

Developing and testing of ergonomically tools for tilesetters work

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Abstract

Ergonomic and occupational medical studies of tile-setters work showed detailed results of stress-strain situations in the tile-setters' work, and of musculoskeletal complaints and diseases (ADELMANN et al.,1994). In order to reduce the tile-setters' strain, ergonomic design requirements were derived (ADELMANN /WAKULA,1997).

Selected tools for tile-setters were developed and designed in a research project (WAKULA,1997; LANDAU and WAKULA, 1997). A transportable work station including a work table and platform with adjustable height, a device for transportation and tipping out mortar, and a tool box were developed. Several of the tile-setters' jobs that were particularly subject to stress up to now, e. g. cutting the tiles on the floor in a kneeling position, working above shoulder level, transporting and tipping out mortar, and the transportation of tools, can be facilitated with these devices.

During the development of the tools, criteria of technical safety, ergonomics, economy and ecology were considered. The project was supported by the Statutory Occupational Accident Injuries Insurances (Bau-Berufsgenossenschaften) in Germany. In the project a group of tile-setters (employers and employees), physicians of occupational health, and engineers of the „Bau-Berufsgenossenschaften“ worked together with the institute.

Two prototypes of transportable work station including a work table and platform with adjustable height were tested in tile-setting companies. A questionnaire was worked out for the testing. Fifteen tile-setters from five small tile-setting companies (until 5 employee's) and three big companies (until 20 employee's) as four person from a learning centre for tile-setters took part in the study. About 87% of asked tile-setters are interested for a work table with adjustable height and about 67% of them have interest for platform. An important question was the price for this work station. Only two tile-setters are ready to pay for this transportable work station about DM 800,-. One third of tile-setters gave no information concerning the price.

Considering the test results and in co-operation with industrial manufacturers, the development will be finished so that the work table / platform can go into production.

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