
**Assistive products for tissue integrity
when lying down —**

**Part 10:
Guidance to cleaning, disinfecting and
care of polyurethane APTI covers**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 173, *Assistive products*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 293, *Assistive products and accessibility*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 20342 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Most healthcare assistive products for tissue integrity when lying down (APTIs) include a polyurethane-coated protective, waterproof, moisture vapour permeable cover, which is designed to protect the internal components of the APTI from damage, while still allowing the tissue integrity functions of the APTI to be effective.

As a class of materials, polyurethanes are very varied - from hard plastics used in ski-boots and car suspension components to stretchy elastomers used in wound dressings and APTI covers. Even the stretchy elastomers used for the APTI cores and covers incorporate a wide variety of polymer chemistry offering different characteristics.

Polyurethane APTI covers are 'soft surfaces', and even the most chemically resistant types are not immune to the aggressive ingredients used in some disinfectants used to treat 'hard surfaces'.

Furthermore, polyurethane APTI covers are more vulnerable to abrasion when wet.

These guidelines for handling APTI polyurethane covers are intended to lead to less damage to the covers and a longer life for the APTI. Other aspects relating to the materials, effectiveness, and durability of APTIs are covered in other parts of the ISO 20342 series.

This document is derived from S3I/NPIAP (2020)^[1] and BHTA guidance on the care, cleaning and inspection of healthcare mattresses^[2].

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Assistive products for tissue integrity when lying down —

Part 10:

Guidance to cleaning, disinfecting and care of polyurethane APTI covers

1 Scope

This document provides guidance around best practices for cleaning, disinfecting and caring for the polyurethane covers for assistive products for tissue integrity when lying down (APTIs) where the covers are designed to protect the internal components of the APTI from damage. Adherence to this guidance will extend the operational life of the APTI and its tissue integrity performance.

This document gives guidance for cleaning and disinfecting by manual means only.

This document is not intended to give guidance related to the efficacy of the cleaning and disinfection procedures.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 20342-1, *Assistive products for tissue integrity when lying down — Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20342-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 assistive product for tissue integrity APTI

surface intended to protect body tissue, designed to interface with the body when lying down (or in adjusted position)

[SOURCE: ISO 20342-1, 3.5]

4 Cleaning, disinfection and care

4.1 General

To maintain the APTI cover's performance and integrity, the manufacturer's instructions on the cleaning, disinfecting and care of their product should take precedence over general instructions from cleaning/disinfectant suppliers.

NOTE 1 Failure to follow the instructions can compromise the performance of the APTI, can increase the risk of patient harm and can void product warranty.

NOTE 2 Prevention of serious disease transmission can require more aggressive interventions.

4.2 Cleaning

4.2.1 General

Cleaning and disinfecting are separate processes. Cleaning shall precede disinfection. Between patients: clean, disinfect, and check the product for proper functioning.

4.2.2 Cleaning process

- a) Physically remove blood and gross soiling using non-abrasive means.
- b) Wipe all exposed surfaces with pH neutral detergent (avoid using pH <6 and >8).
- c) Rinse thoroughly with clean, warm (typically from 18 °C to 40 °C) water and a clean cloth or sponge.

At all steps in the process, in the absence of manufacturer's instructions on cleaners and sponges or cloths, non-abrasive hospital-approved cleaners and sponges/cloths shall be used.

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4.3 Disinfection

4.3.1 Disinfection process

- a) Wipe all exposed surfaces with disinfectant and leave for the recommended time.
- b) Wipe the surfaces dry.
- c) Rinse thoroughly with clean warm water (typically from 18 °C to 40 °C) using a clean cloth or sponge.
- d) Ensure the APTI is dry before linens are added.

4.3.2 Further considerations

Frequent applications of some disinfectants combined with a failure to rinse and dry increase the exposure to the active ingredients, which will accelerate the degradation of the APTI cover and thereby risk allowing fluids to pass through the cover. Compromised covers also increase cross-infection risk.

If some disinfectants are left to dry without rinsing, the chemical residue can be reactivated on contact with other fluids or the next cleaning cycle. Partially dissolved residue can be abrasive, leading to APTI cover damage.

NOTE Sensitive patients can develop dermatitis secondary to this residue reactivation.

4.4 Care of APTI covers

4.4.1 Storage

When the covers remain on the APTI during storage, the APTI should be:

- a) stored in an air-permeable protective cover, ideally in a normal indoor temperature and humidity environment;
- b) stored flat and not on their edge and without other objects such as side rails or bed ends on top;
- c) handled by two people to avoid dragging or pulling by its cover;
- d) transported on a bed or cart suitable for the purpose.

4.4.2 Before use

Inspect the APTI cover for damage, such as pinholes, tears, or cracks in the material, and replace it if necessary.

Ensure that the APTI is suitable for the intended patient in terms of:

- a) risk assessment;
- b) pressure redistribution;
- c) safe working load of the mattress;
- d) proper fit on the intended frame (to reduce the risk of entrapment).

4.4.3 Damage prevention

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- a) Take care not to puncture the cover as this will permit fluid ingress to contaminate the internal components.
- b) Do not place sharp objects, such as scissors, needles, syringes, scalpels, or other sharp objects, on the APTI cover.
- c) Remove or cover hand jewellery, including rings with sharp edges, to prevent damage to the APTI cover.
- d) Take extra care when using medical equipment, such as monitors, IV poles, side rails, transfer boards, X-ray cassettes, etc., to prevent damage to the APTI cover.
- e) Do not store medical equipment, IV poles, IV pumps, negative pressure wound therapy devices, bed parts, etc., on top of the support surface due to the risk of tearing the APTI cover.
- f) When using slings, slide sheets and transfer devices, take care to ensure that buckles do not scratch or snag the APTI cover during use.
- g) Periodically, if possible, open and lift the cover to inspect the inside of the cover and the internal components for breaches and/or contamination.
- h) Damaged covers and internal components should be replaced according to the manufacturer's guidelines.

Bibliography

- [1] S3I/NPIAP (2020), Best Practices for Cleansing, Disinfecting, and Care of Polyurethane Support Surface Covers. https://cdn.ymaws.com/npiap.com/resource/resmgr/s3i/S3i_NPIAP_Cleansing_Disinfec.pdf
- [2] Protect, Rinse and Dry: BHTA guidance on the care, cleaning and inspection of healthcare mattresses. <https://www.bhta.com/wp-content/uploads/2019/10/BHTA-3.pdf>

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