
Light conveyor belts — Determination of the relaxed elastic modulus

*Courroies transporteuses légères — Détermination du module
d'élasticité relaxé*

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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.

ISO 21181 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*, Subcommittee SC 3, *Conveyor belts*.

This International Standard is based on EN 1723:1999, prepared by CEN/TC 188.

This second edition cancels and replaces the first edition (ISO 21181:2005), of which it constitutes a minor revision.

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Introduction

Many applications for light conveyor belts require that the belt is initially tensioned and there is no subsequent change in belt length by adjustment of any rollers. In such cases, the tensioning force in the belt changes throughout the life of the belt because of two effects: permanent stretch and relaxation of the belt, both of which change its real elastic modulus. It is vital to have a means of establishing the way in which the tensioning forces change; and this test applies a cyclic stretching between two defined states of elongation over a large number of cycles. It has been found experimentally that the tensioning force drops in an exponential way. It is possible to measure the tensioning force and then to calculate what is defined in this International Standard as the “relaxed elastic modulus”. It is important to note that this is not a true elastic modulus, because it includes an element of permanent stretch; but, except in cases where the permanent stretch is relatively large, it is a measure of great practical value in determining final tensioning forces. This International Standard is designed to meet the requirements for such applications.

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