays), small storage bins and desk accessories (telephone trays, pencil holders and paper clip holders,

etc.) and similar items are not considered desk/table products and are not included in this standard. (see X5.5.)

**disengaged/disengagement:** To release from an attachment or connection. For use within a standard, a product is considered disengaged if the mechanism used to position or retain a unit is not active or functioning after performing the test. For products held in place by gravity, products are not considered disengaged if they have returned to a properly installed position after performing the test.

**display shelf:** A shelf with a sloping surface and retaining flange or edge.

**doors:** A barrier by which an area is closed or opened. Types include: horizontal receding, vertical receding, tambour, sliding, vertical swinging, horizontal swinging, bi-fold, accordion, and others.

**drawer:** (see extendible element.)

**drawer slide:** (see suspension.)

## **E**

**extendible element:** A movable load bearing storage component, including, but not limited to: drawers, shelves, and filing frames. (This excludes doors, writing shelves, and adjustable keyboard surfaces.)

## **F**

**force:** A vector quantity, expressed in newtons (N) or pounds-force (lbf.) that tends to produce an acceleration of a body in the direction of its application.

**form-fitting load distribution device:** A device which distributes a force over a  $305 \pm 13$  mm x  $89 \pm 13$  mm ( $12 \pm 0.5$  in. x  $3.5 \pm 0.5$  in.) area of a back. The device will be shaped to approximate the contours of the chair back.

**freestanding:** A term that applies to movable, self-supporting furniture not supported by other structures.

**front stop position:** The position of the unit when the unit's tilt mechanism first contacts its forward mechanical stop.

**full depth:** See clear dimensions.

**fully extended:** The extendible element pulled out to the limit of its stops.

**functional load:** A level of loading intended to be typical of hard use.

## **G**

**ganged units:** Two or more units fastened together.

**ganging:** Two or more storage units secured together in a group, side-to-side, rear-to-rear, or a combination of the two.

**glide:** A component that attaches to the bottom of furniture to provide a smooth surface that permits easy movement and/or height adjustment.

**glide assembly:** The entire assembly comprising the glide, adjustment mechanism, support housing, panel attachment, etc.

## **H**

**hutch:** A non-freestanding storage unit which is mounted on a primary work surface(s). Also known as service modules, shelving units, risers, overhead storage units, etc.

## **I**

**IFD:** Indentation Force Deflection. See Method B1, Indentation Load Deflection Test, in Methods of testing flexible cellular materials - Slab, bonded, and molded urethane foams, ASTM D 3574.

**input device support:** A surface that is occupied exclusively by computer input devices such as computer mice, trackballs, and light pens.

**instruction document:** Information supplied by a manufacturer for use by the designer and/or end user and his installation representative that list recommendations, limitations and restrictions on the assembly, configuration, loading and use of the products.

**interlock:** A device that controls the extension of extendible elements to maintain the stability of the unit.

## **L**

**latching mechanism:** A keyless device designed to keep extendible elements and doors in their closed position that requires active participation from the user to disengage the device. Interlock and anti-rebound mechanisms are not considered latching mechanisms.

**lbf.:** Abbreviation for pounds-force. The corresponding unit in the Metric System is the Newton (N).

**leg:** The support member of a desk, credenza, table, or chair.

**length:** The measure of something along its greatest horizontal dimension but not the diagonal dimension of the object/unit. This may be applied to either the unit or to the extendible elements, so it should be specifically identified and described and may refer to either the width or depth of an item.

**leveled:** A condition where the unit, when installed, adopts and maintains a true horizontal and vertical attitude. Leveling may be accomplished by, but not limited to, the use of adjustable glides or shimming.

**load:** The weight to which a structure is subjected; a weight or force applied to a product; force acting on a surface, usually caused by the action of gravity.

**load-bearing element:** The part of furniture that is intended to carry loads. These may include extendible elements, keyboard surfaces, work surfaces, writing surfaces, equipment shelves, door shelves or cantilevered surfaces.

**load-bearing structure/surface:** Any element that supports loads during use. Foam and fabric, for example, are not generally considered load-bearing surfaces, nor are some portions of waterfall edges.

**lock:** A device that secures the stationary and extendible elements of the unit against undesired access or opening. A key or combination-operated mechanism used to secure an extendible element or door. (see panel)

**loss of serviceability:** The failure of any component to carry its intended load or to perform its normal function or adjustments. Unless otherwise specified, cracked or broken glass is considered a loss of serviceability.

**lounge seating:** Free standing seating that is intended for use in indoor public spaces such as waiting, reception, or lounge areas. It is generally not adjustable for personal use.

## **M**

**manufacturer's instructions:** Instructions for assembly, operation, and/or maintenance supplied by the manufacturer to the customer.

**multiple seating:** Lounge seating which has seating positions provided for more than one person.

## **N**

**N:** Abbreviation for Newton, a unit of force in the Metric System.

**newton:** A unit of force in the SI (Système Internationale), also known as the Metric System. (see desk/table & storage)

**normal use condition:** For consistency the midpoint of the adjustment range, such as the height adjustment or counter balancing force adjustment unless otherwise specified in the test method.

## **O**

**office armoire:** A vertical cabinet with doors that conceal a work surface.

**out stops:** A device that limits the travel of the extendible element in a direction away from the unit.

## **P**

**panel:** A flat or curved surface that controls and/or defines space; provides privacy and a means for hanging components. (see systems)

**panel mounted component:** A product intended to be supported by a panel system.

**panel run:** Two or more panels connected in a straight line.

**panel supported:** Individually connected panels and work surface, filing, storage, and shelving components and accessories that receive their primary support from the panels and that, when combined, form complete workstations.

**panel systems products:** The panels, screens, and various panel-mounted components used in conjunction with panel systems.

**pedestal:** A self-contained unit that is deeper than wide, less than 787 mm (31in.) in height, and having extendible elements or doors. The extendible elements are typically used for multi-functional general storage or filing. It may be freestanding, mounted under a horizontal surface, or mobile. Pedestal tops may be configured to accommodate seating or storage.

**pedestal base:** A base that supports a chair by a single central structural member such as a spindle.

**pencil drawer:** (see center/pencil drawers.)

**pivoting back rest:** A back rest that rotates on a horizontal axis above the height of the seat.

**product safety label:** A sign, label, cord tag or decal affixed to the product that provides safety information about that product. Product safety signs or labels may identify the hazard, the degree or level of seriousness, the probable consequences of involvement with the hazard, and how the hazard can be avoided. (see X5.9)

**proof load:** The level of loading in excess of hard use.

**pull:** A feature used to facilitate the opening and closing of an extendible element or door. Pull refers to both projecting and recessed features. (see storage and desk.)

## **R**

**rack resistance:** The ability of the cabinet to resist stresses that tend to make the product distort and the extendible elements to become misaligned.

**receding door:** A compartment closure that pivots to allow access to the compartment, then moves to a storage position parallel to the surface (top, bottom or side). (see doors.)

**return panel:** Panel mounted at an angle to a panel run for the purpose of providing stability or support. (Also referred to as a support panel.)

**RTA:** Ready Io Assemble. Products which are largely unassembled when they leave the point of manufacture. These products are designed to be assembled by the end user.

## **S**

**screen:** A non-load carrying space divider that is less than ceiling height. Screens may be freestanding, panel connected, interconnected or panel mounted.

**seat or seating position:** The portion(s) of a unit intended for sitting, approximately 570mm (22.5 in.) in width. Attached table surfaces are not considered seating positions. The number of seating positions shall be as specified by the manufacturer. If no manufacturer's specification is available, or if the number of seating positions is not clearly defined by the design or contours of the seating surface, the number of seating positions shall be determined as follows: For multiple seat units (i.e., bench-type units) determine the number of seating positions by dividing the width of the seating surface by 570 mm (22.5 in.). Round the result to the nearest integer.

**serviceability:** (see loss of serviceability.)

**shelf:** A horizontal surface that is attached to a vertical support(s) and is used to store materials. Shelves are not intended to provide seating capability.

**single seating:** A unit with one seating position.

**spindle:** A vertical axis or shaft supporting a unit.

**stability:** The ability of a unit to resist tipping under normal loading and use conditions.

**stabilizing device:** A device that provides stability to the unit. Typically used devices are interlock systems, casters on extendible elements, counterweights, etc.

**stool:** A chair with a seat height greater than 584mm (23 in.), intended to allow the user to sit at standing-height work surfaces such that the user's feet are not supported by the floor.

**stops:** Devices that limit travel of extendible elements or doors. (From X5.5 desk)

**storage cabinet:** A freestanding unit that contains a combination of one or more of the following: drawers, doors, shelves and/or other storage option.

**storage component:** A load-bearing element used as part of a storage unit, including, but not limited to: drawers, shelves, and filing frames. (This excludes writing shelves.)

**support element:** A part of the unit that keeps it elevated above the floor.

**surface classifications:**

**adjustable keyboard surface:** An adjustable surface that is intended for placement of the keyboard, and/or other computer input devices.

**display shelf:** A shelf with a sloping surface and retaining flange or edge.

**door shelf:** A surface or load-bearing compartment affixed to a door.

**equipment surface:** A moveable, typically stowable, surface whose primary function is to support office equipment such as printers and scanners.

**keyboard surface:** An adjustable, rolling or stationary surface that is intended for placement of the keyboard, and/or other computer input devices.

**primary surface:** A surface that has the apparent potential for the highest loading or a surface on which a person may sit. In cases where more than one horizontal surface of a unit exists, there may be more than one primary surface.

**secondary surface:** A surface that is vertically separated from and smaller than the primary work surface(s). It is used for storage (i.e., a shelf) or occupied exclusively by the equipment placed on the surface.

**transaction surface:** A surface that is less than 406 mm (16 in.) deep and is not enclosed. It is primarily used as a temporary work surface and not as a shelf.

**unit top, cosmetic/aesthetic:** A surface that is over 1524 mm (60 in.) above the floor surface. These tops are intended to be non-load bearing.

**writing shelf:** A moveable, typically stowable surface that is not intended to carry loads greater than 11 kg. (25 lbs.), whose primary function is to support ancillary office tasks, such as writing and short-term reference material handling.

**suspension:** The system that is used to facilitate the movement of the extendible element in and out of the unit (alternately referred to as "drawer slides" or "drawer supports".)

## **T**

**table:** A freestanding unit having a work surface supported by legs, with storage limited to center/pencil drawers.

**tablet arm:** A surface attached to a chair that has the primary function to support tasks such as writing and short-term reference material handling. These surfaces typically do not have independent support legs and are not intended to support a person's weight.

**tall desk/table product:** Any unit which is higher than 1067 mm (42 in.) tall.

**tambour:** A flexible compartment closure which travels along a curvilinear path.

**tandem seating:** Multiple seating with individual seats structurally supported by a common or shared support member. Tandem seating may also include one or more tables between seats.

**test load:** A particular load/force placed in or on a component specified by a test procedure and not included in the dead weight of the component.

**test platform:** The horizontal hard work surface, (concrete or other unyielding surface) on which the unit to be tested is placed during testing.

**tip over:** The condition where the unrestricted unit will not return to its normal upright position.

**TV/Multimedia Cabinet:** A unit that provides space for the storage/use of a television and associated electronic components.

**trim components:** Items such as decorative trim, accessories, covers, etc. (see Panel)

## **U**

**unit:** When used in ANSI/BIFMA test procedures this refers to the product to be tested. In the case where individual components can be combined, the combined assembly shall be considered a unit.

**unit bottom:** The lowest horizontal fixed surface of a unit. It is used to enclose or partially enclose the unit and/or protect its contents. Unit bottom may also be used to store materials.

**unit height:** The vertical distance of a storage unit from the floor or test platform to its highest load-bearing surface. The height measurement is taken with adjustable glides at the midpoint of their adjustment but not to exceed 13 mm (0.5 in.). The height of wall-mounted units shall be based on the manufacturer's minimum recommended mounting height.

**unit top:** The highest horizontal surface of a unit. It is used to enclose or partially enclose the unit and/or protect its contents. Unit top may also be used to store materials and/or accommodate a person's ability to sit.

**unsupported span:** The distance between adjacent floor supports. Pedestals or other structures not extending to the floor do not affect this distance.

**user adjustable surfaces:** A surface that is intended to be adjusted by the user while under normal use.

## **V**

**vertical file:** A cabinet whose depth is greater than or equal to its width containing exclusively extendible elements. Vertical files are designed for the storage and retrieval of letter or legal size documents. These products are generally freestanding cabinets containing two to five extendible elements. Units that have stackable sections, casters, seating surface tops, doors and/or legs are considered to be storage units and should be tested in accordance with ANSI/BIFMA X5.9.

## **W**

**width:** A horizontal dimension from side to side.

**work center:** A freestanding unit, containing a primary work surface and overhead storage capability. May have storage below the primary work surface.

**working edge:** The side of the surface at which the primary user sits. (Note: some surfaces may have more than one working edge; conference tables for example.)

**workstation:** A grouping of furniture items and components, that when assembled or placed in a location, describes where a person performs work.

**work surface:** A horizontal surface used to perform tasks and/or for storage space.

**worst-case condition:** The product and/or condition (i.e. size, composition and construction of a given unit type) most likely to be adversely affected by an individual test or testing sequence.

**writing shelf:** A moveable, typically stowable surface that is not intended to carry loads greater than defined in the applicable standards, whose primary function is to support ancillary office tasks, such as writing and short term reference material handling.

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