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Z10535.2-17

Lifts for the transfer of persons — Installation, use, and maintenance

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The Subcommittee would like to thank all the individuals who participated in the working groups and task forces for their valuable contributions to the development of this Standard.

Preface

This is the first edition of CSA Z10535.2, *Lifts for the transfer of persons — Installation, use, and maintenance*.

This Standard includes additional stakeholders such as manufacturers, suppliers, installers, managers, administrators, trainers, caregivers, operators, maintenance/technical personnel and their employers which were not previously addressed in CAN/CSA-Z10535.1, which is primarily a design standard for manufacture. Evidence from Health Canada's incident reporting justified the creation of this CSA Group Standard due to the numbers of incidents where clients and staff either were seriously injured or had died following misuse, improper installation, or maintenance. Client lifts are very diverse when considering the many different mechanisms of hoisting and accessories which are between the client and the lifting device itself. This diversity can cause confusion and problems if lifts are not installed, used and maintained appropriately and with the proper training.

CSA Group acknowledges that the development of this Standard was made possible, in part, by the financial support of the governments of Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Northwest Territories, Nova Scotia, Nunavut, Ontario, Prince Edward Island, Québec, Saskatchewan, and Yukon, as administered by the Canadian Association for Drugs and Technology in Health (CADTH).

This Standard was prepared by the Subcommittee on Patient Lifting devices, under the jurisdiction of the Technical Committee on Health Care Facility Engineering and Physical Plant and the Strategic Steering Committee on Health Care Technology and Systems, and has been formally approved by the Technical Committee.

Notes:

- 1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
- 2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
- 3) *This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
- 4) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include “Request for interpretation” in the subject line:*
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 - b) *provide an explanation of circumstances surrounding the actual field condition; and*
 - c) *where possible, phrase the request in such a way that a specific “yes” or “no” answer will address the issue.*

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.
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 - a) *Standard designation (number);*
 - b) *relevant clause, table, and/or figure number;*
 - c) *wording of the proposed change; and*
 - d) *rationale for the change.*

Z10535.2-17

Lifts for the transfer of persons — Installation, use, and maintenance

0 Introduction

Evidence from Health Canada's incident reporting justified the creation of this Standard due to the numbers of incidents where clients and staff either were seriously injured or had died following misuse or improper installation or maintenance of lifts. Patient lifts are very diverse when considering the many different mechanisms of hoisting and accessories which are between the client and the lifting device itself. This diversity can cause confusion and problems if lifts are not installed, used, and maintained appropriately and with the proper training.

This Standard is intended for use by manufacturers, suppliers, installers, managers, administrators, trainers, caregivers, operators, maintenance/technical personnel, and their employers to set clear requirements for client lifting devices as installed and used in various locations, typically hospitals, and long-term care facilities. These devices are used to transfer clients of different weights and body types, with a range of medical, physical, and psychological conditions. Proper use of lifts reduces the risks to health care workers and clients significantly.

There have been numerous reported incidents of negative outcomes as a result of inappropriate selection, installation, assembly, inspection, maintenance, and use of lifting equipment. Such incidents have included injury and in some cases have been fatal.

This Standard sets out requirements for installation, inspections, maintenance, testing, and use that are essential for the safe operation of lifts.

Note: *While the context of this Standard is primarily health care facilities, lifts can be used to transfer clients in clinics, residences, pools, educational facilities, etc.*

1 Scope

1.1

This Standard applies to lifts and accessories used to transfer persons, specifically by suspending from above or supporting from below, between beds, chairs, stretchers, bathtubs, or other similar resting places or standing. This Standard applies to fixed and mobile lifts, lifting arm- or rail-mounted, including lifts often referred to as ceiling-lifts, portable-lifts, floor-lifts, sit-to-stand lifts, bathtub-chair lifts, and their slings, components, and accessories, etc.

Note: *Annex A illustrates lift equipment and terminology. Annex B contains cross-references of terms from CAN/CSA-Z10535.1 and this Standard.*

1.2

This Standard specifies safety requirements for lifts for the transfer of persons and related practices, including

- a) installation;
- b) commissioning;

- c) inspection;
- d) maintenance;
- e) testing (performance-verification);
- f) care and use; and
- g) cleaning and infection control.

1.3

This Standard is intended for use by manufacturers, suppliers, installers, managers, administrators, trainers, caregivers, operators, maintenance/technical personnel, and their employers. The requirements of this Standard are formulated with regard to the needs of both the client being lifted and the caregiver using the lift.

1.4

This Standard does not apply to the design and manufacturing specifications of lifts, which are specified in CAN/CSA-Z10535.1.

1.5

This Standard does not apply to

- a) devices that transport persons between two levels (floors) of a building (e.g., elevators, escalators, stair lifts, etc.);
- b) beds, stretchers, powered lift chairs, wheeled chairs, or other devices used to transport short distances between locations;
- c) air-supported transfer mattresses and mats; and
- d) non-powered or inactive lifting aids that statically assist or support a client.

Note: *A non-powered lifting aid requires clients to actively support themselves to some extent.*

1.6

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the Standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the Standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

1.7

The values given in SI units are the units of record for the purposes of this Standard. The values given in parenthesis are for information and comparison only.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below.

CSA Group

CAN/CSA-C22.2 No. 60601-1:14

Medical electrical equipment — Part 1: General requirements for basic safety and essential performance

Z195-14

Protective footwear

Z314.8-14

Decontamination of reusable medical devices

Z317.13-17

Infection control during construction, renovation and maintenance of health care facilities

Z460-13

Control of hazardous energy — Lockout and other methods

CAN/CSA-Z1000-14

Occupational health and safety management

CAN/CSA-Z1002-12 (R2017)

Occupational health and safety — Hazard identification and elimination and risk assessment and control

Z8000-11 (R2016)

Canadian health care facilities

CAN/CSA-Z10535.1:15

Hoists for the transfer of disabled persons — Requirements and test methods

ISO (International Organization for Standardization)

10535:2006

Hoists for the transfer of disabled persons — Requirements and test methods

3 Definitions

The following definitions shall apply in this Standard:

Accessories — components situated between the client and the lifting device that can be changed by the caregiver without the use of special tools, such as slings, some spreader bars, scales etc.

Belt — equipment that is incorporated into the lift to prevent a client or body part from slipping off or out.

Boom — see **Lifting arm**.

Carry bar — see **Spreader bar**.

Casters — see **Wheels**.

Caregiver — the qualified person operating the controls of and manipulating a lift system for a client. The caregiver might or might not be assisted by another person.

Ceiling hoist — see **Lift**.

Client — the person (typically a patient or resident) being transferred or supported by a lift.

Commissioning — an initial rigorous inspection, maintenance, and testing session typically performed promptly after purchasing, assembling, or installing the lift device, system, component, or accessory. Commissioning occurs prior to first use to ensure all requirements are met, and that all parts and documentation are accounted for, and to establish baseline functionality, performance, and safety.

Deflection — movement (in any of the directions listed below) of stationary structural components of a lift as a result of an applied load. Deflection is typically measured as an indicator of

- a) strength of a lifting system - total combined flexing, bending, give, mechanical play/slack of the entire lift system (not just a single component of the lift system); and
- b) change in slope of the rail network.

Horizontal deflection — lateral or longitudinal movement, or both, of a section of rail (or other structural components of a lift) in the horizontal plane.

Lateral deflection — horizontal movement of a section of rail (or other structural components of a lift) in a direction perpendicular to the long axis of a rail.

Vertical deflection — up or down movement of a section of rail (or other component of a lift) perpendicular to the horizontal plane. Vertical deflection is typically measured at a section of a rail. Vertical deflection includes total resultant movement (bending, flexing, stretching, play, etc.) of all structural components of a lift system (rail, mounts, rods, unistruts, ceiling joists, roof trusses, etc.). Vertical deflection is not an isolated measure of the bending or sag of the unsupported sections a rail due to an applied load.

Documented mobility status — an assessment of the method and equipment required for safely transferring a client as approved by a qualified health care professional.

Engineer — a person in the engineering profession with specific expertise who is licensed to practise in an applicable jurisdiction.

Facility — the organization responsible for and the building where the lift is operated.

Note: *Lifts can also be installed in a location such as a residence, teaching establishment, or private facility (hotel etc.).*

Hanger bar — see **Spreader bar**.

Health care facility (HCF) — a set of physical infrastructure elements supporting the delivery of specific health-related services.

Notes:

- 1) *An HCF can comprise a single room or area, an entire building, or a group of buildings. An HCF could also be a non-stationary unit such as a mobile facility, ambulance, or trailer where health care services are provided. In addition, different classes of HCF can reside in the same building or structure.*
- 2) *This Standard recognizes that provincial/territorial governments define HCFs in different ways for regulatory and capital planning purposes. The definition in this Standard is meant to ensure a consistent approach to health care facility requirements in this Standard and the other CSA standards for health care facilities.*

Hoist — see **Lift**.