

## Recommendations Hand-arm-vibration in grinding processes

This leaflet provides recommendations on the use of **hand-held and hand-guided grinding machines**. It serves as support for estimating exposure to hand-arm vibrations.

Vibrations are mechanical oscillations which upon constant transmission to the hand-arm system affect human health entailing circulatory, bone and joint, neurological or muscular disorders.

### **Safety precautions against possible risks of hand-arm vibration**

- Use high-quality tools with low vibration (e. g. with active vibration-reducing technology) and, where necessary, wear suitable personal protective equipment (e.g vibration-reducing gloves).
- Use good quality abrasive products. Abrasive products of good quality are marked with the respective safety standard:
  - “EN 12413“ for bonded abrasive products,
  - “EN 13236“ for superabrasives or
  - “EN 13743“ for coated abrasives.

An unsuitable or inferior product can produce excessive vibration.

- Maintain mounting flanges and back-up pads in good condition and replace if worn or distorted.
- Maintain all equipment in good condition. Stop machine if excessive vibration occurs and have it checked.
- Do not exert excessive pressure on the abrasive product or workpiece.
- Avoid continuous use of the abrasive product.
- Keep hands warm and exercise hands and fingers regularly. The effects of vibration are more pronounced in cold conditions.
- Pay attention to physical symptoms. If after 10 minutes continuous use of the abrasive product, tingling, pins and needles or numbness is experienced in the hand/arm region, stop the machine, inform the employer and safety representative respectively and possibly seek medical advice.
- Check the vibration exposure values provided by the machine manufacturer in the manual. On the basis of the vibration level (in  $m/s^2$ ), the admissible maximum working hours with the machine can be determined using a vibration calculator. Upon reaching a value of 2,5  $m/s^2$  (exposure action value), instruction by the employer is required, upon exposure above the action value, general training on occupational health by the employer must be provided. Upon exposure at or above the 5  $m/s^2$  (exposure limit value), regular preventive occupational health surveillance is mandatory.