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ISO/TS 16840-15

Wheelchair seating —

Part 15: Selection, placement and fixation of flexible postural support devices in seating

Sièges de fauteuils roulants —

Partie 15: Choix, mise en place et fixation des dispositifs de soutien postural dans les sièges

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This document was prepared by Technical Committee ISO/TC 173, *Assistive products*, Subcommittee SC 1, *Wheelchairs*.

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Postural support devices, such as positioning supports, are typically used to provide increased postural stability and/or to maintain or correct the occupant's posture, in order to help maintain and increase day-to-day functionality for the individual. Postural support devices can also help to reduce the development of skeletal deformities, or to correct them. These devices, having postural support purposes, are not to be confused with belts and similar devices designed to act as vehicular occupant restraints. Postural support devices may improve the occupant's safety in other ways, especially when used to prevent falls in or out of the seating system.

In the US, Axelson reported that deaths from strangulation had occurred due to wheelchair occupants slipping down in their chairs as a result of inappropriate placement of pelvic positioning belts^[1]. In the UK, the records of the MHRA (Medicines and Healthcare Products Regulatory Agency) show that, over a 15-year period, there had been four reported deaths and 17 serious injuries involving, or attributed to, pelvic postural support devices or anterior trunk postural support devices. These deaths are thought to have occurred as a result of inappropriate placement or adjustment of the supports, or their failure.

There appears to be confusion as to best practice in the selection and fixation of flexible postural support devices (e.g. the updated MHRA recommendations in the UK^[2]), and the reasons why postural supports need to be placed and adjusted according to the occupant's needs. This document has been produced to specify these criteria to be applied to positioning supports when used in seating systems and chairs, including wheelchairs and bathroom equipment (such as shower chairs), and, where applicable, hoists. This document has been created to support clinicians, engineers, carers, manufacturers, retailers and repairers.

NOTE 1 In this document, nomenclature has been based on ISO 7176-26 and ISO 16840-1. Thus, a support described as a positioning support can have the name adapted to include a description of its function based on the part of the body to which it is applied: e.g. a pelvic positioning support helps to position the pelvis, but might not be applied directly to the pelvis (e.g. the thighs) to achieve this. On the other hand, an anterior pelvic support would be applied anterior to the pelvis.

NOTE 2 Positioning support placement can differ based on clinical and risk assessment.