

7 The Work Chair

7.1 Seat Height

Users should be able to sit with their feet comfortably on the floor or footrest without undue pressure on the underside of the thighs. The thigh-to-torso angle should not be less than 90°.

7.2 Seat Depth

Users should be able to sit in the chair without undue pressure against the back of the knees, their back properly supported by the backrest and with adequate buttock and thigh support.

7.3 Seat Width

The seat should be wider than the hip breadth of the user with allowance for movement and clothing. The seat width should not limit the ability to comfortably use the armrests.

7.4 Seat Pan Angle

The angle of the seat pan should allow the user to support their feet on the floor or footrest. Seat pan angles should not cause the user's torso-to-thigh angle to be less than 90°. Forward seat pan angles should not cause users to shift excessive weight to their feet or experience the sensation of sliding out of the chair.

7.5 Back Support

7.5.1 Seat Backrest Height

The ultimate test for fit is highly posture dependent. All backrests should provide adequate lumbar support and buttocks clearance. For tasks requiring upper body mobility, the backrest should provide adequate back support, but not interfere with the user's movement (typically these backs should not be higher than the bottom of the user's shoulder blades). For users who prefer reclining postures, or more upper back support, the back height should provide support for the shoulder blades.

7.5.2 Backrest Width

The width of the backrest should provide adequate support for the curvature of the user's back without causing localized pressure points.

7.5.3 Lumbar Support

The height and shape of the lumbar support should coincide with the lumbar curve ("the small") of the user's back. The support should be firm, but not cause localized pressure points.

7.6 Movements of the Seat Pan and Back Support

The chair should allow the user to sit in a position where the torso-to-thigh angle is equal to or greater than 90°. The seat and backrest angles should adjust to accommodate the varying postures assumed by the user throughout the day.

7.7 Arm Support

7.7.1 Armrest Height

The height of the armrest should allow users to sit in a variety of postures while supporting their forearms and/or elbows in a manner that avoids lifting the shoulders (armrests too high) or leaning to the side to reach the armrest (armrests too low). The armrest height should allow accessibility to, and performance of, tasks.

7.7.2 Armrest Length

The length of the armrest should allow users to sit close enough to the work surface to perform their tasks while maintaining contact with the backrest.

7.7.3 Inside Distance Between Armrests

Armrests should allow users to sit in a variety of postures while supporting their forearms in a manner that avoids lifting the shoulders and/or excessive outward positioning of the elbows. Armrests should allow accessibility to, and performance of, tasks. The inside distance between the armrests should allow the user to easily enter and exit the chair. The hips should comfortably fit between the armrests or supports.

8 Work Surfaces

8.1 Clearances for Seated Work

8.1.1 Height Clearance for Legs — Sitting

When centered on their task, users should be able to fit their legs in the space provided under the work surface without contacting the support structure. The space should be adequate to permit users to get close to their work surface while allowing freedom of movement.

8.1.2 Depth Clearance for Knees — Sitting

Users should be able to fit their knees in the space provided under the work surface without obstruction. There should be enough space to allow users to get close to their work surface while allowing some freedom of movement.

8.1.3 Width Clearance for Thighs — Sitting

Users should be able to fit their thighs in the space

provided under the work surface without obstruction. The space should be adequate to allow some freedom of movement.

8.1.4 Height Clearance at Foot Level — Sitting

When centered on their task, users should be able to sit close to the work surface in an upright posture without obstruction at foot level.

8.1.5 Depth Clearance at Foot Level — Sitting

Users should be able to fit their legs in the space provided under the work surface without obstruction. There should be adequate space to permit users to get close to their work surface while allowing freedom of foot movement and/or postural changes.

8.2 Clearances Under Work Surfaces for Standing Work

8.2.1 Height Clearance at Foot Level — Standing

When centered on the task, users should be able to stand close to the work surface in an upright posture without obstruction at foot level.

8.2.2 Depth Clearance at Foot Level — Standing

When centered on their task, users should be able to stand close to the work surface in an upright posture without obstruction at foot level.

8.2.3 Width Clearance at Foot Level — Standing

When centered on their task, users should be able to stand close to the work surface in an upright posture without obstruction.

8.3 Support Surface Heights for Input Devices and VDTs

8.3.1 Support Surface Height for Input Devices — Sitting

Users should be able to sit at the support surface with adequate clearance for the legs, with the shoulders, elbows and wrists at near neutral positions. In some cases, no range of adjustability will accommodate the user because there is little or no space between the top of their thigh and the underside of their forearm in which to fit the keyboard and support surface. In these instances, compromises in posture will be necessary.

8.3.2 Support Surface Height for VDT — Sitting

The support surface should allow the VDT to be at a height that permits the user, when seated in an upright posture, to view the entire VDT screen at a position between horizontal eye level and 60° below eye level, preferably at a position between 20° and 50° below eye level. The top of the screen should not be closer to the

eyes than the bottom of the screen. The user should be able to move their legs under the support surface without obstruction.

8.3.3 Support Surface Height for Input Devices — Standing

Users should be able to stand erect at the input device support surface, with adequate clearance for their feet. The shoulders, elbows and wrists should be at near neutral positions.

8.3.4 Support Surface Height for VDT — Standing

The support surface should be at a height that allows the user, when in a standing posture, to view the entire VDT screen at a position between horizontal eye level and 60° below eye level, preferably at a position between 15° and 45° below eye level. The top of the screen should not be closer to the eyes than the bottom of the screen. The user should be able to stand close to the support surface without obstruction.

8.4 Support Surface Depth for VDT — Sitting or Standing

With the user seated (or standing, as appropriate) in a normal posture, the viewing distance should be greater than 40.0 cm (15.7 in.).

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The Ultimate Tests for Fit were compiled from BIFMA G1-2002, Ergonomics Guideline for VDT (Visual Display Terminal) Furniture Used in Office Work Spaces. G1-2002 is based on ISO 9241-3 and 5.

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