Kasko

Limited liability company

Slavkov No. 82, 687 64 Horni Nemci

RISK PREVENTION

for suppliers' introduction

(finding risks, identifying their causes and sources

and proposals for measures within the meaning of § 102 and Labour Code)

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approved by: authorized person

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	List of identified risks	

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Explanation:

P-Probability of occurrence and existence of risk

1. Random
2. Unlikely
3. Probable
4. Very likely
5. Permanent

N-Probability of consequences - severity

1. Injury without disability
2. Lost-time accident (with incapacity for work)
3. More serious injury requiring hospitalization
4. Serious injury and injury with permanent consequences
5. Fatal accident

H-Evaluators' opinion

1. Negligible impact on the level of danger and threat
2. Little impact on the level of danger and threat
3. Greater, non-negligible influence on the level of danger and threat
4. Large and significant impact on the level of danger and threat
5. More significant and adverse impacts on the severity and consequences of threats and hazards

R-Risk level

0 - 3: Insignificant risk 4 - 10: Acceptable risk 11 - 50: Moderate risk
51 - 100: Undesirable risk
101 - 125: Unacceptable risk

Subsystem	Hazard identification	Evaluation severity	Safety precautions	Note

		risks					
		P	N	H	R		
1.1 Internal transport / Operation of vehicles on internal roads							
Operation on intra-plant and construction site plant roads	* various injuries and accidents and property damage arising from operated vehicles - traffic accidents on the company premises;	3	3	1	9	* familiarizing drivers with internal regulations for intra-plant transport (if developed) and with vehicle operating instructions; * respect the relevant traffic signs (one-way traffic, right of way, maximum speed, etc.); * become familiar with less common dimensions of vehicles, cargo, or transportation routes;	
Operation on intra-plant and construction site plant roads	* hitting or pushing a person with a vehicle against a part of a building or other fixed structure or obstacle when entering a confined space, a gate, when reversing, etc.; * injury to a person due to spontaneous movement of the door leaves; * vehicle hitting a solid structure - damage to the vehicle;	2	3	1	6	* secure the door leaves in the required position; * maintain a safety distance of 500 mm to 600 mm on the left and right; * use vehicle width indicators; * safety markings - black and yellow hatching of narrowed edges up to the eye level of a seated driver; * when reversing, ensure that the vehicle is not overlooked and that there are no people behind the vehicle; * increased attention in the area of the gatehouses - entrances (at the gate), in the dispatch areas, etc.;	
1.2 Intra-factory transport / Handling forklifts							
Handling forklifts	* a load falling on the forklift driver;	2	3	1	6	* if forklifts are used to handle loads that could fall on the driver (e.g. high loads or articulated loads), they must be equipped with a support grille whose height, width and size of openings must be sufficient to effectively reduce the risk of the load or part of it falling on the driver; * driver-controlled forklifts (i.e. except hand-guided forklifts) equipped with a protective frame above the driver's seat, if they are used for stacking to a height greater than 1.5 m above the driver's seat (except for driver-controlled forklifts, where there is no risk of the load falling on the driver);	
Handling forklifts	* a load (pallets and other handling units) falling from the forks and hitting a person near the truck due to incorrect placement and arrangement of the handling unit and organizational shortcomings;	2	3	1	6	* require the driver to comply with the prohibition on leaving the truck when the load is lifted; * load pallets evenly so that the loaded material does not exceed the external dimensions; * the loaded material must not interfere with the loading holes; * material placed on and in pallets must be secured in such a way as to prevent personal injury from falling loose material; * the load and its parts placed on the trolley (or forks) are secured against falling, sliding or shifting (by safe placement, fixation, etc.); * observe the prohibition on stacking handling units with a dirty (muddy, frostbitten, etc.) support surface and with dirty contact points; * when stacking handling units above a height of 2 m with forklifts, when storing pallets at a height above 2 m, require employees to wear protective helmets; * observe the prohibition to stay under a load lifted on the forks of the truck; * the boundary of the stacked handling unit is vertical with a minimum deviation from the vertical (max. 2%); * during the operation of the forklift, the driver or other persons should wear a protective helmet (depending on the level of danger); if so stipulated by the traffic regulations;	
Handling forklifts	* falling of loads (pallets and other handling units) from forks and	2	3	1	6	* correctly adjust the spacing of the load-bearing forks according to the width of the pallet;	

	hitting a person near the truck due to faulty handling of loads;					* handling units intended for fork handling have a gap between individual layers (or a loading opening) of at least 60 mm for inserting the fork; * the load fork is fully inserted into the pallet pick-up holes, parallel to their axis; the fork must firmly support the pallet at least two-thirds of its length or width, eliminating the possibility of slipping; * when inserting the fork, it does not hit any parts of the pallet; * the truck driver lifts the pallet (load) with handling clearance above the stack; if the load is above the stack, the truck's lifting device must be positioned vertically; * the load must be placed carefully and safely, the forks must be moved away from the load by lowering or by tilting the lifting device or the truck forward; * when stacking, shelving, loading and unloading containers and vehicles, the fork extension beyond the outer dimensions of the pallets is not permitted; * the pallet is not handled with only one fork arm; * fork handling performed with only one pallet or superstructure;	
Handling forklifts	* collapse, collapse of stacked pallets or other handling units and endangerment of persons nearby stack/border;	3	3	1	9	* the flat surface of material stacking areas, including aisles, is maintained in good condition; * stacked plain pallets (and other handling units) are only stacked if they are loaded with material that can withstand safe stacking and guarantees the creation of a stable stack; * stacks of pallets and other handling units are made of the same type; * when stacking handling units (pallets, storage boxes, containers), their specified stacking capacity and stacking height are not exceeded; * each type of handling unit has a specified stacking height or number of layers; * Handling units that do not have specified stacking capacity or stacking height can be stacked under the following conditions: - the handling units are structurally or by their shape adapted to handling during stacking (picking holes, hinges, adapted for clamping jaws, etc.), - handling units can withstand the pressures arising from stacking, - the created stack will be stable, - the stacking height is determined in such a way as to ensure the stability of the stack and not to exceed the permissible pressures arising during stacking (see ČSN 26 9030); * stacks and boundaries must be stable and not tilted to one side); if there is a risk of them collapsing or collapsing, they must be immediately secured or dismantled; * when stacking, there is at least 200 mm of free space above the material being stored or above the created stack; * compressed gas cylinders when transported by trolley must be secured against falling, impact and free movement to the sides (place the cylinder on a shaped pad, pallet, etc.); * the boundary of the stacked handling unit is vertical with a minimum deviation from the vertical (max. 2%);	
Handling forklifts	* overturning of the wheelchair (after loss of stability), injury to the driver or other person;	1	4	1	4	* forklift equipped with a label with a load capacity diagram; * when handling a load (palletizing unit, pallet, etc.), do not exceed the load capacity forklift; place the load correctly, evenly, in accordance with the load diagram;	

						* correct driving technique, especially in curves, avoiding hitting obstacles, flatness of driving surfaces; * forklift with a lifting height of more than 1.5 m above the seat equipped with a protective frame; * traffic routes are clearly marked or defined (e.g. in the traffic regulations); * maintain traffic routes, passages, floors and ramps in good operating condition to prevent damage to the truck, to prevent its stability from being impaired and to prevent the safety of truck operation from being adversely affected; ensure that the roads are in a satisfactory condition, with a flat, hard and non- slip surface; * floors, hatches, bridges have sufficient load-bearing capacity and are maintained; *the load capacity specified by the truck manufacturer is not exceeded; *the truck is maintained in good technical condition, in particular: - effective operational emergency and parking brakes; - equipping the truck with a safety device that prevents its use by unauthorized persons and constantly requiring and checking whether the driver removes the key from the ignition switch every time he leaves the truck; - protective frame, - management will, - condition and type of used bikes, - content of pollutants in flue gases, - compliance with the conditions of longitudinal and transverse stability of the truck (selection of forks, placement of the load's center of gravity, instantaneous load capacity of the truck; *the driver does not leave the truck with the engine running; * the truck is parked (i.e. without the driver's supervision, if the driver leaves the truck), the load lifting device is fully lowered, the controls are set to neutral, the power supply is interrupted, the parking brake is applied and the truck is secured against any unintentional or unauthorized use (the driver must not leave the truck without securing it against misuse by an unauthorized person); - see the operating instructions;	
Handling forklifts	* hitting a person with a moving cart or forks against a fixed obstacle or structure;	2	3	1	6	* the width of the aisles between the stacks corresponds to the method of storing the material (the width of the aisle for the passage of transport carts must be at least 0.4 m greater than the highest width of the carts or loads; * the loads do not interfere with the driver's space and do not interfere with his driving; * if the load obstructs visibility when driving forward, the truck must be driven with the load at the rear; under certain conditions, e.g. when stacking or when overcoming slopes, where movement with the load placed in front is required, increased attention must be paid to steering the truck using auxiliary (additional) means or, if operating conditions require, guidance by another person;	
Handling forklifts	* running over a person with a wheelchair, running over a person's foot with a moving wheelchair, endangering a person by movement and working activities of the truck; * collision of a truck with another vehicle in road traffic;	2	3	1	6	* driver concentration, monitoring of surrounding traffic, reasonable speed; * transported loads do not obstruct the driver's view; * compliance with free profiles of roads and storage zones; * before starting to reverse, the driver makes sure that no one will be injured by the reversing truck when reversing and approaching; * preventing the presence of people in the path of the truck, especially when reversing; * the trolley is kept clean so that it can be	

						loose or damaged parts detected); * lifting equipment, lifting devices, pedals, steps and floors of trucks must be free of grease, oil, mud, etc.; * the forklift is regularly inspected and maintained: - exhaust system and connection of the carburetor, vaporizer and fuel pump of trucks with combustion engine, - tires to check for damage to the tread, sidewalls and rims. - adhesion of solid tires to metal strips or rims (if necessary to remove foreign bodies from the tread; - brakes, steering, control mechanisms, warning devices, lighting, regulators, overload protection devices - all parts of the lifting and tilting mechanisms and chassis parts (check these parts carefully and regularly) - protective and safety devices; - accumulator batteries, motors, regulators or; contactors, limit switches, protective devices, electrical wires and connectors (and checked) - hydraulic systems, cylinders, valves and other similar parts. * a defective or damaged truck (which could endanger the safety of persons or the safety of its work and which could cause danger) is taken out of service until it is restored to a safe condition; * for the use of the truck in road traffic (including loading and unloading on roads and local roads) permission from the Police of the Czech Republic is required * if the conditions of use require it, the truck is equipped with additional warning devices (lights and flashing lights);	
Handling forklifts	* driver falling while getting out of the forklift;	2	2	1	4	* using stepping elements, holding on to handrails and other holding elements; * compliance with the ban on jumping out of the wheelchair;	
Handling forklifts	* fall of a person transported in a forklift;	1	3	1	3	* the prohibition on transporting people is observed, except in cases where the truck is designed for their transport;	
Handling forklifts	* hitting the floor with hands or feet with a load on the forks; * hitting a person with a moving part of the forklift;	3	2	1	6	* preventing the presence of persons in the dangerous vicinity of the forks and under the lifted load;	
Handling forklifts	* bothering effects of exhaust gases (especially CO) in the exhaust fumes of a combustion engine vehicle by engine;	2	2	1	4	* a truck with an internal combustion engine may only be used in enclosed spaces if hygienic requirements for the working environment are met, the manufacturer's instructions are followed and the NPK (PEL - permissible exposure limits) in the working atmosphere are not exceeded; * if the truck is equipped with a catalytic converter, the driver is familiar with the manufacturer's regulations; * maintaining the catalytic converter in working condition, technical inspections and checks;	
Handling forklifts	* falling of the trolley when approaching the loading area of the vehicle/wagon; * a trolley falling while crossing a bridge; * breaking of the bridge, access ramp when loaded with a truck with a load;	1	4	1	4	* the lintel (transitional) bridges or bridge walkways have adequate safety/load capacity to support loaded trolleys, their maximum load is marked durably and clearly on the labels; * lintels or bridge gangways secured to prevent any accidental movement, swinging or slipping (functional and properly functioning fastening and securing to prevent unexpected lifting and/or movement of the trolley);	

						* lintel bridges and bridge walkways have an anti-skid surface (they should not have a slope greater than 10%); * if there are bridge decks or footbridges at the destination, measures are taken to secure the vehicle against unwanted movements during loading; * before the wheelchair enters the road vehicle, it is checked whether the brakes are applied and the wheels are chocked (wheel chocks do not need to be used if the road vehicle is equipped with an automatic spring-operated parking brake)	
2.1 Production and operational buildings / Parking areas							
Parking areas	* vehicular impact on a person, running over a person;	1	3	1	3	*correct selection, location and design of a parking space according to the relevant standard, which specifies the parameters of the access and exit roads, the method of arrangement, the size and dimensions of the parking space, the radii of curves and the width of lanes when vehicles drive on a circular track, the dimensions of curves when vehicles drive, the size of the parking space and the width of the roads between the parking spaces; * transverse slope of parking spaces up to 5%; longitudinal slope of the stand up to 3%; *if parking spaces are designed as parking strips along roads, the transverse slope of the parking space, depending on the longitudinal slope of the road, can be up to 9%; for parking strips, the longitudinal slope of the parking space must not exceed 6%; * maintain right-hand traffic on the access and exit roads; * individual parking spaces should be marked with appropriate horizontal traffic signs; *on surfaces where horizontal marking of individual parking spaces cannot be applied, mark the type of parking space with a traffic sign, or mark the width of the parking space on adjacent curbs * mark pedestrian crossings as needed; * maintaining road accessibility in winter;	
Parking areas	* slipping, falling of a person;	2	2	1	4	* rainwater drainage; * maintaining passability, especially in winter	
2.2 Production and operational buildings / Outdoor communications and workplaces							
Outdoor routes and workplaces	* collisions of employees - pedestrians with automobile traffic;	1	3	1	3	* suitable solutions for intra-plant transport, establishment of the best separated sidewalks, or even bicycle paths; * installation of railings, separating barriers if the main entrances and exits from production halls, etc. are located opposite the roadways and in other exposed locations, installation of railings if the sidewalk slope is greater than 1:12 (8.3%); * traffic signs according to traffic needs and danger to people; * mark pedestrian crossings as needed;	
Outdoor routes and workplaces	* a person falling into a deep place;	1	3	1	3	* installation of railings on the free edges of walkways leading over bridges along watercourses, water reservoirs, etc., with smooth reinforced walls with an external slope greater than 1:2.5 or with natural banks with a slope greater than 1:1;	
Outdoor routes and workplaces	* slipping, tripping and falling of people on outdoor horizontal walking surfaces;	2	2	1	4	* timely removal of ice and snow, anti-slip sprinkles to prevent people from slipping and falling when moving on outdoor roads in winter; * drainage of sidewalks and walking areas so that water does not accumulate on them (risk of freezing);	

						* special anti-slip treatment of inclined sidewalks with a slope of 1:8 to 1:12; * flat, rough, dust-free surface of sidewalks and roads; * modification of manhole covers and depressions so that they are at the same level as the adjacent sidewalk, roadway, sufficiently load-bearing, etc.;	
Outdoor routes and workplaces	* impact of a vehicle with an obstacle;	1	2	1	2	* identifying sufficiently wide and high underpasses and passageways; * marking of obstacles (columns, masts, foundation bases of supporting elements of overhead lines, edges of protruding structures, ramps, etc. near roads with safety markings (yellow-black or white-red hatching);	
2.3 Production and operational buildings / Electrical equipment							
Electric devices	* electric shock by direct or indirect contact; * exposure of live parts, reduction of insulation properties, short circuit caused by a conductive object;	1	3	1	3	* preventive maintenance of electrical equipment, inspections, troubleshooting; * timely professional repairs of damaged electrical equipment (sockets, plugs, movable leads, etc.); * routing of movable supply lines outside passages and communications; * careful handling of cables and power cords; * do not operate electrical appliances and equipment with wet hands; * familiarize yourself with the instructions for use; * visual inspection of the condition of the device before each use; * do not leave electrical appliances and equipment turned on after leaving the workplace and ending the work shift; * operation and maintenance of electrical appliances according to instructions; * not using damaged movable leads; prohibiting their routing over sharp edges, tensile stress, etc.; * inspections and revisions of electrical appliances for household and similar purposes (electrical lighting, electrical information technology equipment, consumer electronics devices, movable power supplies and cords, electrical and electronic measuring instruments, other electrical appliances of a similar nature); (see also library "Electrical devices - electric shock")	
Atmospheric electricity (lightning)	* being struck by lightning (danger from atmospheric electricity); * death in the event of direct human intervention by the main leader spark discharge; * danger of being hit by a secondary spark discharge: - burns of all degrees; - paralysis of the nervous system; - shock, respiratory arrest; - fire after ignition of flammable and easily flammable substances (by lightning energy) - lightning strike jump from the down conductor to larger metal surfaces or objects * injuries caused by the indirect effect of lightning in its vicinity, e.g. burns, exposure to intense ultraviolet radiation, being thrown away or damaged by an air wave, deafening, or possibly also by ground current (step voltage) scattered around the point of discharge	1	4	1	4	* conductive connection of suitably and effectively placed interception devices (lightning conductors), their grounding, or the use of other atmospheric voltage arresters (on administrative and operational buildings and metal structures); * maintaining lightning protection equipment in good condition (inspection, troubleshooting); (see also library "Electrical devices - Atmospheric electricity")	

	during a lightning strike;						
2.4 Production and operational buildings / Doors, gates, windows, skylights							
Increased floors, platforms and communications	* falling of persons when opening, cleaning, maintaining skylights, when replacing glass fillings of skylights in higher parts of buildings (in the case of skylights that are difficult to access);	1	3	1	3	* enabling safe access to skylights from both the outside and inside (establishing safe exits, walkways, footbridges, etc.);	
Working environment - lighting	* reduced visibility, the appearance of dark spots, increased probability of error workers during work activities, increased risk of injury;	3	2	1	6	* location of machine operator stations and selection of work locations according to the most favorable natural lighting conditions, establishment of suitable and sufficient artificial lighting, ensuring suitable local lighting; * uniformity of lighting, local lighting with regard to visual demands;	
Gates, doors	* spontaneous closing of the door leaves, e.g. due to wind; * hitting, bumping a person with an unexpected movement of the wings;	2	2	1	4	* securing the door leaves against spontaneous closing (hooks, rods, plugs, etc.);	
Gates, doors	* door leaves falling off and falling on a person;	1	3	1	3	* easy control (closing and opening) of the door leaves, correct design and maintenance of the door hinges; * mechanical securing of the door leaf path against falling out;	
Gates, doors	* sliding door falling;	1	3	1	3	* sliding doors must be secured against sliding out and falling out;	
Gates, doors	* the fall of a gate/door opening upwards;	1	3	1	3	* equipping the gate/door with a mechanism to prevent it from falling back (down);	
Windows, doors	* cuts on glass from broken glass panels;	1	2	1	2	* transparent or translucent walls, partitions in rooms or near traffic routes, doors and gates at eye level clearly marked; in particular, visible marking of all-glass entrance door leaves in exposed areas; * a suitable type of glass with appropriate properties, especially strength, in exposed areas; * timely reglazing of broken and partially cracked glass panels; * windows, etc., can be secured against spontaneous closing when open, as needed;	
Windows, doors	* impact, danger of collision with people;	3	1	1	3	* swing doors and gates must be transparent or have a transparent window;	
Windows, doors	* worker falls after exerting effort while opening a window or skylight;	1	2	1	2	* easy control of the window, skylight, ventilation opening from a safe place; * ensuring safe access and egress to controls;	
2.5 Production and operational buildings / Production and operational buildings and their parts							
Increased floors, platforms and routes	* falling and sinking of materials and objects from the floor, platform, footbridge, steel gratings and other elevated roads, structures and their parts;	2	3	1	6	* provision of free edges of floors with a protective (edge) strip, a stop with a height of at least 100 mm; * protection of materials and objects against falling; * protection of the space under the workplace against the threat of falling objects (by fencing, excluding entry of persons, guarding, etc.);	
Increased floors, platforms and routes	* a person falling through a floor, hatch, floor grate, skylight, etc.;	1	4	1	4	* provision of raised floors with load-bearing covers, gratings, secured against displacement, twisting and other undesirable movement; * maintenance of floor elements, replacement of unsupportive and damaged elements (corroded grates, hatches, rotten planks and wooden parts of hatches, etc.); * maintaining the safe condition of work areas and access routes (vertical steel ladders);	
Increased floors, platforms and routes	* work and movement of workers on the roof, stepping on a damaged, unsupportable part of the roof, movement of people near the eaves or other free edge of the roof with as a result of a fall from a roof or	2	4	1	8	* ensuring safe movement on the roof (sufficient load-bearing capacity of the roof, railings); * determination of suitable anchor points for the use of personal safety equipment (safety harnesses); *when working on non-load-bearing roof covering, protection against	

	collapse through the roof - through an unsupportive roof covering (e.g. corrugated asbestos-cement, sheet metal, etc.);					forfeiture;	
Increased floors, platforms and routes	* a person falling while performing maintenance and repairs and other activities where the worker is exposed to the risk of falling, i.e. at any elevated work and movement locations, including work on roofs (inspection activities, minor maintenance, e.g. snow removal, etc.); * falling of people while cleaning lighting fixtures on the ceiling of a building or hall;	2	3	1	6	* ensuring safe access to work areas at height, establishing handling platforms, walkways, steps with platforms; * provision of free edges of roofs, terraces, walkways, platforms, footbridges, etc. with a protective element (railing, attic or parapet wall or other protective element; * using personal protective equipment when working on parts of buildings and structures where there is no protection against falls from a height, e.g. when working on roofs; * use of ladders, portable platforms, work platforms; * do not climb on railings or other structures;	
Increased floors, platforms and routes	* tripping, falling of a person on a flat surface; * tripping, spraining a leg, bumping into, getting caught on various obstacles and parts protruding from the floor;	3	2	1	6	* removal of any communication obstacles that can be tripped over - lid bolts and raised hatches above floor level, hoses, electrical cables, horizontal elements protruding above floor level and communications; * if solid obstacles cannot be removed, use approach wedges or safety markings (black-yellow or red-white hatching); * keeping roads and passages free and clear, without obstacles, and not blocking them with material or operating equipment;	
Increased floors, platforms and routes	* slip, sprain, bump and fall of a person on the floor of the work station of the service platform, work steps, etc. on horizontal roads, staircases, ramps, footbridges, platforms, level crossings, etc.; * slipping when walking on wet (in washrooms, bathrooms, when getting out of the bath) or greasy (in kitchens) floors; (when walking or working activities); * slipping on the floor, e.g. behind the entrance door;	2	2	1	4	* even and hard condition of the surface of floors and roads, without unevenness, potholes, maintenance, cleaning and tidying of floors, timely removal of damaged areas, unevenness, etc.; * suitable work shoes, use of mats in washrooms; * cleaning of walking surfaces, timely removal of dirt (increasing slipperiness, especially grease), timely cleaning, dry mopping of floors using appropriate cleaning and degreasing agents, etc.; * sloping the floor surface to drain water from operating fluids so that liquid (water) does not remain on it in wet operations; * in winter, removal of ice, snow, anti-slip sprinkle; * roughening of walking surfaces in the event of their smoothing due to natural wear and tear or the unsuitability of the surface material itself; * additional anti-slip treatment of floor surfaces; use of anti-slip footwear as needed (fine-profile soles have better anti-slip properties than soles with coarse profiles) or footwear with softer soles;	
Increased floors, platforms and routes	* narrowed passages, collision and trapping of the worker against fixed structures, machines, etc.;	1	1	1	1	* correct placement of machines, stationary and mobile equipment so that the minimum widths of roads, passages, service areas, etc. are observed;	
Increased floors, platforms and routes	* difficult evacuation and movement of people along escape routes in case of danger;	1	3	1	3	* appropriate route, number, location and dimensions of escape routes, permanent maintenance of clear escape routes and emergency exits; * opening gates and doors on escape routes in the direction of escape (outwards); * marking of designated escape routes and emergency exits; * doors and gates operated by mechanical power are equipped with a clear, easily recognizable and easily accessible emergency stop device, except in cases where,	

						when they open automatically in the event of a power failure, they must allow for manual opening;	
Stairs and ladder outputs - movement persons	* a person falling while descending (less often when ascending) stairs (especially metal), from solid steel ladders and steps providing communication connections with raised platforms, footbridges, etc. structures; * oblique incorrect stepping on the edge;	3	2	1	6	* flat, non-slippery and undamaged surface of stair steps and landings; * holding on to handrails when ascending and descending staircases and vertical steel ladders; * correct stepping, avoiding stepping at an angle, increased caution when reducing adhesion conditions in wet conditions, ice, due to muddy shoes, etc.; * elimination of incorrect stepping up to the edge of the stair step, where friction conditions are deteriorated; * using non-slip shoes (finely profiled soles have better anti-slip properties than soles with coarse profiles) or shoes with softer soles; * cleaning shoes before climbing a ladder * marking the first and last stair steps; * anti-slip lining of worn and worn edges of stair steps, replacement of steel stairs with more suitable tread surfaces of stair steps, ensuring sufficient depth of tread surface * correct stepping on the rungs and other exit elements, the possibility of using a handrail to hold on to the end of the ladder when exiting;	
Ramps	* a person falling from the free edge of a ramp, slipping on a frozen, icy surface;	2	3	1	6	* flat and anti-slip design of the ramp surface; * marking the free edge of the ramp with black and yellow hatching; * provision of the free edge of the ramp with a removable and otherwise modified railing (if the ramp serves as a road); * sufficient ramp lighting; * in winter, removing ice and slippery surfaces; * compliance with the maximum slope of internal ramps for traffic of 1:12 (8.3%); maximum slope of internal ramps for pedestrian routes of 1:8 (12.5%), exceptionally, maximum slope of internal ramps for pedestrians of 1:6 (16.6%);	
3.1.1 Lifting equipment / Passenger and freight elevators / Elevators - user hazards							
Elevators - risks endangering users elevator	* trapping of a person by the movement of the elevator cage in cutting points;	1	3	1	3	* preventing people from accessing the area in which the cage is moving (prevention is carried out by fencing off the area with the moving cage and counterweight - with walls, mesh, glass panes); * fencing the elevator shaft area, preventing people from entering dangerous proximity to the passing cabin and counterweight; * reconstruction, modernization of a non-compliant elevator;	
Elevators - risks endangering users elevator	* reduction in the strength of the wire glass and resistance to breakage, breakage of the wire glass used to glaze shaft doors or shaft walls; * cuts on glass;	1	3	1	3	* use of suitable, sufficiently strong and durable glass (according to strength tests, wired glass can be broken with a force of around 60 N due to the aging of the wires and subsequent embrittlement of the wired glass); * wired glass can only be used after successfully completing elevator tests; * replacement of non-conforming glass with reduced strength and durability (in previously manufactured and used wire glass, due to aging of the wires and subsequent embrittlement of the wire glass); * timely replacement of cracked glass;	
Elevators - risks endangering users elevator	* fire penetration into the shaft;	1	4	1	4	* replacement of wooden shaft doors and wooden elevator cage; * reconstruction, modernization of a non-compliant elevator;	
Elevators - risks	* injury to the transported person	2	1	1	2	* equip the elevator cage with cage doors and	

endangering users elevator	surface of the free shaft wall in the case of an elevator car without a car door or light barrier (abrasions, scratches);					light barrier; * reconstruction, modernization of a non-compliant elevator; * ensure that the transported loads do not exceed the contours of the cage and do not deform its walls and shaft walls;	
Elevators - risks endangering users elevator	* manipulation of the elevator (calling the elevator) without the knowledge of the person in the cage (e.g. a child who enters/ cannot get out/cannot open the shaft door);	1	2	1	2	* exclusion of calling an empty car with open car doors in elevators with a moving floor of a car without car doors or with manual car doors; * correct setting of the floor switch;	
Elevators - risks endangering users elevator	* danger to transported persons when approaching the free shaft wall; * failure to open the cage door switch (same risk as with a cage without a door);	1	4	1	4	*exclusion of the operation of an elevator with a cage without cage doors and without a light barrier; * forced switching off of cage door switches; * ensure prescribed lighting of areas related to elevator operation;	
Elevators - risks endangering users elevator	*a person falling into an elevator shaft; * danger to persons and lift users in the event of the cage moving with the doors open or if a door behind which the cage is not located can be opened (initiation of an extreme emergency situation) by bridging the door switch, or by using an outdated door lock);	1	4	1	4	* door safety interlock (door switch, lock) preventing the elevator from starting if any of the doors are open; * safety measures and equipment eliminating the possibility of causing an extreme emergency situation by bypassing the door switch or using an outdated door lock; * safety device to prevent the door from opening if the cage is outside the station; * functional security device securing the shaft door; * reconstruction, modernization of a non-compliant elevator; * ensure prescribed lighting of areas related to elevator operation;	
Elevators - risks endangering users elevator	* creating a step between the platform level and the cage floor with the possibility of tripping, making it difficult for people to get on and off;	1	2	1	2	* ensuring and adjusting precise stopping with regard to elongation and slippage of the supporting ropes; * performing maintenance, adjustments, professional inspections and tests;	
Elevators - risks endangering users elevator	* insufficient protection entering persons, especially children, from the action of the anti-pinch device in the case of securing the shaft door with only one light photocell;	1	2	1	2	* reliable securing of shaft doors; * securing the shaft door with more than one light photocell;	
Elevators - risks endangering users elevator	* danger to people from shaft doors; * poor door opening and closing function, possible driving with the doors open, possibility of opening the shaft door without the presence of the cage;	1	3	1	3	* timely repair, replacement of worn door cams on freight elevators; * mechanical, electrical adjustment; * ensuring timely elimination of detected and reported defects;	
Elevators - risks endangering users elevator	* inserting a person's limbs into the shaft space;	1	3	1	3	* a maximum clearance of 150 mm is maintained between the cage and the shaft walls or the cage floor level and the platform level if the cage stops above the platform (the horizontal distance between the inner surface of the shaft wall and the threshold or frame of the cage door or the closing edge of the cage sliding door must not exceed 150 mm);	
Elevators - risks endangering users elevator	* the possibility for children to climb into the space between the shaft and cage doors at the entry level;	1	3	1	3	* maintaining a maximum free gap of 150 mm (horizontal distance) between the cage and shaft doors;	
Elevators - risks endangering users elevator	* fire, evacuation of people;	1	3	1	3	* in the absence of a fire sensor, implement a link to the operation of the elevator with the evacuation of transported persons in the event of a fire in the building (meaning a separate supply);	
Elevators - risks	* forfeiture of the transported person	1	4	1	4	* matching protective sill plate;	

Elevators - risks endangering elevator user	into the shaft when the cage stops at the top of the opening zone and the shaft door opens when being rescued from the cage					* ensure prescribed lighting of areas related to elevator operation;	
Elevators - risks endangering elevator user	* malfunction and stop of the elevator car outside the opening zone (anxiety states, during long-term forced stay of people in the elevator car, panic, claustrophobia, impossibility of administering necessary medications, impossibility of self-liberation and long waiting for mediated external assistance);	1	3	1	3	* two-way communication device (connection) between the cage and the permanent rescue service, e.g. signaling of a lift failure to a place with permanent service, permanent residence (gatekeeper, etc.), functional sound signal from the lift cage; * light signaling (or other indicators) providing information regarding elevator operation; * emergency lighting of the cage in case of an emergency; * regular maintenance of the elevator's proper technical condition (provided by the supplier); * ensure timely elimination of detected and reported elevator defects and malfunctions; * carrying out professional inspections, professional tests and operational official tests; * ensure the required qualifications of the lift supervisor and driver and monitor the performance of their duties; *to control and require the fulfillment of the elevator supervisor's duties - including immediately reporting defects, malfunctions, or possible removal of the elevator from service to the operator; * immediately remove the lift from service if it endangers the safety of persons due to its inadequate operational capability, method of use, operation and maintenance;	
Elevators - risks endangering elevator user	* causing distress to peopleduring a power outage and subsequent stopping of the elevator cage;	1	3	1	3	* functional emergency lighting in the elevator car allowing easy search and use of emergency signaling or communication equipment;	
Elevators - risks endangering elevator user	* misuse of the stop controller in the elevator without cage doors, possibility of inducing various undesirable fault states by unauthorized persons, certain groups of elevators descend using a system other than the selected one (comparison run)	2	2	1	4	* regular maintenance of the elevator's technical condition; * ensure regular servicing; in the case of continuous 24-hour servicing, the relevant service company must be able to properly fulfil its obligations; * ensure timely elimination of detected and reported elevator defects and malfunctions;	
Elevators - risks endangering elevator user	* disabling the elevator control from the cage, creating a state of distress;	1	3	1	3	* preventing the cage lighting from being switched off by an unauthorized person or by mistake, even while driving; *Do not place electrical lighting circuit breakers in the distribution box in the hallway so that they are freely accessible; * sufficient intensity of cage lighting;	
Elevators - risks endangering elevator user	* problematic control of the elevator from the cage with burnt, broken and otherwise damaged buttons;	2	1	1	2	* light signaling (or other indicators) providing information regarding elevator operation; * remote control combination with "Antivandal buttons"; *thorough inspection of the elevator by the supervisor;	
Elevators - risks endangering elevator user	* elevator accident due to failure of any mechanical part, failure of the mechanical brake part;	1	4	1	4	* not using simple mechanical brake parts; * reconstruction of an older elevator machine without duplicate mechanical parts of the electromechanical brake; * timely maintenance, repair, replacement and testing; * carrying out professional inspections, professional tests and operational official tests;	
Elevators - risks endangering elevator user	* unfavorable course of dynamic forces during cage equipment self-locking catchers (braking on the leashes and keeping the cage still);	1	3	1	3	* not using self-locking wedge arresters for speeds above 0.7 m/s2 * maintenance and adjustment, functional testing during inspections/tests	
Elevators - risks endangering elevator user	* failure to stop the elevator when an instruction to stop has been issued;	1	2	1	2	*reconstruction of electrical equipment to eliminate a situation where a dangerous/emergency situation can occur due to a single fault; * time limit for drive operation;	

Elevators - risks endangering users elevator	* elevator failure leading to exceeding the permitted speed, getting caught, opening the door, etc.;	3	3	1	9	* revisions, repairs, reconstruction of electrical equipment;	
Elevators - risks endangering users elevator	* long-term slippage of the ropes on the friction disc resulting in extensive damage to the elevator;	1	2	1	2	* a functional device that shuts down the elevator drive if the elevator cage or counterweight becomes blocked; *reconstruction of electrical equipment;	
Elevators - risks endangering users elevator	* disconnection of guides during operation;	1	3	1	3	* not using rod, tube or wire guides; * reconstruction, modernization of a non-compliant elevator;	
Elevators - risks endangering users elevator	* unwanted manipulation unauthorized persons with important parts and components of the elevator (such as door deadline);	1	2	1	2	* limit the use of mesh to enclose the elevator shaft located in the stairwell mirror; * ensure timely elimination of detected and reported defects;	
Elevators - risks endangering users elevator	* threat to unauthorized persons - unwanted contact or capture by moving parts (elevator drive, etc.);	1	4	1	4	* locking of hatches in cage ceilings and engine room doors;	
Elevators - risks endangering users elevator	* fall of the cage due to breakage of the supporting elements (ropes);	1	4	1	4	* carrying out operational and technical inspections; * catchers mechanically securing the cage;	
Elevators - risks endangering users elevator	* a person slipping on the floor in the cage;	3	3	1	9	* suitable anti-slip floor treatment in the cage;	
3.1.2 Lifting equipment / Passenger and freight elevators / Elevators - danger to service personnel							
Elevators - risks endangering service and inspection workers	* person falling (service/inspection worker) on the way to the engine room;	1	3	1	3	* ensure the prescribed lighting of areas related to access to the engine room; * ensuring safe entry into the engine room using a ladder with the possibility of stabilization, steps, etc.;	
Elevators - risks endangering service and inspection workers	* hitting hands, hitting heads when manipulating the hatch at the entrance to the engine room;	2	2	1	4	* balancing the inlet hatch; * securing the hatch hinges; * easy handling with the lid (handle, hinge lubrication, etc.); * hatch lockability in the raised position;	
Elevators - risks endangering service and inspection workers	* possibility of manipulating and inducing an emergency state of the elevator unauthorized persons;	1	3	1	3	* enabling the main switch to be locked in the off position; * not placing the main switch outside the engine room; * lockable engine rooms - for engine rooms located on a grid or platform, removal or closure of the ladder or steps and reliable securing (locking) of electrical devices accessible from access points is sufficient;	
Elevators - risks endangering service and inspection workers	* bumping, pressing, or hitting a worker in the cavity of the cage with parts of the elevator;	1	3	1	3	* location of the "STOP" control in the recess; * compliance with the safety block or alternative measure;	
Elevators - risks endangering service and inspection workers	* difficult manipulation of the elevator with the possibility of causing an emergency without the knowledge of the service worker performing work on the elevator roof;	1	2	1	2	* use (possibility of use) of the STOP control during an elevator inspection ride, when the service worker is on the roof of the elevator; * control combination for inspection travel on the roof of the elevator cage to enable control of the elevator from the roof of the elevator cage during service or inspection activities;	
Elevators - risks endangering service and inspection workers	* creating a dangerous operating condition for a person entering the shaft cavity;	1	4	1	4	* possibility of taking the elevator out of service and eliminating unexpected/unwanted closing of the shaft door while the service worker is in the shaft;	

inspection workers	* a service worker was hit by an elevator when entering a pit - shaft;					* shutdown, STOP button S3;	
Elevators - risks endangering service and inspection workers	* causing an accident (fall, pinching, crushing) due to poor judgment by a service worker in insufficient lighting;	1	3	1	3	* ensuring sufficient lighting of the service worker's workplace, especially the shaft and the roof of the cage; * ensuring lighting and visibility of obstacles during service travel on the elevator cage;	
Elevators - risks endangering service and inspection workers	* a service worker falls from the roof of the cage into the elevator shaft;	1	4	1	4	* placing a railing on the roof of the cage if the distance (free gap) between the edge of the cage and the shaft wall is greater than 200 mm;	
Elevators - risks endangering service and inspection workers	* worker being caught (most often limbs), being pulled in, being pinched by moving parts, when performing service/inspection activities;	1	3	1	3	* protective devices (covers) for friction discs, deflection pulleys, speed limiters including ropes; * suitable clothing with tight sleeves, without loose parts, etc.;	
Elevators - risks endangering service and inspection workers	*stroboscopic phenomenon; * unwanted contact or catching of a service worker with moving parts of the elevator drive;	1	3	1	3	* suitable lighting in the engine room, e.g. with incandescent lamps (not only fluorescent lamps connected to one phase);	
Elevators - risks endangering service and inspection workers	* fall into a depression (of a worker performing service/inspection activities);	1	2	1	2	* enabling safe descent into the depression (with a ladder);	
Elevators - risks endangering service and inspection workers	* worker capture performing service/inspection work in the pit with moving parts of an adjacent elevator;	1	3	1	3	* mutual separation of moving parts in the recess;	
Elevators - risks endangering service and inspection workers	* uncontrollable fall of objects (parts, tools, etc.) into the shaft during activities performed on elevators;	1	2	1	2	* installation of protective, trench strips lining the free edges of the openings in the machine room above the shaft; * correct working procedures;	
Elevators - risks endangering service and inspection workers	*electrical short circuit; * the need to work on electrical equipment in a live switchboard; * worker being electrocuted;	1	2	1	2	*suitable electrical appliances and installations; * correct execution and maintenance of the cross-section of the conductors and the condition of the insulation, *possibility of turning off the power to the lighting and sockets; *reconstruction of non-compliant electrical equipment; * correct and qualified work procedures;	
Elevators - risks endangering service and inspection workers	* electric shock to a service worker;	3	3	1	9	* protection of contacts and terminal blocks, prescribed degree of protection of electrical equipment; (see also library "Electrical devices - electric shock")	
Elevators - risks endangering service and inspection workers	* endangering the worker performing service/inspection work on the elevator cage;	1	3	1	3	* determining safety measures during the inspection drive;	
3.2 Lifting equipment / Overhead cranes							
Crane track	* insufficient soil bearing capacity for foundations - foundation drift, formation of deformations, cracks, fissures,crane tracks, crane fall)	3	3	1	9	* thorough analysis of soil conditions; * geological survey;	
Bridge cranes - construction	* fatigue of the crane runway structure material, fractures, cracks, damage to the connecting elements	3	3	1	9	* regular checks, revisions; * compliance with deadlines for repairs of steel structures and coatings;	

	elements, span change, crane falling off the track, derailment;						
Bridge cranes - construction	* loose rails on the crane track - bridge, trolley, crane swerving off the crane track, crane fall, TÚ, SÚ;	3	3	1	9	* regular checks, revisions, fastening of connections, recording;	
Bridge cranes - construction	* missing safe exits, non-functional railings - operator falls, people fall from a height;	3	3	1	9	* ensuring safe exits (ladders with a protective basket, staircases, compliance with the minimum aisle width); * regular inspections, repairs and elimination of defects;	
Bridge cranes - construction	* failure to retain the kinetic energy of the crane - failure to stop the moving bridge and trolley at the end crane tracks or cat tracks; * crane impact on hall walls; * crane moving off the crane runway; * hitting a crane operator;	3	3	1	9	* installation of bumpers or stops and maintaining their proper function; * correct crane operation;	
Bridge cranes - construction	* worker being caught by the movement of the crane when climbing onto the crane runway, being pressed, crushed, or driven into depth;	3	3	1	9	* marking of exits to the crane runway; * compliance with the prohibition of unauthorized exit; * enter the runway only with the crane operator's knowledge (the crane operator's consent to exit); * suitable location and marking of the main switch;	
Bridge cranes - construction	* slipperiness of the floors of walkways and service walkways, platforms, staircases, ladders - slipping and falling of people moving along the crane runway;	3	3	1	9	* anti-slip design of floors and walking surfaces and elements; * cleaning and tidying the crane runway;	
Bridge cranes - construction	* insufficient spatial conditions of the footbridges, trapping of a person by moving cranes, crushing, crushing, impact, fall from a height;	3	3	1	9	* compliance with the prescribed dimensions of walkways, platforms, etc.; * installation of railings; * safety marking of dangerous places; * prohibition of movement of incompetent persons along the crane runway;	
Bridge cranes - construction	* failure to mark sources of danger in access areas - worker capture moving parts (levers, handwheels, switches, rods, etc.) - winding, bumping, bruising of the worker;	3	3	1	9	* safety markings of moving parts in accessible areas; * installation of signaling, etc.;	
Bridge cranes - construction	* electric shock when a worker (moving along the crane track) touches an electric overhead line conductor;	3	3	1	9	* functional and marked main switches; * warning notices, respecting them; * training of competent persons;	
Bridge cranes - construction	* poorly adjusted, non-functioning brake - decline, slippage, uncontrolled lowering of the load, impact on the equipment;	3	3	1	9	* daily inspection by the crane operator before starting operation; * brake adjustment, repair;	
Bridge cranes - construction	* missing safety seats for the drive wheels - drive wheel breakage, rollover, crane falling off the track, track deformation, difficulty, blocking of traffic on the crane track;	3	4	1	12	* installation of safe stools of appropriate parameters; * regular inspection, troubleshooting;	
Bridge cranes - construction	* crane overload, emergency situation, rope breakage, load falling;	3	4	1	12	* legible marking of the crane's lifting capacity;	
Operator station	* insufficient visibility and overview of the working area from the operator's position, oblique pulls, impacts with the load, impacts on other cranes, people being hit by the load;	3	3	1	9	* removal of obstacles blocking the view; * cabin shape adjustment;	
Operator station	* insufficient space at the operator's station; * increased fatigue and decreased	3	3	1	9	* design of the crane operator's position according to ergonomic principles;	

	operator attention; * unwanted catching on trigger or control elements; * increased likelihood of an adverse event;						
Operator station	* dangerous exits - non-functional and blocked exits and emergency escape routes, worker falling during exits, during rapid descent in case of danger, preventing escape, bumping, worker falling;	3	3	1	9	* regular inspections and revisions, maintenance; * maintaining proper and safe condition of ascents and descents, escape routes, conducting training and information to all competent persons climbing onto the crane;	
Operator station	* narrowed and lowered passage profiles, trapping, crushing, impact of passing persons, injuries to operators and competent persons;	3	3	1	9	* maintaining clear passages and profiles; * safety warning signs; * establishment of through bypasses, etc.;	
Handling burdens accessories for lifting	* falling loads, personal injuries caused by falling and impacting loads;	3	3	1	9	* only a qualified person, i.e. a professionally qualified rigger, should be authorized to suspend loads from the crane's load- bearing body and perform other rigging work; * exclusion of the presence of persons in the area of possible fall of the suspended and settled load and its parts (in the zone of danger from kinetic or potential energy - i.e. under the load and in the areas where the crane is moving); * use of a warning sign by the crane operator to warn persons near suspended loads who may be at risk from the crane or the load; * correct estimation of safety distances between people and transported loads; * using signaling when moving loads and alerting others; * marking of dangerous areas;	
Handling burdens accessories for lifting	* damaged steel bindings, protruding wires of binding ropes, stab wounds, lacerations of binders;	3	3	1	9	* use of safe binding agents; * use of PPE to protect hands (gloves); * regular inspection of lashings; * discarding defective lashing devices;	
Handling burdens accessories for lifting	* defective, damaged, unmarked lashing devices - falling loads;	3	3	1	9	* correct hanging or tying of the load; * use of suitable slings and other means of gripping loads with appropriate load capacity according to the type, properties and shape of the load; * use of safe binding agents, check by the binder before use; * regular inspection of lashing devices, their regular inspections by competent persons; * discarding defective lashing devices;	
Handling burdens accessories for lifting	* unspecified weight of loads, overloading of cranes; * overloading of lifting equipment, damage to the crane and track, falling loads; * endangering people, property, causing an emergency;	3	3	1	9	* determining and marking the weight of loads; * determining the weight of the load by calculation; * information for binders;	
Handling burdens accessories for lifting	* unknown, unmarked weight of loads and accessories to lifting, overloading of the lifting capacity of cranes, crane tracks, foundations, etc., damage to cranes, deformation of crane tracks, deviation from the tracks and fall of the crane, endangerment and injury to persons;	3	3	1	9	* compliance with prohibited manipulations; * when lifting loads, add the weight of the loads and the weight of the accessories;	
Handling burdens accessories for lifting	* dangerous, uneven synchronization of movements of crane lifting drives or multiple cranes, the occurrence of oblique pulls,	3	3	1	9	* determination of the maximum deviations of the ropes from vertical surfaces with regard to horizontal loads on the mechanism; * correct handling of the load when controlling the crane movements (lifting should be carried out sensitively,	

	swinging of loads with impact, loads slipping out of the bindings, loads hitting the crane structure or crane track, people being hit by the load;					(to be carried out smoothly) in particular to prevent the formation of a dangerous oblique draft; * keep the lifting rope in a vertical position before lifting the load; * correct crane operator operation (maintaining safe distances); * compliance with prohibited lifting operations;	
Handling burdens accessories for lifting	* control of simultaneous lifting by multiple people, increase probability of an emergency situation, damage to cranes and tracks due to deformation, etc., increased risk to people;	3	3	1	9	* designating only one competent, authorized person to manage all coordination tasks;	
Handling burdens accessories for lifting	* differential load components during simultaneous lifting (weight of loads and their center of gravity, lifting equipment), undesirable changes in the positions of lifted loads; impacts of loads on structures, impacts on crane and track construction, breakage of lashing devices; falling loads, hitting people;	3	3	1	9	* loading cranes only to their full capacity or using devices to measure a reduction in capacity of 25% or more; * performing static calculations, etc.; * perfect technical condition of cranes, crane brakes, supporting elements, etc.; * special organizational measures as needed;	
Handling burdens accessories for lifting	* use of a grab, exceeding the crane's lifting capacity; damage to lifting ropes, rope slippage, impacts to crane structures;	3	3	1	9	* determining and verifying the weight of the grab with the material by weighing, calculating, etc.; * determining the specific gravity of the transported bulk material; * correct crane operator operation (maintaining safe distances);	
Handling burdens accessories for lifting	* use of magnet - spontaneous movement, impact, falling off of material; insufficient adhesion of the magnet; increased danger of falling; increased dynamic load; hitting people; - crane overload, falling material - load, hitting a person;	3	3	1	9	* compliance with the prohibition on switching on the magnet before placing it on the load or on premature switching it off (do not switch off the magnet before placing it); * correct crane operator operation (maintaining safe distances); * determining the weight of the magnet and the material; * marking of the magnet with a safe load; * exclusion of the presence of persons in the endangered area; * marking of the dangerous area;	
Handling burdens accessories for lifting	* electric shock - placing a switched-on magnet on the ground, the formation of stray currents;	3	3	1	9	* placing the unactivated magnet on a wooden base;	
Handling burdens accessories for lifting	* demolition, earthmoving, drilling work, knocking out castings with conventional cranes, impacts to the structure, damage, breaking of ropes, impermissible dynamic load, people being hit by falling material;	3	3	1	9	* use of suitable cranes; * using only a specially designed or modified crane, or issuing a special permit and setting conditions for the use of a conventional crane;	
Crane operation	* crane rental contract not concluded, difficult to determine liability for adverse events, increased probability of injury or accident;	3	3	1	9	* conclusion of long-term and short-term contracts and compliance with contractual terms; * development of a system for safe crane operation; * identification of the user's competent person;	
Crane operation	* inappropriate selection of competent workers authorized to operate cranes (riggers, signalmen, maintenance workers, etc.), performing dangerous and prohibited manipulations and activities, endangering people, damaging cranes, tracks, accessories;	3	3	1	9	* selection, training, ensuring professional qualifications of workers for individual activities during crane operation; * medical fitness; * periodic training, exams; * development of a system for safe crane operation; * supervision of a designated worker;	
Crane operation	* difficult and inconvenient identification of binders, possibility of binding and hanging the load by unqualified workers;	3	3	1	9	* visibly marked work clothing; * visible helmet markings;	

	use of defective lashing devices, dangerous lashing methods; falling load; staying in a dangerous area;						
Crane operation	* unauthorized access of a person to the crane runway, to the crane, danger to moving material; electric shock, entrapment, crushing, falling from a height;	3	3	1	9	*compliance with the prohibition of unauthorized exit; *entry onto the runway only with the crane operator's knowledge (the crane operator's consent to exit); * processing of conditions for safe crane ascent, descent, escape; * location of the information table at the exit;	
Crane operation	* inappropriate selection of cranes for dangerous activities, increasing the probability of an adverse event; creating a dangerous situation;	3	3	1	9	* development of technological procedures for unusual and dangerous work addressing the sequence, sequence, and continuity of activities;	
Crane operation	* performing work on cranes, movement of incompetent persons along the crane runway, endangerment workers, crane movements,entrapment, crushing, impacts and falls from heights;	3	3	1	9	* verbal agreement to take the crane out of operation if only this one crane is operated on the crane runway and there is sufficient visibility of the moving parts; * written permits for work on complex cranes, in the case of multiple cranes on a crane runway; * development of a crane safe operation system;	
Crane operation	* leaving the crane by the crane operator without securing it, leaving the crane unattended, misuse of the crane incompetent persons; occurrence of adverse events;	3	3	1	9	* do not leave the crane with the crane switch on and a load suspended on the hook; *securing the crane according to the operating instructions; * turning off and locking the main switch in the off state;	
Crane operation	* crane overload, load swinging; oblique pull; incorrect reversal; disruption, damage to the structure; breakage of the supporting ropes, impact, crushing of the binder; load falling;	3	3	1	9	* professional and medical qualifications of competent workers (crane operator, strapper); * correct suspension or lashing of the load of permissible weight; * use of suitable slings and other means of gripping loads with appropriate load capacity according to the type, properties and shape of the load; * keep the lifting rope in a vertical position before lifting the load; * correct execution of turning the load; *knowledge of the weight of the binding elements, knowledge of the weight of the load, its center of gravity; * exclusion of carrying out prohibited manipulations; * observe the prohibition to remain in the area of possible fall of a suspended and settled load and its parts (exclusion of the presence of persons in the zone of danger from kinetic or potential energy, i.e. under the load and in the areas where the crane is moving); *carrying out inspections;	
Crane operation	* ignorance of the technical condition; limitations or impossibility safe operation, occurrence of undesirable events: accidents, accidents, etc.;	3	3	1	9	* regular checks before starting operation with entries in the crane operating documentation (operating log); *condition monitoring, maintenance, inspections, and inspections of cranes and accessories; * a faultless crane support steel rope, its regular inspections by competent persons;	
Crane operation	* lack of knowledge of the operator's control, movement of the crane in an undesirable direction, impact, dynamic shocks inconstruction;	3	3	1	9	* posting shifting instructions at the shifting device; * crane operation by a competent person (crane operator);	
Crane operation	* failure to perform regular lubrication, seizure of moving parts, crane travel, etc., irregular movement of the crane; falls of people from heights, etc.;	3	3	1	9	*ensuring easy and safe accessibility and reachability of lubrication points by establishing walkways, platforms, ladders, etc. according to the frequency of maintenance operations; * color marking of lubrication points;	
Crane operation	* inoperative, unadjusted limit switch of the lifting device, rotating or tilting device, impact of the block and tackle with the hook and	3	3	1	9	* correct function of the limit switch, its check before starting operation;, * regular adjustment. * rotation restriction;	

	load into the trolley structure; impact of the slewing crane into the equipment, falling of the boom, etc., breakage of the ropes; deformation; fall of the load; occurrence of an extraordinary events;					* sound signaling;	
Crane operation	* non-functional signaling of cranes controlled from the operator's station, movement of the crane with loads over workers, endangering people from falling loads, material from the crane, etc.;	3	3	1	9	* equipping the crane with signaling equipment; * use of a warning sign by the crane operator to warn persons near suspended loads who may be at risk from the crane or the load;	
Crane operation	* a person falling from a bridge and a crane trolley	3	3	1	9	* installation of railings on the bridge and crane trolley;	
Crane operation	* lack of information on the part of the crane operator, increased probability of accidents and emergency situations;	3	3	1	9	* manufacturer's instructions for use available at the workplace (provided by the user);	
Crane operation	* danger to persons from rotating parts, catching, drawing in, pinching limbs;	3	3	1	9	* use of safety devices - covering, blocking of freely accessible rotating parts (covers, fences);	
Crane operation	* dangerous surfaces of the crane structure, sharp edges, pressure points - lacerations, cuts, pinching, catching when touching people;	3	3	1	9	* treatment of hazardous surfaces; * use of boundaries, barriers; * safety marking of dangerous places and areas;	
Crane operation	* electric shock while working and moving a crane near overhead power lines and when the crane approaches power lines;	3	3	1	9	*exclusion of crane movement in the high voltage, high voltage protection zone without the consent of the line operator and the specified conditions; * inspection before starting work;	
Crane maintenance	* danger to persons from the movement of the crane while people are working on the crane (catch, crush, impact) a person falling from a height;	3	3	1	9	*access and work on the crane may only begin upon receipt of a written work permit and fulfillment of the specified conditions; *enter the runway only with the crane operator's knowledge (the crane operator's consent to exit); * appropriate location and marking of the main switch;	
Crane maintenance	* poor, neglected technical condition of the crane, increased probability of an emergency situation, the emergence of conditions for an emergency;	3	3	1	9	*performing daily and weekly checks of the crane's condition by the crane operator; *performing annual inspections, condition monitoring, maintenance, inspections, and inspections of cranes and accessories; *carrying out a special assessment once every 10 years; * immediate removal of detected defects;	
4.1 Gas installations / Low-pressure boiler rooms with gas-fired boilers							
Gas equipment for boiler room and heating boilers	* dangers arising from the properties of natural gas; * explosion of natural gas mixed with air initiated by uncontrolled leakage and release of natural gas in enclosed spaces (in boiler rooms) due to: - disruption, damage and leaks of gas pipelines, pipeline corrosion; - leaks in the gas meter connection, gas valve, connecting parts of the gas pipeline, etc. with subsequent leakage of natural gas into the enclosed spaces of adjacent buildings, where the explosive mixture created will explode;defective security device;	1	4	1	4	* ensuring the tightness of gas equipment and preventing the release and leakage of gas and suppressing or preventing its initiation (open fire including hidden smoldering materials, hot objects heated to the ignition temperature of the gas mixture, welding residues), mechanical or electrical spark, discharge of static electricity); * ensuring the tightness of pipes and all joints and gas appliances; preventing the formation of a gas concentration in the lower explosive limit, i.e. 5% in a mixture with air in a closed space (natural gas can be caused to explode at a concentration of 5 - 15% in a mixture with air); * not using the gas pipeline as a supporting structure to hang various objects; * preventing damage to gas pipes and other gas equipment; * perform or ensure cleaning, adjustment and supplier service for operated gas equipment;	

	- overheating of the appliance due to high power consumption; - fluctuating or irregularly restored gas pressure when the burner has previously gone out; - flame flashover to the burner nozzle of the appliance (boiler); - incorrect operation and maintenance caused by: . an incompletely closed lid for a switched-off appliance, . unlit burner and open shutter in front of it, . poorly adjusted burner flames, . partially clogged burners; * burns caused by the flame of ignited burning gas or by the explosion of a natural gas-air mixture * leakage and presence of odorless natural gas that has lost by passing through the soil;					*ensure that repairs are carried out only by an authorised company; * have a control element permanently available for the main lock, for locks located in a closed cabinet, niche, etc.; * ensuring the professional competence of the stoker - certificate for operating gas boilers (a certificate of stoker competence is not required for operating boilers with a nominal thermal output of less than 50 kW), medical fitness of the operator, instruction and training in operating gas boilers; *closing the gas supply when replacing fittings or making repairs; *when igniting appliances, follow and proceed according to the boiler/burner operating instructions and local operating regulations; * detect leaks immediately after symptoms or information about a gas leak (first orientation, smell, hearing, etc.; * do not use flames when searching for leaks; * when detecting a gas leak in enclosed spaces, ensure effective ventilation, prevent sparking (turn off the power); * detecting leaks during inspections of fittings, gas meters, screw connections for connecting appliances, etc.); * always check the air in shafts and unventilated spaces before entering these spaces; * carrying out regular inspections and inspections of gas equipment, including the elimination of detected defects;	
Gas equipment for boiler room and heating boilers	* explosion of a mixture of natural gas mixed with air during venting and degassing of pipes and appliances;	1	3	1	3	*professional implementation of degassing and venting; * ensuring the tightness of pipes and all joints and gas appliances; * preventing the formation of a gas concentration in the lower explosive limit, i.e. 5% in a mixture with air in a closed space (natural gas can be caused to explode at a concentration of 5 - 15% in a mixture with air); * perform or ensure cleaning, adjustment and supplier service for operated gas equipment; *ensure that repairs are carried out only by an authorised company; *closing the gas supply when replacing fittings or making repairs; * detect leaks immediately after symptoms or information about a gas leak (first orientation, smell, hearing, etc.); * do not use flames when searching for leaks; * detecting leaks during inspections of fittings, gas meters, screw connections for connecting appliances, etc.); * carrying out regular inspections and inspections of gas equipment, including the elimination of detected defects;	
Gas equipment for boiler room and heating boilers	* explosion of a mixture of natural gas and air upon ignition boilers/appliances and when working with fire in enclosed spaces (boiler rooms) where gas has escaped (is leaking);	2	3	1	6	* when igniting boilers/appliances, follow the boiler/burner instructions and local operating rules; * detect leaks immediately after symptoms or information about a gas leak (first orientation, smell, hearing, etc.); * ensuring the tightness of gas equipment and preventing the release and leakage of gas and suppressing or preventing its initiation (open fire (including hidden smoldering materials, hot objects heated to the ignition temperature of the gas mixture, welding residues), mechanical or electrical spark, discharge	

						static electricity); * ensuring the tightness of pipes and all joints and gas appliances; preventing the formation of a gas concentration in the lower explosive limit, i.e. 5% in a mixture with air in a closed space (natural gas can be caused to explode at a concentration of 5 - 15% in a mixture with air); * perform or ensure cleaning, adjustment and supplier service for operated gas equipment; *ensure that repairs are carried out only by an authorised company; * have a control element permanently available for the main gas shut-off valve (HUP), for valves located in a closed cabinet, niche, etc.; * ensuring the professional competence of the stoker - certificate for operating gas boilers (a certificate of stoker competence is not required for operating boilers with a nominal thermal output of less than 50 kW; the operator must be medically fit, instructed and trained in operating gas boilers; * do not use flames when searching for leaks; * when detecting a gas leak in enclosed spaces, ensure effective ventilation, prevent sparking (turn off the power); * detecting leaks during inspections of fittings, gas meters, screw connections for connecting appliances, etc.); * in shafts and unventilated spaces, always check the air before entering these spaces; * carrying out regular inspections and inspections of gas equipment, including the elimination of detected defects;	
Gas equipment for boiler room and heating boilers	* CO poisoning, suffocation due to lack of oxygen in gas boiler rooms or adjacent areas; * insufficient ventilation and air supply for combustion, blockage of ventilation holes;	1	4	1	4	*when putting into operation, proceed according to local operating regulations or the manufacturer's instructions and instructions; * before lighting the boiler/appliance, make sure that the flue gas exhaust is in good condition; * ensuring perfect combustion, exhaust of flue gases and sufficient air supply for combustion of gaseous fuel and effective ventilation (do not cover the ventilation holes!); * ensuring proper draft, inspection of flues and chimneys; * performing air checks (or flue gas leaks - CO); *properly maintain the boiler room equipment, regularly inspect it within the deadlines according to the operating regulations, and carry out professional inspections of the boiler room every year;	
Gas equipment for boiler room and heating boilers	* damage to the boiler, exceptionally boiler explosion in the event of a lack of water in the boiler and boiler overheating;	1	4	1	4	*when putting into operation, proceed according to local operating regulations or the manufacturer's instructions and instructions; *operating the boiler with sufficient water, proper operation according to the operating instructions * proper functioning of equipment and safety devices (thermostats, expansion valves, etc.), *preventive maintenance and servicing of boiler equipment; * failure to add cold water to a heated boiler; * functional safety device (protection against exceeding the maximum working pressure, working temperature and lack of water in the system); *functional safety device against exceeding the permissible overpressure - expansion (compensation) vessel, either open or pressure (closed) with a gas cushion, either without a membrane (expander) or with a membrane (expansomat), as well as safety valves, a make-up pump system with bypass to protect the expansion vessel against freezing	

						heat transfer fluid and a pressure gauge for measuring the overpressure of the heat transfer fluid in the boiler; * ensure the safe operation of security equipment; * properly maintain the boiler room equipment, regularly inspect it and check the correct functioning of the safety equipment within the deadlines specified in the operating regulations; * carry out professional inspections of the boiler room every year; devices enabling the setting of relevant parameters and the main heating medium shut-off valves must be secured against unauthorized manipulation;	
4.2 Gas equipment / Gas appliances in buildings							
Appliances on gaseous fuels in buildings	* explosion of natural gas mixed with air initiated by uncontrolled leakage and outburst of natural gas in enclosed spaces, disruption, damage and leaks of consumer distribution, appliances, gas shut-off valves, connecting parts, etc. with subsequent leakage of natural gas into enclosed spaces, where the resulting explosive mixture will explode; * faulty installation of the appliance flame arrester; * overheating of the appliance due to high power consumption; * fluctuating or disorganized gas pressure restored when the burner had previously gone out; The basic factors that characterize the danger of an explosion are: maximum pressure and temperature of the explosion, the rate of pressure increase during the explosion, the pressure at the front of the shock wave, the crushing and tearing effects of the explosive environment (see ČSN EN 1127-1 (83 3250) effects accumulated pressure energy (detonation, scattering, burning, explosive combustion deformation, burns, damage, suffocation, poisoning, potentiation of energy effects, etc.). A natural gas explosion can cause destruction of objects and equipment and personal injuries; workers are at risk due to dangerous and harmful factors such as shock wave pressure, flame (fire), collapsing structures, equipment, collapse of buildings and objects and their flying and ejected parts, harmful substances that are formed during the explosion or escape from damaged equipment, and whose content in the air exceeds the permitted concentrations. The dangerous effects of the gas are increased by	1	4	1	4	* checking project documentation before starting work; * compliance with the gas supplier's conditions; * correct connection of the new installation to the existing one during reconstruction; * compliance with safety conditions and professional gas injection into the gas pipeline, including testing and inspection; * correct connection of the flue gas exhaust and commissioning of the appliance; * ensuring the tightness of gas equipment and preventing the release and leakage of gas and suppressing or preventing its initiation (open fire including hidden smoldering materials, hot objects heated to the ignition temperature of the gas mixture, welding residues), mechanical or electrical spark, discharge of static electricity); * ensuring the tightness of all connections and gas appliances in the consumer distribution system; * carrying out tightness and air checks (or flue gas leaks - CO); * professional assembly and installation of gas equipment, testing and inspections; * prevent the formation of a gas concentration in the lower explosive limit, i.e. 5% in a mixture with air in a closed space (natural gas can be converted to an explosion at a concentration of 5 - 15% in a mixture with air);	

	the fact that most people lose their ability to smell the escaping gas after a certain period of time and also by the fact that when the gas passes through through soil, masonry, etc., the gas loses its characteristic odor.						
Appliances on gaseous fuels in buildings	* explosion of a gas-air mixture when venting and degassing appliances, when igniting appliances and when working with fire in enclosed spaces where gas has escaped (is escaping);	1	4	1	4	* professional implementation of degassing and venting; * correct procedure for igniting appliances according to the user manual and manufacturer's instructions); * performing tightness and air checks (of fittings, gas meters, screw connections for connecting appliances, etc.); or flue gas leaks - CO); * ensuring the tightness of pipes and all joints and gas appliances; * preventing the formation of a gas concentration in the lower explosive limit, i.e. 5% in a mixture with air in a closed space (natural gas can be caused to explode at a concentration of 5 - 15% in a mixture with air); * perform or ensure cleaning, adjustment and supplier service for operated gas equipment; * ensure that repairs are carried out only by an authorised company; * closing the gas supply when replacing fittings or making repairs; * detect leaks immediately after symptoms or information about a gas leak (first orientation, smell, hearing, etc.); * do not use flames when searching for leaks; * carrying out regular inspections and inspections of gas equipment, including eliminating detected defects and properly maintaining appliances;	
Appliances on gaseous fuels in buildings	* incorrect assembly, installation and operation; * incompletely closed closure for a switched-off appliance; * unlit burner and open shutter in front of it; * poorly adjusted burner flames; * partially clogged burners; * flame flash to the burner nozzle; * burns caused by the flame of ignited/burning gas or by the explosion of a natural gas-air mixture; * odorless natural gas that has lost its way through the ground;	1	4	1	4	* ensure that equipment repairs are carried out only by an authorised company and that equipment is operated only by professionally qualified personnel; * closing the gas supply when replacing fittings, repairs, etc.; * when igniting appliances (boilers), follow the boiler/ burner operating instructions and local operating regulations; * functional optical or acoustic signaling of an increase in the concentration of leaked gas in combination with the installation of an automatic valve closing the gas supply to the appliance; * ensure leaks are repaired immediately after symptoms or information about a gas leak (first sighting, smell, hearing, etc.); * do not use flames when searching for leaks; * when detecting a gas leak in enclosed spaces, ensure effective ventilation and prevent sparking (turn off the power, etc.); * professional leak detection, venting/degassing of fittings, gas meters, membranes, seals, screw fittings for connecting appliances, etc.; * carrying out inspections and revisions of gas equipment, including the elimination of detected defects before commissioning; * add a control element to the main lock, and for locks located in a closed cabinet, niche, etc., also a door key; * when putting into operation and igniting, proceed according to the local operating regulations or the manufacturer's instructions and instructions; before igniting the appliance, make sure that the flue gas extraction is safe; * checking to ensure perfect combustion, exhaust of flue gases and sufficient air supply for combustion of gaseous fuel and effective ventilation; * carrying out tightness and air checks (or flue gas leaks - CO);	

Appliances on gaseous fuels in buildings	* dangers arising from lack of air (asphyxiation due to lack of oxygen) and from combustion products (CO poisoning); * CO poisoning, suffocation due to lack of oxygen in rooms with gas appliances or adjacent areas; * insufficient ventilation and air supply for combustion, blockage of ventilation holes;	1	4	1	4	* when putting appliances (boilers) into operation, ignition, proceed according to the operating instructions (manufacturer's instructions) of the boiler/burner; local operating regulations; * before lighting the appliance, make sure that the flue gas exhaust is safe; * checking to ensure perfect combustion, exhaust of flue gases and sufficient air supply for combustion of gaseous fuel and effective ventilation; * inspections of chimneys and flues; * failure to seal ventilation holes and combustion air intake holes; * not using gas stoves (ovens) for heating rooms; * carrying out air checks (or flue gas leaks - CO); *carrying out inspections and revisions of gas equipment, including flue gas exhaust systems, and eliminating any defects found; *ensure that equipment repairs are carried out only by an authorised company and that equipment is operated only by professionally qualified personnel;	
4.3 Gas equipment / Domestic gas pipelines (operating overpressure 10 kPa)							
House gas pipelines (operating overpressure 10 kPa)	* gas leak from the pipeline; * dangers arising from the properties of natural gas; * explosion of natural gas mixed with air initiated by uncontrolled leakage and release of natural gas in enclosed spaces, disruption, damage and leaks of gas pipelines, pipeline corrosion, leaks connection of a gas meter, gas valves, connecting parts of a gas pipeline, etc. with subsequent leakage of natural gas into enclosed spaces of adjacent buildings, where the explosive mixture created will explode * burns caused by the flame of ignited/burning gas or by the explosion of natural gas-air mixtures;	1	4	1	4	* checking project documentation before starting work; * compliance with the gas supplier's conditions; *correct connection of the new installation to the existing one during the reconstruction of gas equipment; * compliance with safety conditions and professional gas injection into the gas pipeline, including testing and inspection; * ensuring the tightness of gas equipment and preventing the release and leakage of gas and suppressing or preventing its initiation (open fire including hidden smoldering materials, hot objects heated to the ignition temperature of the gas mixture, welding residues, mechanical or electrical spark, discharge of static electricity); * ensuring the tightness of pipes and all joints and gas appliances; * carrying out tightness and air checks (or flue gas leaks - CO); * professional assembly and installation of gas equipment, testing and inspections; * prevent the formation of a gas concentration in the lower explosive limit, i.e. 5% in a mixture with air in a closed space (natural gas can be converted to an explosion at a concentration of 5 - 15% in a mixture with air); * not using the gas pipeline as a supporting structure, to hang various objects, to prevent damage to gas pipes and other gas equipment; * identification of the person(s) responsible for the operation;	
House gas pipelines (operating overpressure (10 kPa)	* explosion of a gas-air mixture during venting and degassing of pipelines and when working with fire in enclosed spaces (boiler rooms) where gas has escaped (is escaping);	1	4	1	4	*professional implementation of degassing and venting; * compliance with safety conditions and professional gas injection into the gas pipeline, including testing and inspection; * ensuring the tightness of pipes and all joints and gas appliances; * professional assembly and installation of gas equipment, testing and inspections; * prevent the formation of a gas concentration in the lower explosive limit, i.e. 5% in a mixture with air in a closed space (natural gas can be caused to explode at a concentration of 5 - 15% in a mixture with air);	

Home gas pipelines (operating overpressure (10 kPa)	* incorrect assembly, installation and service resulting in: * incompletely closed closure for a switched-off appliance; * unlit burner and open shutter in front of it; * odorless natural gas that has lost its way through the ground;	1	4	1	4	* ensure that equipment repairs are carried out only by authorized company and only professionally qualified personnel operating the equipment; * closing the gas supply when replacing fittings, repairs, etc.; * detect leaks immediately after symptoms or information about a gas leak (first orientation, smell, hearing, etc.); * do not use flames when searching for gas pipeline leaks; * when detecting a gas leak in enclosed spaces, ensure effective ventilation and prevent sparking (turn off the power, etc.); * professional leak detection, venting/degassing of fittings, gas meters, seal membranes, screw fittings for connecting appliances, etc.; * in shafts and unventilated areas, always check the air before entering these areas and always if you suspect that the equipment is leaking; * carrying out inspections and revisions of gas equipment, including the elimination of detected defects before commissioning; * to have a control element for the main closure; * functional optical or acoustic signaling of an increase in the concentration of leaked gas in combination with the installation of an automatic valve closing the gas supply to the appliance;	
5.1 Pressure equipment / Pressure vessels stable							
Pressure vessels stable (highest working overpressure higher than 0.07 MPa, containing gas, couples or corrosive poisonous and explosive liquids about any temperature or liquids about temperature exceeding their boiling point at overpressure 0.07 MPa)	* damage to the container and its equipment, leakage of substance, danger of burns, fire, possibility of explosion, corrosion; * destruction of the container, pressure wave, threat from mechanical parts - their ejection, throwing into space; * soil and water contamination;	1	4	1	4	* only put into operation vessels whose condition does not endanger the safety of persons and property, for which the prescribed construction and initial pressure tests, initial inspections and conformity assessment have been carried out and which have the prescribed operational documentation, have prescribed and complete equipment and accessories, including testing if the containers are properly placed; * carry out regular inspections and tests, cleaning and maintenance; * fulfill the operator's obligations, i.e. in particular: - develop operating instructions, - appoint a responsible worker for the operation of the containers, - ensure the necessary service and maintenance, - ensure compliance with all regulations, instructions and orders, - equip workers with PPE, - keep accurate records of containers and their changes, - keep documentation and records of the elimination of detected defects; * a container operator over 18 years of age, qualified to perform the operation, familiarized with and trained in the work	
5.2 Pressure equipment / Pressure vessel (TNS) compressor tank (air)							
Pressure vessel (TNS) air tank compressor (air)	* destruction of the TNS pressure unit with danger to people due to dynamic effects of the TNS metal parts by pressure;	1	4	1	4	* during operation, protect the TNS from damage, do not interfere with the container structure or supports and feet; * do not place the TNS directly on the casing, ensure correct positioning and stability of the TNS; * proper functioning of the TNS equipment with suitable, correctly selected and positioned fittings (pressure gauge, safety valve), and their correct setting (according to the passport), permanent maintenance in proper working condition, regular checks of the safety valve and zeroing of the pressure gauge, regular de-sludging; * ensuring accessibility for operating the safety valve and pressure gauge; * not loading the safety valve;	

						* failure to replace safety valves with pressure switches in cases where the pressure source is higher than the maximum working overpressure of the TNS; * ensuring preventive maintenance, regular checks of the TNS and the function of the equipment, regular inspections, keeping documentation - the TNS passport; *professional implementation of TNS repairs;	
Pressure vessel (TNS) air tank compressor (air)	electric shock;	3	3	1	9	* operating electrical equipment in a safe condition, especially regarding grounding, current or voltage protection, correct wiring, shielding, condition of wires, etc. (see also library "Electrical devices - electric shock")	
5.3 Pressure equipment / Gas cylinders							
Storage bottles for transport gases	* hazards arising from the properties of the gas; * flammable gas leak, explosion in a mixture with air, fire, burns to persons;	3	3	1	9	* if there are more than 4 cylinders (converted to cylinders with an internal volume of 50 l) of gases in a closed warehouse that together form an explosive or otherwise dangerous mixture, store the cylinders separately with sufficient ventilation; * in open warehouses, create separate compartments for storing these cylinders, delimited at least by partitions made of wire mesh, etc.) for storing cylinders of each type of gas separately; * warehouse floors made of non-flammable and non-sparking materials; * post a sign on the doors of warehouses indicating the type of gas, the prohibition of smoking and entry with open flames, and entry by unauthorized persons; * in warehouses where full and empty bottles are stored together in one room, store the bottles separately, and mark the places where the bottles are stored with signs: FULL BOTTLES and EMPTY BOTTLES; * there must be no shafts, windows, cellar entrances or other underground spaces near the warehouse where gases heavier than air could penetrate and whose ventilation is difficult; * in the storage area for flammable and fire-supporting gases, or in front of the entrance, place suitable fire extinguishers *do not store flammable substances in the warehouse and within a distance of at least 5 m from the cylinder warehouse and do not carry out work with open fire without a permit; *secure the bottles in the warehouse in an appropriate manner to prevent them from tipping over; *do not store bottles together with corrosive substances; * store empty bottles under the same conditions as full bottles, do not exceed the maximum number of bottles; * a special space (room or cupboard) in the immediate vicinity of the warehouse, in which, depending on the nature of the gases, PPE, first aid supplies, toxic neutralizing substances and neutralizing agents and spare parts are stored;	
Handling and manipulation with bottles	* bottle swapping;	3	3	1	9	* knowledge of cylinder marking according to the type (properties) of gas or gas mixtures (with one or several colored stripes);	
Handling and manipulation with bottles	* falling bottle, bumping or bruising of a limb while handling bottles;	3	3	1	9	* when handling bottles, proceed with caution to avoid dropping or damaging them; * protect bottles from impact, falling; do not throw them; * carry cylinders with a total weight of more than 50 kg (inclusive) by at least two men; it is recommended to use suitable tools and devices adapted for this purpose (holders, handcuffs, suspension trolleys, etc.); * provide operating, stock and empty cylinders	

						in a suitable way to prevent tipping and falling, using chains, stirrups, clamps, stands, etc.;	
Emptying bottles, Handling and manipulation with bottles	* unwanted gas leakage from the cylinder, valves during emptying of cylinders, handling and manipulation of cylinders;	3	3	1	9	* check the condition of the bottle before use within the scope of the operating instructions; if a defect is found, return the bottle to the bottling plant, stating the type of defect; * handle cylinders with the utmost care; do not open the cylinder valve by force (e.g. by using a wrench); * do not accelerate the emptying of bottles by directly heating them with an open flame; * do not connect nuts with damaged threads or nuts with other threads to pressure valves; * rooms and spaces where operating and storage cylinders are located, ventilated according to fire and hygiene regulations in relation to the types of gases placed; * do not place operating and storage cylinders in unventilated and difficult-to-access areas; * start taking acetylene from the cylinder only after at least one hour has passed since the cylinder was transported to the workplace (this condition does not apply if the cylinders are transported in a vertical position and are not laid down before use); * When taking acetylene, place the cylinder either in a vertical position or tilt it with the valve upwards at an angle of at least 30° from the horizontal plane so that acetone is not entrained with the gas. Acetylene cylinders are provided with a porous, steamed material. This material is saturated with acetone (the cylinder contains approximately 6 kg of C2H2) and acetylene dissolved in it under pressure. The complex construction of the cylinder and the properties of the gas require careful handling of the cylinders. * after using the bottle, close the valve tightly; * put a removable cap on the storage bottles; * prepare local operating rules for the operation of pressure stations; * when handling cylinders with poisonous and corrosive gases, at least two medically fit workers must be present; * only professionally qualified personnel should be authorized to operate the pressure station; * do not carry out repair and maintenance of cylinders (only authorized companies may carry out such repairs);	
Emptying bottles, Handling and manipulation with bottles	* unwanted intervention by unauthorized persons, damage to the bottle;	3	3	1	9	* after completing work at temporary workplaces, place the cylinders in a safe place protected from unauthorized persons; * do not place operating and storage cylinders in publicly accessible places; * do not leave a vehicle transporting bottles unattended in publicly accessible places;	
Emptying bottles, Handling and manipulation with bottles	* increased severity of the threat in the event of fire and other emergencies;	3	3	1	9	* do not place operating and storage cylinders in cellars and basements, in passages and passages, on escape routes and staircases, in attics, in offices, cloakrooms, kitchens, dining rooms, sanitary facilities, garages, boiler rooms, skylights, in buildings with flammable structures (e.g. in wooden buildings), in unventilated and difficult-to-access spaces; * do not transport cylinders in the luggage compartment of passenger vehicles and in vehicles in which the driver's compartment is not separated from the space for transporting cylinders (does not apply to cylinders used for operational purposes and individual cylinders with an internal volume of up to 12 liters and PB cylinders up to a total filling weight of 40 kg);	

Emptying bottles, Handling and manipulation with bottles	* explosion of a cylinder or a space in a technical device into which gas under pressure from a cylinder was supplied (the material - the casing is exposed to stress exceeding the yield strength of the sheet metal);	3	3	1	9	* check the condition of the bottle before use within the scope of the operating instructions; if a defect is found, return the bottle to the bottling plant, stating the type of defect; * connect only devices to cylinders that are designed and tested for this purpose; * release gases from cylinders into pipes or into stable containers and equipment designed for a lower overpressure only through a pressure reducing valve, designated and marked for the given gas and set to the appropriate outlet overpressure (a pressure reducing valve is not required in cases where it is safely and reliably ensured that the pressure in the pipes, equipment or stable containers will not rise above the accessible limit); * the low-pressure chamber of the pressure reducing valve is equipped with a functional pressure gauge and a safety device (a pressure gauge is not required for the pressure reducing valve if the pressure reducing valve is part of a pressure station and the pressure gauge is installed on the pipeline in the pressure station), the high-pressure part of the pressure station must also be equipped with a pressure gauge (a safety device for the pressure reducing valve is not required if the pipeline or stable container into which the gas is discharged is equipped with its own safety device); * place the bottles away from heating elements and radiant surfaces so that the surface temperature of the containers does not exceed 50 °C; at least 3 m away from sources of open fire; * perform bottle temperature control according to specific conditions; * in the event of a fire, immediately remove the cylinders from the workplace, but first, cool full cylinders with flammable gases if they heat up above 50 °C; * mark the area where the cylinders are located and do not place more cylinders in one operating room than permitted by the relevant ČSN;	
Transportation of bottles with vehicle	* danger arising from the properties of the gas (gas leakage) and possible destruction of the cylinder during the transport of cylinders by vehicles;	3	3	1	9	* do not transport cylinders together with corrosive substances stored in breakable packaging (e.g. glass balloons), do not transport oxygen together with fatty substances (e.g. lubricants, fats, etc.); * do not transport cylinders together with flammable liquids; * secure the cylinders on the vehicle against spontaneous movement in all directions and against damage; * do not use unmarked, unsprung and folding vehicles and passenger cars for transportation; * when transporting the cylinders, position them so that the valves of all cylinders are on the same side and accessible; * Transport full and empty cylinders only with closed valves and screwed-on protective caps (does not apply to the transport of cylinders with medical gases for medical devices in rescue and ambulance vehicles and for other special cases where it is usually necessary to remove gas from the container during transport); * before transporting cylinders for poisonous, corrosive and flammable gases, with the exception of acetylene and hydrogen, each cylinder valve connection must have a screw-on lock nut; * when transporting cylinders with dangerous gases (including combustion-supporting gases), the cargo must be accompanied by a person who has demonstrable knowledge of the properties transported gas and who can handle the containers; * during transport, have a sufficient number of blanking plugs, appropriate seals, necessary tools and protective equipment in case of an accident and PPE available;	

Pressure cylinders for gas transport in mobile workshops	* explosion, fire in a mobile workshop with placed cylinders;	3	3	1	9	* Do not transport cylinders together with corrosive substances stored in breakable packaging (e.g. glass balloons), with oily substances (e.g. lubricants, fats, greasy textiles, etc.); * do not store flammable substances and flammable liquids in cabinets, shelves or on the floor of the vehicle; * full and empty cylinders may only be transported with closed valves and screwed-on protective caps; position the cylinders so that the valves of all cylinders are on the same side and are accessible; * a vehicle transporting cylinders must be accompanied by a person who has proven knowledge of the properties of the gases being transported and who is able to handle the cylinders; * have the appropriate seal, necessary tools, a fire extinguisher (6 kg powder, located so that it is accessible from the outside) and PPE for welders (fireproof gloves to close the hot cylinder valve) available in the vehicle in case of an accident or fire; * ventilation holes (on the floor and in the upper part of the vehicle) must not be closed or sealed; when transporting cylinders, the internal temperature in the vehicle must not exceed 50°C; * place the bottles at the entrance to the vehicle's storage area, i.e. at the rear door, in a designated place accessible directly from the outside; * secure the bottles against spontaneous movement in all directions; securing the bottles in a vertical position must ensure the stability of the bottles during transport and must enable easy release of the bottles; * transport acetylene cylinders in a vertical position; * when drawing gas during welding or cutting, do not perform any work inside the vehicle; * do not have more than 2 operating cylinders (from which gas is taken) and an oxygen cylinder as a reserve in the vehicle (mobile workshop); * post a sign or pictogram on the rear door of the vehicle indicating the type of gas and prohibiting smoking and entry with open flames; * if acetylene enters the hose and pressure reducing valve when the flame backfires, immediately close the acetylene cylinder valve and then the oxygen cylinder valve; * in the event of a fire, remove the cylinders from the vehicle immediately, with the acetylene cylinder being unloaded first; if it is not possible to remove the cylinders from the vehicle, the location of the cylinders in the vehicle must be reported to the fire department;	
6. Pipes							
Metal pipes assembled and operated	* sudden leakage of working medium (liquid or gas) leaks in pipes and fittings; * scalding, burns, corrosion depending on the type of working substance flowing through, danger to eyesight; * sudden leakage of working fluid from pipes or fittings during exceeding the highest working pressure of the piping system; * pipeline accidents due to collapse and deformation of supports, damage and corrosion of hangers including pipe clamps and beams, clamps, stands, rods, belts,	1	4	1	4	* maintaining safety devices so that the maximum working overpressure of the piping system is not exceeded or the safety device fails; * preventive maintenance, timely removal of defects and malfunctions in pipes and fittings (pipe bursting due to freezing of condensate, excessive corrosion, spontaneous release of pipes from supports), removal of leaks; * professional execution of welds or joints, correct placement and outlet of fittings, valves, etc.; * correct placement of the pipeline, elimination of deformations in the pipeline and fittings or connected devices (e.g. pumps) and prevention of adverse effects of excessive transverse forces and moments in the pipeline; * eliminating excessive pipe deflection in systems that require drainage gradient;	

	chains and other equipment;					* correct use of fittings and pipeline parts, especially if the pipeline is subjected to shock loads from pulsations or vibrations; * maintaining supports and preventing their deformation, damage, replacing corroded hangers including pipe and beam clamps, clamps, stands, rods, belts and other elements; * maintenance of fittings, their regular rotation, etc.; * defining the endangered area when performing tests and preventing unauthorized persons from accessing this area; * use of PPE to protect eyes and face;	
Metal pipes assembled and operated	* endangering workers installing and repairing pipelines due to unwanted leakage of water, steam or other working fluid; * scalding, burns, corrosion depending on the type of working substance flowing through, danger to eyesight;	1	4	1	4	* maintaining safety devices so that the maximum working overpressure of the piping system is not exceeded or the safety device fails; * preventive maintenance, timely removal of defects and malfunctions in pipes and fittings (pipe bursting due to freezing of condensate, excessive corrosion, spontaneous release of pipes from supports), removal of leaks; * professional execution of welds or joints, correct placement and outlet of fittings, valves, etc.; * reliable closing of the relevant valve closing the repaired section of the pipeline before starting work; * correct working procedures; * maintenance of fittings, their regular rotation, etc. * preferably perform pressure tests with liquid; * remove gases from the liquid before use, at least by boiling it and handle it so that it contains as little gas as possible; * defining the endangered area when performing tests and preventing unauthorized persons from accessing this area; * use of PPE to protect eyes and face;	
Metal pipes assembled and operated	* injuries to limbs during repairs to pipes and fittings in confined spaces, in unsuitable positions, in shafts;	1	4	1	4	* correct installation, pipeline preventive maintenance; * correct working procedures; * use of appropriate tools, aids, assembly devices; * ensuring safe access; * use of PPE;	
Metal pipes assembled and operated	* fall from a height or depth while manipulating controls (closing) elements, fittings of the piping system;	1	4	1	4	* correct working procedures; * use of appropriate tools, aids, assembly devices; * ensure safe access to higher control elements using ladders, platforms, steps with a platform; * use of means for safe control of elements located at a height greater than approximately 1.8 m - 2 m; * maintenance of fittings, their regular rotation, etc.;	
Metal pipes assembled and operated	* danger to people from burns, scalding by escaping working fluid (hot water, steam) or inappropriate outlet of safety valves;	1	4	1	4	* maintaining safety devices so that the maximum working overpressure of the piping system is not exceeded or the safety device fails; * preventive maintenance; * correct outlet of safety valves;	
7.1 Handling and storage / Manual handling / Manual handling							
Small manipulation	* a person falling while walking and carrying loads in storage areas premises, after tripping over an obstacle, slipping, stumbling, spraining a leg; * hand injuries after hitting the floor during a fall;	2	2	1	4	* keep handling surfaces clean and flat (free of frost, mud, oil stains, holes, etc.), remove slipperiness from outdoor surfaces in winter (removal of snow, ice, anti-slip sprinkle); * maintain the floors of storage areas, aisles and roads in good condition, damaged surfaces	

	* a worker hitting and falling on a means of transport, handling equipment for stored objects;					repair immediately; * flat, unbeaten and non-slippery surface of floors, roads, vehicle loading areas, handling areas, * cleanliness of the workplace, removal of protruding obstacles (e.g. protruding hatches, lids, mats, steps, thresholds, hoses, cables and moving electrical connections, anchor bolts, etc.)	
Small manipulation	* a load falling on a worker, a worker being hit by a falling load or a moving load; * Fall of stored and handled material onto a worker, hitting a worker with material due to loss of stability of the stacked handling unit (stack, boundary) and piece material;	2	2	1	4	* compliance with the prohibition to remain in the area of possible unwanted movement of the load and under the load, in particular not to remain in the immediate vicinity of the lifted load; * compliance with the prohibition on disturbing the stability of stacks, e.g. pulling objects and elements from below or from the side of the stack; * compliance with the ban on climbing and stepping on the borders and piled up material; * when moving loads with forklifts or other lifting and handling equipment, exclude the presence of workers on the load and in the area where it may fall; do not pass under a lifted load; * do not hold the load during handling work with a forklift; Furthermore, it is necessary to respect international handling signs expressing the correct and safe method of handling, e.g.: "CENTER OF GRAVITY"; "DO NOT USE HOOKS"; "SUSPENSION POINT"; "STACKING WEIGHT LIMIT", "LIMITATION ON NUMBER OF LAYERS IN A STACK", "DO NOT STACK";	
Small manipulation	* fall, overturning, sliding of piece material onto a person; * unwanted change in the position of the material (fall, collapse, displacement, tilting, rolling, etc. of piece material);	2	2	1	4	* ensuring a stable position of the material, placing it on a wider surface; * securing the material with suitable equipment to prevent it from slipping or falling and tipping over; * when manually storing piece material of regular shapes, store it only up to shoulder or head height (max. height 2 m), ensuring its stability by tying it together; * securing piece material with washers, stops, supports, stands, wedges, tying together, especially material stored upright, on narrower edges, pipes, tubes, bundles and rolls, etc.; * the tools must be easy to grip, adjusted and adjusted according to the weight of the load, or according to its shape and size;	
Small manipulation	* falling of a load on the foot, being hit by a load; * bruising and impact of hands and feet when slipping and a load slipping out of the hand;	2	2	1	4	* before starting handling, check the condition (strength, cohesion, fixation) of the transport packaging; * correct manual handling methods; * correct grip of the load; * ensuring a firm grip on loads, using grip holes and handles; * checking the condition of the gripping elements before handling; * use of handles and other aids to facilitate gripping;	
Small manipulation	* pinching fingers, hitting a worker's hand;	2	2	1	4	* objects that fit tightly together during storage and do not have parts that allow for safe gripping (eyelets, handles, etc.) should be stored on supports (do not use logs as supports); * when manually handling heavier objects, use appropriate aids and hand tools (e.g. wheeled jacks);	
Small manipulation	* overload and strain; * muscle tear or strain and	2	3	1	6	* information for workers about all measures to be taken in the area of safe handling of	

	arm tendons as a result of physical overload and excessive exertion; * tearing of muscles and tendons during sudden, violent movements of cold, unmoved muscles, especially those associated with high loads; * the formation of an inguinal or femoral hernia when lifting a load abruptly in handlers who have soft abdominal muscles and insufficient strength of the inguinal ligaments, when accompanying increase intra-abdominal and intrathoracic pressure due to breath holding and excessive strain on the ligaments during sudden lifting;					loads, especially the weight of the load, and the centre of gravity on the heaviest side if the weight of the load is unevenly distributed; * training and education of workers on correct handling methods and procedures; * correct manual handling methods; * not overloading workers, adhering to the weight limit of 50 kg; * when designing a handling unit intended for manual handling, also consider the number of workers with regard to shape, weight, dimensions (especially length) and, if the handling will be carried out by more than one worker, designate a work manager who will manage and coordinate the work of the entire group; * equipping the workplace with suitable work tools, such as billets, crowbars, self-locking and other pliers, stands, adjustable straps, carts, crates, baskets, cages, positioners, rollers, slides, etc.;	
Small manipulation	* spinal damage from prolonged lifting and handling of loads in an inappropriate position; Spinal damage can occur especially in cases where the load is: - too heavy or too big; - bulky or difficult to grip; - unstable, or its contents tend to move; - placed in such a position that it is necessary to hold or manipulate it away from the body, with tilting or turning the torso, - it is likely that due to its contours or consistency it may cause injury to workers, especially in the event of a collision. The risk of spinal damage can occur if physical exertion: - excessive, - achieved only by turning the torso, - is likely to result in a sudden movement of the load, - performed with the body in an unstable position * joint injuries caused by sudden, uncoordinated movements; * gradual damage to the skeletal system, muscles, ligaments and blood vessels; * acute or chronic skeletal injury, manifested by lumbosciatica pain in the sacral part of the spine (often as a result of lifting weights with a bent back)	2	3	1	6	* training and education of workers on correct handling methods and procedures; * compliance with the principles of safe and healthy handling, if possible in a position without a bent back; * correct movements during manipulation (e.g. hold the load close to the body, do not lift with jerky movements, perform manipulation in a position without bending the back, etc.); * ensuring sufficient space, especially in the vertical direction; * ensure that the floor or footrest is stable; * maintaining a flat and non-slip floor; * using appropriate work shoes; * ensure manipulation at a safe working height; and at a suitable level and enable the worker to assume the correct position at a safe height; * ensure adequate, or more frequent and sufficient physical rest and recovery breaks if physical exertion is too frequent or lasts too long, especially taking into account the load on the spine; * if possible, exclude activities in which the worker cannot change the work pace;	
Small manipulation	* a load falling on a worker, hitting hands and feet against the storage surface; * being hit by a load when a worker leaves a limb under the load or between parts of the load, between the load and a fixed obstacle, when moving	3	2	1	6	* ensuring movement coordination by controlling handling work by a designated worker in the case of handling a load by several workers at the same time; * use of appropriate handling aids (belts, straps, guide rails, handling pliers, clamps, suction cups, sliding rollers, roller jacks, etc.); * ensuring a firm grip on loads, use	

	and rolling of the load (load impact most often occurs when the load is placed vertically); * loss of cohesion and disintegration of a fragile, non-cohesive load, falling on one's foot;					gripping holes, handles; * checking the condition of the load, or securing a damaged load before manual handling; * compliance with the ban on the use of unsuitable, damaged and worn-out equipment; * placing heavier objects without handling aids on pads (shims) at least 30 mm high so that there is a safety gap between the load and the storage surface for inserting fingers or pulling out the hand(s) to prevent pinching or hitting hands against the storage surface and the base; * prepare the materials in advance (use pads, spacers);	
Small manipulation	* cuts, pricks, stings, abrasions on hands; * injuries to the surface of the load due to punctures or cuts, edges, burrs, nails, strapping, damaged packaging, chips, etc.;	2	2	1	4	* adjusting the load, removing nails, sharp points, edges; * adjusting the load, removing sharp points, edges and other dangerous parts; * avoiding handling damaged packaging, chipped boards, etc.; * use of gloves resistant to mechanical damage (cuts, punctures, etc.);	
Small manipulation	* performing handling work in confined spaces; * hitting fingers, hand, elbow, etc.; * when manipulating, the limb hits surrounding objects, structures, etc.;	2	2	1	4	* ensuring sufficient handling space, maintaining order, removing waste; * when placing loads, prepare the bases in advance (use pads, spacers with a height of at least 3 cm);	
Small manipulation during storage	* a load falling on a worker, hitting hands and feet against the storage surface; * being hit by a load when a worker leaves a limb under the load or between parts of the load, between the load and a fixed obstacle, when pushing and rolling the load (being hit by a load) load most often occurs when the load is placed vertically); * loss of cohesion and disintegration of a fragile, non-cohesive load, falling on one's foot;	3	2	1	6	* ensuring movement coordination by controlling handling work by a designated worker in the case of handling a load by several workers at the same time; * use of appropriate handling aids (belts, straps, guide rails, handling pliers, clamps, suction cups, underfeed rollers, etc.); * ensuring a firm grip on loads, using gripping holes and handles; * checking the condition of the load, or securing a damaged load before manual handling; * compliance with the ban on the use of unsuitable, damaged and worn-out equipment; * placing heavier objects without handling aids on pads (shims) at least 30 mm high so that there is a safety gap between the load and the storage surface for inserting fingers or pulling out the hand(s) to prevent pinching or hitting the hands against the storage surface and the base; * prepare the materials in advance (use pads, spacers);	
Small manipulation during storage	* tripping, spraining a leg, hand injuries from slipping, stumbling; * a worker hitting and falling on a means of transport, handling equipment for stored objects;	2	2	1	4	* flat, unbeaten and non-slippery surface of floors, roads, vehicle loading areas, handling areas; * cleanliness of the workplace, removal of protruding obstacles (e.g. protruding hatches, covers, mats, steps, thresholds, hoses, cables and moving electrical connections, anchor bolts, etc.);	
7.2 Handling and storage / Manual handling / Transport with hand trucks							
Hand carts - horizontal transport	* falling and overturning of vehicles when hitting an unsupportable hatch or bridge;	1	2	1	2	* covers of canals, shafts and other depressions sufficiently load-bearing; * the load capacity of the leveling bridges corresponds to the operating load, their upper surface is rough;	
Hand carts - horizontal transport	* fall after a worker slips while transporting material on wheels (especially in cases where the worker has to exert force with	2	2	1	4	* modification of the driving surface, leveling and strengthening of the handling surface; * removal of slipperiness, compliance with the maximum permissible slope of temporary inclined driving surfaces of approx.	

	horizontal component - e.g. when pushing the wheels when starting off);					1:5; * do not overload the wheels, fill them only to approximately 3/4 of the contents of the body;	
Hand carts - horizontal transport	* overloading and straining the worker when transporting material with a wheelbarrow;	1	2	1	2	* place the heaviest load on the body as close to the drive wheel as possible; * the wheel must be lifted and placed in a squat position using the strength of the lower limbs with the torso slightly tilted and the spine straight and upright;	
Hand carts - horizontal transport	* worker falls after wheels go off track while approaching a ramp or skid; * fall, overturning of the hand truck, wheels and hitting the worker;	1	2	1	2	* compliance with the minimum width of travel structures and elements (bridges, inclined ramps, ramps), i.e. 60 cm; * reliable securing of the running elements against movement; * even, symmetrical load distribution; * flat, solid and load-bearing running surface; * removal of obstacles in the driving path (this applies in particular to the operation of pallet trucks, so-called ("pallet trucks")	
Hand carts - horizontal transport	* pushing a person with a wheelchair or drawbar against walls, columns, door frames and other fixed obstacles and objects that narrow the traffic profile of the road; * hitting hands and other parts of the body against solid obstacles;	1	2	1	2	* elimination of spontaneous, unwanted movement of the wheelchair; * before starting the wheelchair, ensure clear passage profiles, clear communications and a good view of the road, or arrange for another person to accompany you; * hold the wheelchair by the handle or handrail or by the edge of the wheelchair so that your fingers do not exceed the width of the wheelchair; * use side hand guards on pallet trucks in warehouses;	
Hand carts - horizontal transport	* worker being hit when pulling heavier carts into confined and limited spaces (elevators, containers, basements), when the worker pulls the cart towards him/herself and is no longer able to stop the moving cart in a small space;	1	2	1	2	* when entering confined spaces (elevators, containers, etc.) with a wheelchair, the wheelchair must be pushed and then braked from behind as needed;	
Hand carts - horizontal transport	* slipping when setting the wheelchair in motion (the operator's feet get closer to the wheelchair wheels); * slip and fall when pushing or pulling the wheelchair (especially when transporting the wheelchair on an inclined floor or ramp) running over a leg with a wheelchair wheel;	2	2	1	4	* non-slip roads, ramps; * uncovered operating areas must be drained; * securing and braking the truck when driving on an inclined surface by another worker; * correct position of the worker to avoid tripping over their feet;	
Hand carts - horizontal transport	* leg bruised by being run over by a low-lift or platform truck;	1	2	1	2	* use low-lift trucks equipped with footrests, located in front of each wheel and the rear one; * distribute the load on the truck evenly; * the operator should not push the cart from the side;	
Hand carts - horizontal transport	* falling cargo (transporting a high load with the possibility of the load tipping over and falling is dangerous); * overturning of the truck including the load; * slippage and fall of a load transported and lifted by a forklift truck; * slippage and fall of a load transported by a pallet truck ("a scoundrel");	1	2	1	2	* when transporting unstable cargo (with a high center of gravity), stabilize or fix the material or objects, as necessary, using wedges, attaching ropes, chains, straps, or using a truck with raised sides so that the cargo does not collapse, shift or deform during transport; * correct distribution of the weight of the material on the platform of the truck (loading part), to ensure good stability of the truck including the load, it is necessary to ensure that the common center of gravity is as low as possible (therefore, heavier objects must be placed lower and lighter objects on top of them); * do not exceed the load capacity of the truck; * ensuring proper stability of the truck, including the load; * flat, solid and load-bearing driving surface, removal of obstacles; * correctly and evenly inflated tires; * when driving the wheelchair down a slope, the operator should be behind the wheelchair; * exclude the presence of people in the immediate vicinity	

						the transported load, do not hold the load while it is being moved by the truck; * do not manipulate a loaded truck with loads after removing the load securing devices; * do not use a pallet truck (so-called pallet truck) to handle loads on an inclined plane, * do not carry out repairs and maintenance on a pallet truck loaded with a load; * do not transport unstable or bulky loads on a pallet truck, where the stability of the load against tipping cannot be sufficiently ensured; * do not push the pallet truck by leaning on the transported load; * for forklifts, follow their load diagrams, which indicate the dependence between the instantaneous load capacity of the forklift and the center of gravity of the handled load;	
Hand carts - horizontal transport	* falling load, tipping of the trolley when used on stairs and stepped floor;	1	2	1	2	* to move the trolleys up and down stairs and stepped floors, use trolleys that have a chassis consisting of a set of wheels located at the ends of the spokes of a five-pointed star, which can rotate in both directions around its axis;	
Hand carts - horizontal transport	* catching of material (load) on surrounding obstacles, objects and people; * danger to persons from material transported on the trolley;	1	2	1	2	* choose road widths according to the relevant ČSN; * elimination of spontaneous, unwanted movement of the wheelchair; * ensure clear passageways and a good view of the road before starting the truck; * if the material extends beyond the contour of the trolley, measures must be taken to prevent the material from getting caught on surrounding objects or people; * when turning a truck loaded with longer objects, the safety of other people and traffic must be ensured in an appropriate manner (e.g. by voice, another person, etc.); * the operator should not push the cart from the side, as this creates a risk of the worker running over or hitting an obstacle;	
Hand carts - horizontal transport	* worker overload; * muscle and tendon injuries due to strain due to excessive exertion;	1	3	1	3	* possibility of choosing the appropriate type and size of wheelchair; * do not exceed the load capacity of the truck; * instead of pulling the carts, push them from behind (pushing is easier); * a cart with a ramp should be pushed or pulled at the end where the ramp is; * when driving the wheelchair down a slope, the operator should be behind the wheelchair;	
Hand carts - horizontal transport	* fall, falling of a person transported in a wheelchair;	1	2	1	2	* observe the ban on transporting people on handcarts;	
Hand carts - horizontal transport	* hitting the operator with the drawbar of the pallet truck, after the drawbar is raised abruptly; (the operator may be endangered when the lifting position is unlocked, when the lifting device with the load may drop abruptly, the drawbar will rise abruptly and may hit the operator);	1	2	1	2	* correct way to operate and control the pallet truck; * correct function of the lever mechanism, drawbar - lever, locking latch (unlocked when lowering with the foot pedal); * correct operation of the hydraulic unit control (usually done via the steering drawbar and control lever); * be careful when performing the up and down swinging movement of the steering drawbar and tilting the drawbar or frame to the upper position;	
Hand carts - horizontal transport	* parts of the truck wheel being thrown out when inflating the tire with a compressor;	1	3	1	3	* when inflating bantam tires on hand trucks using a compressor, inform the worker about the pressure value prescribed for tire inflation and equip him with the necessary pressure gauges;	

Hand carts - horizontal transport	* collision of a truck with a motor vehicle while operating on land roads;	1	3	1	3	* a hand truck with a total width greater than 0.6 m, used on public roads, must be equipped with approved reflectors: - two-axle truck with two white reflectors on the front side (on the drawbar side) and two red reflectors on the rear side; - single-axle truck with two red reflectors on the front and rear; (reflectors must be non-triangular in shape, placed symmetrically as close as possible to the side contours of the truck at the same height above the ground, but not lower than 250 mm and not higher than 900 mm)	
7.3 Handling and storage / Manual handling / Handling areas							
	* a person falling on the surface of the ramp, slipping;	1	2	1	2	* the surface of the ramps must be flat, non- slip and maintained in good condition;	
Small manipulation - manipulation premises	* a person falling from a ramp;	3	3	1	9	* ramps must be spatially appropriate for the type of mechanisms used and the frequency of operation; * sufficient ramp lighting (natural or artificial); * ramps higher than 0.5 m, which also serve as pedestrian routes, are equipped with removable railings on the free sides to prevent people from falling (if the railing would prevent the operation of the ramp when loading and unloading materials with low or limited access, the railing does not have to be installed, but the possibility of unintentional falling of people must be warned of by safety signs and also by marking the free edge of the walking area or by marking safety belt at the edge of the walking area at a distance of 0.5 m from the edge of the ramp. * provide the free edges of the ramps with safety markings (black and yellow hatching - paint, foil, etc.); * increased caution by persons performing handling work near the edge of the ramp (loading and unloading);	
Small manipulation - manipulation premises	* fall, skid, person falling;	3	3	1	9	* the skids used for unloading the material do not have a greater inclination than 30° from the horizontal; * skid beams are reliably fixed to the vehicle, e.g. using hooks;	
7.4 Handling and storage / Loading and unloading of vehicles							
Loading and unloading transport resources	* slips, trips, sprains of the leg on handling and loading surfaces;	2	2	1	4	* adjust and maintain the floor surfaces of the loading area so that they are not slippery; * suitable work shoes;	
Loading and unloading transport resources	* the load slipping out of the hands and the load falling onto the foot;	2	2	1	4	* use palletization and containerization to the maximum extent possible; * wear appropriate work shoes; * follow correct work procedures and load handling;	
Loading and unloading transport resources	* bumping, hitting, pinching fingers against the storage surface; * hitting a limb against surrounding objects, structures, or vehicle sides when lifting and placing loads;	2	2	1	4	* if heavy objects are not secured against unwanted movement, do not step under them or put your hands under them; * preferably use vehicles equipped with lifting tailgates, hydraulic lifts (hands) and other suitable handling devices,	
Loading and unloading transport resources	* hitting a hand, hitting a head with the side or rear panel when opening or closing them;	2	2	1	4	* maintain the mechanisms and closing elements of the side walls and rear end of vehicles in proper condition;	
Loading and unloading transport resources	* a load falling on a worker when lifting and placing a load in the event of the load falling due to its faulty fastening, unstable position or incorrect method of removal, after the transported loads are shifted during their transport, etc.	2	3	1	6	* suitable method of storing and securing loads during transport, when unloading from vehicles and when removing material, ensuring its stability; * exclusion of the presence of persons not involved in unloading and loading; * when handling piece materials, ensure the fixation of materials transported in plain pallets;	

						* the height of stacks of cargo transported on means of transport should be selected depending on the type, shape, dimensions and weight of the handling unit, the type and design of handling equipment and means of transport, the carrying capacity of means of transport, pallets and containers, the loading height of means of transport, the method of loading and the arrangement of the handling unit; * to enable the fixation and clamping of transported loads on vehicles and other means of transport, it is necessary to use fastening devices such as tensioning belts with a tensioning ratchet and tensioning straps made of polyester belts with a ratchet and a safety hook with a carabiner; * when loading and unloading vehicles, the loading surface should be as horizontal as possible, especially when manually loading or unloading loads with a higher center of gravity (e.g. racks with material, etc.); * choose the order of unloaded loads and material on the loading area in such a way as to prevent one-sided suspension of the axles and thus a dangerous tilting of the loading area of the vehicle and possible overturning or sliding of the load;	
Loading and unloading transport resources	* falling of a load, object, material on a worker/person during unloading and loading;	2	3	1	6	* suitable method of storing and securing loads during transport, when unloading from vehicles and when removing material, ensuring its stability; * when loading, unloading and other handling, secure piece material with suitable tools and means, if necessary, to prevent the material from sliding, falling or tipping over; * workers involved in loading and unloading must not stay in the immediate vicinity of the lifted load, walk under the lifted load and hold the load during the activity handling equipment, * if heavy objects are not secured against unwanted movement, do not step under them or put your hands under them; * do not manipulate means of transport with loads after removing the fastening or anchoring of the loads; * the skids must not have a slope greater than 30° from the horizontal; * secure the skid beams to the vehicle using hooks or other reliable fastening devices;	
Loading and unloading transport resources	* loads slipping and falling when removing objects from loading surfaces vehicles and their fall on a person;	2	3	1	6	* when opening the side walls, stanchions and rear end, the opening worker must ensure that no one can be hit by them or the released load; * heavy objects should not be leaned against the sides or rear panel, tall objects must be secured against loss of stability; * use appropriate means for hanging and gripping loads in such a way as to eliminate or minimize the loss of materials; * loading operations should be carried out on ramps if possible;	
Loading and unloading transport resources	* ejection of dropped material and hitting a worker;	2	3	1	6	* Do not throw long and flexible objects (bar metallurgical material, unbundled pipes, etc.) onto the ground or floor when unloading, so that they do not cause injury to persons in the vicinity of the manipulation being performed if they are thrown;	
Loading and unloading transport resources	* worker falling while getting on or off a vehicle;	2	2	1	4	* use a ladder or other equivalent device to enable safe access to the loading area of the vehicle (or descent); * do not move unnecessarily near the very edge of the vehicle's loading area;	

Loading and unloading transport resources	* running over, hitting, or pushing a person with a vehicle;	1	3	1	3	* to ensure safe reversing, turning, etc. dangerous vehicle movements, when the driver of the vehicle is usually guided by an instructed person (e.g. a driver), predetermined signals and signs must be used to avoid misunderstandings between the driver and the guiding person;	
Loading and unloading transport resources	* overload and strain due to more intense lifting, moving and manipulating loads (strain, tearing or stretching of muscles and tendons of the hands, sometimes damage to the skeletal system, the formation of a groin or femoral hernias, joint sprains and muscle strains);	1	3	1	3	* loading and unloading work must be carried out with the necessary number of employees, or teams, using appropriate technical means; * observe the weight limit of 50 kg per worker; * correct handling procedures and work techniques;	
7.5 Handling and storage / Storage racks							
Storage shelves	* material falling from a rack cell and hitting a worker;	1	2	1	2	* ensuring the correct placement of the load on the shelf floor (on a wider surface, without overlapping the front edge of the shelf floor, etc.); *depending on the need and type of material, fixing and securing the material against falling; * ensuring the stability of each type of material stored in the rack;	
Storage shelves	* worker falling while operating higher rack cells;	1	2	1	2	* manual operation (storing and removing material) of parts of the rack at a height above 1.8 m is carried out from safe devices and aids (ladders, mobile steps, handling platforms, etc.); * do not climb on the rack structure;	
Storage shelves	* tripping, bumping a person into the rack structure and stored material;	2	2	1	4	* maintaining free access, or arrival, to the racks so that the placement and removal of handling units and material is not obstructed; *the width of the aisles between the racks and stacks corresponds to the method of storing the material and is at least 0.8 m wide for manual operation; the width of the aisle for the passage of transport trolleys is at least 0.4 m greater than the highest width of the trolleys or loads;	
Storage shelves	* collapse and fall of the shelf;	1	3	1	3	* permanent stability of the rack is ensured (empty, partially filled and completely filled racks); anchoring, ventilation, etc. are carried out according to the rack design; * failure to ensure the stability of the rack by simply leaning against each other or against structures; *after each relocation and rearrangement of the rack, the racks are checked at regular intervals to ensure that they comply with the relevant documentation, the rigidity of the joints, verticality and horizontality; *designation of the load capacity of the rack cells and the number of cells in the column (or the load capacity of the rack column); load capacity proven; *do not overload the shelves; * place loads evenly in the rack cells, lighter loads in higher cells, heavier loads in lower cells, etc.); * the prohibition on climbing on the rack, entering the rack and onto it is observed (except in exceptional cases of repairs, etc.);	
Storage shelves	* a load falling on a worker, a worker being hit by a falling load, a moving load when placing and removing material from shelves and during shelf manipulation;	2	2	1	4	*compliance with the prohibition to stay in the area of possible unwanted movement of the load and under the load when storing material with a forklift; *compliance with the prohibition on disturbing the stability of the material on the shelves, e.g. pulling out objects and elements from below or from the side; *compliance with the ban on climbing and exiting the rack;	
Storage	* falling of a load on the leg;	2	2	1	4	* correct manual handling and storage methods	

shelves - manual manipulation during storage	* being hit by a load falling from a rack; * bruising and impact of hands and feet when slipping and the load slipping out of the hand when placing it on the rack;					material to the shelf; * correct gripping of the load when storing and removing material from the rack cells; * ensuring a firm grip on loads, using grip holes and handles; * checking the condition of the gripping elements before handling; * use of handles and other aids to facilitate gripping; * do not store material on the edge of the shelf floor;	
7.6 Handling and storage / Storage areas							
Outdoor communication and outdoor premises	* fall, impact of various parts of the body after a person falls (when moving outdoors) communications and premises);	4	2	1	8	* ensuring the safe condition of the surface of outdoor paths, entrances to production facilities and storage areas and other frequented places; * maintenance, cleaning and tidying of floors, roads and all walking areas in outdoor storage areas and material dumps; * keeping roads and passages free and clear, without being blocked by material or operating equipment; * timely removal of communication barriers; * ensuring sufficient electric lighting at night and in reduced visibility;	
Outdoor communication and outdoor premises	* a person slipping and falling while walking on snow, especially icy roads and outdoor walkways premises;	2	3	1	6	* cleaning and maintenance of outdoor paths in winter, removal of ice, snow, anti-slip grit (provided by own means); * ensuring sufficient electric lighting at night and in reduced visibility;	
Outdoor communication and outdoor premises	* tripping, spraining a leg, bumping into, getting caught in various obstacles and protruding elements in the areas of the paths;	2	2	1	4	* removal of communication obstacles that can be tripped over and raised hatches above floor level, as well as hoses and electrical cables; * ensuring sufficient electric lighting at night and in reduced visibility;	
Outdoor communication and outdoor premises	* fall of the handled load (handling unit) or its part; * worker falling while removing material from a stack;	2	3	1	6	* not reduce the stability of the stack, boundaries; * secure the material against falling after removing the fixing means (wire, tape, foil, etc.); * do not lean materials, objects, equipment, ladders, etc. against stacked handling units; * excluding the presence of persons in the area of possible fall of loads handled by a crane, motorized forklift, etc.; * use of a protective helmet in areas with stacked handling units at a height of over 2 m;	
Outdoor communication and outdoor premises	* a person falling from a height, from a stacked handling unit; * worker falling while removing material from a stack;	2	3	1	6	* observe the prohibition on climbing on or off stacks, stacked pallets and other handling units; * use a suitable means to raise the work area during necessary activities on the stack (border) without disturbing its stability; * do not lean the ladder against stacked handling units; * increased caution when entering the upper part of the landfill (e.g. to hang or unhang a lashing device); * if picking (manual removal) is allowed from stacked units, it must be done safely, e.g. from a handling platform, ladders, steps, etc.;	
Stacking material	* collapsing stacked pallets or other handling units; * fall, collapse of stacked pallets or other handling units;	2	3	1	6	* maintaining the surface of pallet stacking areas and superstructures, including aisles, in good condition, especially evenness; * store handling units in the appropriate pre-determined storage zones; * stacked plain pallets only when they are loaded	

						a material that can withstand safe stacking and guarantees the creation of a stable stack; *do not lean pallets, etc. against each other; * load pallets and superstructures evenly so that the loaded material (products) does not exceed the external plan dimensions; * place the material so that it does not interfere with the loading holes even when stacking; * material placed on pallets and in pallets and superstructures must be secured in such a way as to prevent personal injury from falling loose material; * compliance with the ban on stacking pallets and superstructures with a dirty (muddy, frostbitten, etc.) support surface and with dirty contact points); * create stacks of pallets or superstructures from loaded or empty pallets, and superstructures or the bottom layer of the stack from loaded and the top layer from empty pallets or superstructures; * for each type and type of handling units, determine the stacking height, or the maximum number of layers; * when stacking pallets, pallet extensions, storage boxes and containers, do not exceed their specified stacking capacity and stacking height; * create stacks and boundaries so that they are stable, not tilted unilaterally from the perpendicular to the stacking surface; if there is a risk of their sliding or collapsing, they must be immediately secured or dismantled;	
Stacking material	* catching a cold in winter when working outdoors unprotected areas;	2	2	1	4	* provision of PPE against cold and rain (humidity); * serving hot drinks; * breaks from work in a warm room;	
Stacking material	* overheating, heat stroke in the summer;	2	2	1	4	* providing cold drinks; * use of protective headgear; * breaks at work;	
Stacking material	* glare; * conjunctivitis;	1	2	1	2	* use of sunglasses;	
Motor forklift carts	* a load (pallets and other handling units) falling from the forks of a motorized forklift and hitting a person near the forklift;	2	4	1	8	* correctly adjust the spacing of the load-bearing forks according to the width of the pallet; *the driver observes the prohibition to leave the truck when the load is lifted; *the driver complies with the ban on transporting people; * load pallets evenly so that the loaded material does not exceed the external dimensions; * the loaded material must not interfere with the loading holes; * material placed on and in pallets must be secured in such a way as to prevent personal injury from falling loose material; * observe the prohibition on stacking handling units with a dirty (muddy, frostbitten, etc.) support surface and with dirty contact points; * handling units intended for fork handling have a gap between individual layers (or a loading opening) of at least 60 mm for inserting the fork; * when stacking handling units above a height of 2 m with forklifts, when storing pallets at a height above 2 m, employees use protective helmets; * the load fork is fully inserted into the pallets' pick-up holes, parallel to their axis; the fork must firmly support the pallet at least two-thirds of its length or width, eliminating the possibility of slipping; * when inserting the fork of the truck, it does not hit any parts	

						pallets; * the truck driver lifts the pallet with handling clearance above the stack; if the load is above the stack, the truck's lifting device must be positioned vertically; * the load must be placed carefully and safely, the forks must be moved away from the load by lowering or by tilting the lifting device or the truck forward; * when stacking, shelving, loading and unloading containers and vehicles, the fork extension beyond the outer dimensions of the pallets is not permitted; * the pallet is not handled with only one fork arm; * fork handling is carried out with only one pallet or superstructure;	
Motor forklift carts	* collapse, collapse of stacked pallets or other handling units and endangerment of persons nearby stack/border; * collapse of a stack (boundary) of piece material after loss of stability; * worker being hit by falling material when a load is dropped;	2	4	1	8	* the surface of areas for stacking pallets and other material, including aisles, must be maintained in good condition (flat, undamaged); * stacked plain pallets and other material (handling units) may only be stacked if they are loaded with material that can withstand safe stacking and guarantees the creation of a stable stack; * stacks of pallets and other handling units are made of the same type; * when stacking handling units (pallets, storage boxes, containers), their specified stacking capacity and stacking height are not exceeded; * each type of handling unit has a specified stacking height or number of layers; * Handling units that do not have specified stacking capacity or stacking height can be stacked under the following conditions: - the handling units are structurally or by their shape adapted to handling during stacking (picking holes, hinges, adapted for clamping jaws, etc.), - handling units can withstand the pressures arising from stacking, - the created stack will be stable, -the stacking height will be determined in such a way as to ensure the stability of the stack and to ensure that the permissible pressures arising during stacking are not exceeded; * stacks and boundaries must always be stable (they must not be tilted to one side); if there is a risk of them collapsing or collapsing, they must be immediately secured or dismantled; * when stacking, there is at least 200 mm of free space above the material being stored or above the created stack; * placing the material on a solid, level, load-bearing and flat surface; preventing the stack from tilting on one side; *compliance with the maximum stack height (2 m) when manually stacking; * correct fastening of the load, exclusion of unstable positions and incorrect method of lifting the load;	
13.1 Hazardous substances / Dangerous substances							
Dangerous substances	* dangerous effects of caustics (acids and alkalis) regardless of type, temperature, concentration and duration of exposure) on the skin, eyes and mucous membranes (eye contact is particularly dangerous), exposure to alkalis is more dangerous (collicular necrosis occurs - the tissue is slushy) than to acids (coagulative necrosis - variously colored slough);	1	1	1	1	General first aid principles First aid is a set of simple and effective measures that serve to provide immediate assistance in the event of a sudden health impairment. First aid also includes technical measures (switching off the electricity, extricating, stopping the machine, etc.). For effective first aid, the necessary means and aids must be available - water, which is the most important means for interrupting exposure and must be in sufficient quantity. In addition, there are blankets or other textile	

	* when exposed to vapors, aerosols and gases - low concentrations in the air: burning nose, runny nose, burning throat, hoarseness, cough, feeling of suffocation, burning conjunctiva, tearing, redness of the skin - high concentrations in the air: laryngeal swelling, shortness of breath, cough, tightness in the chest and pain behind the sternum, pulmonary edema with coughing up blood in pink foamy sputum, risk of death, corneal damage, and blisters on the skin; * if splashed into the eyes, burns to the tissues around the eyes, severe damage to the cornea (ulcers or perforation), and blindness may occur; * when splashed on the skin, depending on the concentration and duration of exposure, burns of the 1st to 3rd degree occur, with mild damage there is a burning sensation and pain, the skin is red, the surrounding area is slightly swollen, with higher concentrations they appear on the reddened skin blisters and high concentrations cause deep necrosis; extensive burns can even kill; *when ingested corrosion of the lips, mouth, pharynx with congestion and swollen surroundings, the affected person vomits and has diarrhea, even bloody, pain in the esophagus and stomach with subsequent development of shock (general weakness, shortness of breath, cyanosis - bluish discoloration of the skin clearly visible on the lips, earlobes and fingertips, dewlap cold sweat), which can lead to death, if the affected person survives the shock stage, there is a risk of perforation of the digestive tract, subsequent inflammation of the pericardium and peritoneum and especially cicatricial narrowing of the esophagus and pylorus (part of the stomach) * inhalation of fumes thinners, hardeners, accelerators, initiators and other auxiliary chemicals that evaporate during the curing of resins, inhalation of caustic substances; * dust inhalation of added fillers, which is created when mixing them, when handling bulk materials - weighing, dosing, scattering; * skin damage when working with epoxy resins (due to the action of hardeners produced on the basis of ammonia); * contact with fumes on the hands, armpits and face (e.g. due to loose PPE), it is manifested by inflammation and					materials that allow the victim to be protected from cold and to adjust the victim's position. Other aids are part of the first aid kit, which must be readily available at the place of work with hazardous chemical substances and preparations, and the contents of which depend on the type of substance being worked with. The following are the first aid principles for poisoning: 1. CHECK THE THREATENING CONDITION It is necessary to realize the importance of maintaining the victim's vital functions (breathing, blood circulation, consciousness), given that when breathing and blood circulation stop, brain cells die in just 3 to 5 minutes. If the victim's vital functions are not maintained, it is necessary to proceed with urgent resuscitation: a) Unconsciousness - is a state in which the affected person does not respond to external stimuli, such as loud addressing, strong touch, does not communicate. We determine whether the affected person is breathing and whether he has preserved cardiac activity. We determine breathing by observing the movement of the chest, listening, or by placing the face to the affected person's nose and mouth (when exhaling, exhaled air is visible on the face). We check the cardiac activity on the large arteries, preferably on the carotid artery. If the affected person is unconscious but breathing and has preserved cardiac activity, he is placed in a stabilized position: lying on his side, head on the side in a slight tilt, with his hand under his head. This position allows the airways to be kept open and prevents the inhalation of any vomit into the lungs. We further protect the affected person against cold by covering him and constantly monitor whether there is vomiting or inadequate breathing. b) Breathlessness - is a condition where the victim is not breathing or is breathing only insufficiently. We determine whether there has also been a cardiac arrest. For a victim who is not breathing but has preserved cardiac activity, artificial respiration from lung to lung is performed: The victim is placed on his back on a hard surface, the rescuer tilts the head, which opens the airways and sometimes this maneuver can lead to the restoration of breathing. The head tilt is performed by placing one hand of the rescuer under the neck, placing the other on the forehead and pressing the head slightly back, while lifting the victim with the hand that is under the neck. If this action is not enough, the lower jaw is advanced. After cleaning the oral cavity, removing vomit and dentures (with a handkerchief, finger), natural breathing from lung to lung follows, while maintaining the head tilt and pressing the victim's nostrils with fingers. The rescuer takes a deep breath and exhales air into the victim's mouth. He observes the chest, its rise indicates the entry of air into the victim's lungs. The process is repeated 12 to 16 times per minute. Artificial respiration can be performed through a resuscitation mask. c) In case of cardiac arrest, i.e. blood circulation arrest, we perform indirect heart massage. Its principle is to indirectly compress the heart muscle and thereby expel blood from the heart by pressing on the sternum against the hard spine. The victim must lie on his back on a hard surface. Then the rescuer, with his arms crossed and elbows outstretched, applies pressure with his body over the	

	redness of the skin; these toxic fumes also cause secondary diseases, which generally heal poorly; * inhalation of fumes thinners, solvents or hardeners into the bronchi leads to damage to the respiratory tract, which in the final stage can be permanent; in milder cases bronchial disease occurs (smokers have a worse tolerance than non-smokers); * allergic reactions due to exposure to various substances; * burns or explosions when using solvents, flammable liquids, reactive synthetic resins (they are flammable, like most solvents); * various symptoms such as redness, rashes, but also runny nose, tearing, breathing difficulties depending on the specific substance					wrist to the lower third of the sternum. The sternum must be compressed by 4 to 5 cm to achieve the desired effect and indirect heart massage should be performed at a rate of 60 to 80 compressions per minute. d) In the case of breathlessness and simultaneous cardiac arrest, both lung-to-lung artificial respiration and indirect heart massage are performed in the above-described ways. In the case of two rescuers (one performs indirect heart massage and the other artificial respiration), the ratio of chest compressions (heart massage) to artificial respiration is 5:1, i.e. after the fifth chest compression, one breath is performed. When there is only one rescuer, this ratio is 15:3. 2. GET INFORMATION First of all, we try to determine whether it is poisoning or another life-threatening condition (paralysis, diabetes with hyper- or hypoglycemic shock, high blood pressure, etc.). When it comes to poisoning, we find out how the poisoning occurred, what substance, where the poisoning occurred (at home - alcohol, medicines, cleaning products), at work (what the person works with), whether it was ingested, inhaled or splashed, how great the exposure is, how much time has passed since the exposure. In any case, treatment must be provided. Handle the situation calmly but decisively, do not panic, avoid not giving any medication but, on the contrary, avoid giving large amounts and high doses of medication. Provide material for analysis (vomit), note and inform the doctor about the procedures (medications administered, etc.). If it is not possible to provide a doctor immediately, it is necessary to arrange transport to the hospital with an escort who can provide all the necessary information. 3. STOP EXPOSURE The procedure depends on how the poisoning occurred and the condition of the affected person: a) skin contact: Protective gloves should be used when decontaminating corrosive substances and substances that are easily absorbed through the skin. As soon as possible, rinse the affected area with plenty of warm water (about 30 - 35 degrees C) for 10 to 15 minutes, for strong alkalis at least 1 hour! Remove soaked clothing, watches, jewelry - if it is a corrosive substance, directly under the stream of water, do not pull the stained clothing over the face and make sure that the draining water does not reach those parts of the body that have not been contaminated. If the lower limbs are affected, remove shoes and socks and rinse the skin with running water. After thorough rinsing, wash with soap and shampoo for oily substances and substances soluble in fats (organic solvents) and rinse thoroughly with water again. Use a brush only for nails. Where appropriate, trim contaminated nails and hair (for corrosive and toxic substances), thoroughly wash between the toes, behind the ears and in skin folds. Mechanically remove solid particles (white phosphorus). In the case of burns, we cover the affected areas with a sterile bandage, without using ointments. Beware of hypothermia. Neutralization is neither necessary nor advisable, it can lead to skin damage due to heat generation during chemical neutralization! Inactivation only in special cases.	

b/ eye contact:
The cornea is particularly sensitive to caustic substances and organic solvents, which can damage its surface very quickly and lead to opaque scars. It is necessary to act quickly to prevent serious damage. Rinsing is done with a large amount of lukewarm water or saline solution, from the inner corner to the outer corner of the eye (so that the water does not run into the other unaffected eye, the mouth and nose). The eye is rinsed for 10-15 minutes, we never use any neutralizing solutions. For people with contact lenses, the lenses must be removed first. If the affected person has a spasmodic eyelid, a reasonable amount of force is also appropriate to open it. Do not use neutralizing solutions that can damage the eye Always send the affected person to an ophthalmologist

c/ fluffiness:
We will help the affected person to get out of the contaminated environment into clean air, we will take care of our own safety (oxygen device). It is advisable to remove clothing soaked in vapors, cut hair and nails in case they could be a source of further absorption of poison. With irritating substances, there is a risk of pulmonary edema, the affected person must have complete physical rest, protect him from getting cold, position in a semi-sitting position, it is possible to inhale oxygen. In persons significantly exposed to substances poorly soluble in water (nitrogen oxides, phosgene, ozone) and aliphatic hydrocarbons and petroleum substances - monitor for at least 24 hours.

d/ ingestion:
For unconscious persons, do not give anything by mouth, do not induce vomiting, place in a stabilized position, call a doctor. For corrosive substances, do not give anything by mouth, rinse the mouth with water or milk, if the patient feels better after drinking water or milk, he can drink a maximum of 1 - 2 dl of these liquids, do not induce vomiting, transport immediately to the hospital. In most cases, administer activated charcoal

-ten times the amount we want to remove, mix the powder or crushed tablets with 1 - 2 dl of water. Activated charcoal is not administered after ingestion of caustic substances without an overall toxic effect, for substances that it binds poorly
- iron, cyanides, glycols, alcohols.
Milk is given for poisoning with: divalent mercury salts, fluorides, oxalic acid and oxalates, iodine, copper sulfate
We never serve milk: organic solvents, naphthalene, fat-soluble substances (they accelerate the absorption of toxic substances!)
Induce vomiting, usually within 2 hours of ingestion for poisons, by adding up to 10 crushed charcoal tablets to half a liter of lukewarm water, or 5 teaspoons of salt. If necessary, irritate the soft palate with a finger or a blunt object. Do not induce vomiting for corrosives.
We never induce vomiting when ingesting substances that are not very harmful, ingesting corrosive substances, ingesting substances that cause foam (detergents, surfactants), ingesting substances with a risk of inhaling vomit (gasoline, diesel, kerosene), in a state of drowsiness (drowsiness to sleepiness) - the risk of inhaling vomit.

4. PROVIDE EMERGENCY THERAPY

						Provide the affected person with the appropriate antidote or substances that reduce the effect of the ingested substance, e.g. for organophosphates it is atropine, for cyanides it is amyl nitrite, for iodine it is starch - potato starch, etc., for hydrofluoric acid it is magnesium sulfate, for potassium permanganate it is manganese dioxide, vitamin C for copper sulfate - beaten egg white for barium and its compounds it is magnesium sulfate for bromides it is sodium chloride for ethylene glycol it is ethyl alcohol for organic solvents it is paraffin oil, etc. Safety precautions: * employee selection, medical examinations; *professional competence, familiarization of employees with the effects and properties of substances; * preventing direct skin contact with hazardous substances; * assignment and use of PPE for routine use when exposed to corrosive substances: rubber gloves, rubber apron, rubber boots, safety glasses, protective face shield, acid-resistant clothing, mask with a filter against acid vapors and gases; * PPE for use in emergency situations - corrosives: chloroprene rubber gloves, rubber apron with neck guard, full protective suit, heavy breathing apparatus; * use specific PPE, special gloves and sleeves, aprons, shoes, etc., e.g. resistant to corrosives (acids, alkalis), solvents, solvents, petrochemical products; * eye protection or full face PPE (goggles, face shield), respiratory protection; * ensuring ventilation, fresh air; *in case of allergic reactions, consult a doctor; experience has shown that it is best to change the employee's job assignment in a timely manner; *observe the principles of personal hygiene (do not eat, drink, smoke); * respect the labels and instructions of manufacturers on the packaging and wrappings of these substances, e.g. "Do not breathe fumes", "Toxic if inhaled", "Beware of skin splashes", "Caution, flammable liquid" and other information (including information in safety data sheets, etc.); * timely cleaning of leaked, spilled, or spilt substances; * training employees on the effects of the substances used; *supervision at work, proper control by management employees;	
9.1 Electrical equipment / Electrical equipment - electric shock							
Electric device - accident by electric current	* injuries resulting from workers being struck by electric current during normal activities, usually touching uncovered or otherwise unsecured live parts of electrical equipment, e.g. during operation and activities on electrical equipment workers who are familiar with and instructed, shock when electric current passes through the body of the affected person, subsequently a fall from a height, etc.;	1	5	1	5	* * exclusion of activities in which a worker performing work near electrical equipment would come into contact with live parts under voltage; *prevention of unprofessional interventions in electrical installations; * maintaining temporary electrical equipment in a safe condition - initial inspections, regular inspections, regular professional supervision by a certified electrician (inspections and troubleshooting); * do not approach electrical equipment, do not disable position protection, observe the prohibition or observe the conditions for working near electrical lines and equipment;	

						* switching off electrical equipment on the construction site after working hours (fire hazard) and observing the operating conditions of continuously operated heaters and sources of electrical heating;	
Electric device - accident by electric current	* contact of persons with live parts, i.e. direct contact with parts that are under voltage or with parts that have become live as a result of poor conditions, especially such as: - result of insulation failure (indirect contact), imperfect protection against electric shock from non-live parts (e.g. previous zeroing, grounding); - inadequate degree of protection against contact (accidental, unintentional, arbitrary) arising from the relevant regulations; - faulty functions of electrical equipment (armament), missing fuses of electrical equipment (armament), e.g. parts of electrical equipment, working machines, etc.; - with unprotected live parts, e.g. in an open switchboard, damaged parts of the electrical installation, dismantled covers, etc.; - accessible live parts of electrical equipment due to mechanical damage, e.g. switchboards, etc.;	1	5	1	5	* compliance with the prohibition to remove barriers and covers, open access to electrical parts, disable protective elements of coverings and closures; * respecting safety messages; * exclusion of activities in which a worker performing work near electrical equipment would come into contact with live parts under voltage; * professional connection and repair of power and extension cords, verification of correct connection, use of appropriate cords and cables with protective conductors (always carried out by an electrician - a knowledgeable worker with higher qualifications); * relieve connections from strain, connect extension cords with a protective conductor, the protective conductor must be longer so that it is the last to be interrupted when pulled out; *prevention of unprofessional interventions in electrical installations; * maintaining temporary electrical equipment in a safe condition - initial inspections, regular inspections, regular professional supervision by a certified electrician (inspections and troubleshooting); * compliance with the ban on wrapping electrical cables around metal structures, railings, scaffolding, etc. at workplaces; * careful handling of electrical connections by workers when handling electrical equipment, switching it off, plugging it into sockets, etc., careful handling of cables and power cords; * before moving an appliance connected to a movable power supply, safely disconnect the appliance by pulling the plug from the socket (does not apply to appliances that are specially designed and adapted for this purpose); * avoid using extension cords, use them only as long as necessary; do not use extension cords with plugs on both ends; * make sure that the electrical device or electrical equipment is in good condition before using it (proper inspection); * do not approach electrical equipment, disable the protection position, observe the prohibition or observe the conditions for working near electrical lines and equipment;	
Electric device - accident by electric current	* touching foreign conductive objects (hoses, pipes, metal structures) with electric conductors when handling, erecting and moving rod objects (scaffolding), simple ladders, extendable ladders near outdoor electric lines;	1	5	1	5	* do not approach electrical equipment, disable position protection, observe the prohibition or observe the conditions for working near electrical lines and equipment; *observe the prohibitions on activities in the protection zones of outdoor high-voltage and low-voltage power lines;	
Electric device - accident by electric current	* accidental contact with live or non-live parts of electrical equipment;	1	5	1	5	* exclusion of activities in which a worker performing work near electrical equipment would come into contact with live parts under voltage; * implementation of measures to protect against electric shock from inanimate parts (when workers come into contact with inanimate parts on which there is voltage in the event of a fault (voltage on the conductive frame of the machine or tool); *prevention of unprofessional interventions in electrical installations; * maintaining temporary electrical equipment in a safe condition - initial inspections, regular inspections, regular professional supervision by a certified electrician (inspections and troubleshooting);	

						* make sure that the electrical device or electrical equipment is in proper condition before using it (proper inspection); * do not approach electrical equipment, disable position protection, observe the prohibition or observe the conditions for working near electrical lines and equipment;	
Electric device - accident by electric current	* confusion of the phase and protective conductors due to improper connection of the supply line - cord * failure to verify the correctness of the connection, unprofessional repair of the power cord, use of an extension cord without a protective conductor or with a broken protective conductor, and failure to comply with color coding of wires;	1	5	1	5	* professional connection and repair of power and extension cords, verification of correct connection, use of appropriate cords and cables with protective conductor (always performed by an electrician according to at least Section 6 of Decree No. 50/1978 Coll., i.e. a knowledgeable worker with higher qualifications); * respect the color marking of the wires; *prevention of unprofessional interventions in electrical installations; * maintenance of electrical cables and electrical connections (e.g. against mechanical damage on construction sites, pulling out of terminals, etc.) - regular inspections of temporary electrical equipment; * maintaining temporary electrical equipment in a safe condition - initial inspections, regular inspections, regular professional supervision by a certified electrician (inspections and troubleshooting); * avoid using extension cords, use them only as long as necessary; do not use extension cords with plugs on both ends;	
Electric device - accident by electric current	* pulling out the power cord due to careless, unwanted or prohibited handling by workers;	1	5	1	5	* relieve connections from strain, connect extension cords with a protective conductor, the protective conductor must be longer so that it is the last to be interrupted when pulled out; * careful handling of cables and power cords; *maintenance of electrical cables and electrical connections (e.g. against mechanical damage on construction sites, pulling out of terminals, etc.) * regular checks of temporary electrical equipment; * careful handling of electrical connections by workers when handling electrical equipment, switching it off, plugging it into sockets, etc.;	
Electric device - accident by electric current	* damage to the insulation of connected moving leads (penetration, cutting and other mechanical damage to the insulation to the bare conductor) resulting in exposure to the risk of mechanical damage (incorrect storage or improper use);	1	5	1	5	* careful handling of cables and power cords; * observe the prohibition on running electrical supply cables along roads and where they could be damaged by construction site and other equipment; *maintenance of electrical cables and electrical connections (e.g. against mechanical damage on construction sites, pulling out of terminals, etc.) - regular inspections of temporary electrical equipment; * maintaining temporary electrical equipment in a safe condition - initial inspections, regular inspections, regular professional supervision by a certified electrician (inspections and troubleshooting); * compliance with the ban on wrapping electrical cables around metal structures, railings, scaffolding, etc. at workplaces; * careful handling of electrical connections by workers when handling electrical equipment, switching it off, plugging it into sockets, etc.;	
Electric device - accident by electric current	* damage, breakage of insulation of wires, cables and cords;	1	5	1	5	* special measures to protect electrical lines and the safety of people according to the nature of the work activity; * maintaining electrical equipment in a safe condition - initial inspections, regular inspections; * regular professional supervision by a certified electrician (inspections and troubleshooting); * protection against dangerous touching or approaching live parts of electrical equipment, against dangerous touch voltage on non-live parts, against the occurrence of dangerous touch voltage	

						voltage, from the harmful effects of electric arcs, from unwanted ingress of foreign objects, water, moisture, gases, dust, vapors into electrical equipment, especially in areas with flammable dust;	
Electric device - accident by electric current	* inability to quickly turn off the power in case of danger; * inaccessible main switch of temporary electrical equipment; * improper location of the main switch;	1	5	1	5	* convenient location of the main switch, enabling easy and safe operation and control; * informing all construction employees . * maintaining free space and access to main switches; space in front of electrical switchboards and protection of electrical switchboards (from mechanical damage); * switching off electrical equipment on the construction site after the end of working hours (fire hazard) and compliance with the operating conditions of continuously operated heaters and sources of electrical heating (in construction site facilities .....in the winter period);	
Electric device - accident by electric current	* unwanted approach of a person to the conductors of overhead electrical lines (including when manipulating mechanisms and other devices near electrical equipment);	1	5	1	5	*observe the prohibitions on activities in the protection zones of outdoor high-voltage and low-voltage power lines; * work near electrical equipment should only be carried out in cooperation with a specialist under specified conditions, including compliance with the minimum distances specified in the relevant regulations;	
Electric device - accident by electric current	* electric shock when workers unintentionally touch low and high voltage parts, including contact with outdoor power lines;	1	5	1	5	*observe the prohibitions on activities in the protection zones of outdoor high-voltage and low-voltage power lines; * work near electrical equipment should only be carried out in cooperation with a specialist under specified conditions, including compliance with the minimum distances specified in the relevant regulations;	
9.2 Electrical equipment / Atmospheric electricity (lightning)							
Atmospheric electricity	* being struck by lightning (danger from atmospheric electricity); * death in the event of direct human intervention by the main leader spark discharge; * danger of being hit by a secondary spark discharge: - burns of all degrees; - paralysis of the nervous system; - shock, respiratory arrest; - fire after ignition of flammable and easily flammable substances (by lightning energy); - lightning strike jump from the down conductor to larger metal surfaces or objects	1	5	1	5	* conductive connection of suitably and effectively placed interception devices (lightning conductors), their grounding, or the use of spark gaps, lightning arresters and other atmospheric voltage arresters on buildings and objects; * maintaining lightning protection equipment in good condition (inspection, troubleshooting);	
10. Maintenance and repair of machinery and equipment							
Maintenance and repairs of devices and machines	*a person falling from a height - from a machine or device; *a person falling when ascending or descending to elevated parts of a machine/equipment;	2	4	1	8	* equip the work platforms with railings on the free sides, install handrails, holders, steps, etc.; * ensuring safe access to work areas at height; * establishment of handling platforms, gangways, steps with platforms, a sufficient number of ladders of the required lengths, safe means and elements for climbing and moving around the machine/equipment (steps, treads, ladders, etc.), * use appropriate and safe structures, means and aids for raising work places, hold on to handrails, etc.; * before exiting, remove dirt from the surface of walking surfaces and elements, maintain exit,	

						pedestrian elements and areas; * do not jump from high places; * when carrying out more extensive and demanding repairs, provide auxiliary structures, scaffolding, work tools and equipment; * use personal fall protection equipment as needed (especially in cases where it is necessary to remove railings, hatches, etc.); * prevent people from accessing free, unsecured edges of equipment, technological lines, etc.; * when removing floor grates, a hatch or railing, temporarily fence off or cover the opening and provide good lighting in the adjacent area as needed;	
Maintenance and repairs of devices and machines	* worker falling through a porous grating or an unsupportable floor; * falling through mounting and other openings after removing the cover, hatch, or porous grid;	1	5	1	5	*maintenance of floors, platforms, and, if necessary, reinforcement of walking surfaces and structures; * install a railing, barrier, or conspicuous obstacle at the opening; *covering the opening when work is interrupted and completed, or guarding it by a designated person; * preventing and excluding unauthorized persons from entering the workplace and the dangerous area; * coordinated work procedures; * increased caution when working near openings;	
Maintenance and repairs of devices and machines	* a person falling on a flat surface - slipping, tripping on the floor, walking area around the machine or on the machine;	3	2	1	6	* prevent leakage of operating fluids, drain them into containers or other suitable equipment; * cleaning floors, timely removal of dirt (increasing slipperiness, especially grease); * cleaning the workplace, removing communication barriers at the workplace if possible; * suitable work shoes; * increased caution when working and moving on dirty, oily and wet surfaces; * waste disposal; * marking the danger, i.e. slippery surface, with a warning sign; * prevent people from entering the contaminated area until the leaked medium is removed (cleaned up)	
Maintenance and repairs of devices and machines	* unwanted, undesirable start-up of the machine/equipment; * unexpected start-up of the machine after power is restored, operator hit by a moving part; * dangers associated with premature, unintentional starting of the machine;	1	4	1	4	*preventing the machine from being switched on, the machine from being driven, the machine from starting, or even against spontaneous movement; * locking the main switch in the off state; * disconnection of the electric current - switching off the circuit breaker, removing the fuses in the locked switchboard or fuse box; (or other equivalent solution ensuring interruption of the relevant electric circuit) by/with the cooperation of an electrician, * reliable locking of the flywheel, gear lever, removal and inaccessible storage of the control element, drive belt, etc. * when performing necessary tasks near unprotected moving parts (e.g. adjustments), follow the operating and maintenance instructions; *exclusion of the presence of unauthorized persons from the area where repairs and maintenance are carried out; * correct troubleshooting, acquired skills to perform the required tasks (training, experience, professional competence) guaranteeing reliability in performing the required tasks without intentional or unintentional deviations; * awareness of the risk in a given situation (depends on the training, experience and abilities of the workers); Examples of other possible measures - to be adjusted according to local conditions: * before starting repairs and similar activities on the equipment, the designated maintenance employee who will carry out these works will enter the text in the "Record of repair reports"	

						"Do not turn on, the device is being worked on"; this record will also include the name of the device to be worked on, the date, time of the record, or other important data depending on the scope of the intervention, and his signature. The record will also be signed by the control operator who will turn off the relevant device being repaired. The control operator will place this "Record" in a holder near the screen so that it is clearly visible; upon arrival at the device being repaired, the maintenance employee who will carry out the repair will secure it against unwanted start-ups in the unlocking box (next to the device drive); * after the work is completed, the maintenance worker will unblock the operation in the unblocking box (or restore the electrical circuit for equipment where there is no unblock) and then notify the control room operator of the end of the repair and at the same time write "end of repair", the time and sign in the repair report record. Only then can the control room operator put the equipment into operation in accordance with the relevant operating regulations and must give an audible or visual signal before putting the equipment into operation; * always inform all persons involved in the above activities about the intended switching on of the device, even if the start-up is still signalled by an audible signal; * the device can be put into operation (commissioned) by an authorized (competent) worker from the control room; * checking the functionality of the tellers, blocking; * coordinated work procedures, agree on commands, signals, signs, etc., mutual visual contact between workers; * disconnection of all types of energy (hydraulic, pneumatic drives)	
Maintenance and machine repairs and device	* fall, sliding of a component, mechanism, assembly of a part and material onto a person - pressing, impact;	1	4	1	4	* correct placement of objects and materials, ensuring their stability; * maintaining order; * blocking mechanism;	
Maintenance and machine repairs and device	* fall of a part of a machine/equipment, mechanism, dismantled part, aggregate; * hitting limbs, head and other parts of the body; * falling of an object from a height onto a person;	1	3	1	3	* when carrying out more extensive and demanding repairs associated with the dismantling of equipment, determine the work procedure and ensure appropriate work tools and resources in advance; * do not dismantle parts and components whose weight could endanger the safety of workers without prior securing them against loosening and falling; * securing the raised part of the machine against falling and other unwanted movement and ensuring the stability of the machine and its parts, e.g. by supporting it with supports, stands, trestles, struts, reliable suspension of the raised part; * do not leave spare parts, tools and other equipment lying around, especially near moving mechanisms; *the lashing must be carried out by a qualified person, the lashing must be carried out correctly; * use suitable, undamaged bindings; * do not step under unsecured raised, tilted parts; * do not manipulate the machine/equipment controls without prior measures to prevent unwanted movements; * when repairing control systems, especially if these systems are pneumatically or hydraulically controlled, take measures according to the instructions to eliminate unwanted movement of the machine or some of its parts; *ensuring the stability of the machine and the stable position of its parts; * individual mechanisms during maintenance and repairs	

						lower to the ground and/or to a position in which these mechanisms are secured against falling, spontaneous movement and release; * Store covers, cover panels, fairings, and dismantled parts in a suitable place and secure them as necessary so that they cannot be damaged. uncontrolled and spontaneous movement, falling; * ensure a safe distance (distance) between people - colleagues; * do not store tools and objects near the free edges of the machine and its parts; * coordination of more complex and demanding work, caution; * exclude the unauthorized presence of persons who do not have designated work tasks near the machine being repaired; * securing objects against falling, preventing people from entering under the workplace;	
Maintenance and repairs of devices and machines	* reduction and loss of stability, overturning, falling of the machine/equipment;	1	5	1	5	* placing the machine being repaired on a flat work surface (floor); * ensuring the stability of the machine/equipment (by supporting, underpinning, bracing, anchoring); * preventing dangerous tilting of the machine/equipment being repaired; *elimination of unwanted changes in the position of the center of gravity and tipping; * implementing appropriate technical measures to lower the center of gravity of taller machines/equipment; * determine in advance suitable and sufficiently load-bearing and strong places for placing and hanging jacks, hoists, tripods, winches, winch pulleys, etc.; * secure dismantled heavy machine parts against unwanted movement;	
Maintenance and repairs of devices and machines	*pressing and trapping of a person by moving parts of the machine/equipment; * the formation of tight, narrow profiles, crushing, pressing, bumping a person;	2	4	1	8	*perform maintenance and cleaning only when the machine/equipment is at a standstill and avoid unwanted, premature start-up of the machine/equipment; * when two or more people work together, ensure coordination and cooperation, and communicate using previously agreed signs; * lower mechanisms and machine parts to the ground and/or to a position in which these mechanisms are secured against falling, spontaneous movement, unwanted change of position, loosening, displacement, etc.; * if possible, ensure sufficient space for the placement of auxiliary equipment, materials and space required for handling; * ensure a safe distance (distance) between people - colleagues; * before repairs or maintenance of hydraulic or pneumatic equipment, each part carried by these equipment must be adequately supported in another way and only then can the pressure be released from the system; * the part to be worked on must be disconnected from the pressure supply;	
Maintenance and repairs of devices and machines	* catching and pulling a limb into a moving part of the machine during repairs and adjustments while it is running;	2	4	1	8	* correct adjustment procedures; * training, experience, professional competence guaranteeing reliability in performing the required tasks without intentional or unintentional deviations, awareness of the risk in a given situation; * carry out checks and adjustments during operation or service only with the covers mounted; * if, in exceptional cases, work is carried out on unprotected equipment while the equipment is running (if the work is not otherwise feasible), another person must be present	

						an employee familiar with the procedure, who supervises the worker to ensure their safety and is ready to use the shutdown device. Uncovering can only be carried out in the immediate vicinity. During this work, the necessary caution must be maintained and access to dangerous places (pulling in, pinching) must be limited; * during activities while the equipment is running, take measures to prevent unauthorized persons from entering the dangerous area; *increased caution when necessary work is carried out on the hydraulic system while it is running; * when two or more people work, ensure coordination of work and mutual communication using agreed and contracted signs; * compliance with the ban on touching moving parts with hands or objects held in hands; * compliance with the ban on unauthorized persons (who do not have a designated work presence) staying near the machine being repaired; * placing warnings warning of entry ban; * do not use gloves and PPE (including clothing) that could be caught by moving parts when adjusting, do not allow work with loose parts of clothing, unbuttoned blouse, be careful with winter clothing, scarves, gloves, do not wear watches, chains, rings, bandages);	
Maintenance and repairs of devices and machines	* hitting and pressing a limb or other part of the worker's body against a fixed structure by a swinging load;	2	4	1	8	* using appropriate lifting equipment for lifting and handling; * entrust competent, qualified workers with operating lifting and handling equipment and suspending loads; * the correct way of providing information, signs and signaling coordination when handling loads; * correct suspension or tying of the load, use of suitable slings and other means of gripping loads with appropriate load capacity according to the type, properties and shape of the load; * do not deflect the load from the suspension axis; * do not stay in the area of possible fall of the suspended and manipulated load and its parts (exclusion of the presence of persons in the zone of danger from kinetic or potential energy); * do not overload the equipment, do not lift or manipulate loads of unknown weight;	
Maintenance and repairs of devices and machines	* catching and pulling a limb into a moving part of the machine (pulley, belt, fan, gear, machine working equipment, etc.);	2	4	1	8	* carry out repairs when the machine is at a standstill, securing it against unwanted start-up; *necessary activities near unprotected parts, e.g. adjustments, must be carried out according to the operating instructions; * compliance with prohibited activities, e.g. cleaning while running; * proper clothing for the operator, use undamaged work clothes, clothes without loose parts, clothes with tight-fitting cuffs of sleeves and legs; *do not repair the machine while wearing a work coat; * carry out checks and adjustments during operation only when necessary (e.g. during adjustments), with increased caution and concentration; * after completion of the repair, put all protective devices in working order, install all protective devices (covers, cover panels, lids, hatches, railings, barriers, etc.); * according to local conditions and customs, hand over the repaired equipment to the shift operating technician, who will verify whether the defect or malfunction has been eliminated in full and of adequate quality;	

Maintenance and repairs of devices and machines	* hair scalping;	2	4	1	8	* suitable head covering (PPE - cap, scarf, net);	
Maintenance and repairs of devices and machines	* a worker being pressed by a machine or its parts being repaired; * hitting a limb or other part of the body when opening and closing covers, lids, hatches;	3	3	1	9	* do not manipulate control devices, rods, forks, latches, safety devices, etc. without prior measures to prevent unwanted movements; * exclusion of the presence of persons in the dangerous area; * automatic, mechanical locking of the cover and other parts of the machine in the open, raised position; *securing the raised part with the elements intended for this purpose;	
Maintenance and repairs of devices and machines	* forced lying position of the worker;	3	2	1	6	* equip the workplace with effective and suitable lifting and handling equipment; * when performing isolated repairs performed by a worker lying down, observe the principles of occupational safety and safety breaks;	
Maintenance and repairs of devices and machines	* head impact on a fixed part of the machine/equipment;	2	3	1	6	* use of a protective helmet;	
Maintenance and repairs of devices and machines	* hand strike against a fixed part of the machine/equipment;	2	2	1	4	* correct working procedures; * use of suitable and undamaged tools;	
Maintenance and repairs of devices and machines	*cutting and slicing of the hand on sharp edges; * pricking, stabbing with sharp objects, machine parts and tools;	2	2	1	4	*correct work procedures for maintenance and repairs according to the instructions for use; *according to the possibility of using gloves; * use of suitable and undamaged tools; *compliance with prohibited manipulations; *perception and awareness of risk in a given situation; * cover sharp edges of dismantled machine parts if possible; * for lifting and placing covers and plates, use lifting handles, or lift the cover with a suitable tool and support it with a block before lifting; *do not lift the edges of the covers and plates with your fingers;	
Maintenance and repairs of devices and machines	* pricking and cutting of the foot by sharp parts fallen on the floor;	2	2	1	4	* timely removal of fallen parts; * suitable work shoes with a sturdy sole;	
Maintenance and repairs of devices and machines	* contact with hot surfaces, burns to hands when working near hot, glowing parts engine, radiator, etc.;	3	3	1	6	* correct working procedures (wait until the hot surface cools down, etc.); * use of PPE to protect hands, using gloves if possible; * use of suitable and undamaged tools; *compliance with prohibited manipulations; * color marking or differentiation of hot parts of the machine;	
Maintenance and repairs of devices and machines	* burns, scalding from hot substances;	2	3	1	6	*cool down the equipment before starting repairs or maintenance; * reliably close all steam, hot water, gas, etc. inlets; * use of special PPE; * steam-powered machinery must have the steam inlet and outlet valves securely closed and, where possible, locked or blocked or secured by other means which clearly indicate that the valve must not be opened; * when working with hot water under pressure, establish measures similar to those for working on steam-powered equipment or steam pipelines;	
Maintenance and repairs of devices and machines	* inhalation of fumes of hazardous substances; *release of vapors and aerosols during disassembly or malfunction;	1	2	1	2	* correct disassembly procedures; * use of PPE to protect respiratory system, skin, eyes, etc.; * Disperse fumes as much as possible before starting work	

						by ventilation or extraction;	
Maintenance and machine repairs and device	* hitting the eyes or face with a fragment of material, a small particle of paint, rust, etc.;	1	2	1	2	* Suitable eye protection must be worn by anyone who works with chemicals, grinds, taps, chisels or performs work of a similar nature; * correct choice of work procedure when working overhead, on the bottom of the machine/equipment when impacting, cutting off and releasing parts; * appropriate position of the worker during work, restriction of work performed above oneself; * use of PPE to protect the eyes (safety glasses, protective shields);	
Maintenance and machine repairs and device	* fall, pressing of a person by manipulated, moved heavier parts, aggregates, mechanisms and parts the machine/equipment being repaired;	1	4	1	4	* ensure the assistance of other people, establish and follow appropriate and correct work procedures; * use of appropriate handling and lifting equipment;	
Maintenance and machine repairs and device	* excessive, sudden load, overload of the organism; * spinal damage, herniated disc, muscle and tendon damage due to excessive physical exertion (lifting a load, catching a falling load - parts of a machine; * sudden movements of a person as a result of a reaction to an emergency unforeseen events;	1	3	1	3	* correct working procedures when lifting and handling loads (practice, training); * selection of physically fit workers; * use of hip belts (protectors);	
Maintenance and machine repairs and device	* bumping a hand, injuring joints on a part of a machine in a confined space, slipping of a tool; * hand bruises, lacerations and stab wounds when hitting the machine structure when tightening nuts and during maintenance and repairs carried out with hand tools in confined, difficult-to-access areas of the machine;	2	2	1	4	* training, skill, use of tools appropriate to the purpose of use, of the appropriate size and type; * use of suitable and undamaged tools with non-greased grips, good condition of the tools used (open and closed wrenches, wrenches, pliers, screwdrivers); * correct and appropriate work procedures in accordance with the instructions;	
Maintenance and machine repairs and device	* reduced visibility, visual strain; * incorrect operation during maintenance and repairs due to poor visibility, inappropriate and dangerous manipulations;	1	1	1	1	* ensuring appropriate lighting, using portable lights (depending on the environment, low voltage 24 V); * correct placement of lighting sources;	
Maintenance and machine repairs and device	* electric shock; * cardiac arrest; * burns;	1	5	1	5	* training, experience, professional competence guaranteeing reliability in performing the required tasks without intentional or unintentional deviations; * awareness of the dangers of electric current; * do not arbitrarily remove barriers and covers, do not open access to live electrical parts under voltage, do not disable coverings or closures; respect safety messages; * exclusion of activities in which the worker would come into contact with voltage on the conductive frame of the machine or tool or directly touch it when working on electrical equipment; * do not leave electrical appliances and equipment turned on after leaving the workplace; * protection against dangerous touching or approaching live parts of electrical equipment, against dangerous touch voltage on non-live parts, against the occurrence of dangerous touch voltage, insulation;	
Maintenance and machine repairs and device	* ejection and leakage of high-pressure hydraulic fluid and hitting a worker;	1	2	1	2	* when performing work on parts of the machine's hydraulic system, take such measures that no element of the hydrostatic mechanism remains under	

	* ecological damage;					pressure; *elimination of inadmissible friction, bending, twisting and tensioning of hoses during the movement of moving parts of the machine and during the movement of the machine, maintenance of hydraulic mechanisms; * use of appropriate hoses, connections, clamps, fastenings; * correct setting of safety valves according to the instructions; * a warning must be posted on the supply valve and the valve must be blocked; * connections must be secured against the release of air or oil pressure in the event of damage; * for the safe operation of hydraulic and pneumatic systems, complete cleanliness of the workplace and tools is necessary, and the system and its components must also be kept clean during work; * properly inspect and test the repaired spare part or replaced part of the equipment before it is put into operation in the system; * do not direct the pressurized hydraulic fluid stream against the skin; * wash off any spillage of hydraulic fluid on the skin immediately and thoroughly; * before putting the system into operation, all equipment must be in safe working condition;	
Maintenance and machine repairs and device	* ignorance of the technical condition of the machine/equipment, the emergence of conditions for an emergency;	1	2	1	2	* available user manual, processing instructions for operation and maintenance; * compliance with established work procedures;	
Maintenance and machine repairs and device	* neglect and omission to eliminate detected defects; * failure to carry out prescribed regular checks, inspections, professional and proper maintenance; * deterioration of the technical condition of the machine/equipment having a direct impact on operational safety;	1	2	1	2	*developing a preventive maintenance system, performing regular inspections and monitoring the condition of the machine/equipment according to the operating instructions and operating experience; * timely elimination of detected defects;	
Maintenance and machine repairs and device	* explosion, fire;	1	5	1	5	* in an area where there is oil, fuel or fumes, only an approved type of safety lamp must be used for lighting;	

Explanations: **P**-Probability of occurrence and existence of risk

1. Random
2. Unlikely
3. Probable
4. Very likely
5. Permanent

N-Probability of consequences - severity

1. Injury without disability
2. Lost-time accident (with incapacity for work)
3. More serious injury requiring hospitalization
4. Serious injury and injury with permanent consequences
5. Fatal accident

H-Evaluators' opinion

1. Negligible impact on the level of danger and threat
2. Little impact on the level of danger and threat
3. Greater, non-negligible influence on the level of danger and threat

4. Large and significant impact on the level of danger and threat
5. More significant and adverse impacts on the severity and consequences of threats and hazards

R-Risk level

- 0 - 3: Insignificant risk
- 4 - 10: Acceptable risk
- 11 - 50: Moderate risk
- 51 - 100: Undesirable risk
- 101 - 125: Unacceptable risk