

AS/NZS 4502.3:1997
ISO 9150:1988

Australian/New Zealand Standard[®]

**Methods for evaluating clothing for
protection against heat and fire**

**Part 3: Evaluation of the behaviour
of materials and material
assemblies when exposed to
small splashes of molten metal**

[ISO title: Protective clothing—Determination of behaviour of materials
on impact of small splashes of molten metal]



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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF/4, Occupational Protective Clothing. It was approved on behalf of the Council of Standards Australia on 15 August 1997 and on behalf of the Council of Standards New Zealand on 4 August 1997. It was published on 5 November 1997.

The following interests are represented on Committee SF/4:

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 Australian Chamber of Commerce and Industry
 Australasian Fire Authorities Council
 Australian Wool Processors Council
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF/4 on Occupational Protective Clothing.

The objective of this Standard is to provide means for assessing the resistance of materials used in the manufacture of protective clothing to small splashes of molten metal.

This Standard is identical with and has been reproduced from the ISO 9150:1988 *Protective clothing—Determination of behaviour of materials on impact of small splashes of molten metal*.

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References to International Standards		Australian or Joint Australian/New Zealand Standard
ISO		AS/NZS
139	Standard atmospheres for conditioning and testing	—
NF		
C 42-330	Electrical measuring instruments—Platinum resistance temperature sensors—Reference table and tolerance	—

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AUSTRALIAN/NEW ZEALAND STANDARD

Methods for evaluating clothing for protection against heat and fire**Part 3:****Evaluation of the behaviour of materials and material assemblies when exposed to small splashes of molten metal****0 Introduction**

Clothing designed to protect the wearer against small splashes of molten metal is often submitted to high thermal loads. This International Standard forms a part of a series concerned with clothing designed to protect against heat and fire.

The diversity of the conditions in which splashes of molten metal may come into contact with materials used for protective clothing makes it difficult to evaluate the hazards that may arise under conditions of use.

Experience has shown that the most important protective function is resistance to heat transfer, through the protective clothing, from molten metal drops which impinge on but bounce off the clothing surface.

The test method described in this International Standard allows this heat transfer to be assessed.

1 Scope and field of application

This International Standard specifies a test method designed to evaluate the behaviour of materials used for protective clothing when such materials are struck by small liquid metal splashes, especially when molten steel particles are projected against the material.

It applies to any pliable material, or assembly of materials, designed to protect workers against small splashes of molten metal.

The results obtained by this method enable the behaviour of different materials which have undergone this test under standardized conditions to be compared. They do not permit conclusions with respect to contacts with large splashes of molten cast iron or other molten metal to be drawn, neither will they allow the behaviour of complete garments under industrial conditions to be predicted.

2 References

ISO 139, *Standard atmospheres for conditioning and testing*.

NF C 42-330, *Electrical measuring instruments — Platinum resistance temperature sensors — Reference table and tolerance*.

3 Definition and symbols

For the purposes of this International Standard, the following definition and symbols apply.

3.1 drop : A quantity of molten metal produced from the fusion of a metal rod by a welding torch, falling under the simultaneous action of its own weight and of the air movement produced by the welding torch.

3.2 Symbols

f	Frequency of drops, expressed as number of drops per minute.
m	Mass of a drop, expressed in grams.
ϱ_l	Linear density of the steel rods, expressed in grams per centimetre.
X	Number of 0,5 g drops, produced at the frequency of 20 per minute, required to raise the temperature of the sensor behind the test specimen by 40 K, the sensor temperature being within ± 2 K of ambient temperature at the beginning of the test.