

M5-EN.12 RISK ASSESSMENT TOOL FOR THE LAND TRANSPORT SECTOR

Hazard		Who (type of worker)	Harm	Required Safety Measures
Source	Hazard description			
Unguarded moving parts of vehicles	Contact with moving parts (e.g., wheels, main propeller shaft and axels etc.) of vehicles	Drivers and employees	Injuries (most often hands, feet, legs, head, chest, arms) sometimes fatal	<ul style="list-style-type: none"> - Use intrinsically safe equipment in new installations; - Observe safe distances; - Avoid narrow spaces; - Properly select protective equipment in places of potential crushing, cutting and gripping: takedown safety guards (e.g. covers and shields), stationary safety guards (e.g. forced position switches) or limiting safety guards (e.g. rims); - Have the vehicles inspected by a competent person (at least once a year); - Label hazardous places.
Parts with hazardous surfaces	Contact with sharp-edged, pointed or abrasive elements in the vehicle or close to the vehicle (e.g. protruding door handles or tyre treads)	Drivers and employees	Injuries due to bad visibility, insufficient lighting, not sharp enough contrast, unexpected appearance of hazardous surfaces, inconvenient for movement space, inadequate movement trajectory, too little space for standing etc.	<ul style="list-style-type: none"> -Mitigate hazardous impact to not dangerous limits (e.g., round or take away corners, polish the roughness, cover blades and edges with soft material etc.) making the surfaces that have to be contacted as big and/or as soft as possible; - Use covers or safeguards; - Replace maintenance and operation levers; - Organize the work and arrange spaces in such a manner that the possibility for a person moving in all directions of contacting the

				<p>hazardous surface would be minimized;</p> <ul style="list-style-type: none"> - Ensure good visibility of hazardous surfaces (illumination); - Provide employees with personal protective equipment (head protection, safety footwear with pierce proof sole, gloves, cut and pierce proof clothing) and control that the equipment is used.
Moving vehicles and working equipment	Accidents where moving vehicles and working equipment are involved	Driver and other traffic participants	Injuries of different seriousness, sometimes fatal	<ul style="list-style-type: none"> - Prevent unauthorized use of vehicles and equipment; - Use safe vehicles and auxiliary working equipment (vehicle superstructures; load securing devices; tanks; local movement restriction (loading restriction, emergency braking etc.) equipment; warning and signalling equipment; equipment to protect space behind the vehicle; alarm systems restricting the leaning angle of the vehicle, loading momentum or driving speed etc.); - Comply with vehicle maintenance terms; - Ensure periodic inspections by a competent person; - Appoint a signalling person for reverse driving; - Periodically inspect vehicle using safety; - Prepare the cargo distribution plan; - Prepare the vehicle for winter use in time. - Steps and ladders must be safe and within easy reach;
Objects moving out of	Contact with falling, swaying, rolling down, sliding, spreading	Driver and any other employees /	Injuries of different seriousness,	<ul style="list-style-type: none"> - Avoid forces generated by acceleration, i.e. sudden change of direction, sudden braking or

<p>control</p>	<p>objects</p>	<p>people, especially those who are involved in loading or tipping cargo</p>	<p>sometimes fatal</p>	<p>start-up, towing sideways if the cargo may sway;</p> <ul style="list-style-type: none"> - Avoid load force acting in one direction, i.e. sinking into soil, holes, cavities, driving uphill etc.; - Arrange, load and unload cargo in a safe manner (comply with load distribution plan, allowable height of stacks etc.); - Distribute the load evenly; - Keep things carried in the cabin or passenger vehicle (packages, bottles, cans etc.) in a safe and specially arranged place; - Ensure safe distance from moving objects is maintained; - Use additional roll protection measures (cones and barriers; props, supports, poles, frames, side walls; tension cables and belts; safely strapped stacks, pyramid type of loading, in-between trays, stoppers are used); - When these measures are not effective, objects that may roll or slide should be levelled or intercepted by levelling supports, deflecting grooves; interception nets, canvas, baskets, fences; lids, covers, enclosures; - Install supporting parts of warehouse equipment in a safe manner and indicate the allowable loads; - Avoid standing under suspended loads, mark and fence dangerous zones; - Avoid external dynamic forces (e.g., impact,
-----------------------	----------------	--	------------------------	---

				pressing); - Control fasteners and holders; - Limit pressure in hydraulic or air driven equipment in the event of danger that broken hoses may produce knocks, sprinkle or spray liquids; - Use retention equipment (e.g., protective walls); - Regularly control whether the loading platform and the vehicle are in proper condition; - Use head and feet protective equipment.
Falling on flat surface, slipping, stumbling, tripping, unstable step	Slipping, tripping, stumbling, unstable step on a slippery surface	Employees and visitors	Injuries of different seriousness	- Ensure safe driving and walking on service roads; - Keep the roads and walkways clean in all weather conditions; - Avoid supporting surfaces with different surfaces that have different skidding resistance; - Ensure that the step height is even (surface may be prepared adequately); - Ensure easy cleaning of supporting surfaces and protect them from contact with oil (e.g. by providing appropriate guards); - Apply additional chemical or mechanical treatment to give extra roughness to surfaces; - When surfaces become slippery, immediately apply measures to reduce the skidding (e.g., sawdust, ice melting mixes, sand); - Install handrails, handles or other supports on surfaces inconvenient for walking;

				<ul style="list-style-type: none"> - Wear appropriate footwear; - Protect places posing the hazard of falling into (e.g., by using dismantled fencing)
Falls	Falls from height	Drivers and employees	Severe or fatal injuries	<ul style="list-style-type: none"> - Acquire proper vehicles and supporting equipment; - Instruct employees about correct boarding and landing as well safe driving; - Perform work, if possible, from the floor or other safe standing position (e.g. rolling scaffold); - Regularly inspect the ladder and use it correctly; - Regularly inspect the status of loading pallets and correct use of bridges; - Park the vehicle safely at the ramp during loading and unloading.