

Focus on IFA's work

Edition 7/2014

617.0-IFA:638.3

Low-dust methods in the construction industry: wall chasers

Problem

During the redevelopment of buildings, channels must often be cut into walls for the concealed installation of new electrical, water and heating lines. These channels (chases) are usually produced with the aid of wall chasers. The cutter employed on the majority of wall chasers consists of two cutting blades arranged in parallel.

During the cutting of stone, particularly stone containing quartz, and also mortar or plaster containing sand, fine dust containing quartz may be released. This task is classified by the technical rules for hazardous substances (TRGS) 906 as carcinogenic. For this reason, tasks of this kind are classified as carcinogenic, and the dust produced by wall chasers must be exhausted away and filtered.

The ongoing technical development of wall chasers, particularly their dust-collection features, and of the associated mobile dust collectors was reviewed here with reference to an earlier project.

Activities

The BG BAU (German Social Accident Insurance Institution for the building trade) launched a project which built upon an earlier project conducted by the IFA and the then BG Expert Committee Electrical Engineering at the BGFE, the German Social Accident Insurance Institution for the energy, textile and electrical products sector.



Wall chaser

A range of machines used for stoneworking were studied for their dust release. This included the performance of tests on a number of wall chasers in a test room. The results showed the machines to be similar in terms of the dust volumes which they generate, as had already been found in the previous project.

The state of the art was described with the support of manufacturers, the ZVEI (Zentralverband der Elektrotechnik- und Elektronikindustrie e. V.) and a number of Accident Insurers.

Results and Application

Certain combinations of wall chaser and mobile dust collector returned very good results in terms of their cutting performance and collection of the dust which was released.

Conversely, dust collection was still found to be unsatisfactory on some products, particularly during initial penetration by the tool or at the end of the cut as the tool was withdrawn from the wall. Concerning this issue, the study called for further developments in order to improve dust collection.

With regard to the mobile dust collection units, new designs were tested which had been upgraded with particular consideration for mineral dust. Certain mobile dust collectors still failed to satisfy the requirements, however. Some models for example could be operated only for a few minutes before the filters required cleaning or even replacement.

Besides the wall chasers, the project examined other machine types such as concrete floor grinders, wall strippers, parting-off grinders, etc.

Area of Application

Electrical, plumbing and other trade businesses

Additional Information

- BG/BGIA-Report: Mauernutfräsen – Handlungshilfen zum staubarmen Einsatz bei der Elektroinstallation. Hrsg.: Hauptverband der gewerblichen Berufsgenossenschaften (HVBG), Sankt Augustin 2005
www.dguv.de/webcode/d6241

Expert Assistance

IFA, Division 3: Hazardous substances: handling – protective measures

BG BAU, Mr Walter Gunreben

Literature Requests

IFA, Central Division