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Light conveyor belts — Determination of the relaxed elastic modulus

Courroies transporteuses légères — Détermination du module d'élasticité relaxé

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This third edition cancels and replaces the second edition (ISO 21181:2013), which has been technically revised.

The main changes are as follows:

— addition of test room condition in 8.1.

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For many applications for light conveyor belts, the belt must be initially tensioned and there must not be a 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;

— relaxation of the belt.

Both effects change the real elastic modulus of the belt. There must be a means of establishing the way in which the tensioning forces change; and this test method applies a cyclic stretching between two specified 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 specified in this document as the “relaxed elastic modulus”. However, 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 document is designed to meet the requirements for such applications.