

Prosthetics and orthotics —

Part 3: Method of describing lower limb amputation stumps

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Association of Prosthetists and Orthotists
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British Limbless Ex-Service Men's Association
British Medical Association
British Orthopaedic Association
British Surgical Trades Association
Chartered Society of Physiotherapy
College of Occupational Therapists
Department of Health
Disablement Services Authority
International Society for Prosthetics and Orthotics (United Kingdom National Society)
Limbless Association
National Centre for Training and Education in Prosthetics and Orthotics
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SATRA Footwear Technology Centre
Scottish Home and Health Department
Scottish Office
Society of Chiropodists and Pediatrists
Surgical Appliance Manufacturers' Association

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National foreword

This Part of BS 7313 has been prepared under the direction of the Health Care Standards Policy Committee. It is identical with ISO 8548-2:1993 *Prosthetics and orthotics — Limb deficiencies — Part 2: Method of describing lower limb amputation stumps*, published by the International Organization for Standardization (ISO).

Many different systems have been developed to classify amputation stumps, but none has achieved universal acceptance. The reasons for this are many. The members of the clinic teams in different countries, working with different patients and different technical possibilities, develop their own systems to meet their individual needs. Hence there is a need for an international system to be developed in order to compare one publication with another, one patient against another. The different care groups who will appreciate and use a standardized system of describing stumps include surgeons of different disciplines, other doctors (especially those concerned with rehabilitation), physical and occupational therapists and prosthetists. Such a system is also of value to epidemiologists and government health officials.

The system proposed has to meet the needs of the different members of the clinic team and to enable the description of the stump to be recorded in a way that can be easily incorporated in reports. This Part of BS 7313 deliberately aims at defining the minimum information to be described. It should be feasible for this information to be included in forms designed by the individual institution; the information should also be capable of ready adaptation for computer analysis.

Other Parts and Sections of BS 7313 include:

- *Part 1: Terminology;*
- *Section 1.1: Glossary of general terms relating to external limb prostheses and external orthoses;*
- *Section 1.2: Glossary of terms relating to external limb prostheses and wearers of external limb prostheses;*
- *Section 1.3: Glossary of terms relating to external orthoses;*
- *Part 2: Method of describing limb deficiencies present at birth;*
- *Part 4: Method of describing upper limb amputation stumps.*

Cross-references

International Standard	Corresponding British Standard
	BS 7313 <i>Prosthetics and orthotics</i>
ISO 8548-1:1989	Part 2:1990 <i>Method of describing limb deficiencies present at birth</i> (Identical)
ISO 8549-1:1989	Section 1.1:1990 <i>Glossary of general terms relating to external limb prostheses and external orthoses</i> (Identical)
ISO 8549-2:1989	Section 1.2:1990 <i>Glossary of terms relating to external limb prostheses and wearers of external limb prostheses</i> (Identical)

Additional information. Note that the expressions “joint power” and “muscle power” are used in 4.3. These are terms commonly used in medical texts. A more scientifically correct description would be the strength and/or endurance of the muscles acting at the joint.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 14, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This part of ISO 8548 establishes a method of describing lower limb amputation stumps and for recording the descriptive information.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8548. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8548 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 8548-1:1989, *Prosthetics and orthotics — Limb deficiencies — Part 1: Method of describing limb deficiencies present at birth*.

ISO 8549-1:1989, *Prosthetics and orthotics — Vocabulary — Part 1: General terms for external limb prostheses and external orthoses*.

ISO 8549-2:1989, *Prosthetics and orthotics — Vocabulary — Part 2: Terms relating to external limb prostheses and wearers of these prostheses*.

3 Definitions

For the purposes of this part of ISO 8548, the definitions given in ISO 8548-1, ISO 8549-1 and ISO 8549-2 apply.

4 Measurement of lower limb amputation stumps

4.1 Reference levels and reference planes

Identify the reference levels and planes relevant to the particular level of amputation as described in 4.1.1 and 4.1.2.

4.1.1 Reference levels

4.1.1.1 Crotch level — the most proximal level at which a circumferential measurement, perpendicular to the centreline of the thigh, can be obtained.

4.1.1.2 Medial joint line — the level of the medial tibial plateau, unless there is a fixed deformity of the knee, in which case this level is the highest at which a circumferential measurement perpendicular to the centreline of the stump can be obtained.

4.1.1.3 Stump end level — the level of the stump end.

4.1.1.4 Ground level — the level on which the patient is standing barefoot.

4.1.1.5 “Fall-away” level — in trans-femoral and trans-tibial stumps only, the level on the medial side of the stump at which the slope of the stump shape changes as it curves in towards the end.

4.1.1.6 Minimum circumferential level — in knee and ankle disarticulation stumps only, the level of the minimum circumferential measurement.

4.1.1.7 Femoral condylar level — in knee disarticulation stumps only.

4.1.1.8 Maximum distal circumferential level — in ankle disarticulation stumps only, the level of the maximum distal circumferential measurement.

4.1.2 Reference planes (used for partial foot amputations only)

4.1.2.1 Heel plane — the plane at the posterior aspect of the heel parallel with the centreline of the leg.

4.1.2.2 Anterior tibial plane — the plane at the anterior aspect of the tibia at the ankle joint line parallel with the centreline of the leg.

4.1.2.3 Stump end plane — the plane at the stump end parallel with the centreline of the leg.

4.1.2.4 Toe plane — the plane at the tips of the toes of the contralateral leg parallel with the centreline of the leg.

4.2 Measurements

4.2.1 Length measurements

Measure and record the length measurements as specified in the appropriate table (see Table 1 to Table 7) for the particular level of amputation.

4.2.2 Circumferential measurements

Measure and record the circumferential measurements as specified in the appropriate table (see Table 1 to Table 7) for the particular level of amputation.

4.3 Assessment of joint function

4.3.1 General

The aspects of joint function which need to be recorded include abnormalities of range of joint movement, significant reduction of muscle power and any loss of joint stability.

4.3.2 Measurement of abnormal range of joint movement

Record any abnormalities of the range of joint movement using the method of measurement of joint motion as adopted by the American Academy of Orthopaedic Surgeons in 1964 in which all motions of the joint are measured from defined zero starting positions.