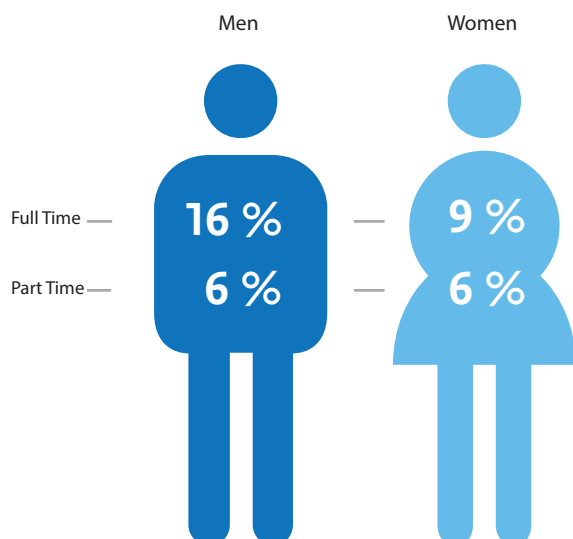


# Just don't stir up any dust – Exposures to dust, smoke, gases and vapours

## 20 baua: Facts

**Dust is almost everywhere but is often not recognised as a hazard for health. But dust can have severe health consequences. Year after year around 6,000 cases of disorders of the respiratory tract caused by dust are recognized as occupational diseases in Germany. The results of the BIBB/BAuA 2012 Employment Survey show that around one in eight employees comes frequently into contact with dust, smoke, gases or vapours. Many workers in the construction industry and manufacturing industries are particularly affected.**

Even if a dust does not contain any hazardous chemicals it can still endanger health. In particular the small particles in dust can get into the fine pulmonary alveoli and there trigger inflammatory processes or even cancer. Although relatively large dust particles settle out rapidly and do not penetrate into the lungs, they can - depending on their type - cause damage to the nose and throat. In order to picture the burden caused by dust, smoke, vapours and gases at workplaces, data of the BIBB/BAuA 2012 Employment Survey have been analysed by sectors and individual occupations. In addition the relationship between dust burden, level of education and complaints has been examined.



**Fig. 1** Percentage of employees who are frequently exposed to dust, smoke, gases or vapours by gender

Nearly every second employed person who comes frequently into contact with dust etc. feels stressed thereby - and this regardless of gender. Here - in respect

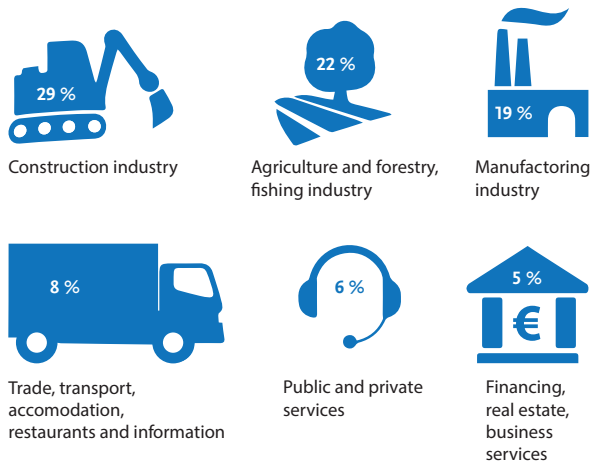
of full-time work - men (16%) are exposed to dust etc. significantly more frequently than women (9%; see Fig. 1). In part-time work there is no gender difference (6%). In addition, data show a relationship between the frequency of work under conditions with dust, smoke, vapours or gases and the level of education of persons polled. Thus nearly every fifth person (19%) without a school leaving certificate or with low qualifications feels frequently exposed to dust etc.; among the persons polled with a higher school-leaving qualification it is only one in 25 persons (4%). This is not surprising since a low level of education generally only permits employment in occupations which require no or only very low qualifications. Differences also show up with the times of work. Thus the proportion of the persons affected working shifts with a night-shift component is 26%, whereas only 19% of the shift workers without a night-shift component are exposed to dust etc. This difference could be attributed to the cleaning or maintenance of machines and systems which usually only takes place in the evenings or at nights. In occupations with a higher qualification requirement such work is required clearly less often.

### Differences between the occupations

The Employment Survey shows that the dust exposure depends on the sector. At an above-average extent employed persons in the construction industry (29%), in agriculture and forestry as well as in the fishing industry (22%) and in manufacturing industries (19%) see themselves frequently exposed to dust, smoke, vapours or gases (see Fig. 2). Among these, craft business stand out with a share of 28% of frequently exposed persons.

Consideration of individual occupations shows that the proportion of skilled workers in the construction industry

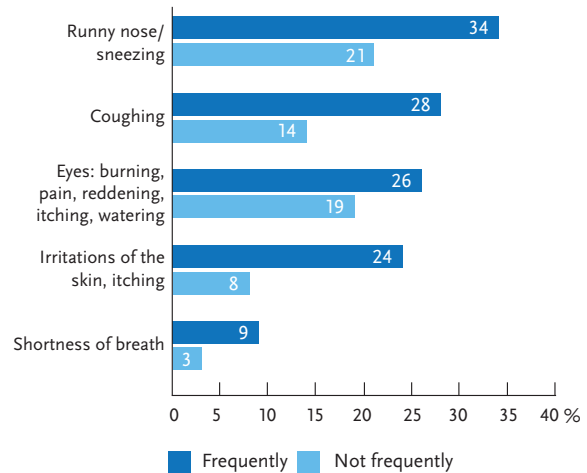
and construction-development as well as of operators of stationary systems and machines who are frequently exposed to dust, gases, smoke or vapours is over 40%. This high work-related exposure is also reflected in the health of these employed persons.



**Fig. 2** Proportion of the employed persons who are frequently exposed to dust, smoke, gases or vapours, by economic sector

### Effects on health

Of the employed persons frequently working under conditions with dust, smoke, vapours or gases, 22 percent rated their subjective state of health to be between less than good and bad. In contrast to the employed persons who are never, rarely or sometimes exposed to dusts and similar substances, twice as many of the employed persons frequently exposed to these working conditions suffer from coughing (28%). Skin irritations and itchiness occur even three times more frequently (24%). 9% of the employed persons working under these working conditions complain about shortness of breath. Half of the affected persons frequently exposed to dust, smoke, vapours or gases suffer from three or more psychosomatic complaints while 55 percent report three or more complaints of the musculoskeletal system. Here, however, the exposure to dust etc. is likely to play only a subordinate role. Much rather do the occupations exercised and their work demands favour the complaints named many times. For example, night-work and shift-work are associated with the occurrence of psychosomatic complaints. Strenuous physical work, for example on construction sites and in manufacturing process, contributes to degenerative diseases of the musculoskeletal system. Nevertheless the exposure to dust, smoke, vapours or gases represents an additional impediment.



**Fig. 3** Selected health complaints mentioned by employed persons who are frequently / not frequently exposed to dust etc., in comparison.

### Conclusion

The results make clear that complex hazardous substances such as dust also affect the health of employed persons. In this context, it is to be observed that - in addition to the differences between industrial sectors which are to be expected - the employed person's occupational qualifications play a decisive role. Accordingly, health and safety measures should be firmly integrated into the individual work processes and the employees should be regularly trained. Particular attention should be paid here to the areas of work requiring only low qualifications. With the aid of the „Easy-to-use workplace control scheme for hazardous substances“ (EMKG) issued by the BAuA, the hazards arising in connection with work with hazardous substances at the workplace can be systematically evaluated. In addition, this concept provides easily understandable guidelines on the implementation of these measures.

### Further information

- 1 BIBB/BAuA 2012 Employment Survey.  
[www.baua.de/en/Topics-from-A-to-Z/Working-Conditions/Working-Conditions.html](http://www.baua.de/en/Topics-from-A-to-Z/Working-Conditions/Working-Conditions.html)
- 2 Easy to use workplace control scheme for hazardous substances (EMKG).  
[www.baua.de/en/Topics-from-A-to-Z/Hazardous-Substances/EMKG/EMKG.html](http://www.baua.de/en/Topics-from-A-to-Z/Hazardous-Substances/EMKG/EMKG.html)