BS ISO 26910-1:2023

BSI Standards Publication

Springs — Shot peening

Part 1: General procedures

bsi.

National foreword

This British Standard is the UK implementation of ISO 26910-1:2023. It supersedes BS ISO 26910-1:2009+A1:2017, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee FME/9/3, Springs.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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INTERNATIONAL STANDARD

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Springs — Shot peening —

Part 1: General procedures

Ressorts — Grenaillage de précontrainte —

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 227, *Springs*.

This second edition cancels and replaces the first edition (ISO 26910-1:2009), of which it constitutes a minor revision. It also incorporates the Amendment ISO 26910-1:2009/Amd. 1:2017.

The changes compared to the previous edition are as follows:

— the Normative reference has been updated to ISO 80000-1;

— "or less" has been deleted from the sentence of 3.5 saturation time;

— "and size" has been added to the sentence of a) of 4.3 Conditions of shot peening;

— "Type A" has been added to the last sentence of 6.2 Selection of the class of Almen strip;

— the statuses of Annexes A and B have been changed to informative.

A list of all parts in the ISO 26910 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Shot peening is widely applied to various mechanical and structural elements in a wide range of industrial fields, because of its effective improvement in the strength and life properties at moderate costs. It is also used in some cases for other purposes such as to form thin sheet products, to increase wear resistance, or to assist lubrication effect, deburring and so on. It is, however, especially important for spring industries, as it is indispensable for the achievement of the required fatigue strength and to decrease stress corrosion cracking.

The important effects of shot peening are known to be due mainly to the compressive residual stresses introduced near the shot peened surface, and helped sometimes by the work hardening of the surface layers. Various processing methods have been developed and practised together with diverse materials for shot peening.

This document serves to establish smooth technical communication between the spring manufacturers and industry related to shot peening, including peening machine manufacturers, peening media suppliers and shot peening processors, as well as users of those springs in various industrial sectors.

INTERNATIONAL STANDARD **ISO 26910-1:2023**

Springs — Shot peening —

Part 1: General procedures

1 Scope

This document specifies general requirements for the shot peening process applied to springs in order to improve their resistance to fatigue and stress corrosion cracking, mainly by introducing compressive residual stresses into their surface layers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 80000-1, *Quantities and units — Part 1: General*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
shot peening
cold work applied to the surface of a material or a mechanical element, to improve its fatigue strength and stress corrosion cracking resistance, by a stream of near spherical hard particles at a high velocity that generates compressive residual stresses and work hardening in the surface layer

3.2
peening media
generally spherical or near-spherical hard particles, made of metals, glasses or ceramics, used for shot peening

Note 1 to entry: Individual particles can be called shots.

3.3
Almen strip
rectangular metal strip used for evaluating the peening intensity by the magnitude of its bending deformation after shot peening on one surface

3.4
Almen arc height
h
height of the arched deformation of an Almen strip measured on the basis of a fixed span

Note 1 to entry: It is expressed in millimetres.