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1 Scope

This Linde Standard (LS) defines which work is categorised as hazardous and therefore requires the application of the permit to work system.

NOTE As an alternative the permit to work process can be substituted by a comparable safe "standard operating procedure" for defined frequently repeating hazardous works.

This LS applies globally to all operations carried out by entities of Linde Engineering or their contractors.

2 Normative references

This LS contains provisions which, through dated or undated references in this text, constitute provisions of other publications. The normative references are cited at the respective place in the text and the publications are listed below. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the issues valid at the effective date of contract shall apply.

Regulation (EC) No 1272/2008	Regulation on the classification, labelling and packaging of substances and mixtures
EN 60825-1	Safety of laser products – Part 1: Equipment classification and requirements

3 Definitions

3.1 Hot work

Work with an increased risk of fire or explosion, such as welding, grinding, abrasive cutting, brazing, or the like.

At LE entity sites not applicable for:

- activities at work areas, that have a permanent approval for hot work (e.g. welding workplaces or workshops), or
- activities outside these areas, when a horizontal distance of at least 10 m (USA: 35 ft.) and a vertical distance of at least 20 m (USA: 65 ft.) downwards and 4 m (USA: 13 ft.) upwards is kept from any flammable material.
- the use of burners in laboratory and testing setups, if HSE risk assessments, operating instructions and/or operations manuals are in place.

At project construction sites only applicable for areas presenting an increased risk of fire or explosion (e.g. through the presence of flammable materials or an explosive atmosphere).

3.2 Working at height

- Work with a possible height of fall greater than 2 m (USA: 6 ft.), such as work on roofs, work on ladders when standing higher than 2 m (USA: 6 ft.), work on platforms, the erection of steel structures, the installation and removal of gratings or working in suspended work baskets or platforms.
- Working above water or any other surfaces with the hazard of drowning

Not applicable for the following activities that are usually covered by specific regulations and operational instructions and that usually do not require additional protective measures against falling:

- erecting, modifying and dismantling scaffolds,
- work on approved scaffolds, mobile scaffolds or work platforms (e.g. green tagged),
- work on mobile elevated work platforms.

3.3 Entering or working in confined spaces, excavating or tunnelling

Entering or working in enclosed confined spaces that are not designed for continuous employee occupancy, large enough and so configured that an employee can bodily enter and perform work inside (e.g. containers, storage tanks, silos, pipelines, windowless cellars, or furnaces) and in which exceptional hazards exist or can emerge, such as:

- the potential formation of hazardous atmosphere,
- entanglement with fluids or granulated solids,
- welding in confined spaces,
- electrical hazards,
- structures with entrapping configurations,
- structures which may collapse,
- excavations in which oxygen-displacing substances can accumulate,
- limited or restricted means of entry and exit,
- excavating underground, tunnelling work, and working in underground excavations, as well as excavating, trenching, and working in excavation pits deeper than 1.2 m (USA: 4 ft.),
- other severe health and safety hazards.

3.4 Working with hazardous materials

Work with corrosive, explosive, highly flammable, carcinogenic substances (categories 1 and 2 acc. to the global harmonized system / GHS of the Regulation (EC) No 1272/2008), cryogenic substances, mutagenic, reprotoxic, toxic or biological substances (categories 3 and 4 acc. to the GHS).

At **LE entity sites not applicable for** activities that are executed only by employees qualified and instructed in the handling of hazardous substances and in work areas that are specifically equipped for the use of hazardous materials, e.g. laboratories and facilities for research and development.

3.5 Working on live systems and electrical hazards

Work on systems that are live or physically connected to live systems that are energised or isolated during work:

- a) pressurised systems (e.g. pneumatic, hydraulic),
- b) systems containing fluids with a low ($< 0\text{ °C}$ / $< 32\text{ °F}$) or a high temperature ($> 60\text{ °C}$ / $> 140\text{ °F}$),
- c) systems containing hazardous materials,
- d) systems with stored hazardous mechanical energy,
- e) electrical equipment – Not to be used for work under low voltage $< 50\text{V AC}$ or $< 120\text{V}$ (USA: $< 60\text{V}$) DC at LE locations carried out by qualified and locally authorised electricians.

Furthermore, work in a distance of less than 5 m (USA: 16 ft.) to uninsulated overhead power lines (also applicable for lifting work)

a) – d) At LE entity sites not applicable for:

- testing setups in facilities for research and development, which are built and used based on a test specific risk assessment by qualified and instructed employees
- the intended and regular operation of gas installations and installations for the supply with gaseous or liquid substances from stationary tanks.

3.6 Pressure testing

Hydraulic pressure testing ($V > 100\text{ m}^3$; USA: $V > 3531\text{ ft}^3$), and pneumatic pressure testing

At **LE entity sites not applicable for** dedicated work areas that have been specifically risk assessed with all necessary controls being implemented, operating instructions being displayed, and where the work is being carried out by authorised employees only.

3.7 Lifting

Lifting with mobile or tower cranes when the lifts exceed 15 t or 85% of the crane capacity by load chart, or complex lifting (i.e. involving more than one crane at the same time, lifting over live equipment or over active work areas, such as office buildings or public access ways)

3.8 Working with ionising radiation

Work involving ionising radiation that requires the definition of dedicated areas with specific safety regulations.

At **LE entity sites not applicable for** dedicated work areas that have been specifically risk assessed with all necessary controls and checks implemented, operating instructions being prepared, and work during normal operations being carried out by qualified and instructed employees only.

At **project construction sites not applicable for** handheld X-ray fluorescence analysers

3.9 Other hazardous work

- Working with inert gases, unless being applied as shielding gas for welding operations (e.g. nitrogen)
The exceptions to section 3.4, 3.5 and 3.6 are also applicable.
- Working with laser of classes 3 and 4 in accordance with EN 60825-1, if not entirely contained
- Work requiring the removal or deactivation of critical safety installations, such as gas detection, firefighting systems, etc.
At **LE entity sites not applicable**, if defined processes for the definition and implementation of necessary compensating controls are in place.
- Blasting operations
- Working in areas in which rail tracks are in use