International Association of Oil & Gas Producers

REPORT 365-18 | JUNE 2018

Load securement

Land transportation safety recommended practice – Guidance Note 18

Acknowledgements

Safety Committee

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Revision history

VERSION	DATE	AMENDMENTS
1.0	June 2018	First release

Contents

Section 1: Introduction

1.1 Scope

This document is targeted at cargo transported on a routine basis. It is not intended to cover all cargo transported and therefore may not address specialised cargo, cargo items, or commodities. Many jurisdictions offer guidance on specific cargo requirements. These guidance documents should be consulted in conjunction with the use of this document.

1.2 Foreword

This document establishes recommended practices for load securement and protection against shifting, falling, damage to, and/or loss of cargo during road transport in the upstream oil and gas industry.

It is strongly recommended that companies and contractors without equivalent established practices and procedures adopt those herein as standard.

The document is not intended to replace any legislation or regulatory requirement. The intent of this document is to provide guidance on industry best practice in support of regulatory requirements. In many cases, the document may be found to exceed those requirements. If contradictions with regulatory requirements are found, regulatory requirement will supersede this document. In cases where regulatory requirements and the practices recommended in this document differ, the more stringent practice should be followed, while maintaining regulatory compliance.

In keeping with the intent of providing a guidance document, the use of the word 'must' or 'shall' have not been used and are replaced by the word 'should' or similar.

NOTE: While it is recommended that companies and contractors use the guidance in this document as standard practice, it is understood that there may be instances where alternative methods of securement or alternative types of equipment may afford better overall securement results. In such cases, the variance(s) should be subject to a documented risk assessment process with any changes from the recommendations made in these guidelines, managed and approved as an "exception".

1.3 Terms and Definitions

Acronym/Term	Definition
Belly-wrapped	Using a securement device to go over and completely around one or more articles of cargo often for the purpose of unitising multiple items (binding groups of small items together to form larger units of a load).
Bolster	Built-for-purpose, portable racks designed to securely contain tubular products. Bolsters typically consist of multiple layers of material designed to cradle each tubular and secure it from movement relative to the rest of the material contained in the bolster.
Cargo	For the purposes of this document, this term includes all items transported in/on a vehicle, including those transported in the passenger compartment.
Chock	Wedge shaped blocks that can be used to prevent movement of cargo, or a vehicle.
CoG	Center of Gravity – The balance point of a load or item.
Direct securement	Where the securement extends from an anchor point on one side of a vehicle or trailer directly to an anchor point on the cargo, or that extends from an anchor point through, around or over an article of cargo and is then attached to an anchor point on the same side as the initial anchor point.
Dunnage	Packing material placed either between items of a load or between the load and the transport vehicle.
Hazardous Materials	Materials classified as being dangerous to humans and/or the environment (generally explosive, radioactive, flammable, toxic or corrosive).
Indirect securement	Where the securement device extends from an anchor point on one side of a vehicle or trailer, through, over or around an article of cargo and then attaches to an anchor point on the opposite side of the original anchor point on the vehicle or trailer.
Load	Sum of the cargo.
Pallet	A portable wooden or plastic platform onto which loads are placed for mechanical handling.

Acronym/Term	Definition
Pipe bunks	Portable cargo restraint equipment designed to serve the same function as pipe stanchions.
Stanchion	An upright pole fixed to the side of a vehicle for lateral restraint.
Stripped / stripping	Dunnage, usually consisting of wooden timbers or similar material, used to separate layers of unbolstered tubular goods.
Tiedown(s)	A combination of securement devices that form an assembly attaching articles of cargo to, or restraining articles of cargo on, a vehicle or trailer and attached to anchor point(s). Direct tiedown: a tiedown that extends from an anchor point on one side of a vehicle or trailer directly to an anchor point on the cargo, or that extends from an anchor point through, around or over an article of cargo and is then attached to an anchor point on the same side of the vehicle. Indirect tiedown: a tiedown that extends from an anchor point on one side of a vehicle or trailer, through, over or around an article of cargo and then attaches to an anchor point on the opposite side of the vehicle. Transverse tiedown: an indirect tiedown.
Trailer	*Link to the Glossary Document*. Any vehicle designed to be towed by a motor vehicle (including semi-trailers).
Twist Lock	A locking device with a rotating head that is used to engage a corner casting of specially designed load containers.
Unbolstered	Tubular products that are not unitised in a bolster.
Vehicle	*Link to the Glossary Document.* For the purposes of this document, the term Vehicle includes the trailer.
Working Load Limit / WLL	The maximum load that may be applied to a component of a cargo securement system during normal service, usually assigned by the manufacturer of the component. Aggregate Working Load Limit / WLL: the summation of the working load limits or restraining capacity of all devices used to secure an article of cargo on a vehicle.

Section 2. General Practices

All cargo transported via land transportation methods should be:

- Correctly and securely restrained to the vehicle in or on which it is being transported.
- Fully compliant with applicable regulations related to cargo loading, securement and transport.

To the extent possible, and where these are two separate parties, shippers and carriers should work together to package and load cargo in such a way as to allow the driver to secure the cargo from the ground. Some securement activities may require drivers and/or other personnel to access the deck of trucks and trailers. When this occurs, care must be taken to prevent injury from falls. Appropriate equipment should be provided to eliminate the need to climb on tires and other parts of the vehicle. Consideration should be given to use of fall protection equipment and procedures.

When moving cargo between locations within the confines of a facility or leased property, cargo securement may differ. Consideration should be given to the specific operating environment within the facility of property, such as inclines, rough surfaces, traffic, etc.

Stop Work Authority

All personnel are empowered and obligated to exercise Stop Work Authority and stop the work for any operations at any time they believe a condition or activity may be unsafe. All personnel are required to immediately intervene in any unsafe operation they observe, regardless of whether they are directly involved. **Stop Work Authority is not only a right; it is a responsibility.**

2.1 Supervisor Responsibility

Supervisory staff are responsible for ensuring the driver is trained and competent in load securement and that appropriate practices are followed for safe and proper load securement.

Prior to commencing any loading/unloading tasks, the supervisor should be responsible for ensuring that a complete task-based risk assessment, or Job Safety Analysis (JSA) or equivalent hazard identification and risk control protocol, has been performed with the loading/unloading personnel to identify and mitigate the hazards associated with the work to be performed. If the operation being performed is an unsupervised activity, the driver is should then take over this responsibility to ensure its completed prior to commencing the operation.

2.2 Primary Responsibility - Driver

The vehicle driver has the primary responsibility for ensuring that all loads are secured adequately before and during transit.

If the driver is uncertain as to how an article should be properly secured, the driver should suspend operations until the situation is resolved using the progression associated with Stop Work Authority and should not continue the loading process or proceed on the journey until fully confident the load is safe to haul. This may require consultation with the shipping agency, the owner of the item(s) and/or engineering personnel.

Load/Securement Inspections

- Prior to use, the driver should inspect all securement devices (chains, binders, straps, etc.) and attachment points.
  - Chains and binders with damaged, stretched, or bent components should not be used and should be taken out of service.
  - Straps with tears, holes, knots, damage, deterioration, or abrasions should not be used and should be taken out of service.
  - Attachment points that are damaged, worn, or otherwise not suitable or adequate for securing the load, should not be used.
- Prior to departure on a journey, the driver should inspect and be satisfied that the entire load is adequately positioned and secured according to the guidance in this document and to the requirements of all applicable regulations.
- Prior to departure, the driver should remove and/or secure any loose items, including tools and other equipment, and inspect all surfaces of the load and vehicle to ensure mud, dirt, sand, snow, ice, etc., has been removed.
- The driver should completely inspect the load and its securement at a minimum:
  - Once within the first 80 km (50 mi)
  - Again within each journey segment of 240 km (150 mi), or three hours
  - At each stop or change of duty status
  - After any emergency maneuver involving a sudden change in speed and/or direction, such as a hard braking or turning event
- Inspections may be needed more frequently based on the types of freight being secured and/or the road and terrain being covered.
- The driver should stop only in places that provide adequate space and security to allow for safe inspections. Road shoulders and on/off ramps should not be used for this purpose. Where possible, the securing device should be located on the non-traffic side of the vehicle unless this practice conflicts with the integrity of the securement technique.

- The cargo, or any other object, should not:
  - Obscure the truck driver's view ahead, or to the sides, or the field of view of rear mirrors
  - Prevent the driver's free and ready access to equipment required for emergencies
  - Prevent the free and ready exit from the vehicle

An example of a comprehensive cargo securement checklist can be found in Appendix 4

2.3 Secondary Responsibility – Vendors/Shippers

The safe transport of freight is a responsibility shared by all involved in road transport activities. Therefore, service companies, vendors and suppliers are responsible for:

- Preparing, packaging and presenting freight that is suitable for safe transport in/on the type of vehicle selected for transport.
- Respecting and accommodating the driver's job in positioning and properly securing freight.
- The safe handling and loading/off-loading of freight and materials which includes participating in and abiding by all aspects of the task-based risk assessment, or JSA, and respecting the Stop Work Authority process regardless of who may exercise this authority.

2.4 Additional Responsibilities – Hauliers and others

All haulers/hauliers, service companies, vendors, and suppliers should provide training to their personnel on the regulatory requirements affecting their jobs and the contents of this document and should ensure that these recommended practices are followed. Further, they should ensure that adequate space, time, equipment, and other required resources are provided to allow the full execution of these recommended practices.

Section 3. General Loading and Unloading Recommendations

It is critical that drivers remain clear of cargo that is being lifted, moved, or that may fall due to lack of securement during the loading or unloading process. Drivers and yard or dock personnel should only proceed with load/unload operations after a task-based hazard assessment or JSA is completed and safe zones are clearly defined and agreed upon. Drivers should not be on the deck of a truck/trailer while cargo is being loaded or unloaded, and should be in a safe zone. If it is necessary for a driver or other worker to be on a trailer during the load/unload process or otherwise within the fall zone of dropped cargo, work should stop until control measures are put in place to ensure worker safety. While it may be necessary to access the deck of a truck or trailer during the securement process, no one should climb onto or into the cargo itself. At all times work should be performed in accordance with working-from-height procedures and/or policies.

A safe zone is an area that will provide protection for personnel should cargo fall from the vehicle or from the material handling equipment.

3.1 Vehicle Selection and Specification

Vehicles selected for hauling freight should be appropriate for the task with consideration given to the factors identified in Land transportation safety recommended practice Guidance note 14.

3.2 Personal Protective Equipment (PPE)

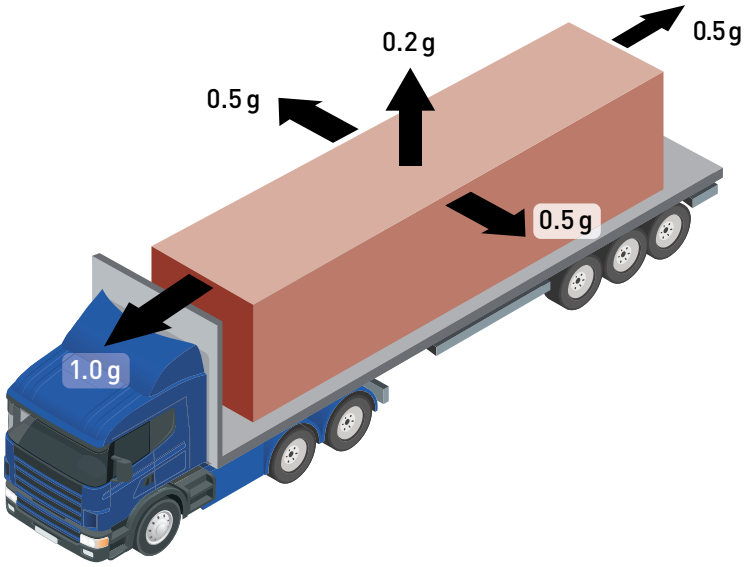
Each driver should have the appropriate PPE upon arrival at the assigned work location, based on a task-based risk assessment, or Job Safety Analysis (JSA) or equivalent hazard identification and risk control protocol specified by the site operator. PPE requirements should be communicated to the driver prior to their arrival at the work site. Selected PPE should meet all applicable codes, standards and regulations.

High visibility clothing should be worn by personnel during loading / unloading activities.

Section 4. Cargo Securement – General

4.1 General Recommendations

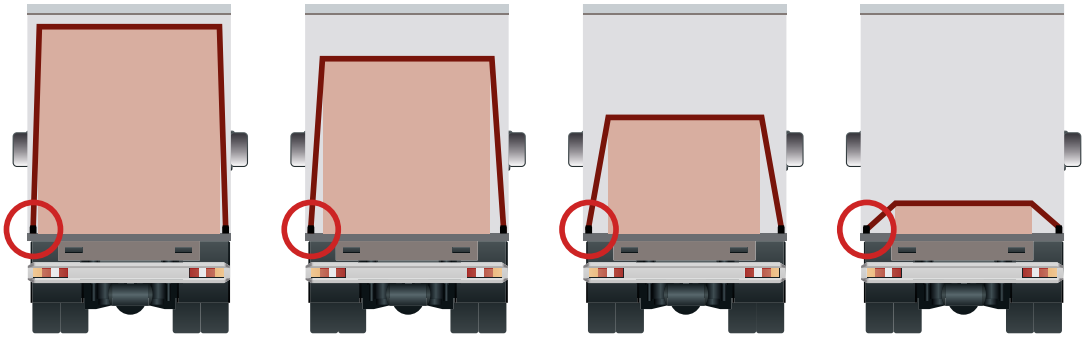
- Individual items in a cargo should be independently secured unless the items are blocked in, unitised, or contained, as detailed in these guidelines.
- All general freight cargo shall be secured such that the cargo will not dislodge, cause the vehicle to become unstable, or fall out during unloading operations.
- Cargo should be completely immobilised and secured on or within the transport vehicle using appropriate securement systems that may include chains, straps, dunnage, or a combination of these.
- Each item of cargo regardless of size or weight should be secured with a minimum of two securement devices. There should never be a single point of failure in a securement system.
- Chocks, wedges, or cradles may be required to restrain cargo capable of rolling.
- The total WLL of all cargo securement devices applied to a single article of cargo should be capable of restraining the cargo being secured from movement to:
  - 100% of its weight in a forward direction (1.0 g) – note, that while 80% (0.8g) is typically the required minimum, this document recommends 100% (1.0g)
  - 50% of its weight in a rearward or side-to-side direction (0.5 g)
  - 20% of its weight in a vertical direction



For example, a 9,071 kg (20,000 lb) article being secured with chains and binders with a WLL of 2,994 kg (6,600 lb) each, would require a minimum of four chains – 2,994 x 3 = 8,982 kg (19,801 lb). A fourth chain would be required to reach a minimum of 9,000 kg (20,000 lb) ***NOTE****: In this example, the chains would be secured on one end to one side of the trailer, would pass over or through the article of freight, and then attach to the other side of the trailer (indirect tiedown).*

***NOTE**: This example assumes the materials and equipment used are clean and dry with no unusual conditions. If any condition exists that may compromise cargo securement, or anything that may reduce the coefficient of friction between the freight and the trailer or securement devices, additional securement may be needed. Similarly, if any condition exists that may limit the tension placed on securement devices, additional securement may be required. These conditions should be identified and evaluated during the JSA process.*

- All securement devices should be secured in such a way that they are in alignment with manufacturers' recommendations and limitations. If the freight itself limits the ability to tension a securement device, additional securement may be required. These conditions should be identified and evaluated during the JSA process.
- All securement devices should be applied in such a manner as the angle of the device is as close as possible to 90 degrees in the direction of the intended restraining force. For example, when using an indirect tie down (holding cargo by passing from one side of a trailer over the top of the freight to the other side of the trailer), the angle of the device should be as close to vertical as possible. The further from 90 degrees the angle is, the less the restraining force applied to the cargo. When securing cargo from moving in a forward direction, the securement device should be placed as close to horizontal as possible.



Angle	Effectiveness
90	100% of WLL
60	85%
45	70%
30	50%
15	25%

- Cargo securement devices should be installed in such a manner so as to not unfasten or come loose in transit.
- Articles of cargo placed beside each other and secured by transverse tiedowns should either be:
  - In direct contact with each other or
  - Prevented from shifting towards each other while in transit.
- Loose items placed inside open top transport containers that can be damaged, or cause damage to other items (e.g. container or equipment), should be packaged in a manner which mitigates this risk. Chemical and fluid containers should be removed from baskets that contain other types of materials (e.g. buckets should not be shipped in the same container with metal tools that could cause punctures) if items cannot be secured within the basket. While it is the shipper's responsibility to secure items within containers/crates, drivers should verify that items within these containers are adequately secured.
- If straps used to secure cargo are subject to abrasion, edge protection resistant to abrasion, cutting, and crushing needs to be used - edge protection composed of paper, cardboard or similar not-for-purpose products should not be used.
- Hoses should be secured with adequately rated and marked securement devices in the hose troughs/racks in such a manner as to prevent them from becoming ejected onto the roadway. This includes movement while on worksites and access roads.

4.2 Cargo Securement Equipment

All equipment and devices used should be in good repair and be designed for, and appropriate for, cargo and loading application. In addition, they should be clearly marked with the Working Load Limit (WLL) or other appropriate indicator of capacity, such as the Standard Tension Force (STF) as in the case of cargo straps used with an indirect securement method.

***NOTE**: If the specific circumstances of a cargo preclude the use of the recommended equipment, a thorough task-based risk assessment, or JSA or similar hazard analysis, should be conducted to identify and mitigate potential hazards associated with using alternative equipment types.*

***NOTE**: All equipment and lifting points used for mechanical hoisting and rigging should be subjected to the specification, inspection and usage criteria specified for that type of equipment. That information is not covered in this document. Please refer to IOGP Report #376, Hoisting and rigging safety recommended practice.*

The most commonly used types of securement equipment are steel chains and synthetic web straps. Following are recommended guidelines for this equipment:

- Chains and binders
  - Should be a minimum of 10mm (3/8in), Grade 70 Transport Chain, as rated by the National Association of Chain Manufacturers (NACM) or equivalent certifying agency.
  - Chains and binders should be marked by the manufacturer as to grade and/or WWL.
  - Only ratchet binders should (or similar) be used and should be of the same size and WLL as the chain being used.
  - The use of extension or cheater bars to increase leverage is prohibited.
- Straps
  - 10cm (4in) straps are the preferred cargo securement device, understanding that certain cargo types may require the utilisation of chains. The use of straps versus chains should be considered during the task-based risk assessment, or Job Safety Analysis (JSA) or equivalent hazard identification and risk control protocol.
  - Smaller straps may be used to secure items inside of baskets, containers, motor vehicle beds. They may also be used to secure moving parts of equipment.
  - Nylon straps used to secure the cargo should be placed in the immediate proximity of support points.
  - Whenever possible, straps should be run between the rub rail and the trailer for added protection. A rub rail is a rail along the outer edge of an open-deck truck body and/or trailer intended to protect tiedown assemblies in the event the vehicle contacts (rubs against) other objects.
  - Straps should be clearly marked as to WLL.
  - Edge protection should be put in place anywhere cargo securement straps may be subject to abrasion or being cut

***NOTE**: Any restraining device not marked by the manufacturer with its working load limit should be considered deficient and removed from service.*

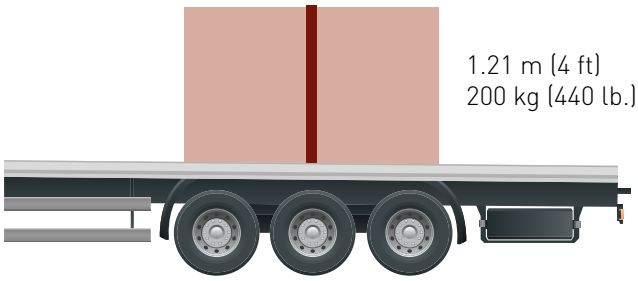
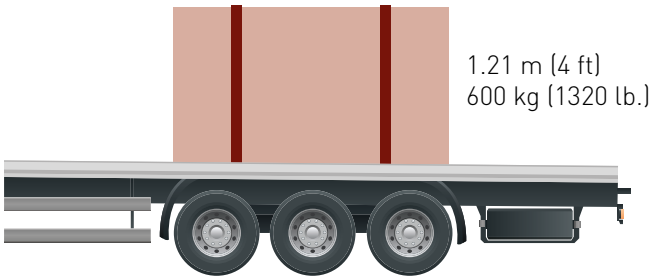
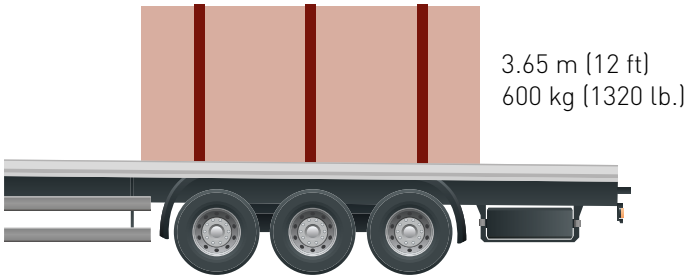
When calculating the effective WLL of any single securement device used alone or in combination, the following should be considered:

The aggregate working load limit is the sum of:

- 50% of the working load limit of each tiedown that goes from an anchor point on the vehicle to an anchor point on an article of cargo (direct securement)
- 50% of the working load limit of each tiedown that is attached to an anchor point on the vehicle, passes through, over, or around the article of cargo, and is then attached to an anchor point on the same side of the vehicle (direct securement)
- 100% of the working load limit for each tiedown that goes from an anchor point on the vehicle, through, over, or around the article of cargo, and then attaches to another anchor point on the other side of the vehicle (Indirect securement)

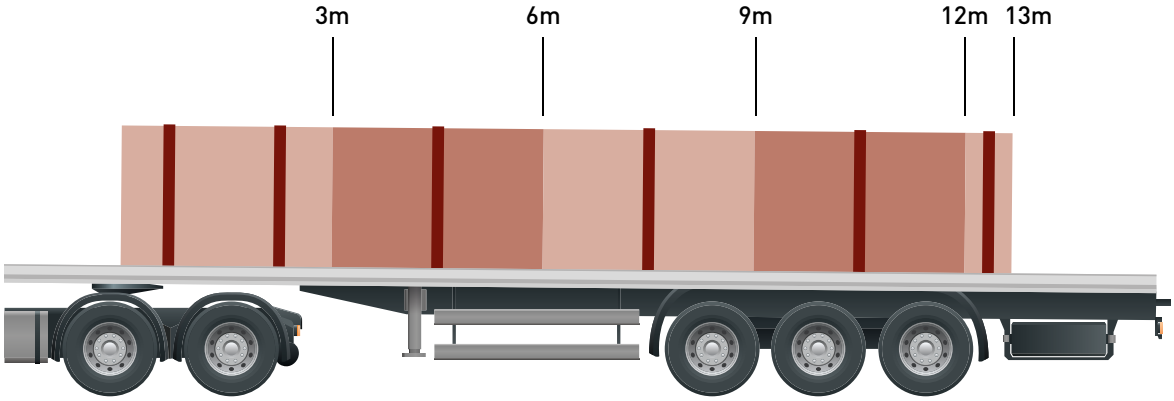
A minimum of two securement devices should be used for each article of cargo (or articles if loaded transversely across the deck of a vehicle). There should never be a single point of failure that would allow an article of cargo to become loose or to become inadequately secured.

While the specific securement requirements of an article of freight will vary depending on its construction, design, size and weight, general practice should comply with the following when using straps as a securement system:

Article Description	Minimum number of tiedowns
1.52 m (5 ft) or shorter 500 kg (1,100 lb.) or lighter	1 
1.52 m (5 ft) or shorter Over 500 kg (1,100 lb.)	2 
More than 1.52 m (5 ft) but 3.02 m (10 ft) or less	2 

- At least two straps should be placed within the first 3 meters (10 feet).
- At least one additional strap should be used for every additional 3 meters (10 feet) of cargo length.

  Examples:
  - A 2m (6.5 ft.) item would require a minimum of 2 straps.
  - A 4m (13 ft.) item would require a minimum of 3 straps.
  - A 6m (19.7 ft.) item would require a minimum of 3 straps
  - A 7m (23 ft.) item would require a minimum of 4 straps.



NOTE: in addition to calculating the recommended (or required) numbers of straps based on length, consideration must also be given to meeting the recommended (or required) number of straps based on weight as outlined in Section 4.1 above

4.3 Center of Gravity

- The cargo should be secured to the performance criteria from this standard, with particular attention to the Center of Gravity (CoG).
- If the location of the CoG is unknown or not obvious, or if the height of the object is greater than its base, additional technical information or engineering assistance may be needed to determine proper securement techniques.
- A minimum of 50% of the Load Securement should be above the CoG on items to be secured for transport.
- Care should be taken to ensure that CoG of any item is not above any bulkhead or other containment device intended as part of the securement system.

4.4 Exceptional Loads

Any cargo may be designated as an exceptional load. Typically, a load will be designated as exceptional if:

- The equipment requires special handling due to:
  - Size,
  - Weight
  - Awkward or bulky shape (e.g., with a high center of gravity), making proper securement difficult
- Loss or damage would result in:
  - Substantial economic loss
  - Major time delays to the project

Where appropriate, palletised loads should be recognized as 'exceptional loads', especially if the pallets (sack material, drums, etc.) are at risk of shifting during transport.

For example, a hydraulic power unit is not particularly heavy or bulky, but would be difficult to replace in a timely manner.

All exceptional cargo plans should be reviewed by all involved parties to ensure a proper task-based risk assessment, or JSA, as well as appropriate cargo securement planning, Journey Management Planning and contingency planning has been completed as appropriate.

For a more comprehensive set of standards for characterisation of cargo lift and associated risk management practices, refer to IOGP Report 376 - *Lifting and hoisting safety recommended practice, Appendix 1: Example of lift characterisation scheme*.

4.5 Cargo Dimensions

Height

The top layer of pipe, or other tubular products, should not extend more than half its diameter above the pipe stanchions, dock racks, or headache rack. When headache racks, side kits or other parts of the vehicle/equipment is used for cargo restraint, care should be taken to ensure that not more than 50% of the cargo extends above the restraining equipment and that the CoG remains below the top of that equipment.

It is the truck driver's responsibility to ensure that the highest point of the cargo/trailer/vehicle has sufficient overhead clearance along the entire route, including the pickup and drop off locations (e.g., entrance gates). Additional care should be taken to ensure adequate

clearance is maintained with overhead power lines, taking into account the arcing distance for high-voltage lines and guy wires around derricks and other installations. These factors should be considered during the Journey Management process.

Further, drivers should understand the impact of a higher CoG and cargo positioning on the performance of their vehicles and operate with due consideration and care.

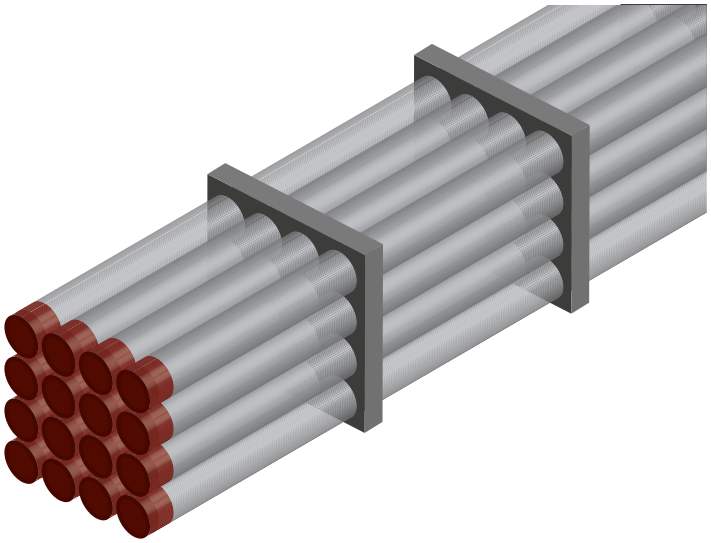
Length/Width

The length and width of cargo may affect both vehicle stability and maneuverability. Both drivers and loaders/cargo planners should work to ensure cargo complies with local regulations and that these factors are considered during the Journey Management process.

Appendix 1: Bolstered and Unbolstered Tubular Goods

Bolstered Tubular Goods

A1.1 General Recommendations



- Bolstered tubular products are those that are secured in built-for-purpose, portable racks designed to securely contain the tubular products. Bolsters typically consist of multiple layers of material designed to cradle each tubular and secure it from movement relative to the rest of the material contained in the bolster.
- Tubular products contained in bolsters may be treated as a single unit and secured as such.
- If bolsters are designed in such a way as to allow for safe stacking, they may be stacked, but 50% of the height of the top bolster should not extend above the headache rack or other equipment used as part of the securement system.
- Additional items of cargo should not be stacked on top of bolstered product.
- While the party shipping the bolstered product is responsible for the condition of that equipment, the driver should inspect both the product and bolster to ensure both are in good repair and fit for shipment.

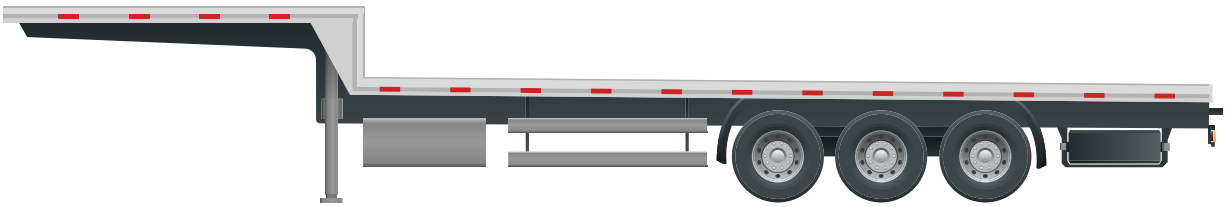
Unbolstered Tubular Goods

A1.2 General Recommendations

Vehicle used to carry unbolstered tubular goods should be equipped with:

- Pipe stanchions/bunks
  - Stanchions are designed to provide secondary containment for tubular cargos during transit.
  - Stanchions are designed to provide primary securement during loading/unloading operations when all other securement has been removed or has not yet been placed.
  - They should be of adequate strength to perform this role given the type, size and weight of any cargo they may need to contain. Therefore:
    - Stanchions should be of substantial construction with attachment to both the side and the frame of the vehicle.
    - It is recommended that stanchions be constructed of square or round steel tubing either 7.6cm x 7.6cm x 0.5cm (3in x 3in x 3/16in) or 6.4cm x 6.4cm x .6cm (2.5in x 2.5in x 1/4in). Smaller dimension material may be used on small goose-neck or utility-type trailers.
    - Small gauge tubing fitted into stake pockets should not be considered adequate for the purpose of secondary securement.
    - Channel and angle iron is not recommended for use as stanchions.
  - Stanchions should be covered with rubber, polypropylene or other suitable material to prevent metal-to-metal contact between the tubular product and the stanchion.
  - There should be at least two stanchions on each side of the vehicle or trailer.
  - Where trailers are fitted with removable pipe pins, ALL pins should be put in place. Pipe pins are Metal devices inserted into pockets on either side of a cargo deck to assist in preventing cargo items from shifting or rolling off of the deck surface during loading and offloading operations, and providing secondary securement during transit. These devices should not be included in any cargo securement calculation.
  - Stanchions should be placed so that the loaded product is contained within the front and rear stanchions, but should not rest against the stanchions for restraint.
  - Pipe bunks should be so installed and secured to the trailer as to not allow them to roll during loading/unloading procedures.

- Trailer Types
  - Trailers adequate for the size and weight of the intended cargo should be selected.
  - Pole trailers should not be used to transport tubular goods. A pole trailer is an extendable trailer, without a deck, that is designed to carry poles or other long pieces of cargo by providing support only at the front and rear of the cargo.

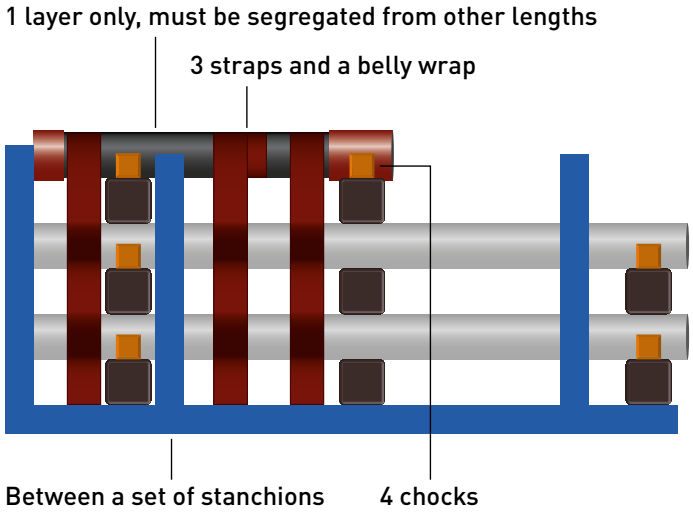


  - Drop deck trailers may be used if the following conditions are met:
    - The pipe is fully supported on the deck of the trailer.
    - The pipe does not exceed the lower deck length.
    - Pipe stanchions and/or dock racks/pipe bunks are in place.
    - The cargo is not bridged on other freight, stacked timbers or a cargo leveling device.

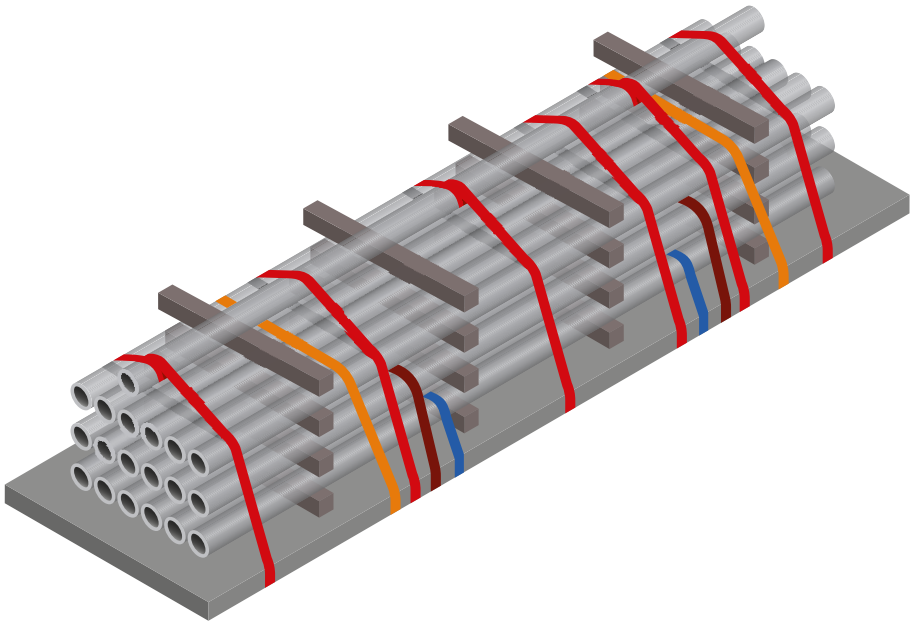
A drop-deck/low-bed trailer is a trailer that steps down behind the tractor connection and is designed to carry freight that is too tall to be carried on a standard flatbed trailer, or freight that has a higher center of gravity.

A1.3 Loading Recommendations

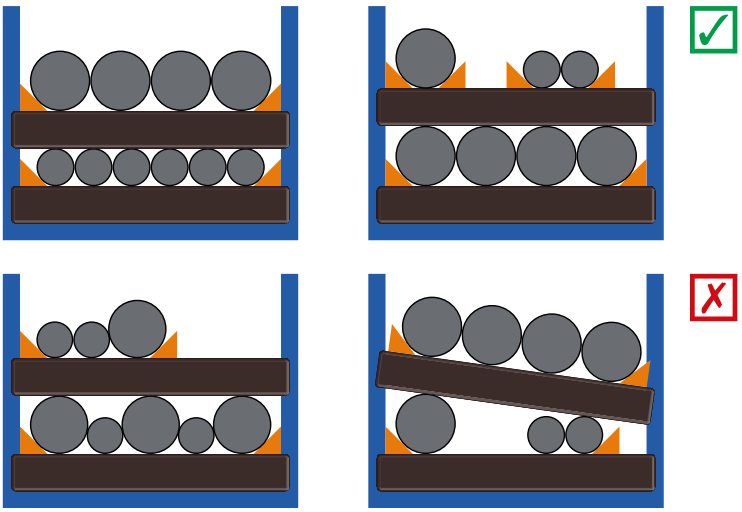
- All pipe should be placed on the truck with collars facing in the same direction for ease of unloading and stacking pipe at field sites.
- Chains should not be used on tubular products except where required by regulation.
- Each layer should be properly stripped using hardwood stripping in at least three points per layer.
- Nylon straps and other means of securement should avoid the area of the thread protectors, couplings, and/or upsets to minimise thread damage.
- To prevent shifting of material, all tubular goods should be uniformly loaded and secured to the trailer at all times, including during staging. To ensure uniform loading, pup joints should not be interspersed with other lengths of pipe.



- Different diameter pipe may be hauled on the same cargo provided that each layer is of the same diameter from layer to layer. Each new layer should be fully stripped and chocked.



- Different diameter pipe may be hauled on a single layer provided
  - It is the top layer with no other freight stacked on top of it.
  - Pipe of each diameter is individually and independently secured.
  - Each diameter should be belly-wrapped in at least two locations and secured "over the top" as required



- Drivers should not remove the cargo securement devices on a load of tubulars until the truck is in its final position where it will be unloaded. Likewise, prior to moving a loaded vehicle, the cargo should first be fully secured and prepared for transport.

A1.4 Stripping and Strapping

Tubular goods should be transported horizontally, and stripped between each layer as follows:

- Tubular products should be supported using stripping in at least three locations along the length of the product. The following dimensions are recommended for tubular products of various diameters:
  - For tubular goods greater than 127 mm (5in) diameter, 10cm x 10cm (4in x 4in) hardwood (nominal size). Greater friction would be provided if rubber is applied on timbers.
  - For tubular goods 127mm (5in) or less in diameter, 5cm x 10cm (2in x 4in) hardwood (nominal size), but 10cm x 10cm (4in x 4in) timbers are suggested for ease of forklift operations.
  - **Consideration should be given for the use of appropriately sized rectangular stripping to offset any opportunity for the stripping to 'roll'.**
- Stripping timbers should not extend beyond the sides of the vehicle deck.
- Stripping timbers should be placed directly above one another from layer to layer to prevent bending of the tubular material being transported.
- Nylon straps should be placed in the immediate area adjacent to stripping timbers to prevent damage to the material.
- Stripping should not touch the threaded connections, couplings, and/or upsets to minimise thread damage of any tubular goods.

- Each loaded layer of tubular product should have a minimum of 1 chock per corner (4 per layer to complete the load), and each chock should be installed with 2 double-headed nails (or appropriate alternative).
  - Chocks should be of appropriate size for the diameter of the tubular it is containing. It is recommended that chocks be made of durable plastic, pre-drilled hardwood, or similar material.
  - Nails should be placed in engineered locations or in pre-drilled holes.
  - Chocks should be firmly seated on timber without obstructions (old nails, nylon straps etc.)
  - Chocks should not overhang the dunnage they are secured to.
  - Consideration should be given to the possibility of thread protectors and other equipment becoming loose and falling off pipe ends during transit. Additional means of containing/mitigating this risk should be taken as necessary.
- Pup joints may be transported horizontally on a properly secured layer of tubulars, as follows:
  - A loaded layer of pup joints should be contained within the confines of at least one set of stanchions and should not rest on them for restraint.
  - Nylon straps and other means of securement should avoid the area of the thread protectors, couplings, and/or upsets to minimise thread damage.
  - There should be minimum of 3 straps, with the center strap being belly-wrapped per layer of pup joints. The use of the loop lashing securement method may also be used. Loop lashing is a securement method used for securing low items where a steep angle on the strap for tie-down cannot otherwise be attained. The cargo strap passes under then over the cargo and returns to same side of the decking. A similar lashing in the opposite direction securing to the other side of the decking is then required for the lashing to be complete.
  - To prevent shifting of material, all pup joints should be uniformly loaded and secured to the trailer at all times, including during staging to ensure uniform loading.
  - Pipe should be loaded with all collars facing in the same direction (cab-forward).
  - Pup joints should not be interspersed with other lengths of pipe.
  - Different diameter pup joints may be hauled on the same load provided that each layer is of similar diameter and provided that the different diameters can be independently stripped and chocked. Stripping for pup joints should have at least 2 support points and a minimum of two 2in x 4in / 5cm x 10cm dunnage.

- Whenever possible, smaller tubular products (i.e., shorter than 2.5m (8ft)) should be shipped in baskets or other appropriate shipping containers or provided with secondary securement (see Appendix 2 below).
  - The shipper should ensure that the contents of the basket are properly secured within the basket.
  - Since neither the WWL nor the integrity of pallets or banding can be known, smaller tubular products that are banded, shrink-wrapped or otherwise secured to wooden or other pallets should be treated as miscellaneous freight and secondary securement should be provided per Appendix 2 below.
  - As in all cases, the driver has the final responsibility for ensuring that all product is secured prior to commencing the journey.
- Special consideration should be given to the following loads:
  - Tubular products loaded in a single layer or tier
  - Tubular products loaded in a partial layer that makes up the top layer of a load

  Since straps or other securement devices applied at shallow angles provide limited downward force on tubular loaded in the middle of a layer, it is recommended that single layers, and partial layers be belly-wrapped.

Appendix 2: Miscellaneous Freight

A2.1 Pallets, Crates, Drums and Sacks

The use of pallets (especially wood pallets) is highly discouraged since it is difficult to determine the structural integrity of the pallet.

- Drivers carrying shipments of products loaded on pallets should stop and check the condition and securement of the cargo more frequently than otherwise recommended/required.
- Pallets that have been exposed to weather or chemicals, overused or have been otherwise damaged are subject to collapse or other failure when properly secured for transport.
- Similarly, banding, shrink/stretch wrap may not have a WLL and/or may have degraded over time and exposure. These materials should not be relied upon for cargo securement.
- All materials being transported on pallets should be evenly distributed and bundled by means of plastic/poly/steel banding, or cargo straps.

Drums transported on pallets,

- Should be strapped together to unitise the drums and should be properly secured to the pallet (banding or similar devices).
- A pallet, or similar device, should be secured on the top of the drums to complete the load and afford an adequate means to secure the drums and pallets to the vehicle while minimising the possibility of damaging the drums.
- Palletised drums and/or buckets should be secured using strapping applied horizontally to prevent shifting during transit, as follows:
- When using steel or plastic banding, a minimum of two nylon straps should be applied for each palletised load and banding should be a minimum of 2.5cm (1in) in width.
- If cargo straps are being used, a minimum of two 5cm (2in) straps should be applied.
- The layering or stacking of palletised drums for flatbed transport is strongly discouraged.

Palletised sack material:

- A pallet, or similar device, should be secured on the top of the sack(s) to complete the load and afford an adequate means to secure the sack(s) and pallets to the vehicle while minimising the possibility of damage to the sack(s) and accommodating for uneven sack(s), and shifting of material within the sack(s) during transport which may result in the loosening of securement devices.
- Pallets containing sack materials should be loaded in a manner providing additional support to the front of the cargo (e.g., against the bulkhead or other freight).

- Secondary securement, such as properly rated cargo nets, should be considered when hauling sack materials.
- A second layer of palletised sack material may be loaded. This should only be done if there are two pallets of the same size loaded across the deck of a vehicle and the third pallet can be centered (pyramided) between the two lower pallets. If this is done, care should be taken to ensure the stability of the cargo in the event of sudden deceleration/acceleration.
- As a best practice, containment pallets should be considered for use when available.

It is important that the freight itself be secured to the transport vehicle. Simply securing the pallet while relying on the banding or other material to secure the actual freight is generally considered inadequate and should be avoided.

Pallets being transported to a shore base for offshore delivery should be transported in pallet boxes or other containers suitable for lifting onto a boat and offshore platform.

A2.2 Secondary Securement

Secondary securement provides a means of containment in the event the primary securement devices fail or are inadequate for containing the freight due to size, shape or composition.

Any time shipments using pallets are loaded, an effective means of secondary securement should be considered. Secondary securement systems/devices may include

- Cargo containers such as baskets, pallet boxes, etc
- Cargo nets
- Temporary or permanent side panels added to an open-deck truck or trailer, or other additions to the vehicle structure
- Temporary bulkheads adequately constructed from dunnage and chains

Any form of secondary securement should have a designated WLL from the manufacturer or an engineering expert.

Appendix 3: Mobile Equipment

A3.1 General

- Apply transmission brakes of mobile equipment and engage the parking brake.
- Lower the stabiliser outriggers if fitted (e.g., on cranes), confirm no steel-on-steel contact, and use rubber or wooden cargo mats. Validate that the tires still have contact with the trailer deck.
- Position cargo cranes and excavators with the boom facing the rear of the low-bed trailer.
- Use chains to restrain movable parts (e.g., excavator booms, backhoes) that can rotate.
- Lower buckets, blades and rippers, vibrator pads, etc., onto the trailer deck.
- When the mobile equipment is wider than the trailer deck, a widening low-bed trailer with outriggers or extensions should be used for maximum support. At least 75% of the normal contact area of tires or tracks should be supported.
- Hydraulic booms and other movable parts should not be used as a means of cargo restraint.

A3.2 Tracked Equipment

- Heavy vehicles and other mobile equipment (mobile cranes, bulldozers, graders, etc.) should only be transported by drop-deck/low-bed trailers.
- Steel tracked equipment, such as bulldozers, excavators, side booms, etc., should be transported on trailers with wooden decks. Steel decked trailers should only be used if equipped with rubber or wooden cargo mats to avoid steel on steel (low friction) contact.
- Securement should include a minimum of four chains with proper blocking. The driver should calculate the total number of chains required based on the weight of the equipment.
- When feasible, the equipment should be blocked against the gooseneck of the drop-deck/low-bed trailer. In these circumstances
  - Two chains should be attached at the rear to prevent sideways movements, in a cross-bind configuration.
  - Two chains should 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 should be utilised.

A drop-deck/low-bed trailer is a trailer that steps down behind the tractor connection and is designed to carry freight that is too tall to be carried on a standard flatbed trailer, or freight that has a higher center of gravity.

A3.3 Wheeled Vehicles and Equipment

- Wheeled vehicles or equipment should have at least one pair of tires restrained with chocks, if the journey is to take place entirely on hard-surfaced roads. If the journey is to include dirt, gravel, caliche or similar roads, adverse "pinching effect" due to rough road surfaces may occur. Therefore, chocks are not required if:
  - Additional securement devices are applied.
  - Parking and/or transmission brakes are applied.

  If either one of these conditions cannot be met, chocks should also be used for trips on all roads.
- The following cargo restraint guidance should be applied when moving mobile equipment:
  - Check tires on rubber-tired vehicles or equipment for correct pressures and that there are no leaks at the time of loading.
  - Engage the articulated steering locks/separate locking mechanism when transporting articulated machines.
  - Operate all hydraulic controls (including steering) at least twice with the engine off to relieve any residual hydraulic pressure in the systems.
  - Engage the 4-wheel drive (4WD) option, if fitted, before applying the parking brake.

A3.4 Contained Cargo

- Shipping Containers: Trailers fitted with twist locks are recommended for use when transporting shipping containers – four operable twist locks per container. However, these containers may be hauled on other trailers, preferably drop-deck/low-bed, provided adequate securement is attached. This securement would include
- Bracing the container against the gooseneck of the trailer;
- Cross-binding chains to prevent side-to-side movement;
- All other securement required based on size and weight of the container.
- Skid Cargoes: Skid cargoes should be restrained by four chains, one at each corner of the skid, correctly angled to prevent forward/rear/sideways movement (cross-bind pattern). Depending on cargo dimension, CoG, etc., additional securement may be required or advisable.
- Other Contained Cargoes: Where cargo is carried in an open-bodied vehicle (such as a pickup truck) without any vertical lashing,
- The cargo should be adequately secured to prevent motion within the bed.

- A cargo net or other device should be used if there is a possibility of the cargo blowing or bouncing out of the bed.

  NOTE: cargo nets should be adequately rated (WLL) and must be secured to an adequately rated anchor point in/on the vehicle.
- The top of each item should be at least 1ft / 30cm below the top of the sides or tailgate.
- If the cargo extends above the level of the vehicle body, secondary securement options should be applied (e.g., cargo net with an adequate WLL). Shrink/stretch wrap should not be considered adequate securement.
- The center of gravity of any item or items transported in this manner should be at least 1ft / 30cm below the top of the sides or tailgate of the vehicle.
- Tanks, Skips, Skids and Bins: These items should be properly secured according to the guidelines in this document and/or regulatory requirements whether they are full or empty.

A3.5 Steel-frame/Skid-mounted equipment

This type of equipment includes items such as

- Crane booms
- Skid-mounted compressors
- Boom rests
- Any other equipment that rests on a steel frame and/or has limited surface-to surface contact area between the cargo and the vehicle

Securement of these items with straps alone, while meeting legal requirements, is often inadequate, especially when the cargo is loaded on dunnage such as 4x4 timbers. The friction between the cargo and the vehicle/dunnage is inadequate to ensure against movement, particularly against forward movement in the event of an emergency maneuver. Therefore, it is recommended that

- Such items be placed against a properly constructed and rated bulkhead
- Chains and binders be added to or used in lieu of straps alone, with the understanding that the either the chains or the straps should be adequate to secure the entire load independent of the other
- Chains should be so configured as to protect against movement in any direction (cross-bind)
- Friction mats be used as appropriate. A friction mat is a sheet of material used to increase the coefficient of friction between two surfaces, typically made of rubber

A3.6 Reels, Coils and Rolls

Transport of reels, coils and rolls will require adherence to related and appropriate cargo securement regulations. A combination of tie-down lashings and direct restraint against the vehicle headboard or other structures mounted to the vehicle should be used to restrain rolls, reels and coils.

- Friction matting is recommended to assist the overall restraint system. A friction mat is a sheet of material used to increase the coefficient of friction between two surfaces, typically made of rubber
- Each roll, reel, coil or drum that is not blocked or contained by the vehicle body (or by other items of cargo) should be secured separately to prevent movement in all horizontal directions
- Consideration should be taken for the use of cradles

A3.7 Sheets and Flat Cargoes

Large loose sheet or flat cargoes should be restrained in all directions by blocking against the vehicle headboard or other structures mounted to the vehicle. Tie-down lashing alone may not provide adequate restraint. Considerations should be given to the need for stripping/strapping, edge protection, and secondary securement.

Stacked sheet cargoes can easily slip on each other, and therefore should be prevented from sliding by unitising into packs or by being fully contained within the sides of a vehicle body. Lightweight sheets should be secured in open vehicles by tie-down lashings to prevent them from dislodging due to airflow.

Unitising refers to binding groups of small items together to form larger units of a cargo.

A3.8 Compressed Gas Cylinders

Compressed gas cylinders should be:

- Kept vertical, whether empty or full.
- Transported in racks, which have clamps or similar securing devices to firmly restrain the cylinders. The racks themselves should be securely restrained to the transporting vehicle.
- Cylinder racks should be inspected by both vendor/shipper and driver prior to loading to ensure they are in good repair, and that internal containment/securement components are adequate and properly installed.

Transport of compressed gasses will require adherence to related and appropriate hazardous material/dangerous goods regulations.

A3.9 Hazardous Material/Dangerous Goods

Hazardous materials and dangerous goods are heavily regulated in most operating areas. The transport of this material need always be in compliance with applicable regulations.

- **Shippers** should be fully aware of regulations pertaining to the proper packaging, marking, labeling, and preparation of shipping documents. They should present shipments of hazardous materials/dangerous goods in a manner that is fit for shipment and fully compliant with applicable regulations.
- **Drivers** should likewise be knowledgeable of these same regulations and certified as required by applicable regulation(s) to transport dangerous goods. Drivers have the ultimate responsibility of not accepting materials that are not compliant with the law. Anytime there is uncertainty regarding a shipment of hazardous materials/dangerous goods, a Stop Work action should be initiated by either the driver or shipper. The shipment should not proceed until all issues including proper securement and segregation of materials is fully resolved.
- **Receivers/trans-shippers** should be knowledgeable of the applicable regulations and should not accept cargo that is not in full compliance.

Appendix 4: Cargo Checklist

Vehicles must meet all regulatory and company requirements. Attention should be paid, at a minimum, to:

- Cargo decks – no visible holes or rotted boards that could fail once loaded

CHAINS													
Grade of Chain	**Size (in.)**	**Working Load Limit**		**Weight of Load in Pounds (kg.)**									
		(lbs.)	**(kg.)**	**5,000 (2,268)**	**10,000 (4,536)**	**15,000 (6,804)**	**20,000 (9,072)**	**25,000 (11,340)**	**30,000 (13,608)**	**35,000 (15,876)**	**40,000 (18,144)**	**45,000 (20,412)**	**50,000 (22,680)**
Grade 30 proof coil or unmarked	1/4	1,300	580	4	8	12	16	20	24	27	31	35	39
	5/16	1,900	860	3	6	8	11	14	16	18	22	24	27
	3/8	2,650	1,200	2	4	6	8	10	12	14	16	17	19
	7/16	3,700	1,680	2	3	5	6	7	9	10	11	13	14
Grade 43 high test	1/4	2,600	1,180	2	4	6	8	10	12	14	16	18	20
	5/16	3,900	1,769	2	3	4	6	7	8	9	11	12	13
	3/8	5,400	2,449	1	2	3	4	5	6	7	8	9	10
	7/16	7,200	3,270	1	2	3	3	4	5	5	6	7	7
Grade 70 transport	1/4	3,150	1,429	2	4	5	7	8	10	12	13	15	16
	5/16	4,700	2,132	2	3	4	5	6	7	8	9	19	11
	3/8	6,600	2,994	1	2	3	4	4	5	6	7	7	8
	7/16	8,750	3,970	1	2	2	3	3	4	4	5	6	6
Grade 80 alloy	1/4	3,500	1,570	2	3	5	6	7	8	10	12	13	15
	5/16	4,500	2,000	2	3	4	5	6	7	8	9	10	12
	3/8	7,100	3,200	1	2	3	3	4	5	5	6	7	8

- Cargo securement anchor points – in good working order, including welds
- Frame/structural components/suspension – damage free, underride devices in place
- Brakes – serviceable in keeping with manufacturer and legislated expectations
- Air lines – secured, undamaged/unworn
- Legally required items i.e. functioning lights, visible license plate(s), etc.
- Tires – no bulges/blemishes nor excessively worn, mud flaps in place and serviceable
- Dunnage should be properly secured within the confines of a timber rack or secured to the deck in the same manner as cargo. Dunnage should not be stowed in "landing gear" or frame structures
- In addition, the cargo should be placed up against the bulkhead

PPE

Each driver should have the following equipment, at a minimum, upon arrival at the assigned work location, based on a task-based risk assessment, or Job Safety Analysis (JSA) or equivalent hazard identification and risk control protocol or as otherwise specified by the site operator:

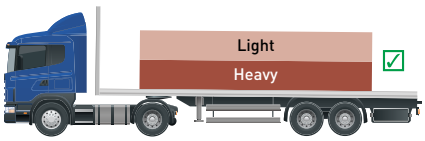
- Hard hat
- Impact-resistant safety glasses with side shield
- Safety-toed shoes or boots
- Work gloves appropriate for the work
- Fluorescent colored or high-visibility vests or outer layer of clothing
- Flame-Resistant Clothing (as an outer layer) may be required
- An appropriate gas detection monitor may be required

Tie-down quick reference

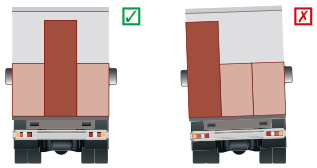
These charts indicate the minimum number* of indirect tie-downs (tie-downs with both ends attached to opposite sides of vehicle) needed to secure cargo based only on the weight of the cargo.

For direct tie-downs (tie-downs that are attached directly to the cargo or that have both tie-down ends attached to the same side of the vehicle), double the number of tie-downs shown. For welded steel chain that is not marked with either the grade or working load limit, assume a working load limit equal to that for grade 30 proof coil.

		YES	NO
1.0	**ARRANGING LOADS ON VEHICLES**		
1.1	Are vehicle's cargo space and loading deck suitable for the type and size of the cargo?		
1.2	Is the deck clear from grease or dirt?		
1.3	Check the weight of the load to be carried. Can the vehicle carry them safely?		
1.4	If cargo is stacked, is heavy cargo stacked on the bottom?		
1.5	Are heavier items loaded nearer to the longitudinal center line of the trailer?		
1.6	Are Strong items placed in front of weak crushable items?		
1.7	Is any of the cargo exceeding any of the following dimensions? • Height: 13.6 feet / 4.15 meters • Width: 8.5 feet / 3.5 meters • Rear Overhang: 4.9 feet / 1.5 meters *Note: In some jurisdictions, escort vehicles and/or permits may be required for loads exceeding any of these limits.*		



Stack Heavier packages on the bottom



Place heavier items nearer to the longitudinal center line, and the lighter towards the sides

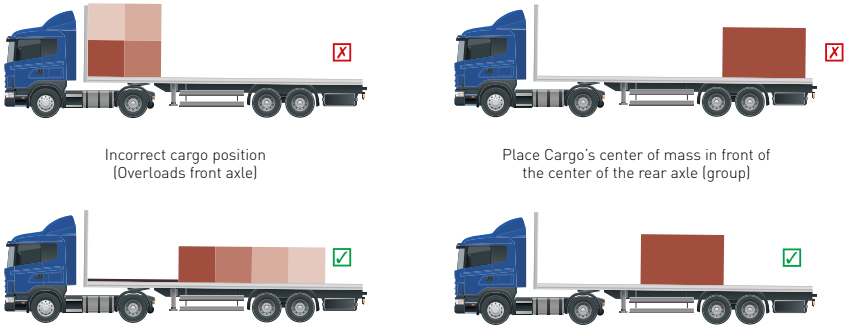
Place Strong items in front of weak crushable items.

	YES	NO
1.8 Is cargo evenly positioned across the vehicle?		

DON'T overload your vehicle or its individual axles.

DON'T overload the steering axle by placing the load too far forward.

DON'T reduce the weight on the steering axle by placing the cargo too far back.



Incorrect cargo position (Overloads front axle)

Place Cargo's center of mass in front of the center of the rear axle (group)

Place cargo further back for better weight distribution, and keep center of mass is as low as possible

Ensure sufficient weight on steer axles to ensure safe steering and not overload the rear axle

Insufficient weight on drive axles

Excessive trailer deflection

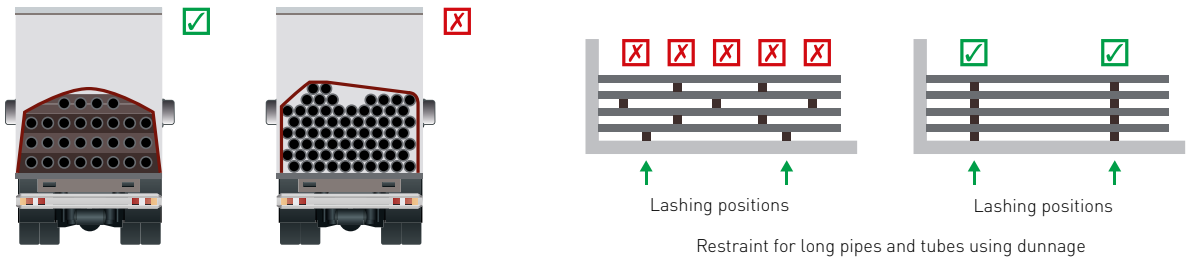
Good weight distribution

1.9 Is there any cargo projecting dangerously towards the cabin or outside the vehicle?		

Dangerous Position

Correct Position

1.10 If long pipes are transported, is dunnage used to restrain them?		

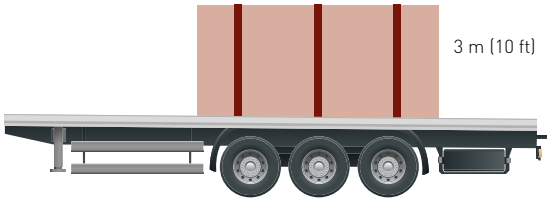


Lashing positions

Lashing positions

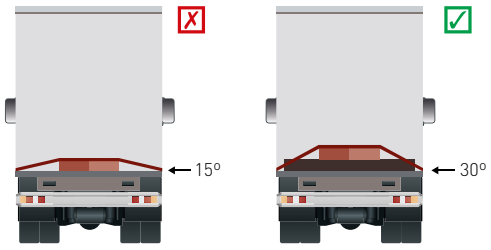
Restraint for long pipes and tubes using dunnage

		YES	NO
2.0	**RESTRAINING CARGO ON VEHICLES**		
2.1	**Steel Chain**: Shall be 10mm (3/8in) thickness or more, Grade 70 or Transport Chain identified by, '7', '70', '700' on the links, with grab, winged or claw hooks.		
2.2	**Tie Down Strap**: Shall be 10cm (4in) width or greater.		
2.3	**Do make sure** you have enough lashings and that they are in good condition and strong enough to secure your cargo. Ensure to have at least two (2) chains for every 10 feet (3 meters) for all objects.		



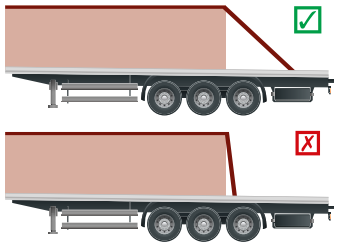
Tie-down lashings

2.4	**DO make sure** that tie-down lashings for fixed cargo is as near to vertical as possible.		
2.5	**DO make sure** that direct lashings attached to cargo on wheels are not near vertical.		



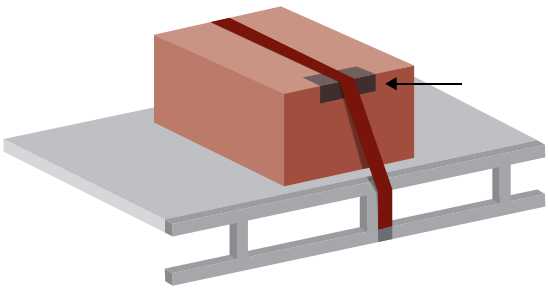
Low tie-down angle

Higher tie-down angle

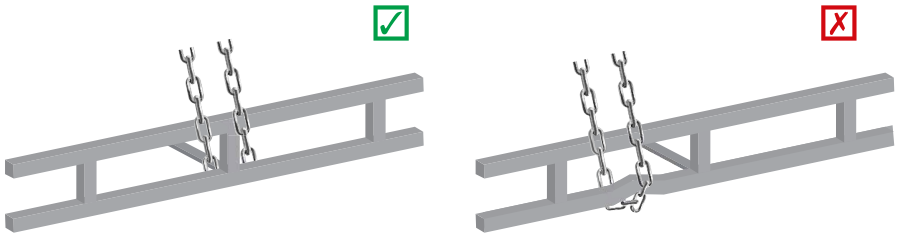


Lashing for cargo on wheels should not be near vertical

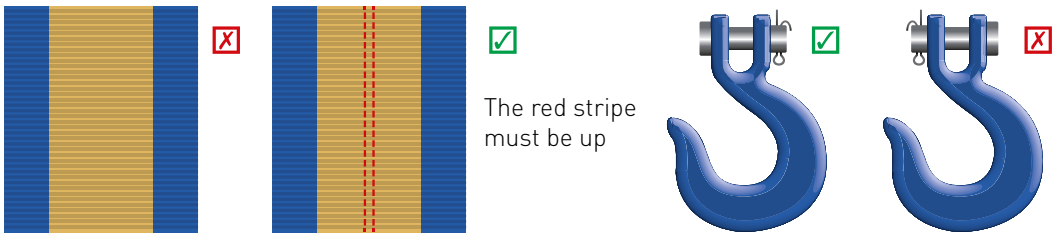
2.6	Are lashing protectors used on sharp edges?		



		YES	NO
2.7	Are lashings attached at tie rail support points?		



2.8	Are all extra chains or straps secured?		
2.9	Inspect all Chains and Belts and look for faulty equipment. Replace them if found. For example: • Wear exceeds 10% pf a link diameter • Cut, nicked, cracked, gouged, burned or corrosion pitted link • Bent or twisted links • Stretched links • Damaged webbing belts • Webbing belts placed upside down • Improper placement of pins in a clevis hook		



2.10	Ensure that the **brake-over** binder/boom **is not in use**. Only Ratchet type binders.		

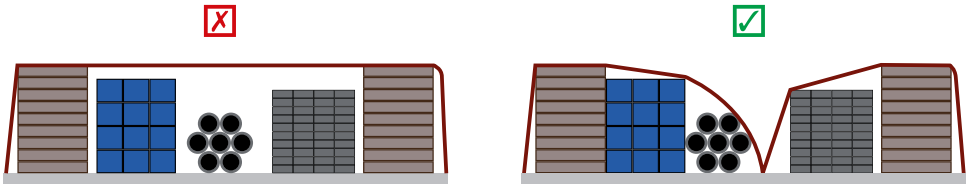
Brake-over Binder NOT to be used

Ratchet Type Binder

		YES	NO
3.0	**RESTRAINING OF LOOSE CARGO ON VEHICLES**		
3.1	Is all palletised cargo blocked against a headboard or loading rack?		

Pallet blocked to headboard

3.2	In some cases, it may be necessary to divide the cargo into two or more stacks to crown it effectively. The lashings must be attached along the middle of the deck.		

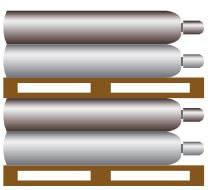


Use Cargo Net to Restrain Cargo.

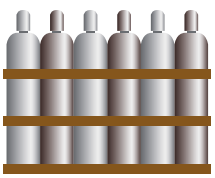
3.3	Have a separate lashing made for each rolls, reel, coil or drum not blocked or contained by the vehicle body (or by other items of cargo). This to prevent movement in all horizontal directions.		

Loose drums unsecured on the back of a truck

A combination of tie-down lashings and direct restraint against the vehicle structures.

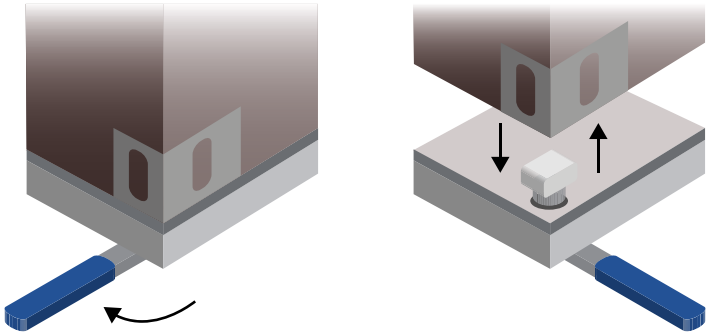


Incorrect way of transporting gas cylinders.

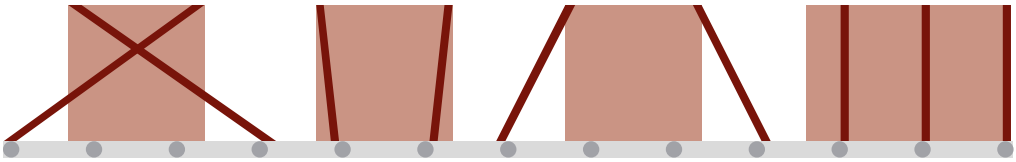


Transport on racks.

		YES	NO
4.0	**TRANSPORTING LARGE LOADS**		
4.1	If the trailer is equipped with twist locks, are the twist locks engaged when transporting shipping containers?		



4.2	Where the building cannot be blocked against the headboard, lashings should be attached at the at the front and back, to prevent movement.		
4.3	Where twist locks are not fitted, empty containers can be restrained by one of the four tie-down methods as shown below. They must be placed either on a timber deck, on timber dunnage, on rubber pads, or friction matting, but not directly onto a metal cargo deck or similar surface.		



Cross chaining | Chains pulling to each other | Chains pulling away from article | Chains pulling straight down

The under signed personnel are declaring that:

- Cargo is properly restrained by the vehicle and the load securing equipment.
- A vehicle's load restraint structure, attachments and load securing equipment are serviceable and functional.
- Vehicle's load restraint structure, attachments, and load securing equipment are suitable for the application.
- The size, type and position of the load will not affect the handling of the vehicle.
- Check load restraint every 100km on black top and every 50km on Graded road and after emergency braking or swerving.
- Check your load every time you remove or add items to your load during the journey.
- DON'T move your vehicle if any part of the load is not correctly restrained.
- Visually inspected chains and hooks every six months to ensure no broken stretched, bent, damaged or worn or grooved links. If deemed fit for service chains shall be color coded on the links adjacent to the hooks.
- Chains and straps which fail inspection shall be scrapped, also repaired chains by welding are unacceptable.
- Prior each use of a chain or strap the driver shall visually inspect the chains and hooks for damage. If any damage is found do not use and notify the supervisor.

DRIVER	DISPATCHER
Name:	
Phone:	
Date:	
Signature:	

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This document establishes recommended practices for load securement and protection against shifting, falling, damage to, and/or loss of cargo during road transport in the upstream oil and gas industry.

It is strongly recommended that companies and contractors without equivalent established practices and procedures adopt those herein as standard.