issa | INTERNATIONAL SOCIAL SECURITY ASSOCIATION

Section on Prevention in the Chemical Industry

Maintenance and hot work

Training tool for safety instructions

Version 06/2020

Notes

Topic:

This safety instruction points out safety aspects of maintenance, especially for hot works involving fire hazards. Maintenance work can pose a major accident risk in many companies. Serious and even fatal injuries can occur if hazards are not identified or not properly assessed during preparation and completion of the work in question. They can also be caused if effective countermeasures are not in place or are intentionally bypassed – and also if spontaneous decisions cause new hazards that haven't been considered in advance.

The aim of this instruction is to clarify basic procedures for ensuring that maintenance work is conducted safely. It will cover risks associated with both maintenance in general and work involving fire hazards in particular.

An important tool for compiling hazard assessments is the permit form that is legally required for work involving fire hazards (and for entering containers and confined spaces). If used correctly, it can help identify and address risk factors (Lesson 1).

Key aspects for ensuring the safety of all people involved include clear communication between operating and maintenance personnel regarding the work to be completed and the risks involved (Lesson 2), preparation and checks of the workplace and the necessary emergency measures (Lesson 3), conducting the work and in particular the procedure for addressing unforeseen problems (Lesson 4) and handover following completion of the work (Lesson 5).

Further information on this topic is available in the ISSA Chemistry Section's "Maintenance and Changes" brochure.

Method:

This training tool is not to be used for E-learning. The set of slides is intended to assist managers for the personal instruction of employees and to start an open discussion on the topic of occupational safety.

Text and images included in the lessons provide information on which aspects are most important to the topic. Using this as a basis, discussions should be held on whether and where similar issues occur at the company in question, which specific technical and organisational measures are already in place, and which solutions could improve the situation. Safety instructions can thus be used not just to fulfil legal requirements but also as a tool for promoting ongoing improvement within the company.

Analysing thematically related events and "near misses" at the company (or other incidents known of from literature) can help the staff involved become aware of the relevance of the topic and thus encourage safety-conscious conduct for the long term. This may require further preparation and/or research.

Also included is a picture that can be used to check what has been learned. This can be carried out either with the whole group straight after the training session using the solution slides, as an independent follow-up activity with the solutions revealed at a later stage, or as part of an in-house (safety-themed) event, possibly with prizes.

The content of the safety courses is always focused on the staff involved. They therefore do not include information on measures to be undertaken by the employer.

Lesson 1

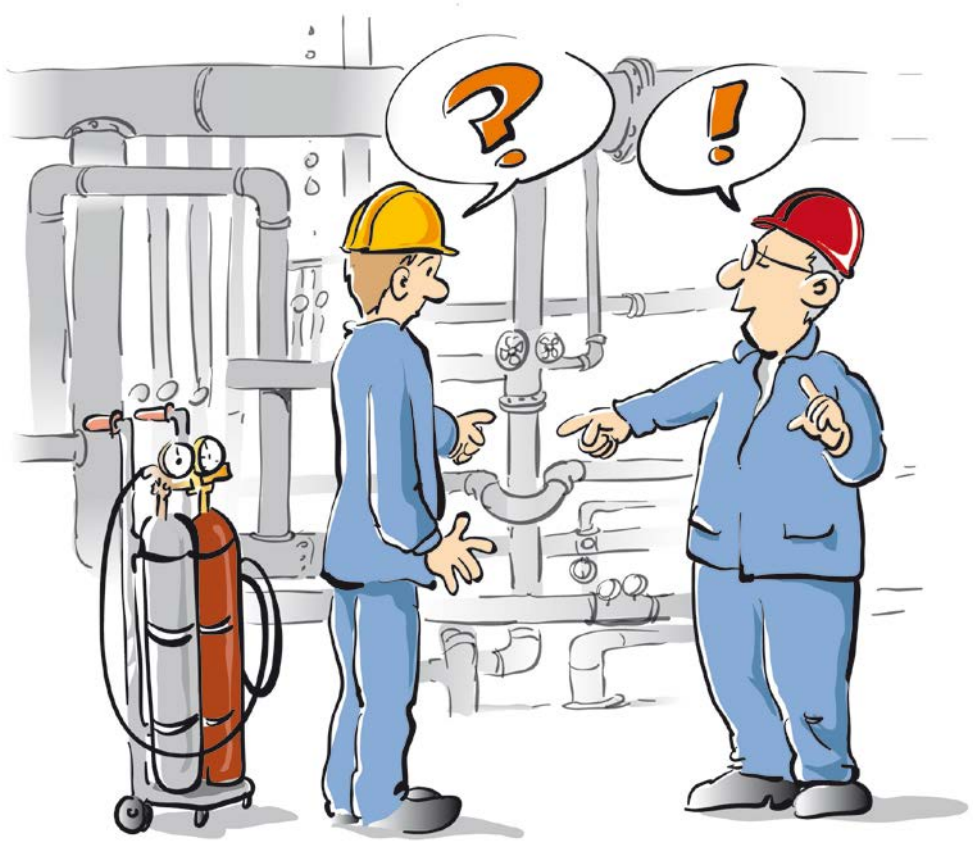
Using a work permit

- Work permit = hazard assessment
- More than one task = more than one permit + coordination of activities

Lesson 2

Get clear before starting work

- What
- Where
- When
- Hazards and dangers
- Safety precautions
- Coordination of work



Lesson 3

Securing the work site and vicinity before starting work

- Fire loads
- Hazardous substances
- Explosion hazards
- Breathable air
- Safety measures
- Emergency and rescue measures

Lesson 4

Working safely

- Wear personal protective equipment
- Stick to agreements
- Work prudently
- Report problems

Lesson 5

Leave the work area under predefined conditions

- Tidy up
- Inspect protective devices
- Report completion
- Inspection by fire guard if necessary

What's wrong?
Find the nine mistakes

Mistake 1

Three-part side protection (handrail, midrail, toeboard) is essential for scaffolding with a height of fall of more than two meters

Mistake 2

Ladders may only be set up on flat, even surfaces

Mistake 3

Ladders have to extend at least one meter beyond the exit point

Mistake 4

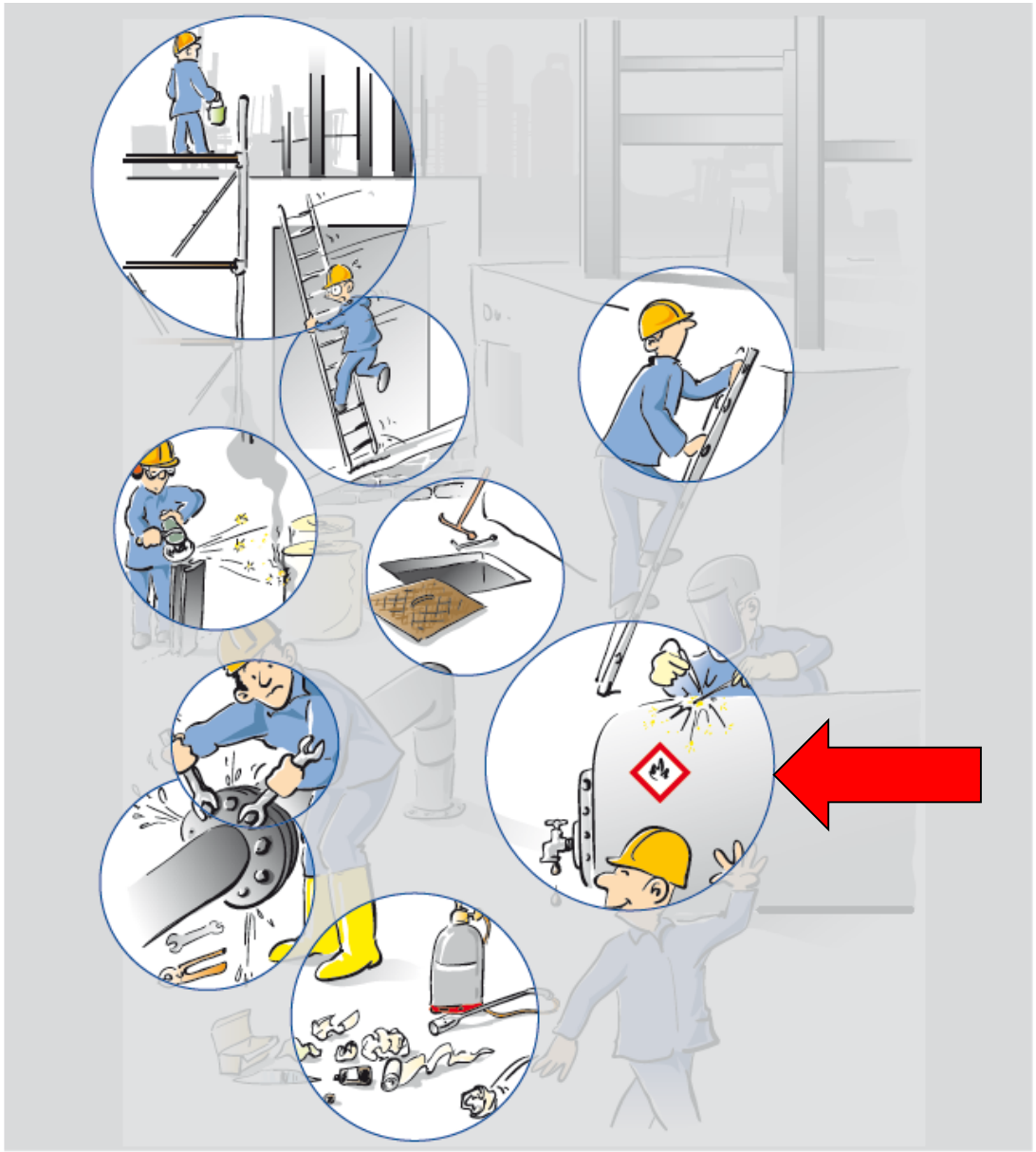
Remove flammable substances

Mistake 5

Provide fall protection at openings, remove tripping hazards

Mistake 6

Perform hot work only on cleaned and flushed containers

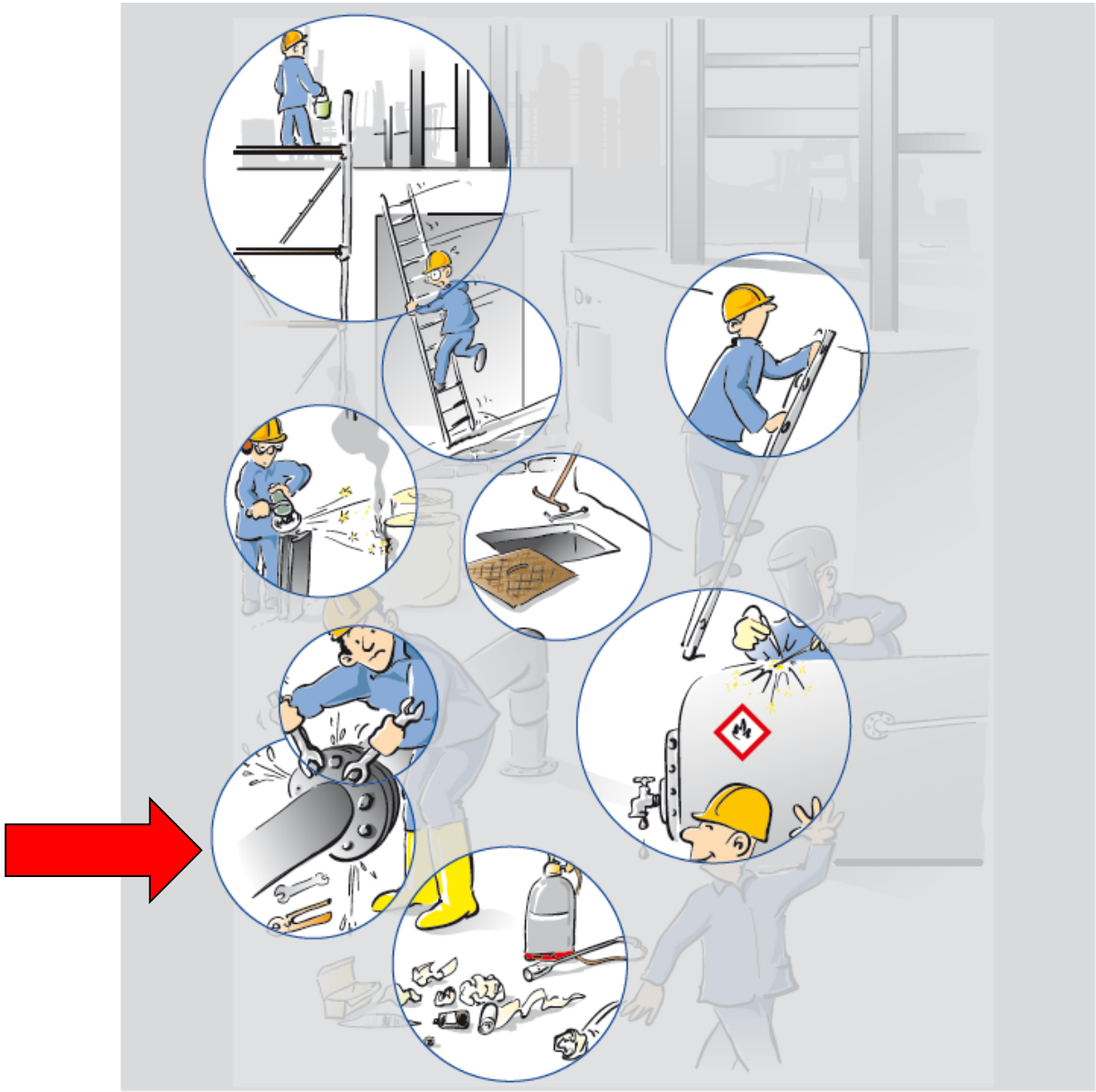


Mistake 7

Wear personal protective equipment suitable for the hazard

Mistake 8

Perform maintenance work only on depressurized and flushed piping



Mistake 9

Clean up the work place after work