

[BusinessCodeLabel]	OPERATIONAL EXCELLENCE MANAGEMENT SYSTEM (OEMS)	
Corporate	CHSEQ	Administrative Procedure
02 Health, Safety, Security and Environment Management		
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1. PURPOSE

This procedure seeks to reduce safety incidents in workplaces by offering practical guidance on managing risks related to forklifts operations. It provides minimum requirements and non-mandatory safety & health recommendations. It shall be used in conjunction with local procedures, guidelines, regulations, and statutory requirements.

This procedure provides the requirements to ensure safe operations of forklifts. In warehouses, operational areas, shipping yards, freight terminals and other workplaces, forklifts are widely used to lift, stack and transfer loads. While forklifts offer a practical material handling solution for many businesses, each year they continue to be associated with workplace deaths and injuries. Forklift incidents can be prevented, especially when employees and employers work together. Anyone, including employees as well as contractors or any 3rd party, is responsible for the safe operation of forklifts. The driving and duty hours shall be guided Management of Fatigue in the Workplace.

2. SCOPE

This procedure shall be used throughout all Engen facilities and on Joint Venture facilities where Engen has operational control. This procedure is applicable to all Engen Divisions. In countries where forklift operations may be governed by statutory regulations or national codes of practice, that must be observed however where the requirements differ with this procedure, the more stringent requirement shall be adopted. This document applies to all operating facilities where forklifts are used including projects and construction sites. It applies to anyone, including employees as well as contractors or any third party, responsible for the safe operation of forklifts. Forklift daily pre-use inspections shall be conducted to check it is in good condition. If faults are identified, these shall be recorded, immediately reported, and corrective action initiated.

All aspects shall be taken into consideration when carrying out observations and risk assessments of current forklift operations to ensure that pedestrians are adequately protected. Note that certain risks may require special control measures beyond those set out in this guideline, e.g.:

- Working at height, e.g., when working from safety platforms attached to forklift.
- Working in a confined space;
- Working near a steep edge and steep slope, on undulating surface and on soft ground; and
- Fire and explosion risks, from use of combustible fuel, operation of forklift in potentially explosive atmospheres and battery charging.

3. PERFORMANCE MEASUREMENTS

- Number of incidents caused by non-compliance to Forklift Safety Operations.
- Number of ZeTo violations with regards to Forklift Operations activities (Speeding, no wearing safety belt, using phone/ two-way radio).
- Number of non-compliance from Forklift Safety Operations daily inspection or audits.

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4. PROCEDURE

4.1 COMPETENCE AND TRAINING

Only personnel, including contractor employees, who have been trained and/or certified competent shall be appointed to operate the forklifts. As a minimum, the operator shall have attended:

- Forklift training provided by the manufacturer or an approved training provider [accredited SAQA unit standard]; and
- Training on safe handling of hazardous material, including their properties and associated hazards and controls, if they are expected to handle hazardous material.

The requirement for refresher training and re-assessment should be established based on forklift operator risk exposure. As a minimum, it shall be conducted every two (2) years. The training and refreshers frequency shall be in the HSEQ Training Matrix. Line Manager and Contractor shall retain documentary evidence of any required certification or training attended. Any additional requirements required by local/country legislation shall be identified and complied with.

4.2 FORKLIFT OPERATIONS

The following forms part of the operating requirements for the day-to-day operations.

- Visual pre-use check;
- Pre-start check;
- After start-up check;
- Proper entering & exiting of a forklift;
- Moving the forklift – control and steer;
- Parking;
- Loading;
- Transporting at inclines;
- Loading or unloading;
- Using attachments – jibs, slings, lifting rings; and
- Handling LPG/battery.

Incidents involving forklifts shall be investigated to understand what can be done to minimize the chance of recurrence, regardless of whether injury, illness, or material damage was caused. Where appropriate, corrective, and preventive actions must be implemented.

Forklift routes should avoid vulnerable plant, equipment, and locations (e.g., columns, pipes, bulk tanks, unprotected edges) wherever feasible. Where this is not feasible, physical collision protection and clear bright coloured markings should be provided. Allow the engine and components to warm up to operating temperature for approximately 5 minutes before operating.

4.2.1 PARKING AREAS

Parking areas shall be identified and designed carefully, away from pedestrian flows the reason being the fork of parked forklift is a tripping hazard. In addition, forklift operators become pedestrians themselves when they get off their trucks and therefore also need to be protected from collision with other forklifts.

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Figure 1: Dedicated forklift parking area

4.2.2 REVERSING

Wherever feasible, reversing should be eliminated or minimized by:

- Using types of forklifts where the operator can always face in the direction of travel.
- Providing sufficient space in the work area to enable forklifts to turn around; and
- Reducing the height of loads carried so the operator can see forward and over the load. This might require carrying one pallet at a time, instead of one stacked on top of another, or reducing the height of individual pallet loads.
- If/when the operator does not have a clear line of sight, the use of an assistant, i.e., flagman must be used to guide the operator at all times. Always ensure good and clear communication.

Note: all forklifts must be fitted with a reverse alarm.

In circumstances where reversing cannot be avoided, the risk may be reduced by instructing operators to:

- Turn around as much as possible;
- Check carefully before starting to reverse;
- Keep looking while moving backwards; and
- Operating the forklifts at reduced speed.

The use of swivel seats, mirrors may also help but this should be carefully assessed.

4.2.3 PROTECTION FOR PEDESTRIANS

Crossing of forklift and pedestrian flows shall be minimized. Where this is unavoidable, designated pedestrian crossing points shall be provided, in locations with good visibility. Crossings shall have suitable floor markings and safety signs. Swing gates (that need to be pulled back to open) shall

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also be provided where the collision risk is high. Separating pedestrians and forklifts is the most important aim of the traffic management. Separate pedestrian walkways, forklift routes and operating zones should be provided where possible. Provide barriers, warning signs, designated walkways or other safeguards to reduce risk of collision between the pedestrian and a forklift. Restrict pedestrians' access to areas where forklifts are operating as far as reasonably practicable.

Create 'no go' zones for forklifts (pedestrian-only areas), e.g. amenities and entrances. Create clearly marked pedestrian crossings. Create 'no go' zones for pedestrians (forklift only areas), e.g. loading and unloading zones. These should be enforced within a three-metre radius of forklifts. Assess the physical environment, e.g. lighting, ventilation, housekeeping and road surfaces. Consider high-visibility or reflective clothing for pedestrians and employees operating forklifts, and high-visibility markings for forklifts. Consider speed limits, signage, and speed-limiting devices. Use a combination of audio (alarms and horns) and visual (flashing lights) warning devices, and make sure these are working at all times the forklift is operating. Flashing lights are imperative in areas with a high level of ambient workplace noise.



Figure 2: Example of pedestrian walkway with clear marking

4.2.4 FLOOR SURFACES

Surfaces used by forklifts should be as level and firm as possible. Forklifts routes should be typically surfaced with concrete or other similar material, unless the forklifts is specifically designed to operate on rough or uneven surfaces. Potholes, loose material, and spilt liquids are particularly hazardous and should be repaired or cleaned up as quickly as possible. Standing rainwater or ice in external areas and cold rooms presents a similar hazard and should be minimized. Road humps are unsuitable for forklifts and should be avoided in areas where they operate, or by-passes provided.

4.2.5 LIGHTING

Forklift routes should be adequately lit to enable good visibility for forklift operators and others who might be in the area. Glare and differences in lighting levels between different areas should be minimized.

4.2.6 INCLINES

Inclines should be avoided as much as possible, and any incline on which forklifts have to operate should be as gentle as possible. Forklifts should not be used on inclines that exceed the maximum

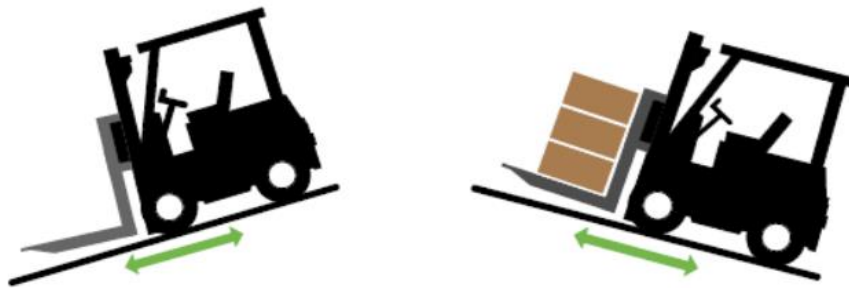
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gradient specified by the manufacturer. Forklift operators should exercise great care when operating on inclines, using low speed, when loaded moving down backwards to prevent tipping. Loads should not be raised or lowered on an incline.

4.2.6.1 Loading or Unloading Using a Forklift on Inclines

You should:

- Keep forks pointed downhill when travelling without a load on a ramp.
- Keep forks pointed uphill when travelling with a load on a ramp.
- Stay clear of edges of docks or ramps. Have edges clearly marked.
- Do NOT tow or push trucks with a forklift.



4.2.7 SIGN AND ACCESS CONTROL

Safety signs shall be used to remind people of hazards, prohibitions, and mandatory requirements. As a minimum:

- Signs should warn of forklift risks in shared areas, both at entrances and within the areas; and
- Pedestrian access into shared areas should be restricted as far as feasible, and signs used to reinforce restrictions.

4.2.8 BLIND CORNERS AND INTERSECTIONS

Sharp corners should be avoided wherever feasible. If they are unavoidable measures such as one-way systems, or overhead dome mirrors should be put in place to reduce risk. In storage areas, visibility should be improved at corner locations by:

- Keeping lower-level pallet spaces clear; and
- Limiting block stacking to a single pallet height.

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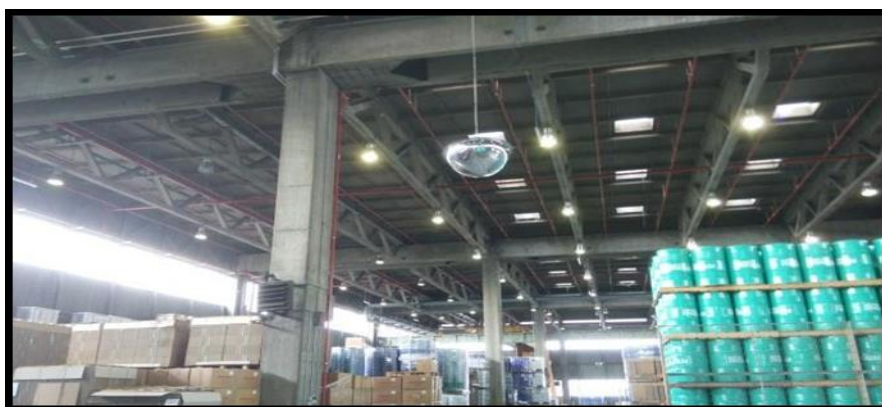


Figure 3: Overhead dome mirrors

4.2.9 PERMANENT AND TEMPORARY BARRIERS

Permanent barriers are the most effective method of safeguarding pedestrians. All permanent barriers should, as a minimum, have good structural integrity. Impact-resistance may also be required in high-risk areas, as per the risk assessment. Barriers with poor structural integrity (e.g., chains and tapes) should only be used for temporary barriers, e.g., to block off areas temporarily during certain activities.

4.2.10 DOORWAYS

Wherever feasible, pedestrians and forklift should be provided with - and use - separate doorways. If this is not feasible other precautions should be provided to minimize the risk of collision, e.g., safety signs, audible alarms, visibility panels, etc. In addition, forklifts should reduce speed and typically use the horn before proceeding through the door.

Pedestrian doorways should not open directly onto traffic routes. When this is unavoidable, barriers should be installed in front of the doorway to stop pedestrians walking into traffic routes.

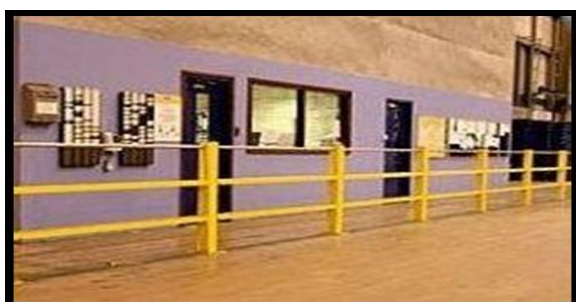


Figure 4: Barriers in front of doorways

There are two main hazards from use of forklifts in explosive atmospheres:

- Ignition of the surrounding atmosphere (e.g., by hot surfaces, electrical equipment, or hot sparks from the exhaust); and

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- Introduction of an explosive atmosphere into the engine. If this happens, the engine can accelerate out of control and/or flashback to ignite the surrounding atmosphere.

For these reasons, forklifts shall not be used in areas where explosive atmospheres could occur, unless they have been certified for such use.

4.2.11 ENTERING OR EXITING THE FORKLIFT

Entering or exiting the forklift are the major causes of personal injury. The following are good practices to adopt:

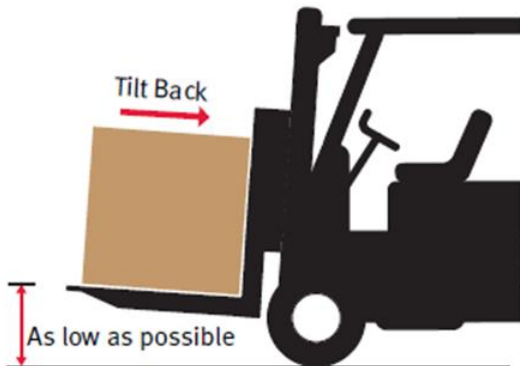
- Always use the (grab rail) hand holds and steps that have been provided by the manufacturer for safe entry and exit;
- Always be seated when starting the machine with seatbelt fastened;
- Keep three points of contact (both hands and one foot or both feet and one hand) at all times and always face the machine for safe entry or exit;
- Do not use the controls as hand holds for entry or exit;
- Do not jump on or off any forklift;
- Never enter or exit a moving forklift;
- Be careful when conditions are wet or slippery. Ensure all steps and platforms are free of mud and scrape boots before entering the forklift; and
- No passengers are allowed.

4.2.12 MAINTAINING CONTROL WHEN TRAVELLING

The following are some guidelines when maintaining control when using a forklift:

- Tilt load backwards;
- Travel with forks as low as possible from the floor and tilted back;
- Match speed to driving, load and workplace conditions;
- Obey posted traffic signs;
- Decrease speed at all corners, sound horn and watch the swing of both the rear of the lift truck and the load;
- Watch for pedestrians;
- Avoid sudden stops;
- Travel in reverse when a load blocks your vision and always look in the direction of travel;
- Check for adequate overhead clearance when entering an area or when raising the forks;
- Watch out for the following dangers on the floor or roadway: oil spots, wet spots, loose objects, holes, rough surfaces, people, and other vehicles; and
- Maintain a safe working limit from all overhead power lines.
- Maintain safe operating speed, adhere to site speed limits and safety requirements.

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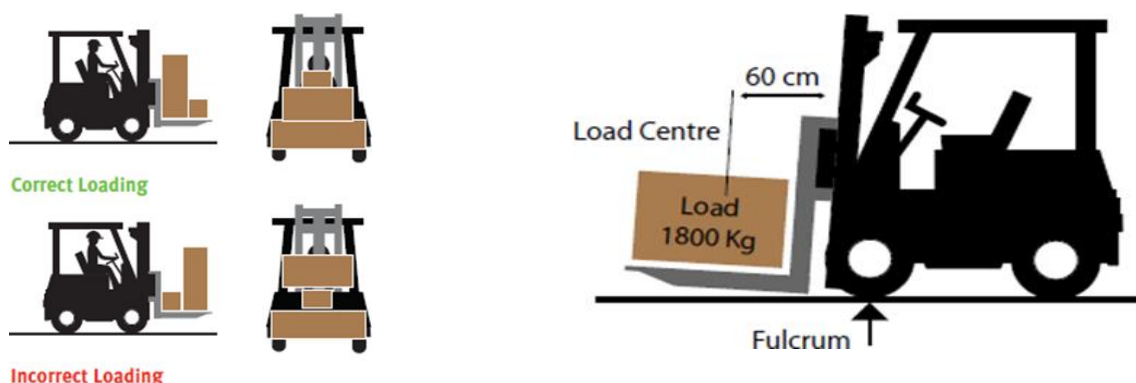


4.2.13 LOADING THE FORKLIFT

The most important safety consideration when operating a forklift is the stability of the forklift when it is loaded.

- If the load on the forklift causes it to become unstable, it may tip forward or tip sideways;
- It is essential that the load on the pallet is stable and well stacked before it is lifted and moved;
- Make sure the pallet is in good order;
- Broken pallets should not be used. The load may need to be restacked if the pallet is broken or appears unsafely loaded; and
- The load should have a centre of gravity that is:
 - Low as possible in the load;
 - To make sure that the load is stable, heavy objects should be placed at the bottom of the load and to the rear of the load;
 - Towards the back of the load; and
- Centered across the load.
- Travel at an appropriate speed, remember it takes time to stop a loaded forklift.

To make sure that the load is stable, heavy objects should be placed at the bottom of the load and to the rear of the load. Use strapping to secure the load if there is a chance of objects falling off. No part of the load should extend beyond the back rest of the carriage unless it cannot possibly slide back towards the driver.



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4.2.14 REFUELING WITH DIESEL

Safety precautions prior and during diesel tank refuelling shall include but are not limited to the following:

- The forklift engine shall be switched off, properly parked and the operator out of the forklift before refuelling.
- Refuelling area shall have adequate ventilation to prevent the accumulation of flammable vapors;
- Care shall be taken to wipe away any spillage properly before restarting the engine;
- Open flames and sources of ignitions in the refuelling area are prohibited; and
- A fire extinguisher of appropriate class and size shall be in close proximity to the refuelling operation and the operator shall be trained on how to use the fire extinguisher.

4.2.15 CHANGING OF CYLINDER UNIT (LPG POWERED FORKLIFT)

Safety precautions prior and during replacing gas cylinders shall include but are not limited to the following:

- Change the gas cylinders of LPG-Powered Forklift outside buildings away from pits, drains, lift shafts and sources of ignition, in an adequately ventilated area and where notices prohibiting smoking are clearly displayed;
- Wear appropriate PPE, such as safety glasses, gloves and protective footwear;
- Use the appropriate lifting technique (apply correct ergonomics) when lifting LPG bottles on or the forklift;
- Extra caution should be exercised so as not to damage the mounting band or bracket during the removal or installation operation and when handling the high-pressure rubber hose to prevent damage to the mouthpiece at the tip and the rubber packing;
- The replacement operation to be performed on flat ground; and
- After completing the replacement operation, the gas cylinder mount shall be locked.

The LPG cylinder replacement area shall be designated as a hazardous area and appropriately labelled. Only authorized person shall repair and/or replace parts of LPG cylinders and the LPG system of the forklifts.

4.2.16 CHARGING OR CHANGING OF BATTERY (ELECTRICALLY POWERED FORKLIFT)

Safety precautions prior and during charging batteries, including those described as maintenance free, shall include but are not limited to the following:

- Battery charging installations shall be performed at a designated, well-ventilated area where smoking, naked flames or other ignition sources are prohibited;
- Electrical apparatus (and any other potential sources of ignition) shall be kept a safe distance from the battery, but not where any electrolyte could spill onto it;
- Tools and other metal objects shall be kept away from the top of the battery to prevent an arc or explosion due to short circuited terminals;
- Appropriate PPE shall be worn as per risk assessment;
- Battery charging facilities shall have the following provisions:

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- Flushing and neutralizing spilled electrolyte;
- Protecting charging apparatus from damage by any moving vehicles/objects; and
- Adequate ventilation for dispersal of fumes from gassing batteries.

Forklift drivers should be instructed and trained to enable them to carry out general low-level battery care and maintenance according to the manufacturer's instructions. However, a battery shall never be jump-started unless by an authorized person. Where batteries have to be changed, the person responsible for changing the batteries shall have suitable training and instruction on how to change them safely.

4.3 IMPLEMENTATION

All sites where forklifts are used shall assess their compliance with the minimum requirements or guidance in this document. Where non-compliances to the minimum requirements are identified, action plans must be developed to close the relevant gaps. Sites should endeavour to follow the guidance in this document unless it is not relevant to their situation, or they have alternative local arrangements that deliver the same level of safety and health. When local/country legislation requires or recommends stricter standards, these will need to be applied.

4.3 PLANNING AND RISK ASSESSMENT

Risk assessments shall be conducted for all forklift operations unless a standard procedure for the job with the necessary precautions and mitigation incorporated has already been established and workers have been briefed and trained.

The following shall be considered for the risk assessment:

- Identify and assess the hazards e.g., environmental conditions, possibility of emergencies, the hazards from the forklift operations on workers, equipment, or the environment.
- The appropriate means to perform the forklift operation; and
- The steps to verify that the hazards are adequately mitigated.

Typical hazards and risks to be considered include but are not limited to:

- Weight and size of loads/cargo;
- Nature of cargo e.g. chemicals with fragile packaging;
- Shape of loads/cargo;
- Obstacles, including overhead structures in the travel path;
- Ground surface condition i.e. near steep edge, steep slope, undulating surface, soft ground, uneven or slippery flooring;
- Intoxication by exhaust fumes;
- System to control the use of forklifts;
- Operating condition of the forklift;
- Environmental/weather conditions;
- Manoeuvring space;

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- Driving with forks or load elevated;
- Attaching loads to the forks, suspending loads from forks, or using attachments;
- Excessive speed, particularly when cornering;
- Making contact with overhead structures;
- Operating the forklift beyond its Safe Working Load (SWL);
- Forklift operators getting parts of their body caught between forklift and other objects in the workplace;
- Health hazards and risks i.e. Fatigue, neck 'craning', neck or back disorders, muscular-skeletal disorders; and
- Fire and explosion associated with forklift electrical systems, battery charging, and fuel.

The forklift operator shall be assessed and certified fit for the prescribed validity by an accepted occupational health practitioner. Any additional medical assessment or certification requirements required by local country legislation shall be identified and complied with.

4.4 PROCUREMENT, SELECTION AND KEY FEATURES

4.4.1 PROCUREMENT, PURCHASING AND LEASING PROCEDURE

All facilities shall adhere to the purchasing or leasing procedure prior to obtaining a forklift. All forklifts, including those which are leased, shall be inspected, and tested to confirm their functionality prior to each use. The forklift shall be maintained and thoroughly tested on a regular basis according to approved requirements and frequency, and in line with manufacturer's recommendations.

4.4.2 SELECTION OF FORKLIFT

Generally, forklifts are categorized into different load capacities. Among each load capacity, there are different applications of forklift by varying the type of mast, attachment and options and type of motive power. A brief but concise introduction to the characteristics of each type and classes of forklift can be referred to forklift's type, classes, and characteristics.

4.4.3 KEY FEATURES OF FORKLIFTS

The following are key features established by Engen that shall be included as a mandatory item when procuring or leasing forklifts. Depending on the particular application, other optional features may be selected as appropriate.

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Design Feature	Mandatory	Optional	Comments
Seatbelt	x		Equivalent restraining device (for ride-on counterbalanced forklifts).
Speed limiter (simple)		x	Limits maximum speed at all times.
Manufacturer Data Plate (MDP)	x		Information on safe working load and safe operating limits which varies with load height and position, and any attachments.
Seatbelt control system		x	Prevents forklift from starting if operator is not restrained by seatbelt.
Horn	x		Provide sound to alert surrounding personnel.
Side Mirrors	x		These can aid rear visibility but can also discourage operators from turning and looking back.
Turning signal light		x	Indicating direction of forklift movements when in motion.
Flashing beacon light	x		Can be active continuously or just when reversing.
Reversing alarm	x		Consideration should be given to number of forklifts operating and frequency of reversing.
Overhead protection	x		If forklift can lift load above head height.
Fully enclosed cabs	x		If to be used in external and harsh environments.
Load back rest extension		x	Prevents load falling back from forks onto operator.
Collision detection system		x	Detects and records collisions. Can also deactivate truck requiring it to be reset. Can be a useful tool for improving operator behaviour and identifying collisions for investigation.
Intelligent speed limiter		x	Limits maximum speed under different circumstances, e.g., load weight, lift height, turning radius.
Raised fork control system		x	Limits wheel rotations while forks are elevated.
Safeguard at rear access point		x	For stand-up operated forklifts. Prevents feet being moved out of forklift during operation.
Fork levelling control		x	Enables perfect horizontal fork position with single control.
Fork side shift		x	Enables fork adjustment according to load size.
Operator position control system		x	Prevents forklift from operating if operator is not in correct operating position, (reach truck).
Mast-tilt control system		x	Senses load weight and mast height, and limits forward tilt angle and/or backward tilting speed.
Load weight indicator		x	Automatically measures the load weight and indicates this to the operator.
Grab rails	x		Enables operator to maintain 3-point contact.

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Access steps	x		With anti-slip surfaces.
Low step height		x	Makes getting on and off easier.
Low vibration operating position		x	In seat, armrest, and floor plates.
Ergonomic seats	x		Seats with dampers to reduce vibration.
Adjustable steering wheel		x	Usually, height and angle are adjustable.
Adequate floor space in forklift cabin		x	Allows operators to achieve comfortable leg position and to move them around.
Flexible side fender		x	For countries having winter season.
Fire Extinguisher	x		Fire Extinguisher based on forklift type.

4.5 WORKPLACE CONTROL

Sites shall adequately control risks associated with forklifts to prevent injuries, illnesses, or property damage. Risks may be controlled using different approaches but shall be selected in accordance with the control measure hierarchy, i.e.

- Wherever feasible, the potential for harm shall be eliminated or reduced. In the context of forklift, this may involve changing the way in which material is moved around the facility, changing the type of forklift used, and/or separating forklift from pedestrians.
- Residual risks shall be controlled through engineering, procedural and behavioural measures. Priority must be given to the measures which are most reliable. Typical control measures include:
 - Engineering measures – Forklift safety features, physical barriers, etc.
 - Procedural measures – training, authorization, high visibility clothing; and
 - Behavioural measures – supervision, behavioural observation, etc.

Note: In the specific case of "shared areas" (i.e., areas where forklift and pedestrians could both be present at the same time), all aspects should be taken in consideration when carrying out the risk assessments and in developing action plans to minimize the identified risks for the forklift operations. The forklift shall not be used for ferrying or lifting of personnel at any time.

4.5.1 Forklift Routes

Forklift operators shall maintain safe distance between active forklifts (except when forklifts need to cross in opposite directions). Forklift routes;

- Shall have sufficient width and overhead clearance to enable forklift to use them and, if necessary, pass each other, safely.
- Shall have adequate visibility for operators and pedestrians.
- Shall minimize reversing operations that require operators to look over their shoulders.
- Shall be appropriately constructed for the intended use.
- Shall be provided with appropriate markings for forklift route or marking of other use (pedestrian walkway, work area, parking area, etc)

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- Shall be maintained in good physical condition.
- Shall be sufficiently well-lit to enable forklifts and pedestrians to move around safely.
- Shall be maintain from obstructions, debris, leaks, and spills.
- Shall be subjected to routine inspections and review.
- Shall have a separation between pedestrian routes and workstations. It is highly recommended to install physical barriers.
- Shall establish temporary control to restrict forklift or pedestrian access during particular activities (i.e., shutdown, turnaround, loading operations), where it is not feasible to create permanent forklift exclusion zones.
- Recommended to have one-way traffic systems for forklifts to reduce risks of collisions between forklifts.

4.6 INSPECTION AND MAINTENANCE

Forklifts shall be maintained in a good working order. Facility/Site shall use a combination of daily pre-use inspections by forklift operators and planned and breakdown maintenance by competent technicians. If faults are identified which affect the safety of operation, the forklift shall not be used until the fault is corrected. All forklifts, including those which are leased shall be inspected and tested to confirm their functionality prior to operation. A forklift pre-acceptance inspection shall be conducted when obtaining the forklift. Check all gauges for correct operation.

Forklifts shall be maintained and thoroughly tested on a regular basis according to requirements and frequency, and in line with manufacturer's recommendations.

Records of the annual or regularly scheduled maintenance and testing, as well as repairs, shall be kept.

or other suitable means) as determined through risk assessment. In case where the above is not possible or not practical based on risk assessment, Project/Site management shall at minimum inform staff and contractors of the existence and location of the confined space by posting danger signs. In the case of entry into an inert space, the restricted area around the open manways/entry points shall be established and barricaded. The warning signs shall explicitly indicate the presence of the inert atmosphere.

4.7 COMPLIANCE AND ASSURANCE

Site management shall monitor compliance through assurance audit (First line assurance) and inspection of Forklift Operations Safety on a regular basis and take prompt corrective action when deviations are identified. In addition, the site's management of forklift operations risks must be regularly audited to:

- Assess compliance with legal (Driven Machinery Regulation – South Africa) requirements;
- Review the effectiveness of the current arrangements; and
- Identify opportunities to further improve management of the identified risks.

Any corrective action to address non-compliance or shortfalls should be assigned to an action party and tracked to closure using MyHSSE.

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5 ROLES AND RESPONSIBILITIES

The following roles and responsibilities apply to activities related to Forklift Operations.

5.1 FACILITY /AREA MANAGER

Responsible to establish:

- The operation, workplace controls, inspection, and maintenance programme for forklifts.
- The competency programme for forklift operators, including those from the contractor;
- Establish the contract in which the scope for leasing and operation of the forklift will be specified; and
- An effective maintenance programme for the forklifts.

5.2 CONTRACT OWNER

The contractor management is responsible to:

- Ensure that an effective maintenance programme for the forklift is available and implemented; and
- Ensure that the forklift operator complies with the competency requirements.
- Ensure that all the Forklift operators comply to Engen safety requirement.

5.3 SUPERVISOR

The supervisor for the forklifts operations is responsible to:

- Carry out risk assessments for forklift operations;
- Ensure only authorized personnel is allowed to drive a forklift;
- Plan all forklift operations (forklift, forklift operator, forklift workplace control);
- Ensure that forklift inspection and maintenance is carried out according to the approved programme;
- Ensure that the forklift operator fulfils the competency and safety operations requirements; and
- Ensure that risk assessments are established for both routine and non-routine operation.

5.4 FORKLIFT OPERATORS

The forklift operator is responsible for the safe operation of the forklift. He/She will:

- Operate the forklift as per the training received and local procedures;
- Carry out a forklift inspection before each operation;
- Report any defect or abnormal condition of the forklift;
- Wear the defined Personal Protective Equipments;
- Look out for pedestrians; and

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- Report all collisions (with people, plant, or equipment) and near misses.

5.5 PEDESTRIANS

Pedestrians shall minimize the time they spend in shared areas but when their work requires for them to enter, they shall:

- Wear the defined PPE;
- Look out for forklifts;
- Use marked walkways and pedestrian crossing points;
- Report all collisions (with people, plant, or equipment) and near misses; and
- Comply with site specific HSE requirements.

5.6 CONTRACTOR MANAGEMENT

The contractor management is responsible to ensure that:

- All employees who perform Forklift Operations are trained and competent.
- All employees who perform Forklift Operations medically fit for the work.
- Ensure that all the Forklift operators comply to Engen safety requirement; and
- Forklifts used are adequately maintained and inspected, certified and safe for use.

The following RACI Chart describes the list of the actions and associated responsibilities with regard to Forklift Operations responsibilities for the main parties.

Action	Facility/Site Manager	Supervisor	Forklift Operators	Pedestrians	Contractor Management
Ensure that the Forklift Operations procedure is proper implemented.	A	R	C	I	I
Ensure that all personnel, including contractors, who operate forklifts are trained and are competent.	A	C	C	I	R
Ensure that an effective maintenance programme for the forklift is available and implemented.	R	I	C	I	R
Operate the forklift as per the training received and local procedures.	C	R	A	I	R

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Use marked walkways and pedestrian crossing points.	I	R	C	A	C
Ensure that forklift inspections and maintenance is carried out according to the approved programme.	I	R	A	C	R
Ensure that an assurance audit is conducted.	A	R	I	C	I

6 DEFINITIONS

Terms	Definitions
Forklift	A forklift is a powered industrial truck used to lift and move materials over short distances
HSEQ	Health and Safety, Environment and Quality
LPG	Liquefied Petroleum Gas
Pedestrian	A person walking rather than travelling in a vehicle
PPE	Personal Protective Equipment
Shared areas	Areas shared between pedestrians and forklift operations

7 LINK WITH OTHER DOCUMENTS AND RECORDS

The following documentation and records shall be retained according to the Division or facility document management requirements:

- Medical fitness of forklift operators;
- Proof of training and competency;
- Daily pre-checks inspections; and
- Maintenance records.

Reference	Document Name
1. OHS Acts 85 of 1993	Driven Machinery Regulations
	Forklift Health & Safety Best Practice guideline", 2010
2. PTS 18.52.34	Forklift Operation

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8 ATTACHMENTS AND APPENDIX

APPENDIX 1: EXAMPLE OF SIGNAGE AND ACCESS CONTROL



Example safety
sign (for high
visibility clothing)



Example prohibition
sign (for no
pedestrian access)



Example hazard
sign (for forklift
traffic)

APPENDIX 2: PRE-OPERATION CHECKS

Visual pre-use checks:

1. General condition and cleanliness;
2. That the floor is clear of objects that could cause an accident;
3. That other workers or visitors in the area will be safe;
4. Doorways are large enough to fit through;
5. Location of dangerous goods;
6. Overhead to make sure there are no obstructions;
7. Nearby objects to avoid as you drive away;
8. Engine oil level, fuel level, radiator water level (LPG, gas and diesel forklifts);
9. Battery is charged; check cables for exposed wires; battery plug connections not loose, worn or dirty, vent caps not clogged;
10. Electrolyte levels in cells; hold-downs or brackets to keep battery securely in place;
11. Bolts, nuts, guards, chains, or hydraulic hose reels are not damaged, missing or loose;
12. Wheels and tyres for wear, damage and air pressure, if pneumatic tyres;
13. Forks are not bent; no cracks present; positioning latches are in good working condition; carriage teeth not broken, chipped or worn;
14. Fluid leaks - no damp spots or drips;
15. Hoses are held securely; not loose, crimped, worn or rubbing;
16. Horn is working and loud enough to be heard in working environment; other warning devices operational;
17. Lights - head lights and warning lights operational;
18. Hose connection is intact to prevent LPG leak;
19. Odometer is in good working condition; and
20. Reverse alarm in sound condition and audible.

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The pre-start checks:

1. Foot Brake – that pedal holds and unit stops smoothly;
2. Parking Brake –that brake holds against slight acceleration;
3. Dead man seat brake (if available) which brake holds when operator rises from seat;
4. Clutch and gearshift – shifts smoothly with no jumping or jerking;
5. Dash control panel – that all lights and gauges are operational;
6. Steering – moves smoothly;
7. Lift mechanism;
8. Tilt mechanism – moves smoothly and holds;
9. Cylinders and hoses – not leaking after above checks; and
10. Listen for any unusual sounds or noises.

APPENDIX 3: CAUSES OF FORKLIFT IMBALANCE

The following situations can cause imbalance of forklifts, and consequently to tip over:

1. Driving too fast;
2. Turning sharply;
3. Turning on sloping ground;
4. Travelling with load raised;
5. Working on uneven or sloping ground;
6. Carrying an unevenly balanced load;
7. Travelling across an incline;
8. Braking too hard when turning;
9. Flat or under inflated tyres; and
10. Load is not adequately secured.

A forklift may tip forward if:

1. It is overloaded;
2. The operator brakes too severely;
3. The mast tilt is used incorrectly; and
4. The load is not positioned against the heel of the fork arms.

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APPENDIX 4: DAILY FORKLIFT INSPECTION FORM

	Daily Forklift Inspection Form							
	Forklift type: Diesel / Battery / LPG							
Item	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Comments / Rectification required
Operating controls								
Emergency stop & brakes								
Operation levers & controls								
Foot controls (if applicable)								
Safety signs & load charts								
Boom & forks								
Hydraulic leaks								
Extension cylinders & chains								
Pivot pins								
Electrical lines								
Vent mast sliding & rolling parts								
Base (Visual)								
Broken, cracked or loose parts								
Lights, mirrors & windows clean								
Seat belt & its mounts								
Tires & outriggers								
Back-up alarm, horn & manual								
Reflectors								
Engine compartment (Visual)								
Oil level								
Fuel Level								
Belt, hose & motor condition								
Battery & electrical								
Other observations:								
Inspected by (operator):					Date:			
Verified by (supervisor):					Date:			

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Important

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APPENDIX 5: ASSURANCE CHECKLIST FOR FORKLIFT

Date					
Affiliate Name and Location					
Team Lead					
Team Members					
No	Checklist	Compliance			REMARK
		YES	NO	N/A	
1. General Requirements					
1.1	Is the daily forklift checklist available on site?				
1.2	Are the completed daily checklists records available on site?				
1.3	Are maintenance records of the forklift available on site?				
1.4	Are the training records of the forklift operator available on site and valid?				
1.5	Are there any leaks or seepage from oil, gasoline, water or hydraulic fluid lines noted from the forklift?				
1.6	Is the forklift equipped with an extinguisher within service and sealed?				
1.7	Is the forklift equipped with seatbelt and functional?				
1.8	Is the reversing beeper still operating?				
1.9	Is forklift operator aware of the speed limit and PPE to be worn?				
1.10	Are battery chargers for the forklift positioned in a well-ventilated demarcated area and protected from the normal forklift traffic and operation?				
1.11	Is the forklift parked on a designated parking area?				
Rec. No	Description of Recommendation				
1.					
2.					
3.					
4.					
5.					
All Items have been reviewed / checked by					
Team Members Designation		Name (Print Name)		Signature	Date
Team Leader					
Site Manager					
Site Supervisor					
HSEQ Personnel					

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APPENDIX 6 – FORKLIFT SAFE WORKING PRACTICES – DO AND DON'T'S

1. Safety belt shall be worn at all time while operating forklift.
2. Know the recommended load limit of the forklift and never exceed it.
3. Know how to assess the weight of the load to be lifted.
4. Do a visual and operational check of the forklift at the start of the shift.
5. Check for adequate overhead clearance before raising the load.
6. Know the blind spots of the lift truck with and without a load.
7. Keep pedestrians away from a forklift in operation.
8. Stop when anyone crosses the route being travelled. Lower the load to the floor, and wait until clear.
9. Wear appropriate gloves when manually moving or shifting loads.
10. Keep hands, arms, head, feet and legs inside the confines of a moving forklift.
11. Stay in the truck in case of overturn. The most common cause of death and injury in forklift accidents is when drivers attempt to jump from an overturning forklift. Often the driver is caught and crushed by the protective cage of the forklift or the forklift mast.
12. Wear Safety Helmet when driving and when working in a safety helmet required area.
13. Passengers shall never be carried.
14. The dynamic forces involved when a forklift travels at speed with a load, means that small changes in direction or level of the forklift can cause the centre of balance to move and unbalance the forklift. See CAUSES of tipping– Causes of Forklift Imbalance.
15. The higher the speed or the load, the longer the distance required for the forklift to make a complete stop. E.g. a forklift travelling at 10 km/hr. will require at least 9 metres to stop in an emergency situation.
16. Operator shall not be using mobile phones or other talking devices while operating a forklift.
17. Do not modify forklift unless certified by OEM or equivalent bodies.

9 DOCUMENT HISTORY

Revision History

Revision No.	Description of Amendments/Changes
1	Writing procedure on OEMS Template

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Approver:	[Approver]	Date:	[LastReviewDateLabel]