Mechanical hazards (M)

Risks associated with mechanical installations and equipment

In accordance with its Staff Rules and Regulations and the CERN Safety Policy, CERN establishes and updates Safety Rules as required for its functioning.

The CERN Safety Rules listed below define the minimum requirements applying to all mechanical equipment belonging to or hired by CERN or the collaborating institutions, used or intended for use at CERN, and associated activities. The associated documents also listed below aim to assist people in the implementation of the above-mentioned CERN Safety Rules.

The mechanical Safety Rules cluster currently covers item of lifting, pressure and cryogenic equipment as well as lifts.

In the future the HSE Unit will also publish CERN Safety Rules regarding machinery, HVAC, metallic structures and welding. You are invited to regularly consult the HSE website to follow any evolution of the CERN Safety Rules that may concern you.

For any other information and/or questions relating to risks associated with the mechanical installations and equipment, please contact the HSE Unit: Safety.Info@cern.ch.

Safety regulation

SR-M - Mechanical equipment | - Mechanical - | en fr

The purpose of this Safety Regulation is to define the minimum Safety requirements applying to all mechanical equipment belonging to or hired by CERN or the collaborating institutions, used or intended for use at CERN, and to all associated activities.
General Safety Instruction

**GSI-M-1 - Lifting equipment and accessories** en fr

The purpose of this General Safety Instruction is to define the minimum Safety requirements applying to all lifting equipment and accessories belonging to or hired by CERN or the collaborating institutions, used or intended for use at CERN, and to all associated activities. This General Safety Instruction does not apply to the following: • the structures supporting lifting equipment; • lifts, as defined in General Safety Instruction GSI-M-5 “Lifts”.

**GSI-M-2 - Standard pressure equipment** en fr

The purpose of this General Safety Instruction is to define the minimum Safety requirements applying to all standard pressure equipment and accessories belonging to or hired by CERN or the collaborating institutions, used or intended for use at CERN, and to all associated activities. This General Safety Instruction does not apply to the following: • fire extinguishers; • pressure equipment used with an open-flame; • heating, ventilation and air conditioning (HVAC) equipment; • cryogenic equipment.

**GSI-M-4 - Cryogenic equipment** en fr

The purpose of this General Safety Instruction is to define the minimum Safety requirements applying to all cryogenic equipment and accessories belonging to or hired by CERN or the collaborating institutions, used or intended for use at CERN, and to all associated activities.

**GSI-M-5 - Lifts** en fr

The purpose of this General Safety Instruction is to define the minimum Safety requirements applying to lifts and their safety components used or intended for use at CERN. This General Safety Instruction does apply to the worksite lifts.

Specific Safety Instruction
SSI-M-1-1 - Slings and lifting chains en fr
The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to slings and lifting chains, compared to General Safety Instruction GSI-M-1 “Lifting equipment and accessories”.

SSI-M-1-2 - Cranes, bridges cranes, gantry cranes and power driven hoists en fr
The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to cranes, bridge cranes, gantry cranes and power-driven hoists, and their accessories, compared to General Safety Instruction GSI-M-1 “Lifting equipment and accessories”.

SSI-M-1-3 - Non-fixed load-lifting accessories en fr
The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to the following non-fixed load-lifting accessories, compared to General Safety Instruction GSI-M-1 “Lifting equipment and accessories”: • electro-permanent lifting magnets; • permanent lifting magnets; • C-hooks; • lifting electromagnets (battery or mains fed); • lifting forks; • lifting beams; • clamps; • sheet-metal clamps; • vacuum gripping systems.

SSI-M-1-4 - Manually powered lifting equipment en fr
The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to the following manually powered lifting equipment and accessories, compared to General Safety Instruction GSI-M-1 “Lifting equipment and accessories”: • pulley blocks; • lever hoists and their supports; • hand chain blocks and their supports; • deflection pulleys; • jaw winches and their supports; • other manually powered lifting equipment, except pallet trucks, forklift trucks, lifting tables and manual platform lifts.
SSI-M-1-5 - **MEWP, suspended platforms, mast-climbing platforms and rail-dependent storage and retrieval equipment** en fr

The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to mobile elevating work platforms (MEWP), suspended platforms, mast-climbing platforms and rail-dependent storage and retrieval equipment, and their components, compared to General Safety Instruction GSI-M-1 “Lifting equipment and accessories”. This equipment includes: mobile elevating work platforms installed temporarily or permanently, powered manually or electrically, used to move people, equipment and materials to and from a single starting point, and which are designed to be used by one or more people to carry out their work. Platforms used by the firefighters and other emergency services are excluded from the scope of this Specific Safety Instruction.

SSI-M-1-6 - **Lifting tables, vehicle lifts and tail lifts** en fr

The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to lifting tables, vehicle lifts and tail lifts, and their components, compared to General Safety Instruction GSI-M-1 “Lifting equipment and accessories”. This equipment includes: elevating work platforms installed temporarily or permanently, powered manually or electrically, used to raise/lower equipment, materials and/or personnel and which also allow equipment and materials to be raised to perform work at a height more conveniently and safely.

SSI-M-1-7 - **Forklift trucks** en fr

The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to forklift trucks, compared to General Safety Instruction GSI-M-1 “Lifting equipment and accessories”. This Specific Safety Instruction does not apply to pallet trucks.

SSI-M-2-1 - **Pressure vessels** en fr

The purpose of this Specific Safety Instruction is to define the additional Safety requirements, compared to General Safety Instruction GSI-M-2 “Standard pressure equipment”, relating to pressure vessels used at CERN that are subject to or could be subject to a maximum allowable pressure of PS > 0.5 bar. The following vessels and their safety accessories are excluded from the scope of this Specific Safety Inspection: • cryogenic vessels; • vessels subjected to an open flame; • simple pressure vessels; • vessels used for heating, ventilation and air conditioning (HVAC); • transportable pressure vessels.
SSI-M-2-2 - Simple pressure vessels

The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to simple pressure vessels and their safety accessories used at CERN, compared to General Safety Instruction GSI-M-2 “Standard pressure equipment”. Cryogenic vessels are excluded from the scope of this Specific Safety Instruction.

SSI-M-2-3 - Safety accessories for standard pressure equipment

The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to safety accessories used at CERN for the protection of standard pressure equipment, compared to General Safety Instruction GSI-M-2 “Standard pressure equipment”. Cryogenic equipment and HVAC (Heating Ventilation Air Conditioning) equipment are excluded from the scope of this Specific Safety Instruction.

SSI-M-2-4 - Metallic pressurised piping

The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to metallic pressurised piping used at CERN, compared to General Safety Instruction GSI-M-2 “Standard pressure equipment”. Cryogenic equipment is excluded from the scope of this Specific Safety Instruction.

SSI-M-2-5 - Vacuum chambers and beam pipes

The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to vacuum chambers and beam pipes, compared to General Safety Instruction GSI-M-2 “Standard pressure equipment”. Cryogenic vacuum insulated vessels and windows for vacuum chambers are excluded from the scope of this Specific Safety Instruction.

SSI-M-2-6 - Transportable pressure equipment

The purpose of this Specific Safety Instruction is to define the additional Safety requirements relating to pressure equipment used at CERN that is transportable by road, compared to General Safety Instruction GSI-M-2 “Standard pressure equipment”. Aerosols, cryogenic equipment and fire extinguishers are excluded from the scope of this Specific Safety Instruction.
In accordance with General Safety Instruction GSI-M-4 Cryogenic equipment, this Safety Guideline is intended to provide advice on the safe use of cryogenic equipment and its conformity. This Safety Guideline is aimed at those people who, in the course of their duties, work with cryogenic equipment or those who are responsible for putting in place control measures for activities involving cryogenics.

Submitted by Svetlana Palagina on Tue, 23/09/2014 - 18:11