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Focus on IFA's work

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Anti-vibration gloves

Problem

At the beginning of the 1980s, so-called anti-vibration protection gloves were available on the market which the manufacturers tested under unrealistic conditions and promised would provide protection against unhealthy hand-arm vibrations. Other studies nearly always found there to be only negligible damping effects or even no vibration reduction at all.

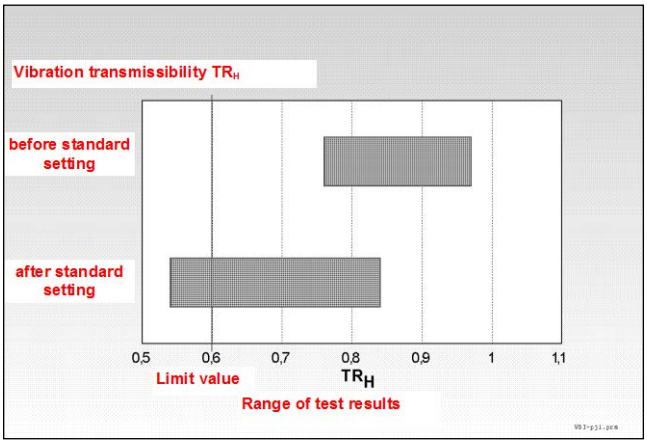
Activities

A laboratory test procedure was developed that more closely emulated real use situations and that provides a uniform and reproducible basis for evaluating the vibration-insulating effects of such gloves.

The procedure is designed on the basis of the vibration aspects of commonly used devices and the most common pressures applied for gripping and holding such tools. The standard value for defining an effective protective glove is a vibration-transmission factor of $TR_H \leq 0.6$ for the high-frequency vibration spectrum and of $TR_M \leq 1$ for the medium-frequency vibration spectrum. The procedure was included in European and international standards.

Results and Application

Comparison of the test results before and after the beginning of the standards-setting process (see illustration) clearly shows the positive influence of the standardisation on the product design work.



Insulating effects of anti-vibration gloves

Before the standardisation process began, the range of the damping effects lay between 0.75 and almost 1 (1 meaning no vibration damping!). The manufacturers made changes to their products during and after the standardisation, which resulted in improved anti-vibration properties (of up to 0.54).

This observation applies only to the frequency ranges above 150Hz. For the frequencies below this range, IFA has so far not found anti-vibration gloves with any vibration-reducing effects for use on machines.

It is not yet possible to make any definitive statements as to the real reduction in the health hazards associated with using anti-vibration gloves in practice.

Area of Application

Construction, metal-working and timber industries

Additional Information

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Expert Assistance

IFA, Division 4: Ergonomics – Physical environmental factors

Literature Requests

IFA, Central Division

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