AS 1544.1—2003
Reconfirmed 2017

Australian Standard™

Methods for impact tests on metals

Part 1: Izod

Standards Australia

This Australian Standard was prepared by Committee MT-006, Mechanical Testing of Metals. It was approved on behalf of the Council of Standards Australia on 15 August 2003 and published on 19 September 2003.

The following are represented on Committee MT-006:

Australasian Railway Association

Australasian Aluminium Council

Australian Industry Group

Bureau of Steel Manufacturers of Australia

CSIRO Measurement Laboratory

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This Standard was issued in draft form for comment as DR 03161.

STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 1544.1—2003
Methods for impact tests on metals
Part 1: Izod

RECONFIRMATION NOTICE

Technical Committee MT-009 has reviewed the content of this publication and, in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 20 March 2017.

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Galvanizing Association of New Zealand
New Zealand Metal Roofing Manufacturers

NOTES

Australian Standard™

Methods for impact tests on metals

Part 1: Izod

Originated as AS B188.1—1963.
Previous edition AS 1544.1—1977.
Third edition 2003.

Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 5041 9

PREFACE

This Standard was prepared by the Standards Australia Committee MT-006, Mechanical Testing of Metals, to supersede AS 1544.1—1977, *Methods for impact tests on metals,* Part 1: *Izod.*

The objective of this Standard is to specify a method for testing toughness in metals by impact testing.

This Standard is Part 1 of a series of Standards on the methods for impact testing of metals. The series comprises the following methods:

AS		
1544	Method for impact tests on metals	
1544.1	Part 1:	Izod
1544.2	Part 2:	Charpy V-notch
1544.3	Part 3:	Charpy U-notch and keyhole notch
1544.4	Part 4:	Calibration of the testing machine
1544.5	Part 5:	Assessment of fracture surface appearance of steel

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

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FOREWORD

This Standard includes details of the method of test together with essential dimensional requirements for the testing machine and dimensional requirements for the test pieces.

The satisfactory operation of a pendulum impact testing machine is dependent on factors which include the design, the foundation, the accuracy of construction of machine components, the degree of wear, and the friction-free movement of the pendulum.

During a test, all the absorbed energy indicated by the machine is attributed to the fracturing of the test piece. However, it is known that there are other mechanisms by which small amounts of energy may be absorbed. It is suspected that items such as test piece supports, the machine foundation and frame work, the pendulum and striker, ejection and drag of the broken test piece cause some degree of energy absorption. This energy is not determined, as suitable methods and apparatus have not yet been developed for measuring energy absorption by these individual items.

STANDARDS AUSTRALIA

Australian Standard
Methods for impact tests on metals

Part 1: Izod

1 SCOPE

This Standard specifies requirements for performing the Izod impact test on metals. It also includes requirements for the installation of the testing machine, its initial and periodic calibration, and recommendations for its maintenance by the user.

NOTE: The test piece may have a square, a rectangular or a circular section. Where a requirement involves reference to a face of a test piece, it applies directly to square or rectangular test pieces and by implication, to the corresponding portion of the surface of a circular test piece.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1544	Methods for impact tests on metals	
1544.2	Part 2:	Charpy V-notch
1544.3	Part 3:	Charpy U-notch and keyhole notch
1544.4	Part 4:	Calibration of the testing machine
1544.5	Part 5:	Assessment of fracture surface appearance of steel

3 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

3.1 Centre of percussion

That point in a pendulum at which a blow, delivered in a tangential direction, will cause no reaction at the centre of rotation.

3.2 Initial potential energy

The energy theoretically available in a pendulum-type impact testing machine when the pendulum is returned from its striking position to its initial release position.

3.3 Length of pendulum

The distance from the axis of rotation of the pendulum to the impact point of the pendulum, on a standard test piece.

3.4 Point of impact

The midpoint of the line of contact between the striking edge and the test piece.

3.5 Sample

A portion of material or a group of items selected from a batch or consignment by a sampling procedure.

3.6 Secondary standard test pieces

Charpy test pieces having an assigned impact value obtained from tests performed upon a verified testing machine.