

FURNTECHNICAL BULLETIN No. 4

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Office Desks and Workstations

The purpose of this bulletin is to outline some issues in relation to testing these items and to describe interpretations of some matters contained in the relevant Standards – AS/NZS 4442 Office Desks and AS/NZS 4443 Office panel systems – Workstations.

The Standards

Both of the above Standards were issued in 1997 and are now being considered for revision. They have a considerable amount in common which is probably not unexpected given that both relate to work surfaces for use in office situations and it is often difficult to differentiate between a desk and a work station. Even the definitions given in the standards are not particularly useful in making this distinction.

According to AS/NZS 4442 a desk is:

“a grouping of furniture items and components, providing a horizontal or slightly inclined work surface or work surfaces, either fixed or adjustable in height, that facilitates the performance of tasks in an office like environment.”; while

according to AS/NZS 4443 a workstation is:

“a grouping of furniture items and components either fixed or adjustable in height that, when assembled designates where a person performs work in an office and facilitates the performance of the tasks.”

When asked to test such an item one of the first decisions required is whether to use requirements as defined in AS/NZS 4442 or 4443; fortunately, in many cases they are equivalent. Furntech uses a simpler and more obvious definition; if the work surface is supported by legs or pedestals it is a desk and if by panels or screens it is a workstation. We have not found this distinction to be grossly inadequate. However, as noted elsewhere, hybrid desk/workstations are not uncommon in which case the more appropriate section from either Standard is applied.

The strength and durability testing defined in these two Standards was adopted from the American Standards for desks and work stations ANSI/BIFMA X5.5 and ANSI/BIFMA X5.6 which were originally issued in 1996, both of which have since been revised. This revision did not result in any significant changes to the strength and durability requirements or the test methods, and there is little concern regarding these issues with the Australian Standards.

Ergonomics

The ANSI/BIFMA standards did not provide for any ergonomic requirements for desk or workstations. The Australian/New Zealand standards have attempted to provide some ergonomic specifications which it is now apparent may have been too rigid in some respects. In particular these specifications do not reflect the fact that the dimensional requirements for a work surface should be determined in terms of the specific end use or function for which the work surface is designed (for the same end use these requirements may also vary between particular individuals due to their physical stature, or even to the manner in which they carry out particular tasks).

Where task specific requirements can be defined, suitable and appropriate work surface sizes should be accepted under these Standards. For example, a ticket sales counter workstation where the customer is separated from the operator by a security screen. In such a case the customer is unable to reach to collect or deposit items and the operator may have to reach over the full width of the work surface so a work surface significantly narrower than 800 mm would probably be more appropriate.

For work surfaces, the idea that one size fits all is simply not appropriate. A work surface designed to meet a particular set of task related requirements in relation to size and shape may not meet the Standard requirements and hence the desk or workstation is classed as non compliant even though it meets the end user requirements and is compliant with the Standard in all other respects. In addition to this, changes in technology such as the widespread use of flat screen computer monitors and laptop computers, have substantially modified the requirements for the

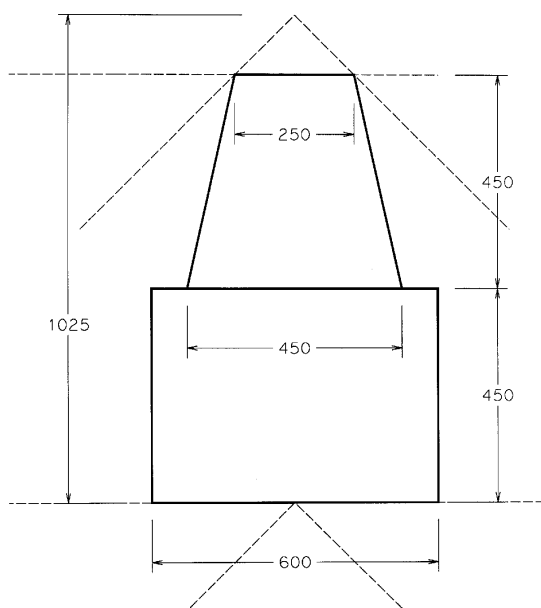
work surface depth required to maintain appropriate screen viewing distances and work areas in front of such screens.

Furntech has adopted a limited interpretation for minimum work surface area for desks and workstations for use with flat screen monitors and Cathode Ray Tube monitors. For both desks and workstations the minimum work surface for single task operation defined in both AS/NZS 4442 and AS/NZS 4443 is a rectangle of sides 800 x 1,200 mm and for multi task operations 800 x 1,600 mm. These minimum areas i.e. 0.96 m² and 1.28 m² respectively have been retained in the interpretation, but a differentiation in requirements has been made for flat screen monitors and for CRT screen monitors as follows.

For flat screen monitors in addition to the minimum surface areas defined above, the work surface shall be of such a shape that a test square of side 600 mm can be placed on the work surface without any part of the test square projecting beyond any edge of the work surface. This allows for a monitor screen up to 150 mm thickness to be placed on the work surface at least 450 mm from the front edge.

For use with CRT screens the work surface shall be of such a shape that when a test surface in the form of an isosceles trapezium, having a depth of 450 mm and parallel side dimensions of 450 mm and 250 mm, is placed so as to be fully within the perimeter of the work surface a test rectangle of size 600 mm width x 450 mm depth can be placed on the work surface without any of the rectangle projecting beyond any edge of the work surface or covering any part of the trapezium test surface (see diagram below). This will ensure that a CRT monitor with a typical trapezoidal footprint can be placed on, and at least 450 mm away from the front edge of

the work surface and not project outside the perimeter of the work surface.



Worksurface Templates for CRT Monitors

Height adjustment

Both Standards recognise two conditions for work surface height – fixed and adjustable. The height adjustable work surface is advocated as the preferred option, and there is an implication that if a work surface is fixed in height that an adjustable keyboard platform should be fitted although most of these devices do have some disadvantages, particularly due to encroachment into the knee space under the work surface.

By adjustable we understand that such a desk or workstation incorporates a mechanism by which the operator can, without the need for special tools, adjust the height of the work surface usually without having to leave their normal working position. Many desks and workstations are constructed in such a way that the height of the work surface can be set on assembly to suit the immediate requirement, but can be set to other heights by partially dismantling

and reassembly. This is informally referred to as "technician" adjustable. In some cases the work surface can be assembled at any required height within the available range, yet in others they can be set only at discrete height positions. For testing purposes desks requiring reassembly to effect the height adjustment are treated as fixed height desks but it is apparent that they can to some extent meet the ergonomic requirements of height adjustable desks.

In differentiating between height adjustable and non height adjustable desks, both Standards have the requirement that to be classified as height adjustable it is necessary that the work surface has a prescribed minimum vertical travel height covering a specified height range. Although work surfaces which adjust over only part of this range are classified as not adjustable, such "partially" adjustable items would normally be subjected to the vertical adjustment tests defined in the Standards. These tests would not be applied to "technician" adjusted items.

Desk/Work station systems

Many manufacturers of desks and workstations make "systems" of desks etc. modelled around a central core component or architectural theme but which can vary in configuration and minor components to suit a wide range of requirements and office layouts. This can offer obvious advantages from production, business and office planning points of view. Such systems often include items with "hybrid" configurations which incorporate, on the one hand, features which might be classified as a screen based system, and on the other, features unique to a desk system. Because of the sometimes huge range of possible combinations of components and configurations available in such systems, testing of them all

is simply not feasible and yet manufacturers still want their systems tested and approved as compliant with the relevant Standard or Standards. The obvious solution to this problem is to test a "sample" from the system. Such a sample obviously should effectively represent the system so that the system can be verified as being compliant with the Standard within an appropriate level of confidence, but be of reasonable proportions in terms of the testing requirements and cost. The Standards in their present form do not offer any assistance in relation to sampling from such systems.

Other issues

There are other requirements set out in these Standards which are generally disregarded because they are either:

1. defined in such ways as to not lend themselves to objective assessment or;
2. too technically involved to test economically.

Examples of the former would be the safety requirement for protection of

computer memories from electric motors Clause 2.1(b), or the requirement for workstations that there be "...sufficient room under the work surface to prevent a mobile storage unit from protruding beyond the front of the work surface...". This must depend on the depth of the storage unit. The assessment of the acoustic properties of office panel systems is an example of a parameter which is too technically complex. It is very expensive and probably unwarranted given that other variables would most probably dominate the acoustic behaviour of most offices.

Many of the clauses in both Standards are recommendations i.e. have "should" priorities rather than "shall". This makes assessment of such items confusing. While most if not all of these recommendations represent good practice they are not enforceable. For example, adjusters having a normal left hand wind i.e. "counter-clockwise up" must be accepted, even though they are not normal and the Standards recommend against them and they may even be dangerous in some situations.

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If, for any reason owners of products for which Blue or Orange Tick Certificates will be issued, do not wish their certificates to be available from our website in this way, should mark the box on our Request for Test form indicating non PDF Listing of Certificates when submitting products for testing or assessment.

Standards Update

The following new or revised or draft standards have recently been issued:

AS/NZS 2269: 2004

AS/NZS 4266.9: 2003 Amdt 1:2004

HB 136:2004

DR 04311

Plywood - Structural

Reconstituted wood based panels

Methods for test – Thickness stability and glue bond quality

Safety aspects - Guidelines for child safety

Method for bend and related testing of metals – Part 3 Tubular Products

Copies of these standards may be purchased through the Institute.

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**Blue Tick
Product
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