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Protective clothing for users of hand-held chain-saws - Part 4: Test methods and performance requirements for protective gloves (ISO/DIS 11393-4:2016)

Schutzkleidung für Benutzer von handgeführten Kettensägen - Teil 4: Prüfverfahren und Leistungsanforderungen für Schutzhandschuhe (ISO/DIS 11393-4:2016)

Vêtements de protection pour utilisateurs de scies à chaîne tenues à la main - Partie 4: Méthodes d'essai et exigences pour les gants de protection (ISO/DIS 11393-4:2016)

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Protective clothing for users of hand-held chain-saws —

Part 4: Test methods and performance requirements for protective gloves

*Vêtements de protection pour utilisateurs de scies à chaîne tenues à la main —
Partie 4: Méthodes d'essai et exigences pour les gants de protection*

ICS: 13.340.40

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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.

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ISO 11393-4 was prepared by Technical Committee ISO/TC 94, *Personal safety - Protective clothing and equipment*, Subcommittee SC 13, *Protective clothing*.

This second/third/... edition cancels and replaces the first/second/... edition (ISO 11393-4:2003), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

ISO 11393 consists of the following parts, under the general title *Protective clothing for users of hand-held chain-saws*:

- *Part 1: Test rig driven by a flywheel for testing resistance to cutting by a chain-saw*
- *Part 2: Test methods and performance requirements for leg protectors*
- *Part 3: Test methods for footwear*
- *Part 4: Test methods and performance requirements for protective gloves*
- *Part 5: Test methods and performance requirements for protective gaiters*
- *Part 6: Test methods and performance requirements for upper body protectors*

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Introduction

This part of ISO 11393 forms part of a series concerned with personal protective equipment designed to reduce the risks arising from the use of hand-held chain-saws primarily constructed for cutting wood. In some areas of work with chain-saws, one third of injuries occur to the hands. However, with different working practices few hand injuries occur. Accidents occur due to a number of complex reasons, but a common factor is incorrect use of the chain-saw. The importance of correct training and proper use of a chain-saw in preventing accidents cannot be underestimated.

In some countries, chain-saw users adopt working practices which together with training makes the use of chain-saw protective gloves unnecessary. These usually include the instruction to hold the chain-saw with both hands and to use the chain brake if it becomes necessary to stop cutting and clear away branches, etc.

All parts of the hand (palm, back and fingers) have been shown to be at risk when using a chain-saw. It is generally accepted for ergonomic and health and safety reasons that protecting the palm and the underside of the fingers is not practicable. Neither is it possible to adequately protect the back of the fingers unless a mitt is used. In this part of ISO 11393, specifications for the protective coverage and performance of the back of right hand and left hand glove are given.

For certain operations such as tree surgery from lifts or platforms chainsaw operators may be assisted by other workers who also require protection from the chainsaw and particularly to the hands. The gloves specified in this standard are suitable for these workers also.

Further information is provided in [Annex A](#) on risk analysis, glove ergonomics and selection.

No personal protective equipment can ensure a 100 % protection against cutting from a hand-held chain-saw. Nevertheless, experience has shown that it is possible to design personal protective equipment which offers a certain degree of protection. As far as is known, all chain-saws are designed for right-handed use and therefore all protective clothing designs and requirements have assumed right-handed use. Protection may not be adequate for left-handed use.

Different functional principles may be applied in order to give protection.

These include

- a) chain slipping: on contact, the chain does not cut the material,
- b) clogging: fibres are drawn by the chain into the drive sprocket and block chain movement,
- c) chain braking: fibres have a high resistance to cutting and absorb rotational energy, thereby reducing the chain speed.

Often more than one principle is applied in chain-saw protective clothing. It should be noted however that none has yet been shown to be fully effective in gloves.