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AMENDMENT 1
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Personal protective equipment — Footwear protecting against risks in foundries and welding —

Part 2: Requirements and test methods for protection against risks in welding and allied processes

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Équipement de protection individuelle — Chaussures de protection contre les risques dans les fonderies et lors d'opérations de soudage —

Partie 2: Exigences et méthodes d'essai pour la protection contre les risques lors d'opérations de soudage et techniques connexes

AMENDEMENT 1

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Foreword

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This document was prepared by Technical Committee ISO/TC 94, *Personal safety — Personal protective equipment*, Subcommittee SC 3, *Footwear protection*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 161, *Foot and leg protectors*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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Clause 8

Add the following note at the end of list item g):

"NOTE For more information on protection against heat and flame, see Annex A."

New Annex A

Insert the following new Annex A.

Annex A
(informative)

Heat protection

A.1 General

PPE designed to protect all or a part of the body against the effects of heat and/or fire should possess thermal resistance and mechanical strength appropriate to the foreseeable conditions of use.

This annex provides the reader with information on heat and flame resistance in relation to footwear for welders and allied processes. When specifying and selecting footwear, heat and flame resistance should be given a high priority.

In this context heat and flame resistance are specific terms referring to the real work condition for welding or allied processes to prevent such risks like of spontaneous ignition and heat flux in contact with hot surfaces or molten metal splashes.

Even though the number of accidents at welding or allied processes caused by contact with hot surfaces or molten metal splashes is negligible, the personal costs of these accidents, the resultant injuries may bring about great financial costs and have life-threatening consequences for humans.

Footwear for welders and allied processes alone cannot protect against all risks as found in this special work place. It should be worn always in conjunction with heat and flame-resistant PPE (clothing, gloves, hoods, aprons, gaiters) according to the risk assessment of the work place.

Welder boots do not provide protection against defective equipment or incorrect use of equipment. They are not suitable in cases where safety footwear should be worn in accordance with EN 50321.

It is important that heat- and flame-resistant footwear for welding or allied processes is in use at all times when there is a potential risk of heat or flame or metal splashes; comfortable and specific designed footwear will encourage this.

A.2 Explanation of heat and flame-resistant properties

A.2.1 General

The test conditions and performance requirements of this document are considered basic requirements for footwear for welding or allied processes. This footwear is used for short-term in environments with high temperatures or molten metal splashes. Often it is found that this footwear in combination with other suitable PPE can achieve a higher protection or longer remain time in hazardous environments.

A.2.2 Resistance to effects of molten metal splashes

During welding or allied processes many small metal splashes can occur, which may be very hot. If they get into the footwear, foot burns can occur. A footwear with at least ankle height upper and either trousers falling over them and made of flame-retardant material, aprons or at least gaiters should be worn at welding.

The footwear upper alone is resistant against at least 25 small molten metal splashes, before the temperature on the inside of the footwear increase by 40 °C. This property is marked with the symbol "WG".

A.2.3 Resistance of upper to hot environment

Safety footwear upper for welders is flame resistant. The upper materials do not burn or glow longer than 2 s after a contact time of 10 s with a specified test flame.

A.2.4 Optional heat resistance properties

Depending on the real work situation and its existing risk for the user several optional properties may be added to minimize or prevent injuries of the humans. This may be:

Heat insulation (symbol HI):	The heat resistance of this footwear allows the wearer to stand 30 min on a floor at 150 °C before reaching a temperature increase of 22 °C on the inside of the footwear. The outsole of this footwear resist damage for 30 min on a floor of 150 °C.
Heat resistant outsole (HRO):	The outsole material does not collapse after a contact time of 1 min at 300 °C.

A.3 Additional protection

In addition to high temperatures or molten metal splashes, welding or allied processes also have mechanical hazards that require additional protection.

These may be among others e.g.:

— Perforation resistance (Symbol P);

— Energy absorption of seat region (Symbol E);

— Metatarsal protection (Symbol M);

— Cut resistance (Symbol CR).

Bibliography

Add the following:

"[6] EN 50321, *Live working — Footwear for electrical protection*"

ICS 13.340.50

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