
Understanding **2-52**

ARJOHUNTLEIGH
GETINGE GROUP



IEC60601-2-52 Medical Bed Standard

...with people in mind



Understanding **2-52**

What is IEC60601-2-52?

IEC (International Electrotechnical Committee) are an international group of recognised experts who set global safety standards for medical electrical equipment. IEC60601-2-52 is the latest Standards Publication for 'Particular requirements for the basic safety and essential performance of medical beds'.

The last update to EN60601-2-38 was completed in 1999 and IEC60601-2-52 combines the EN60601-2-38 (electrically powered beds) and the EN1970 (requirements and test methods for adjustable beds for disabled persons).

The IEC60601-2-52 standard includes additional requirements over and above the previous standards' that we need to comply with to maximise safety in addition to other requirements identified by other bodies across the globe (e.g HBSW).

Products can be certified as IEC60601-2-52 compliant by an independent test house and will have a certificate to verify this.

Safety standards

The dimensions within the standard take into consideration adult patient sizes across the world, using the smallest 5th percentile and largest 95th percentile dimensions as the limits.

Head and neck

The standard has been set at 12cm for the smallest head breadth and 6cm for the smallest neck diameter, these measurements are based on the 5th percentile of the adult female.

Torso

31.8cm is used, which represents the 95th percentile of an adult male chest.

Height

Having taken into consideration the shortest and tallest height of men and women internationally this range has been defined as 146cm to 215cm.



How does this affect me?

From the 1st April 2013 all medical beds purchased must be IEC60601-2-52 compliant where the Standard is applied. Manufacturers should supply you with certification of this compliance. The regulations take into account several safety elements including application environment, product life cycle, dimensions to reduce the risk of entrapment, lateral stability and side rail height.

Ensuring your product of choice complies with these regulations gives you peace of mind and a reassured level of safety.

What are the major changes?

Replacement Mattresses

The standard outlines compatibility checks for stable, non-immersive foam mattresses. Other support surfaces such as active mattresses should be risk assessed for compatibility.



Medical Bed Markings

All manufacturers will have to include special markings to communicate important features of the bed. These can be either sentences or symbols.

New to this Standard are labels for recommended safe working load, minimum and maximum patient weight and height must be indicated on the bed. Labels should also clearly state mattress dimensions.

Maximum Patient Weight & Safe Working Load

The minimum safe working load for the Acute and Intensive Care setting is now 203kg. For Long Term Care it is 173kg. Maximum patient weight limit takes into account any equipment placed onto the bed such as mattress pump, etc.

Medical Beds must adhere to precise measurements

Distances between any moving parts must comply to avoid entrapment and pinch points.



New requirements for Longitudinal and Lateral stability

Medical beds must be capable of taking a load without tipping of 225kg in all four corners, unless the foot board is fixed. In this case, it must be capable of taking a load of 112kg in the two corners at the foot end.

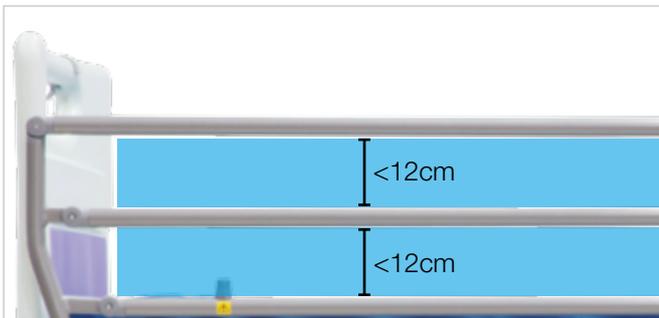
Communicate important features of the bed

Manufacturers need to detail important features such as lockout functionality, brake and track facilities to assist with safe working practice.

Areas of focus

Head entrapment

If a gap is wider than 12cm it presents a risk of the head passing through and subsequently becoming entrapped. This risk is present in any clearances or side gaps between the side rails and the headboard. The side rails also must be strong enough not to deflect beyond 12cm.



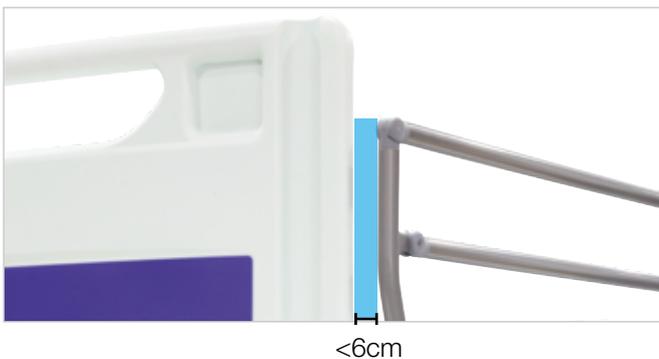
Chest entrapment

Clearances narrower than 31.8cm either between the side rails and the footboard or in-between the side rails themselves can present a risk of patient chest entrapment.



Neck entrapment

A gap of 6cm or more in the side rail area can present a risk of soft tissue in the neck area becoming entrapped, which in extreme circumstances can result in the patient being asphyxiated.



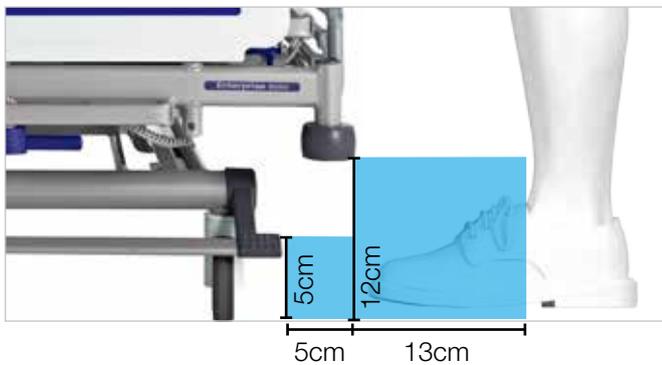
Falling over the side rail

There should be a minimum measurement of 22cm between top of a basic foam mattress and side rail for at least 50% of its length, thus reducing risk of patient falls.



Foot/toe entrapment under the bed

There must be a minimum clearance of 12cm under the bed at the outer edges to eliminate the risk of the foot/toe entrapment. Further under bed clearance must be a minimum of 5cm to take into account shoe toe caps.



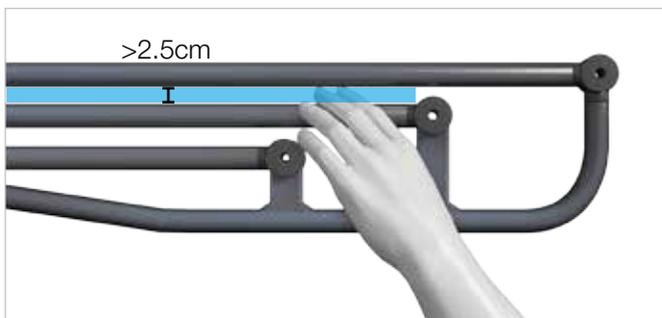
Lateral bed stability

The bed must be able to withstand a load of 225kg in all four corners without tipping over.



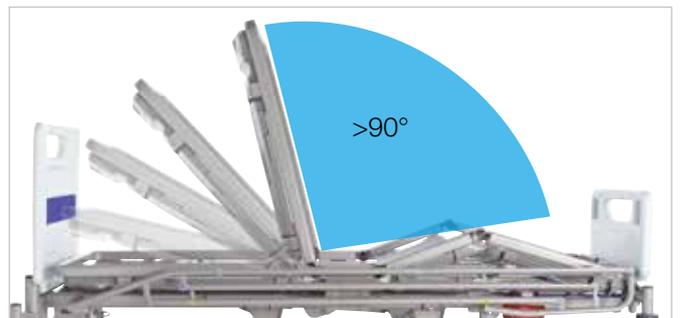
Finger pinching

Distances between a movable part of the bed such as the side rails or headboard, less than 0.8cm for rotating gaps or greater than 2.5cm for closing gaps to eliminate the risk of the patient or caregiver's fingers being pinched. Illustration below shows closing gap requirement for folding side rails.



Compression in the abdominal area

The angle between the backrest section and the thigh section should be greater than 90 degrees during all profiling adjustments.



The new **Enterprise medical bed range** has been independently tested by the globally renowned organisation **UL**, to certify that it is compliant with the latest stability, dimensional and safety requirements of the **IEC60601-2-52 Standard**.



Enterprise 9000X



Enterprise 8000X



Enterprise 5000X



Enterprise 5000 split safety sides

Please Note: Brochure describes elements of IEC Standards in relation to Enterprise hospital beds and is intended for commercial information purposes only. This is not intended as a technical reference document

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