



**issa**

INTERNATIONAL SOCIAL SECURITY ASSOCIATION

*Section on Prevention in the Chemical Industry*

# Maintenance

**Hot work –  
working with fire hazards**

Safety training



## Lesson 1

# Using a work permit

## Work involving fire hazards:

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



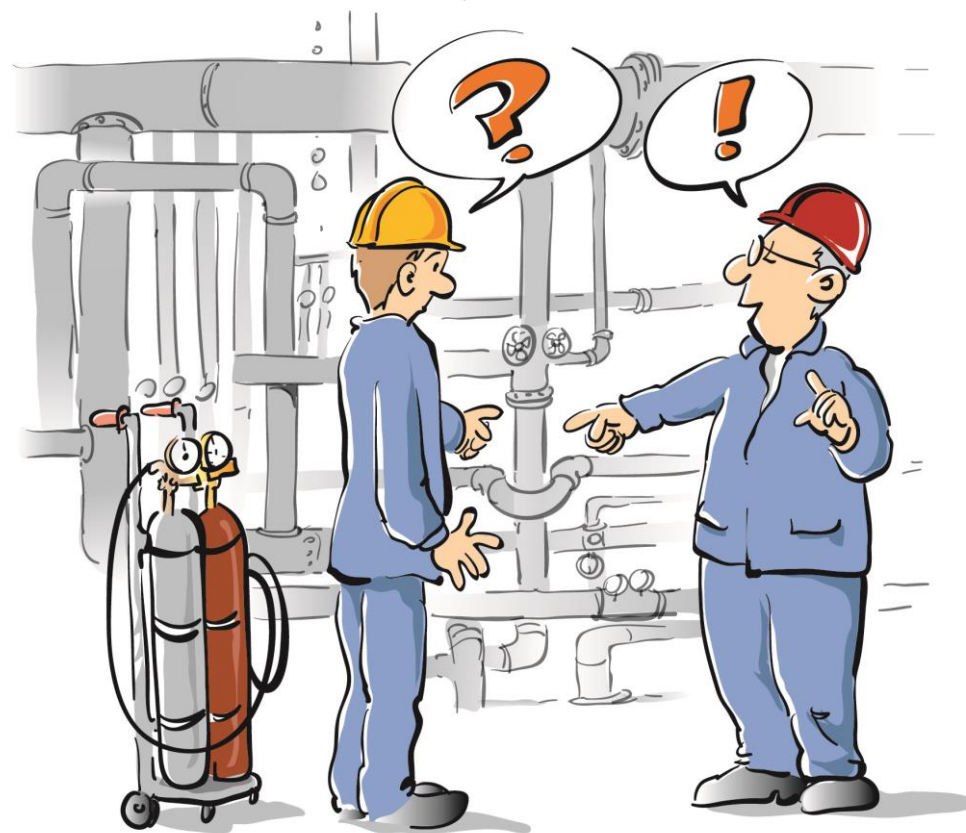


## Lesson 2

# Clear coordination of work

### Discuss before starting work:

- What
- Where
- When
- Dangers
- Safety precautions
- Coordination





## Lesson 3

# Securing the work site and vicinity

### Check before starting work:

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





## Lesson 4

# Working safely

### During the work:

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





## Lesson 5

# Leave the work area under predefined conditions

### After work:

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







# What' wrong? Find the nine mistakes





# Survey of 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

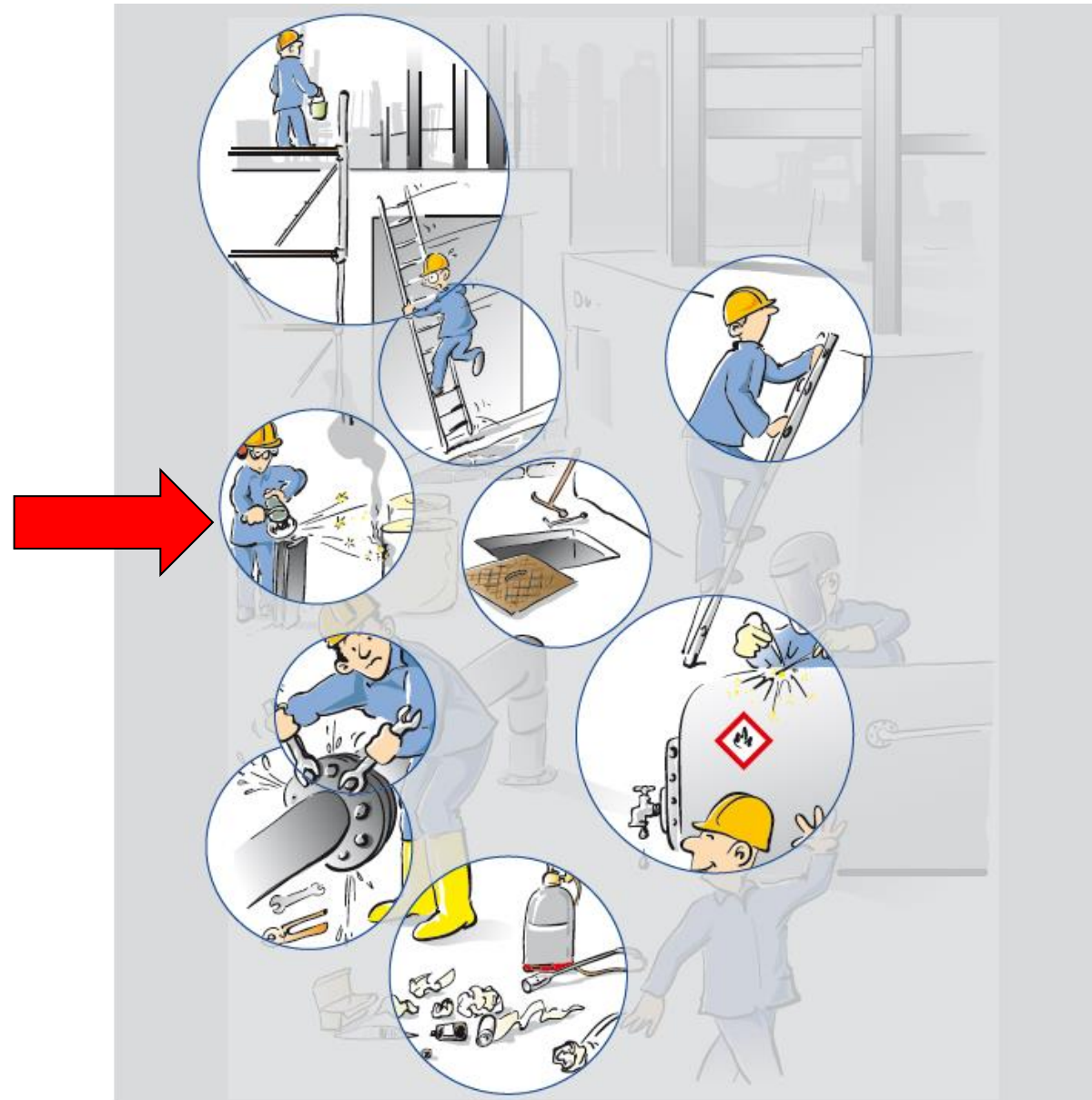
**Ladders have to extend at least one meter beyond the exit point**





## Mistake 4

Remove flammable substances







## Mistake 5

**Provide fall protection at openings,  
remove tripping hazards**

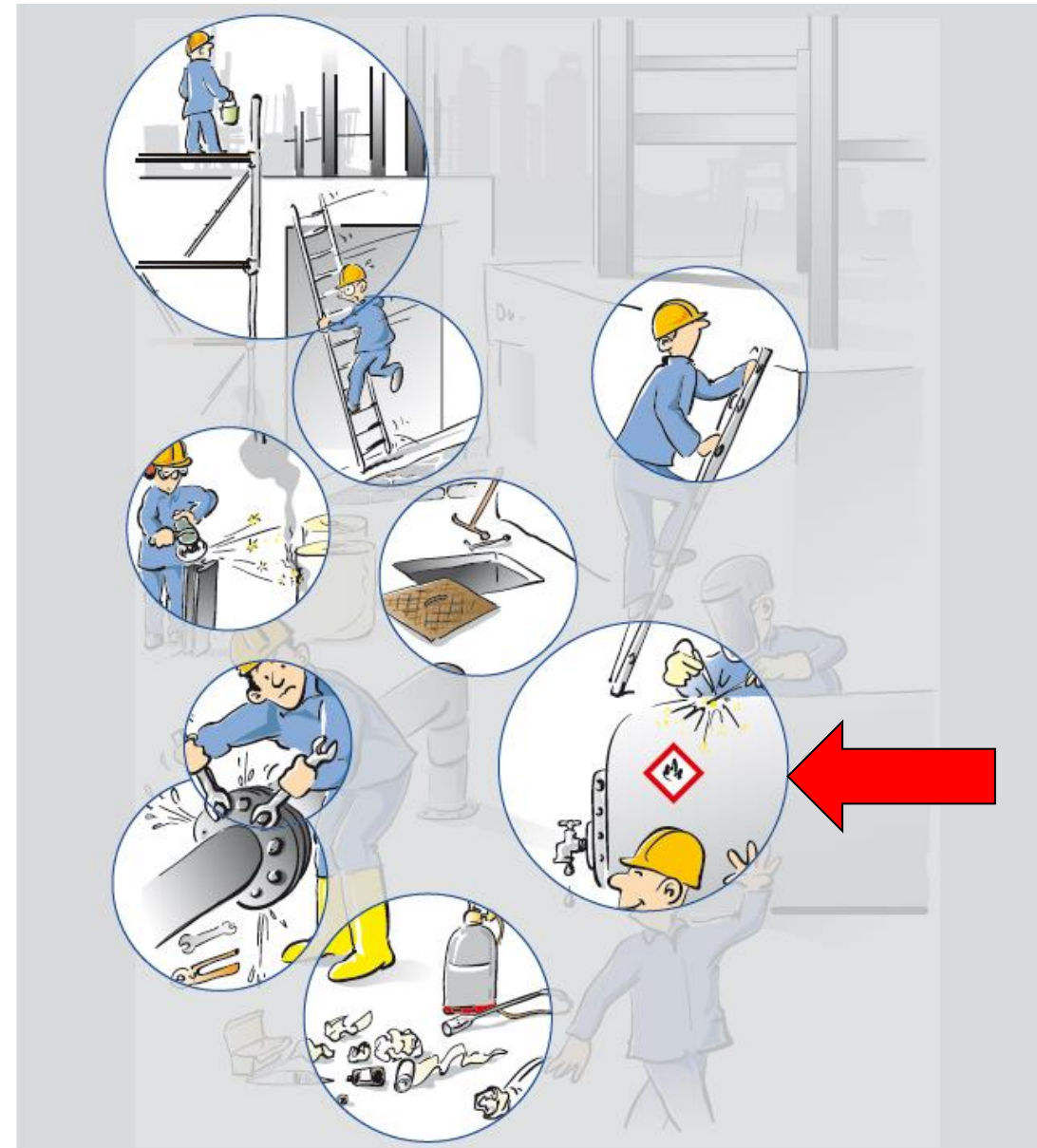






## Mistake 6

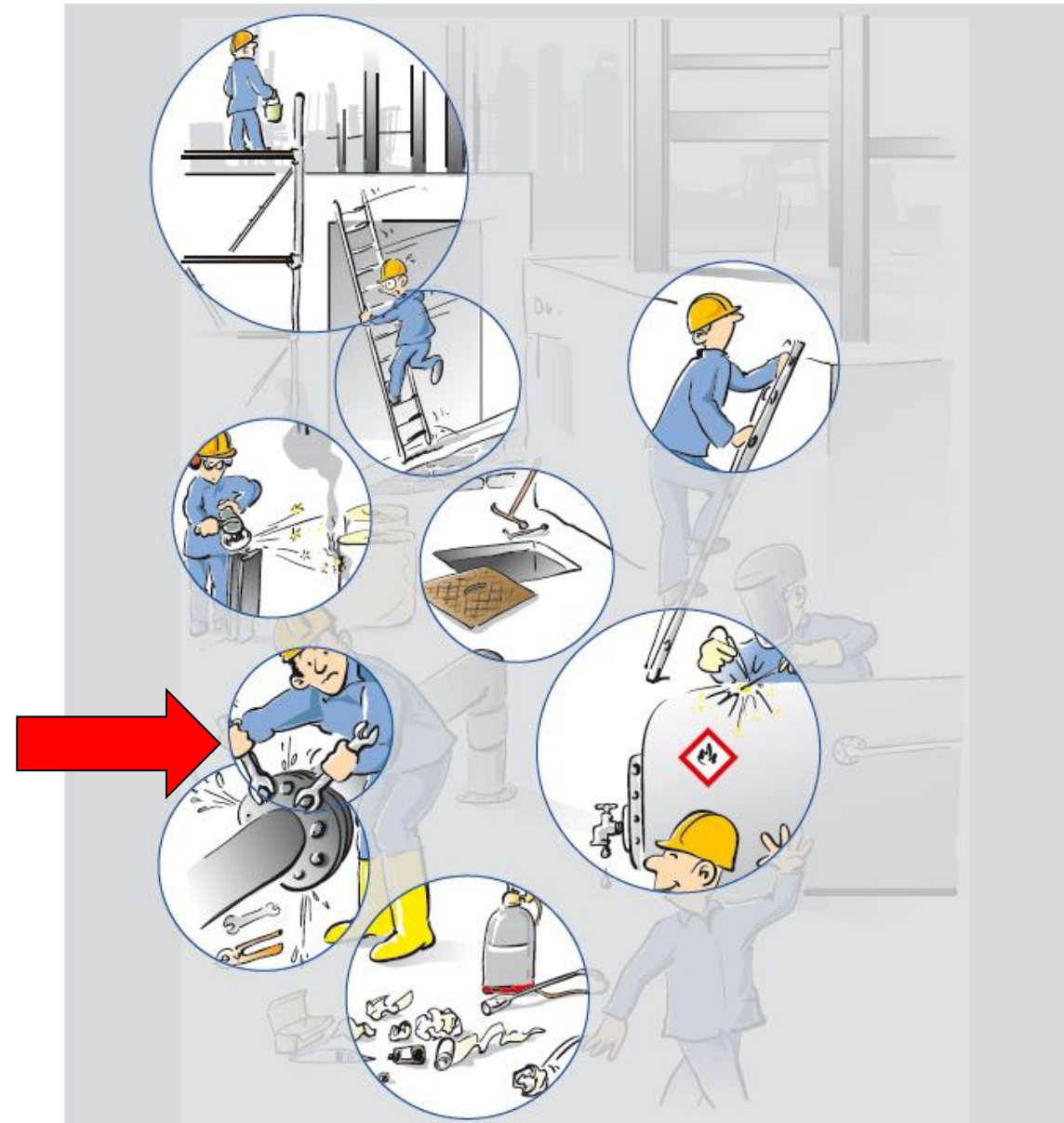
**Perform hot work only  
on cleaned and flushed containers**





## 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 completion of the work**







# Notes

## Topic:

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 safety training course 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:

The set of slides is intended to help managers instruct staff and involve them in open discussion on the topic of occupational safety. This can also be completed on site.

The text and images included in the introductory units 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 training 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 "spot-the-mistake" 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.