

Focus on BIA's work

Berufsgenossenschaftliches Institut für Arbeitsschutz

No.: 0092 Noise-reducing grinding wheels

○ Problem

Noise is the source of the most frequent occupational disease. More than one third of all confirmed occupational diseases in the industrial trades are related to hearing loss caused by noise; more than two million workers in Germany are directly at risk. It is thus necessary to use all available methods to protect against this hazard effectively. Reducing noise at its source is certainly the most tangible response. This is particularly true for the grinding wheel on hand-held angle grinders used in grinding work which produce noise loud enough to damage hearing. Specially designed noise-reducing grinding wheels are available on the market. Information on their noise-reducing properties makes it easier for the user to select the appropriate equipment.

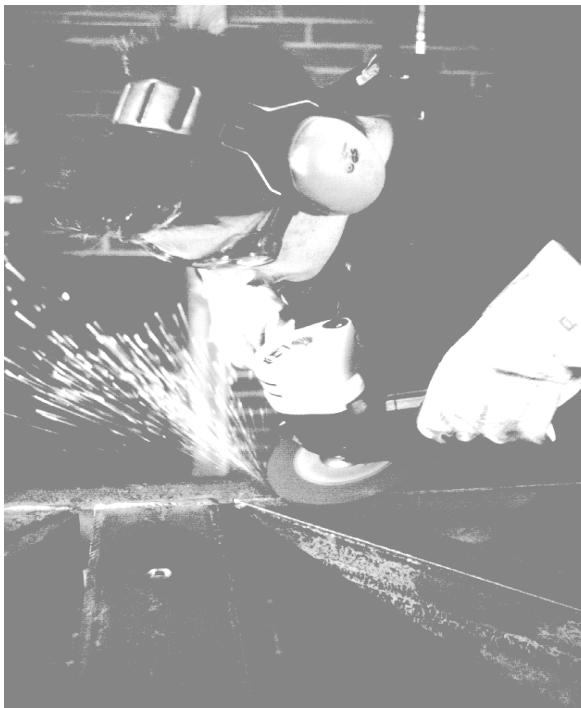


Illustration
A noise-reducing grinding
wheel in use

○ Activities

Noise measurements were taken on different grinding wheels commonly available on the market as these were used to grind different materials. The measurements also included different types of angle grinders – powered either by compressed air or electricity.

○ **Results and Application**

Using reduced-noise grinding wheels instead of the standard grinding wheels can reduce the noise level considerably in most applications:

- for materials with low inner damping properties, such as steel:
a reduction by 3 to 13dB(A)
- for materials with higher inner damping properties, such as grey cast iron:
a reduction by 4 to 11dB(A)

The greatest noise reduction is achieved by using reduced-noise grinding wheels on low-noise angle grinders.

○ **Area of Application**

All industrial-type fields of industry; in particular the metal-working industry, electrical industry, construction

○ **Additional Information**

- Lärmschutzarbeitsblatt LSA 01-320: Geräuschminderung bei der spanabhebenden Metallbearbeitung; Lärmgeminderte Schleifscheiben (BGI 760, früher ZH 1/564.11) (10.99). Hrsg.: Berufsgenossenschaftliches Institut für Arbeitssicherheit – BIA, Sankt Augustin. Carl Heymanns, Köln 1999
- Fischer, S.; Hertwig, R.: Geräuschminderung bei der spanabhebenden Metallbearbeitung. Sicherheitstechnisches Informations- und Arbeitsblatt 230 243. In: BIA-Handbuch Sicherheit und Gesundheitsschutz am Arbeitsplatz. 36. Lfg. XII/99. Erich Schmidt, Bielefeld 1985 – Losebl.-Ausg.

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

○ **“Focus on BIA’s work”**

Published by:

Berufsgenossenschaftliches Institut für Arbeitsschutz – BIA
im Hauptverband der gewerblichen Berufsgenossenschaften – HVBG
53754 Sankt Augustin
Germany

Edited by: R. Hertwig

Phone: +49 2241 231-02 / Fax: +49 2241 231-2234

e-mail: bia@hvbgb.de

Internet: www.hvbgb.de/bia