



# Product inspections for mobile conveyor systems

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## Reason

Serious accidents have occurred involving conveyors or conveyor belts in the past. The lack of (adequate) guarding of moving parts is often the cause. Employees can unwittingly move too close to the drive rollers/turning rollers of the machine. The consequences are drastic: limbs, hair or clothing can become entangled in the moving parts, resulting in serious injury or even amputation.

## Examples of accidents

2011 saw a fatal accident in Utrecht, at a soil cleaning plant. A technician became entangled in a conveyor belt and consequently died.

Another accident occurred in the UK in 2014. An employee of a British foodstuffs company became seriously injured when his hand became entangled in the unprotected part of a conveyor belt. The employee required hospital treatment and was unable to work for a number of months following the accident.

Based on risk analysis, the Market surveillance programme for product safety, by the SZW Inspectorate, has prioritised the Mobile Conveyors product group. Inspections were conducted at the premises of market participants in mobile conveyors, in 2015.

## Hazards and statutory requirements

Since 1995, conveyors on the European market are subject to the Machinery directive. Harmonised NEN-EN standards are provided in order to comply with the Machinery directive 2006/42/EC.

The main hazards when working with conveyors are:

- Risk of entanglement and crushing;
- Unexpected restart;
- Inadequate provisions to prevent unwanted events (emergency stop and control panel).

The party introducing the conveyor to the European market (often the machine manufacturer) is responsible for conformity of the product with the Machinery directive. In the Netherlands, this European product directive has been implemented in the Commodity Act

on Machinery. This inspection project served to monitor the obligations on the basis of said Commodity Act.

According to the Occupational Health act, any employer who has his/her employees work with a conveyor is responsible for the purchase of safe machines, and for effective information to, instruction of and supervision of the employees using this machine. This project did not conduct any inspections on the basis of the Occupational Health act.

## Standardisation

There is a harmonised European standard for conveyors, giving the essential safety requirements:

- NEN-EN 618:2002+A1:2010, NEN-EN 619:2002+A1:2010;
- NEN-EN 349:1994+A1:2008 Safety of machines – minimum distances to avoid crushing of parts of the human body;
- NEN-EN 953:1998+A1:2009 Safety of machines – general requirements for the design and construction of fixed and movable guards;
- NEN-EN-ISO 13857:2008 Safety of machines – minimum distances to prevent hazard zones being reached by upper and lower limbs.

## Which mobile conveyors have been inspected?

Conveyors/conveyor belts can be part of assembled machines or can function as stand-alone machines. Conveyors are custom manufactured (according to specific client wishes) or produced in series. The length of a conveyor or conveyor belt can vary from a number of metres to a number of kilometres.

This project inspected the mobile versions of conveyors.

Mobile conveyors are used, for example, for:

- The transport of sand and gravel by earthmoving contractors;
- The transport of food and products;
- The transport of hay and animal fodder;
- Sorting of waste;
- Loading and unloading heavy goods vehicles.

## The SZW Inspectorate pays attention to:

The inspections focused on manufacturers and importers of mobile conveyors. The points for inspection are:

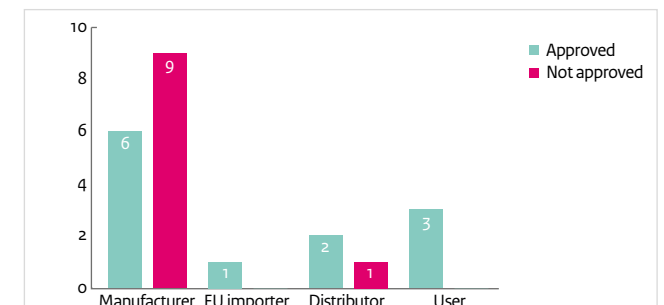
- Guards or safety provisions at locations with the risk of entanglement/crushing;
- Emergency stop provision with which actual or potentially hazardous situations can be prevented;
- Operating panel to prevent unwanted events;
- Protection against unexpected restarts;
- Documentation and markings (Declaration of Conformity, Dutch language user manual, and CE marking).



## Inspection results

30 different types of mobile conveyors, by 20 manufacturers, were inspected; 15 Dutch manufacturers and 5 foreign manufacturers. The foreign manufacturers were registered in Ireland (2x), Belgium, Italy and France. The products were inspected at the premises of the manufacturers, distributors and/or users. Inspections were conducted at a total of 22 market participants.

Figure 1: Inspected market participants

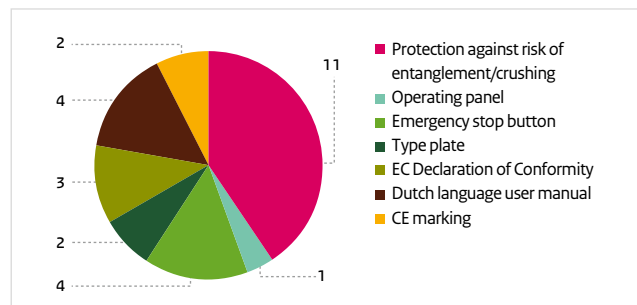


An administrative violation was detected at 1 of the 5 foreign manufacturers. This product was not accompanied by the documents and instructions in the Dutch language. Agreements have been made with this Dutch distributor, for this purpose.

The mobile conveyor did not meet the requirements at 9 of the 15 Dutch manufacturers; no non-conformity was detected in the mobile conveyors of the other 6 manufacturers.

Violations were detected at 40% (12 of the 30 products) of the inspected mobile conveyors. The SZW Inspectorate detected a total of 27 deficiencies (see Figure 2) in these 12 mobile conveyors. There was inadequate protection against the risk of entanglement/crushing in 11 types of mobile conveyors. In 5 types, the emergency stop provision or control panel did not comply with the requirements. 9 violations were related to administrative obligations.

**Figure 2: The 27 detected violations in 12 mobile conveyors**



Manufacturers generally work with product components which comply with the European directives. However, non-conformity often occurs following the installation and/or modification of machines. Many companies are unaware that the modification of machines can result in new risks, therefore requiring a new risk assessment and subsequent measures. The compilation of various machines and components, which together form a new machine, can also entail new risks. It is striking that manufacturers who supply multinationals, are more critical and cautious when applying the conformity assessment process (so that the machine is indeed supplied according to the obligations), than those manufacturers who supply products to small users. In customised products, there is also great attention for the total product and the specific client wishes. Product safety hereby appears to be self evident.

Based on the detected violations, the manufacturers and/or importers in question were given the opportunity to take the necessary measures. An inspection letter was sent to them, based on the Commodity Act.

### Conclusion, reach and follow-up

The inspections showed 40% of the products to be non-conforming. The violations varied from the lack of the correct type plate to the absence of safety provisions to prevent the risk of entanglement/crushing. The companies which sell non-conforming mobile conveyors were issued a warning, with the comment that the sale of nonconforming products is forbidden (on the basis of the Commodity Act).

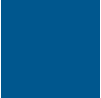
They were given the opportunity to:

- Make the mobile conveyors in question conform to the obligations of the product directive in question, or to
  - Cease trade in these products.
- Re-inspection will take place in 2017.

In this inspection project, part of the Netherlands market for mobile conveyors has been inspected. During the re-inspections in 2017, the other types and brands of mobile conveyors will be assessed. In doing so, we contribute to an equal playing field for the suppliers of mobile conveyors in Europe.

Product inspections have a wide reach. By achieving conformity among market participants via product inspections, safe products for many users (companies and consumers) can be traded. Five of the inspected market participants for mobile conveyors have supplied more than 20 machines during the past 5 years, whereby one market participant traded more than 300 mobile conveyors.

Via the EER consultation on implementation of the Machinery directive – the Administrative Cooperation in Market Surveillance of the Machinery directive (ADCO-MD) – the results of the inspections are made available to the European commission and the product supervisory boards in the other EER countries. The results are also discussed with the branch organisations. During these initial inspections of mobile conveyors, market participants demonstrated ignorance of the regulations. Communication via the branch



organisations would seem to be an effective way of increasing knowledge on product legislation.

### About the Market surveillance programme for product safety, by the SZW Inspectorate

The SZW Inspectorate is one of the five inspection departments in the Netherlands responsible for surveillance of product safety. Market surveillance of product safety is the surveillance of compliance with European product legislation.

Purpose: to monitor free movement of products on the European market, while at the same time ensuring that these products offer a high degree of protection for general interest, such as health and safety in general and at work, consumer protection, environmental protection and security.

The surveillance field of the SZW Inspectorate comprises 6 European product directives:

- Machinery (2006/42/EC, with the exception of consumer products);
- Personal Protective Equipment (89/686/EC, with the exception of consumer products, and Regulation 2016/425);
- Lifts (95/16/EC and 2014/33/EU);
- Pressure Equipment (97/23/EC, and 2014/68/EU);
- Pressure Equipment (97/23/EC, and 2014/68/EU);
- Equipment for potentially explosive atmospheres (94/9/EC and 2014/34/EU).

In the Market surveillance programme for product safety, the SZW Inspectorate prioritises product groups on the basis of:

- Risk/hazard;
- Reports to the SZW Inspectorate;
- Joint actions (EU collaboration projects); and
- the European obligation for surveillance of each product directive (Regulation 765/2008/EC and Decree 768/2008/EC).

## More information

### Website

The SZW Inspectorate website provides additional information with regard to products safety:

<https://www.inspectieszw.nl/onderwerpen/algemeen-productveiligheid-en-certificatie>

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