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Personal fall-arrest systems —

Part 6:
System performance tests

Systèmes individuels d'arrêt de chute —

Partie 6: Essais de performance

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10333-6 was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 4, *Personal equipment for protection against falls*.

ISO 10333 consists of the following parts, under the general title *Personal fall-arrest systems*:

— *Part 1: Full-body harnesses*

— *Part 2: Lanyards and energy absorbers*

— *Part 3: Self-retracting lifelines*

— *Part 4: Vertical rails and vertical lifelines incorporating a sliding-type fall arrester*

— *Part 5: Connectors with self-closing and self-locking gates*

— *Part 6: System performance tests*

Introduction

Fall arrest equipment has been traditionally manufactured and tested as discrete components, which are then linked together in series to form a personal fall arrest system (PFAS) by the user, before commencing work.

This requires personnel in the supply and use chain who are capable of deciding which combinations of components can be linked together and which of those cannot.

Over the years, a continuous process of fall simulation and strength testing has revealed the dangers of linking incompatible components together, as a result of test failures, near misses and accidents. Examples have included: inadvertent release of connections, localized overloading or overstressing of components, and unexpected decrease in performance levels. These incidents occurred because insufficient analysis and attention had been paid to the particular combination of components in question, and because the interaction between the components in a fall was unknown.

Further investigation showed that the behaviour of a complete system under test could reveal shortcomings which could not be detected when the individual components of the same system were tested separately.

Consequently, in 1979 and 1985, other fall arrest standards with a lineage back to 1947 were revised to ensure that performance tests were conducted on complete systems. This allowed the complete PFAS to be tested in the actual mode of use, and an arrested fall to be simulated as closely as possible under test conditions.

This part of ISO 10333 fully supports the essential requirements of the range of current International Standards written to specify the components that are used to form personal fall arrest systems, i.e. the other parts of ISO 10333, and ISO 14567.

However, in recognizing the importance of complete personal fall arrest system performance tests, this part of ISO 10333 provides test methods for situations where it is both important and desirable to ascertain satisfactory system performance and interactive component compatibility. It goes beyond that required in the above component standards by specifying system performance testing applicable to complete personal fall arrest systems, as opposed to component testing, which only requires tests on individual components.

In cases where the hazard of falling from a height exists and where, for technical reasons or for work of very short duration, safe access cannot be otherwise provided, it is necessary to consider the use of PFAS. Such use should never be improvised and its adoption should be specifically provided for in the appropriate formal provisions for safety in the work place.

PFAS complying with this part of ISO 10333 ought also to satisfy ergonomic requirements and only be used if the work allows means of connection to a suitable anchor device of demonstrated strength and if it can be implemented without compromising the safety of the user. Personnel need to be trained and instructed in the safe use of the equipment and be observant of such training and instruction.

This part of ISO 10333 is based on current knowledge and practice concerning the use of PFAS that incorporate a full-body harness as specified in ISO 10333-1.

This part of ISO 10333 presumes that the manufacturer of the PFAS, subsystems or components will, for the sake of consistency and traceability, operate a quality management system which will comply with national and regional regulations in force at the time. Guidance on the form this quality management system may take can be found in ISO 9000.