

	Road Transport HSE Management Standard	Rev 07
---	---	---------------

APPENDIX 7

Loads Transported by Roads

Purpose

To manage *Risks*¹ of driving and transportation of people and goods on *Company Business*.
 Sakhalin Energy operations rely heavily on the transport of materials and heavy equipment by road. It is recognised by Sakhalin Energy in its [Logistic HSE Case](#) that loads carried on vehicles represent a threat that is the root cause of a significant number of road traffic incidents.
 Therefore, this document describes Sakhalin Energy’s minimum mandatory requirements for ensuring the security and safety of loads transported by road.

Who is this for?

- *Project/Asset Managers;*
- *Managers/Department Heads;*
- *Transport Area Supervisors;*
- *Drivers*
- *Contract Holders;*
- *(Sub) Contractors.*

What situations are covered?

This document sets requirements for loads transported by *Sakhalin Energy* land transport and by (Sub) Contractors on behalf of the *Company*.


Terminology

TERM	MEANING
Shall	Indicates a mandatory course of action.
Should	Indicates a preferred course of action.
May	Indicates a permitted course of action.

Definitions

TERM	MEANING
Company	Shall mean “Sakhalin Energy Investment Company LTD” and any affiliated organization (contractors and subcontractors, etc.) that operate on behalf of “Sakhalin Energy Investment Company LTD”.
Centre of Gravity (C of G)	The point at which a load can be balanced with half of the mass on either side of a line crossing through the point.
Chock	Wedge shaped blocks of solid material that can be used to prevent the movement of a load.
Flammable Substance	Any material that has a flash point of less than 23C (Class 3) or between 23-61 C (Class 4) as classified in GOST19433-88.

¹ Italicized terms in this document are included in the [Sakhalin Energy HSE Glossary](#)

	Road Transport HSE Management Standard	Rev 07
---	---	---------------

Gross Vehicle Weight (GVW)	The maximum allowable weight of a vehicle when loaded, as stated by the vehicle manufacturer. This value is derived from the kerb weight of the vehicle itself plus the weight of the load and any passengers.
Hazardous Materials	Any material classified as dangerous to humans and/or the environment on the basis of specific characteristics (typically explosive, flammable, radioactive, toxic or corrosive) as provided in RF Traffic Rules 1090.
Headboard	A permanent vertical frame mounted at the front of a transport vehicle's loading deck, capable of restraining 50% of the load weight by itself.
Heavy Goods Vehicle	Any transport vehicle, gross weight of which exceeds 3500 kg, intended for carriage of goods or towing of Trailers, Categories N2 and N3
Kerb Weight (Tare Weight)	The unladen weight of a vehicle as recorded by the Russian Federation GIBBD at registration.
Lashing Point	A fitting or attachment on a vehicle or a load specifically installed as a point to secure a lashing
Lashings	Fastening devices made of chain or nylon webbing used to restrain loads
Light Vehicle (LV)	Any transport vehicle having no more than 8 passenger seats, gross weight of which does not exceed 3500 kg. Category M1; N1.
Low Bed Trailer	A trailer specifically designed to carry high centre of gravity loads
Payload	The load capacity (load weight) carried by a vehicle. Calculated as being the difference between the Gross Vehicle Weight (GVW) and the kerb (tare) weight of the vehicle.
Professional Driver	Personnel specifically employed to drive a Company vehicle.
Stabiliser	A rigid member that can be extended from a crane or vehicle to support a load in the direction of its length
Stanchion	An upright pole fixed to the side of a vehicle for lateral restraint
Trailer	Any transport vehicle intended for being carried by a motor vehicle, including semi-trailers and pole trailers.
Twist Lock	A locking device with a rotating head that is used to engage a corner casting of specially designed load containers
Journey Category	<p>Category 1</p> <ul style="list-style-type: none"> • Journeys in South Sakhalin Area • Journeys on public roads in or within 15 Km of an Established Base in North Sakhalin Area. • Journeys within Sakhalin Energy Assets/Sites fence perimeter. <p>Category 2</p> <ul style="list-style-type: none"> • Journeys on public roads in excess of 15 Km from an established Base in North Sakhalin Area. . <p>Category 3</p> <ul style="list-style-type: none"> • Journeys for inspecting any road to ensure safe use of the road; • All off-road driving journeys; • All night time driving journeys.

1. Responsibilities

1.1. Project Managers and Asset Managers are responsible for requirements 1.1.1 to 1.1.5.:

1.1.1. To manage Land Transport Vehicles in accordance with:

- Russian Federation law (overview is provided in Legal Requirements for Road Transport²), and
- Lender and Shareholder requirements defined in International Requirements for Road Transport

1.1.2. To provide vehicle fleets and organizational framework sufficient to comply with the requirements of this document.

1.1.3. To ensure that the transport vehicles operated by them comply with this document.

1.1.4. To ensure that the related personnel are aware of the responsibilities with respect to

² Underlined items in this document refer to Sakhalin Energy Controlled Documents.

	Road Transport HSE Management Standard	Rev 07
---	---	---------------

implementation of this document.

1.2. Transport Managers are responsible for requirements 1.2.1 to 1.2.2.:

- 1.2.1. Ensuring that the vehicle fleets they operate for transporting loads are in compliance with this document;
- 1.2.2. Ensure that their supervisors and drivers are aware of their responsibilities with respect to the implementation of the document requirements;

1.3. Transport Supervisors are responsible for requirements 1.3.1 to 1.3.3.:

- 1.3.1. Ensure that the road transport activities they oversee are carried out in accordance with the requirements of this document. This shall include monitoring and checking vehicles and loads to verify that they meet the requirements of this document.
- 1.3.2. Ensure the compatibility of materials carried when vehicles under their supervision are transporting mixed cargoes.
- 1.3.3. In case of transporting hazardous materials ensure that:
 - the company has the required RF licence for the transport of hazardous substances;
 - any vehicle carrying dangerous goods is suitable for the operation;
 - an MSDS and transport emergency plan for each type of hazardous material transported is provided to the driver before departure;
 - the driver is properly trained and fully competent in the transportation of dangerous goods of the type being transported as per the requirements of the [Chemicals Management Standard](#);
 - loading, unloading, stowage, securing and segregation of all cargo are done properly by suitably trained personnel; and,
 - all necessary precautions against contamination, fire and explosion are taken.

1.4. Drivers are responsible for requirements 1.4.1 to 1.4.2:

- 1.4.1. Ensure the integrity of all loads transported by vehicles that they operate during the journey. This shall include inspecting and verifying that loads are safely and securely loaded prior to beginning a journey and for routinely inspecting the condition of the load during transit.
- 1.4.2. In case of transporting hazardous materials to ensure that:
 - hazard warning placards have been applied to the vehicle, and are clean and not obscured;
 - goods are properly packed and segregated (e.g. toxic goods and food are not carried in the same vehicle, unless food is adequately separated and protected against contamination);
 - all necessary documentation, including the emergency plan, are in place and in good order.
 - an MSDS and transport emergency plan for each type of dangerous good transported is available in the vehicle cab prior to departure;
 - non-applicable documents are removed from the vehicle and returned to the transport supervisor;
 - all safety equipment is available, well maintained and ready for use;
 - the vehicle is never parked unattended unless it is in an area designated by the transport supervisor; and,
 - precautions to prevent fire, explosion or any other incident are taken throughout the carriage.

1.5. Contract Holders are responsible for requirements 1.5.1 to 1.5.3:

- 1.5.1 Ensure that requirements of this document are included as contractual requirements for activities where there is land transport scope and that compliant vehicles and drivers are provided by Contractors and sub contractors.
- 1.5.2 Ensure vehicle fleet, and drivers provided by Contractors and subcontractors are sufficient to carry out the content of this Document.
- 1.5.3 Contractors and subcontractors involved in transporting hazardous material are operating in accordance to the relevant Sakhalin Energy standards and RF legislation.

	Road Transport HSE Management Standard	Rev 07
---	--	--------

2. General Requirements

2.1. Background.

The nature of the project construction and operation activities undertaken by Sakhalin Energy generates a requirement for materials and heavy equipment to be transported by road extensively throughout Sakhalin Island. The combination of road and environmental conditions, driving standards and characteristics of the loads themselves make the risks associated with transportation of loads by road significant. Load related incidents are one of the 6 key threat categories identified in the Sakhalin Energy [Logistic HSE Case](#).

For these reasons, it is essential that all personnel operating road transport activities that involve the movement of materials and equipment in vehicles apply the mandatory controls identified in this Standard. Adequate steps should be taken by both staff and contractors to reduce the risks associated with loads carried by vehicles to a level that is 'as low as reasonably practicable' (ALARP), and to ensure the health and safety of personnel using road transport in the course of their duties.

2.2. Legal Requirements.

2.2.1. Specific legal requirements with respect to the transportation of loads in vehicles are provided in the following Russian Federal (RF) legislation:

- 2.2.1.1. Russian Federation 'Traffic Law No. 1090 and Appendices', 23 October 1993.
- 2.2.1.2. RF Ministry of Transport Order #8, 'Regulations for Oversized and Heavy Cargoes Transportation on Russian Federation Roads', 22 January 2004 (including Annex I).
- 2.2.1.3. RF Ministry of Transport Order #73, 'Rules For Hazardous Goods Transport by Road', 8 August 1995.
- 2.2.1.4. GOST 19433-88, Dangerous Goods Classification.

2.3. Vehicle Selection.

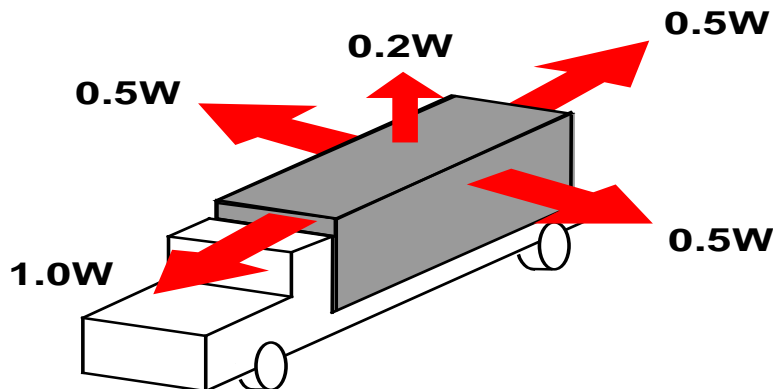
2.3.1. The vehicle selected to carry any specific load must be appropriate for the duty as defined by the following criteria:

- 2.3.1.1. The design and construction of the vehicle must be compatible with the load to be carried (e.g. open or closed body; high or low bed; open-sided or slide-gated; wood or steel deck; restraint anchorage points; twist locks fitted, etc.).
- 2.3.1.2. Maximum payload of the vehicle in relation to the load to ensure the vehicle is not overloaded.
- 2.3.1.3. Dimensions of the vehicle (length, height and width) to allow the load to be fully contained within the vehicle whenever possible and avoid the need for escort vehicle.
- 2.3.1.4. Reflective signs shall be attached to the load to give warning to other road users of load length and width.
- 2.3.1.5. Bulk liquids must be transported in vehicle tanks designed to completely contain the load and minimise the of load movement effecting vehicle stability (i.e. fitted with baffles).
- 2.3.1.6. Loose bulk material (e.g. sand or soil) shall be covered to prevent any of the material blowing or falling off in transit
- 2.3.1.7. Vehicles shall not carry cargo or tow a trailer in excess of the recommended loads specified by the vehicle manufacturer in the vehicle handbook.

2.4. Amount of Restraint.

2.4.1. Every load shall be restrained such that no movement of the load in respect to the vehicle can occur during normal conditions expected during transit. The load restraint system shall be strong enough to withstand (see figure below):

- 100% of the load weight in the forward direction of the vehicle
- 50% of the weight of the load in both lateral directions
- 50% of the weight of the load in the reverse direction of the vehicle
- 20% of the weight of the load in the upward direction.



2.5. Load Dimension Limits.

2.5.1. The dimensions of loaded vehicles shall not normally be more than the following limits:

- 4.0 metres in height
- 2.55 metres in width
- 20.0 metres in length
- 2.0 metres of extension of the load from the rear of the vehicle; or,
- Any vehicle with two or more trailers in combination.

2.5.2. The normal clearance for overhead bridges on Sakhalin Island is:

- 4.5 metres for major roads; and,
- 6.3 metres for railways over roads.

2.5.3. Route planning for oversize vehicles shall take these limits into account in addition to any overhead power or communications lines that exist on the route to be used. Any vehicle that cannot comply with the above limits is required to meet special requirements including (from RF Min transport order #8 22/01/04):

- 2.5.3.1. Making an application for permission to move a large vehicle with the Russian Federation Federal Road Transport Authority or an authorised agency. Permission can be granted for a single trip or for multiple trips over a time period/number of trips depending on type of cargo. The application is reviewed with Traffic Police, which determines which type of escort is required.
- 2.5.3.2. Provision of an escort vehicle (or wrecker vehicle) is required to be supplied by the transporting company if the vehicle width is more than 3.5 m, or length is more than 24 m. The escort vehicle shall be equipped with rotating beacons (orange or yellow).
- 2.5.3.3. In addition to the above, a Traffic Police escort is required to be arranged by the transport company:
 - if transport width is more than 4.0 m, and length is over 30.0 m;
 - if while moving, the transport (even partially) occupies opposite lane; or,
 - the cargo vehicle is particularly heavy (Group B from the table in Requirement 2.6.1)

2.5.3.4. Speed limits for oversize vehicles are:

- 60 km/h - on roads
- 15 km/h - on bridges

2.5.3.5. During transportation, the transport company shall not change the approved route or carry on driving if the road conditions become hazardous, or visibility drops to below 200 m (this applies to all journey categories).

2.5.3.6. All signage ('Long vehicle', 'Oversized Cargo', etc.) shall be in line with RF Traffic Rules requirements.

2.5.4. Vehicles shall not be loaded to such a height that the vehicle stability is adversely affected. This determination shall be made relation to the C of G of the vehicle. For maximum stability, the location of the C of G of the combined vehicle and load shall be within the width of the vehicle, as measured from the outside of the tyres on opposite sides of the vehicle (otherwise known as the track width). Any loaded vehicle that has a C of G that is higher from the ground than the track width of the vehicle will have a lower stability than normal, and greater care shall be taken when driving the vehicle, particularly around corners and on side slopes.

2.6. Load weight Limits.

2.6.1. A vehicle shall not carry a load that exceeds the manufacturer's specified load bearing capacity. In addition, vehicles shall not exceed the weight limits provided in the table below based on the distance between axles of the vehicle.

Vehicle Type	Full Weight (tonne)		Distance Between Axles (m)
	Group A	Group B	
Rigid Trucks, Buses			
Four-Wheel	18	12	3.0
Six-Wheel	25	16.5	4.5
Eight-Wheel	30	22	7.5
Tractor with Semi-trailer			
Six-Wheel	28	18	8
Eight-Wheel	36	23	11.2
Ten-Wheel or more	38	28.5	12.2
Road Train			
Six-Wheel	28	18	10
Eight-Wheel	36	24	11.2
Ten-Wheel or more	38	28.5	12.2
Articulated Buses			
Two-sectional	28	-	10

Notes:

- Group A vehicles are those with axles carrying the most weight in the 6-10 tonne range. Group B Vehicles are those with the axle carrying the most weight is less than 6 tonne.
- The full weight of a tractor shall not exceed 30 tonne
- Weight on vehicle shall be equally distributed on axles where limits are approached
- Simple interpolation shall be used to calculate characteristics for intermediate values not shown above

2.6.2. In addition to the above requirements, the full weight of the vehicle and load shall not exceed the following values when traversing bridges.

Distance between axles (m)	Full weight (tonne)
Over 7.5	30
Over 10.0	34
Over 11.2	36
Over 12.2	38

Notes:

- The full weight of a tractor shall not exceed 30 tonne
- Weight on vehicle shall be equally distributed on axles where limits are approached
- Simple interpolation shall be used to calculate characteristics for intermediate values not shown above.

2.7. Lashings.

2.7.1. Lashings shall be made from one of two types of material:

- Steel chains of not less than 13 mm (1/2 inch) thickness with grab, winged or claw hooks; or,
- Webbing straps of 50 mm width and 2.000 kg lashing capacity or greater are to be used on heavy trucks. The maximum elongation is 7% at lashing capacity. Lashings with lashing capacity up to 10.000 kg are to be used if utilized for heavy machine transports.

2.7.2. Cargo netting is acceptable as a *secondary* means of restraint (in addition to one of the above) when the load is large enough not to pass through the netting.

2.7.3. Rope shall only be used to restrain loads on light vehicles (as defined in the Section "Definitions").

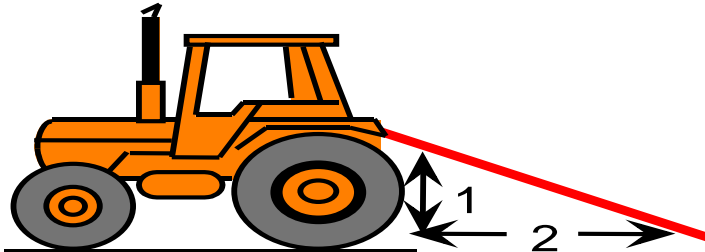
2.7.4. The hydraulic lifting arm (if a vehicle is equipped with one) shall not be used as a means of



restraint for any load placed on the vehicle.

2.7.5. All loads transported shall be secured using the vehicle's lashing points.

2.7.6. Lashings shall be applied in directions that are opposite to the direction in which the load is to be restrained. Direct lashings should be applied in a manner that gives a maximum slope of 1 to 2 in the direction of restraint as shown in the figure below.



2.7.7. In no case shall lashings applied to restrain a load in the forward and reverse direction of the vehicle exceed 60 degrees. Lashings applied to provide only lateral restraint should be applied to provide a 1 to 1 slope.

2.7.8. Drivers shall stop their vehicle in a safe location and inspect the load and lashings at regular intervals during transport. Lashings identified to be loose during inspection shall be tightened by the driver so that adequate restraint of the load is maintained. Frequencies of inspections of load restraint shall be:

- Every 100 km travelled on blacktop roads; or,
- Every 50 km travelled on graded roads.

2.8. Inspection of Load Restraint Equipment.

2.8.1. Chains and hooks shall be visually inspected every six months to ensure no broken, stretched, bent, damaged or worn or grooved links (link diameter reduced by 10% = failure), or no stretched or damaged hooks. If deemed fit for service chains shall be colour coded on the links adjacent to the hooks, with the hooks also colour coded. Note that chains "repaired" by welding are unacceptable. Chains that fail inspection shall be destroyed so that they cannot be re-used and scrapped. The manufacturer's Certificate of Load Capacity shall be obtained at time of purchasing the chain, and be retained for inspection at owner's premises.

2.8.2. Prior to each use of a chain the driver shall visually inspect the chains and hooks for damage. If any damage is found the chain is not to be used, and a supervisor should be notified of the condition of the chain.

2.8.3. CHAINS FOR LASHING SHALL NEVER BE USED AS LIFTING EQUIPMENT as the method of manufacture and steel type makes them unsuitable for lifting purposes.

3. Specific Loads

3.1. Mobile Plant and Equipment.

3.1.1. Heavy mobile plant, vehicles and equipment (mobile cranes, engineering plant, bulldozers, graders, etc.) shall only be transported by low-bed trailer. High bed trailers shall not be used.

3.1.2. Steel tracked equipment such as bulldozers, excavators, side booms etc., shall be transported on wooden decked low-beds. Steel decked low-beds may only be used provided rubber or wooden load mats are placed between the steel tracks and steel decks to avoid steel on steel contact (*low friction = high risk*).

3.1.3. Restraint by four 13 mm chains with blocking is the accepted standard for transporting most mobile plant and equipment. Calculate to ensure 4 are sufficient for the load weight, and secure as follows:

3.1.3.1. The equipment should be blocked against the gooseneck of the low-bed trailer;

3.1.3.2. Two chains shall be attached at the rear to prevent sideways movements; and,

3.1.3.3. Two chains shall also be attached at the front to prevent rearward movement and be so angled as to also prevent sideways movement. If the two front chains cannot be so angled



- (e.g. due to limited anchoring point locations), then two additional chains must be utilised.
- 3.1.4. Wheeled vehicles or equipment shall have at least one pair of tyres restrained with chocks if the journey is to take place entirely on blacktop roads. If the journey is to include graded roads, to avoid adverse “pinching effect” due to rough road surfaces chocks are not required only when:
- Additional lashings are applied; and,
 - Parking brakes and transmission brakes are applied.
- If neither one of these two conditions can be met, chocks shall also be used for trips on graded roads.
- 3.1.5. The following load restraint rules shall also be applied when moving mobile plant or equipment:
- 3.1.5.1. Check tyres on rubber-tyred vehicles or equipment for correct pressures and that there are no leaks at the time of loading;
- 3.1.5.2. Engage the articulated steering locks/separate locking mechanism when transporting articulated machines;
- 3.1.5.3. Operate all hydraulic controls (including steering) at least twice with the engine off to relieve any residual hydraulic pressure in the systems;
- 3.1.5.4. Engage the 4-Wheel Drive option, if fitted, before applying the parking brake;
- 3.1.5.5. Apply transmission brakes of mobile equipment and engage the parking brake;
- 3.1.5.6. Lower the stabiliser outriggers if fitted (e.g. on cranes), ensuring no steel on steel contact. Use rubber or wooden load mats. Ensure that the tyres still have contact with the low-bed trailer deck;
- 3.1.5.7. Load cranes and excavators with the boom lowered and facing to the rear of the low-bed trailer;
- 3.1.5.8. Restrain movable parts (e.g. excavator booms, backhoes) that can rotate with chains; and,
- 3.1.5.9. Lower buckets, blades and rippers, etc. onto the trailer deck.
- 3.1.6. When the mobile equipment is wider than the trailer deck, a widening low bed trailer with outriggers or extensions shall be used for maximum support. At least 75% of the normal contact area of tyres or tracks shall be supported.
- 3.1.7. Hydraulic booms shall not be used a means of load restraint.
- 3.2. Contained Loads.**
- 3.2.1. Shipping Containers. Only trailers fitted with twist locks shall be used to transport 20 ft and 40 ft shipping containers, with four operable twist locks per container. This also applies to decommissioned shipping containers modified for other purposes.
- 3.2.2. Skid Loads. Skid loads shall be restrained by four chains, one at each corner of the skid, correctly angled to prevent forward/rear/sideways movement.
- 3.2.3. Other Contained Loads. Where a load is carried in an open-bodied vehicle without any vertical lashing, the top of each item shall be at least 300 mm below the top of the sides or tailgate.
- 3.2.4. Tanks, skips, skids, and bins shall be secured whether they are empty or not.
- 3.3. Pipes and Tubular.**
- 3.3.1. Use of Headboards. Pipes and tubular shall be:
- 3.3.1.1. transported on vehicle/trailers with headboards that can prevent the load from moving forward in the event of a sudden stop of the vehicle;
- 3.3.1.2. positioned as close as possible to the headboard (to leave a minimal space for loading/unloading hooks if required); and,
- 3.3.1.3. positioned such that the top layer of pipe/tubular has at least a portion of each pipe or tubular below the top of the headboard (i.e. no layer shall be 100% above the top of headboard).
- 3.3.1.4. Headboards shall be in good condition and securely connected to the trailer/vehicle body, with no splits, corrosion or other damage affecting the headboard integrity. The headboard shall be capable of restraining 50% of the maximum load weight that can be carried
- 3.3.2. Side Stakes/Stanchions. Vehicles or trailers shall have a minimum of three side-stakes/stanchions on each side to prevent sideways movement of the load.
- 3.3.3. Tie-down lashings. Tie-down web lashings shall be sufficiently tensioned to provide adequate downward restraint and prevent sideways/frontal/rearward movement.
- 3.3.4. Pipes and Round Lengths on Flat Dunnage. Where pipes are tied down on flat dunnage, side stanchions are required also to prevent the pipes rolling during loading and unloading.

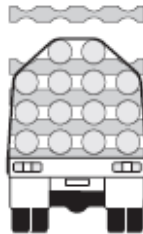


Tie-down lashings are to pass over each layer of pipes, thereby preventing all the pipes in that layer from rolling. If there is sufficient tie-down, side stanchions do not need to be designed to provide sideways restraint when the vehicle is moving.



- 3.3.5. Pipes and Round Lengths on Scalloped Dunnage. Dunnage, scalloped top and bottom or on the top only, can be designed to prevent pipes rolling during transport and during loading and unloading.

Scalloped dunnage is only effective if the scallop is deep enough to stop the pipe rolling sideways. The load shall be 'crowned' so that all pipes have a downward force provided by the lashings. If crowning is not used, the middle, upper two pipes are not restrained and could fall off.



- 3.3.6. Large Diameter Pipes and Tubulars. Pipes and tubulars shall be restrained by webbing; a minimum of four web straps of 4-inch/100 mm width, and minimum of three stanchions/side stakes per side (6 in total). Webbing straps shall be used to encircle and bind the load and also to fasten the pipe load to the truck chassis. Steel chains may only be used to secure larger pipes and tubulars when fitted with tensioners and lined flap clamps that fit to the openings of the pipe. Routine movement of pipes and tubulars should be made in purpose built cradles or pipe trailers designed to transport pipe.

3.4. Bulk Bags.

Bulk Bags shall be transported in trailers with headboards, secured by tie-down web lashings and cargo-nets. The first row of bags shall be stacked against the headboard. When high-sided cage trailers are used, cargo nets are not required. A second layer of bags may be stacked on the middle of the two bottom rows of bags provided in so doing the vehicle is not overloaded.

3.5. General Cargo.

Separate lashings shall be used for individual items in a load unless the items are blocked in, unitised or contained as detailed in this Standard. All general freight loads shall be secured such that the load will not dislodge, cause the vehicle to become unstable, or fall out during unloading operations.

3.6. Hazardous Materials.

3.6.1. The transport of hazardous materials presents additional risks and shall be fully in compliance with the [Chemicals Management Standard](#) as well as Russian Federation Regulations with regard to the specific requirements for vehicles, transport supervisors, drivers, hazard communication and emergency management.

3.6.2. Classification of hazardous materials used in this Standard is also consistent with the 'European Agreement Concerning the International Carriage of Dangerous Goods by Road', 2001. This agreement is commonly referred to as the ADR. The ADR classification groups hazardous materials into categories by characteristic, such as flammability, corrosivity, etc. The Russian Federation is a signatory to the ADR convention.

3.6.3. Packaging.

3.6.3.1. It is important that any potential dangerous substances and articles are easily recognised,

	Road Transport HSE Management Standard	Rev 07
---	---	---------------

therefore every package shall contain the following information:

- Proper Shipping Name (PSN) and the UN Number. PSN may be the chemical name of the substance (e.g. ACETONE UN 1090) or chemical group name or may be the type of preparation with certain common characteristics (e.g. ADHESIVES containing flammable liquid UN 1133). However, trade names are not acceptable as descriptions for hazardous materials.
 - There shall be the hazard 'diamond label' for the prime hazard and the 'class number' shown at the base.
- 3.6.3.2. Industrial gas cylinders, full or empty shall be securely fastened in upright cages or racks; they shall never be transported in a horizontal position.
- 3.6.4. Vehicle Requirements.
- 3.6.4.1. Vehicles that transport hazardous materials are first required to meet all of the requirements in Sections 2.5.9 and 2.8.1 of the [Land Transport Vehicles. Appendix 6](#), in particular those portions of the Standard that deal with cargo vehicles and tankers. In addition to those requirements, vehicles that carry hazardous materials are required to be inspected and licensed by the Russian Federation Militia.
- 3.6.4.2. Hazardous substances shall be contained, segregated and properly secured in a fit for purpose vehicle so as to avoid movement of any packages during transportation. Segregation is obtained by maintaining certain distances or physical barriers between incompatible dangerous goods. The container packing and storage guide provides information on the incompatibility of various hazardous materials by class. It is provided as Attachment 1 of this document.
- 3.6.5. Safety Equipment.
- Adequate safety equipment is required to be carried to deal with the specific dangers of the substances being transported, and the driver is required to be trained to use the safety equipment effectively. Such equipment may include fire extinguishers, first aid equipment, protective clothing, spill containment equipment, etc. The specific safety equipment that is required for each transport vehicle will be defined in its emergency plan.
- 3.6.6. Hazard Warning.
- 3.6.6.1. Once the transport vehicle has been properly packed with hazardous materials in packages or in bulk, the vehicle shall be marked with placards to indicate that it contains dangerous goods.
- 3.6.6.2. For tank containers with tank capacity of over 3000 litres, the tank shall be placarded with the appropriate hazard warning placards (rectangular orange plate/panel); one on each side of the tank (as far to the front as possible), and one on the back of the unit.
- 3.6.6.3. The hazard warning placards must display the following information:
- The danger sign appropriate for the prime hazard;
 - The hazard identification number;
 - The substance identification number (name and the UN number); and,
 - A telephone contact number where specialist advice can be obtained when the goods are in transit and during emergencies
- 3.6.6.4. A multiple compartment tank containing two or more dangerous goods shall have hazard warning placards placed along each side of tank at the positions of each relevant compartment.
- 3.6.6.5. For any other cargo transport vehicle carrying over 500 kg of regulated hazardous materials, one hazard warning placard shall be placed on each side of the cargo compartment and one on the back of the vehicle.

4. Code of Practice

For specific and detailed guidance on the safe loading of vehicles Sakhalin Energy has standardized according to the European Commission's "[European Best Practice Guidelines on Cargo Securing for Road Transport](#)". The application of the cargo securing practices contained in this manual are mandatory for all cargo haulage activities in Sakhalin energy operations, regardless of whether they are performed by Sakhalin Energy staff, contractors or subcontractors.



ATTACHMENT 1. CONTAINER PACKING & STORAGE GUIDE

		2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	6.2	8
		Flammable Gases											
2.1		✓	✓	✓	✗	↔	✗	✓	✗	✗	✓	✗	↔
2.2		✓	✓	✓	↔	✓	↔	✓	✓	↔	✓	✗	✓
2.3		✓	✓	✓	✗	✓	✗	✓	✓	✗	✓	✗	✓
3		✗	↔	✗	✓	✓	✗	↔	✗	✗	✓	✗	✓
4.1		↔	✓	✓	✓	✓	↔	✓	↔	✗	✓	✗	↔
4.2		✗	↔	✗	✗	↔	✓	↔	✗	✗	↔	✗	↔
4.3		✓	✓	✓	↔	✓	↔	✓	✗	✗	✓	✗	↔
5.1		✗	✓	✓	✗	↔	✗	✗	✓	✗	↔	✗	✗
5.2		✗	↔	✗	✗	✗	✗	✗	✗	✓	↔	✗	✗
6.1		✓	✓	✓	✓	✓	↔	✓	↔	↔	✓	↔	✓
6.2		✗	✗	✗	✗	✗	✗	✗	✗	✗	↔	✓	✗
8		↔	✓	✓	✓	↔	↔	↔	✗	✗	✓	✗	✓

Key:		
Store in a separate compartment separated by at least 2 metres distance	No segregation necessary	Keep separated by at least 2 metres distance
Categories:		
2.1 – Flammable Gases	4.3 – Substances dangerous when wet	
2.2 – Non-toxic, non flammable gases	5.1 – Oxidising substances	
2.3 – Poisonous gases	5.2 – Organic peroxides	
3 – Flammable liquids	6.1 – Poisons	
4.1 – Flammable solids	6.2 – Infectious substances	
4.2 – Spontaneously combustible substances	8 – Corrosives	