

Healthy Workplaces Good Practice Awards 2020-2022

CASE STUDY



Preventing back strain in concrete production



ORGANISATION/COMPANY

Rohrdorfer
Transportbeton GmbH

COUNTRY

Austria

SECTOR

Manufacture of concrete
products for construction
purposes

TASKS

Bending and manual lifting
of heavy packages to feed
into the concrete mixer
trucks



Source: Rohrdorfer Transportbeton GmbH

Background

Rohrdorfer Transportbeton is an Austrian company that produces and supplies all types of ready-mixed concrete. It operates 36 concrete plants mainly in the East, North and South of Austria. The company has more than 250

concrete mixer trucks available to transport concrete to construction sites.

Musculoskeletal disorders (MSDs) are among the most common occupational illnesses due to the non-ergonomic way in which heavy loads are handled. Heavy lifting or work that involves carrying strains the

back and spine. The consequences include strain with chronic pain and pathological changes, in particular in the intervertebral discs. This often leads to absence due to illness and often an inability to work. Alongside individual interventions in the case of back strain at work, technical interventions are essential preventive measures.

A simple, cost-effective solution has removed a significant risk, contributing to the company's general approach to developing safe workplaces that meet age-related needs. This method includes designing software for system control, screen monitor equipment, and individual measures like occupational medical examinations and support in the case of the development of long-sightedness.

To encourage employees to play an active role in occupational safety and health, the company has a reporting system that enables them to indicate hazardous or stressful conditions in the workplace. In this way, appropriate preventive solutions were found through staff involvement.

Another part of the approach is the systematic survey of work-related stress that can also be seen in connection with the consequences of the strain caused by MSDs.

The general approach to creating age-appropriate working conditions is continuously coordinated and complemented by the company's management and board, together with the preventive specialists and works council representatives. The goal is to promote and maintain employee loyalty amid tight labour market conditions by ensuring an attractive workplace.

Aims

The intervention aims to reduce back strain and related MSDs for workers by reducing the load as they manually lift and empty heavy packages into the concrete mixer trucks.

What was done and how?

The following problem was identified:

In the production of fibre-reinforced concrete, steel fibres are fed into the drum of the concrete mixer truck. The steel fibres are packed in boxes of 20 kg. These packages are supplied on pallets from which they had to be removed manually and emptied into the drum. With the existing work method, as the packages were removed, the workers had to increasingly bend much more as the pile was reduced. This meant that the workers had to endure strain when lifting, and rotate their spine, causing considerable stress on their intervertebral discs. The consequences were physical strain and the risk of intervertebral disc injury, as well as medical conditions leading to temporary incapacity for work.

The amount of work carried out in these unsuitable conditions was considerable. Each concrete mixer truck requires 8 packages of 20 kg, so the total load handled by the worker is 160 kg per mixer truck. Between 5 and 10 mixer trucks have to be filled each day.

The following solution was introduced:

To maintain the lifting height of the packages at the same level, and thus avoid bending down, a floor conveyor with a scissor lift table was designed for the pallets of fibre-reinforced concrete packages. This allows the pallets to be handled in such a way that workers do not need to rotate their spine to feed the steel fibres into the drum, while the pickup height can also be lowered again by operating a pedal lift. Therefore, the worker does not need to bend down.

What was achieved?



Source: Rohrdorfer Transportbeton GmbH

- Back strain has been reduced and the task of filling the concrete mixer trucks is much safer for workers.
- The measure has improved working conditions and prevents workers from being absent due to illness.
- Older employees can continue to perform their duties safely.

Success factors

- The workers were very satisfied with the solution and the work environment has improved.
- Workforce loyalty has increased in the context of a tight labour market, staff turnover has decreased and product quality is ensured for customers.



Source: Rohrdorfer Transportbeton GmbH

Transferability

The simple solution of introducing a scissor lift table to reduce loads during manual lifting is fully transferable to other companies in the construction sector. It could easily be adopted by organisations in other sectors where manual lifting is required.

Costs and benefits

The cost of the scissor lift table was €800, whereas the cost of a worker being unable to work for 2 weeks would be €1,500. The cost of the investment was paid off in a year.

Employees were satisfied with the solution and can perform their work faster without undue back/spinal strain.

Despite the cost pressures on the company, these tangible improvements in the workplace are making the company a more attractive place to work at.

Key features of good practice example

- A simple, cost-effective solution has removed a significant risk.
- The company is committed to developing safe workplaces that enable older workers to continue to perform their work. This also helps to maintain their loyalty to the company and reduces staff turnover.
- The company involves the works council, and employees are encouraged to report hazardous and stressful conditions in the workplace, thus involving them in finding preventive solutions.

Further information

Further information can be found at <https://www.rohrdorfer.at>

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