

Focus on BIA's work

Berufsgenossenschaftliches Institut für Arbeitsschutz

No.: 0222 Low-noise circular-saw blades

○ Problem

Employees at workplaces in wood, metal, plastics and stoneworking businesses are frequently exposed to high noise emissions from circular saws. The saw blades are generally responsible for the high sound pressure level generated. The sound pressure level can therefore be reduced substantially in the majority of cases by the use of low-noise circular-saw blades. Although such saw blades have been available for many years, they have on the whole seldom been employed in practice. In order to increase their acceptance, the potential noise reductions are to be studied in detail and published.



Illustration
Measurement of
noise emissions
during sawing in the
semi-soundproof
chamber

○ Activities

A project is conducted in which the noise emitted by various types of low-noise circular-saw blades during the cutting of various materials is compared to that emitted by conventional saw blades. Different blade sizes are considered, as is for example the feed speed and the free projection of the saw blade. In addition to the laboratory measurements, comparative measurements are also conducted in the workshops of appropriate production shops.

○ **Results and Application**

Results obtained to date from these tests reveal reductions in the noise level, in some cases considerable, when low-noise circular saw blades are used:

- up to approx. 6 dB(A) with the saw in idle mode;
- up to approx. 8 dB(A) during sawing of wooden panels;
- up to approx. 12 dB(A) during sawing of squared hardwood timber;
- up to approx. 6 dB(A) during sawing of plastic extrusions.

Upon completion of the project, users are to be provided with detailed information, in the form of a noise control work sheet (*Lärmschutzarbeitsblatt*), on the saw blade types available on the market, appropriate applications for them, and the attainable noise reductions. The work sheet is to promote greater acceptance and wider use of low-noise saw blades and thus make a substantial contribution to noise prevention.

○ **Area of Application**

All workshops and industrial production shops in the metal industry and in the plastics, wood and stoneworking industries.

○ **Additional Information**

- Lärmschutzarbeitsblatt (under preparation)
 - ⇒ Expert assistance: BIA, Fachbereich 4: Arbeitsgestaltung – Physikalische Einwirkungen [BIA, Division 4: Ergonomics – Physical environmental factors]
 - ⇒ Literature requests: BIA, Zentralbereich [BIA, Central division]

○ **“Focus on BIA's Work”**

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