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Institut für Arbeitsschutz der
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Focus on IFA's work

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Safety testing on abrasive products

Problem

The grinding of workpieces includes the use of different abrasive products. These are subject to clamping, cutting and centrifugal forces during use. Should they lack sufficient strength, the products may fail, damaging machinery and installations in the process. Flying debris may seriously injure employees.

The European safety standards EN 12413, EN 13236 and EN 13743 therefore contain detailed requirements governing the strength of abrasive products and the safety factors which must be observed.

Activities

The IFA examines abrasive products for observance of the safety requirements. A range of centrifugal speed testers are available for this purpose. The largest speed tester is designed for abrasive products with outside diameters of up to 2 m, masses of up to 1 600 kg, and speeds of up to 5 000 rpm. The test stand with the highest speed is designed for a maximum speed of 125 000 rpm and an abrasive product mass of up to 40 kg. Special test facilities are available for single-point and three-point side load tests and for impact tests, thereby permitting evaluation of the side load capacity of resin-bonded abrasive products intended for use on manually guided machines. Bending and shear tests are employed for assessing the safety of diamond cutting-off wheels and dish wheels.

Centrifugal speed tester for centrifugal force tests involving grinding tools

Results and Application

Testing activity contributes to assuring that the high safety standards for abrasive products are met. The test results provide the abrasive products industry with information on developing such products further such that they can be employed safely.

Area of Application

Manufacturers of abrasive products, users of abrasive products

Additional Information

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Expert Assistance

IFA, Division 5: Accident prevention – Product safety

Literature Requests

IFA, Zentralbereich

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