Cladding Technology Shanxi Co., Ltd

HSE Forklift Safety Operation Instruction

Document No.: CLADDING-HSE-PD-26

1 Purpose

To standardize the operation of the Company's forklifts (including counterbalanced forklifts, reach trucks, side-loaders, electric forklifts, and internal combustion forklifts), clarify HSE control requirements for pre-operation, in-operation, and post-operation phases, and prevent accidents such as forklift collisions, tipping, load falling, personnel crushing, electric shock/fire (during charging/refueling). This instruction ensures forklift operations comply with national regulations (Safety Technical Specification for Site (Factory) Special Motor Vehicles - GB/T 3811, Safety Code for Powered Industrial Trucks - GB 10827), PIPING SYSTEM PTE LTD HSE requirements, and the Company's needs for warehouse material handling and equipment acceptance & transportation. It aims to protect employees' life and health, equipment and property safety, and ensure environmental compliance in operation areas.

2 Scope of Application

This instruction applies to forklift operations in all departments of the Company (Warehousing Center, Procurement Department, Equipment Management Department, Project Departments, User Departments) and all operation scenarios, including:

2.1 Equipment Types

• Counterbalanced Forklifts (Internal Combustion/Electric): Used for loading, unloading, and stacking of heavy materials (single weight ≤ 5t) in outdoor yards and Warehousing Center, with stacking height ≤ 3m;

• Reach Trucks: Used for handling light materials (single weight ≤ 2t) in narrow indoor warehouse aisles (aisle width ≤ 2.5m);

• Side-Loaders: Used for lateral loading, unloading, and transportation of long equipment (e.g., steel pipes, valves) with length ≤ 6m;

• Warehouse Forklifts: Used for short-distance turnover of light materials (single weight ≤ 1t) in indoor areas (e.g., material storage and retrieval between shelves).

2.2 Operation Scenarios

• Warehouse Material Management: Loading, unloading, stacking, and shifting of materials (e.g., steel, mechanical components) in indoor/outdoor warehouses;

• Equipment Acceptance & Transportation: Unloading of procured equipment (e.g., pumps, compressors) after arrival at ports, and short-distance transportation in acceptance sites;

• Yard Turnover: Arrangement and stacking of materials (e.g., containers, palletized materials) in outdoor yards;

• Temporary Operations at Project Departments: Short-distance transportation of construction materials (e.g., scaffolding, tools) and delivery of emergency materials at construction sites;

• Charging/Refueling: Charging of electric forklifts and fuel refueling of internal combustion forklifts (including daily replenishment and emergency refueling).

2.3 Applicable Personnel

• Forklift Operators (holding valid Special Equipment Operator Certificate);

• Operation Guards (warehouse safety officers, Project Department safety officers);

• Auxiliary Operators (riggers, material managers);

• Equipment Maintenance Personnel (specialists from Equipment Management Department);

• Operation Leaders (team leaders, Project Department supervisors);

• User Department Personnel (proposing forklift usage requirements, managing on-site operation environment).

3 Terms and Definitions

3.1 Rated Lifting Capacity

The maximum allowable load (including the weight of forks and attachments) specified in the forklift design, marked on the forklift nameplate and in a prominent position in the operator's cab. Overloading beyond the rated capacity is strictly prohibited.

3.2 Load Center Distance

The horizontal distance from the center of gravity of the load on the forklift forks to the front wall of the vertical section of the forks, which directly affects the load-bearing stability of the forklift (e.g., the standard load center distance of a 3t forklift is 500mm).

3.3 Overhead Guard

A metal frame structure installed above the forklift operator's seat to protect the operator from falling objects (e.g., collapsed materials, falling shelf components). It must be intact and free from deformation.

3.4 Braking Distance

The distance a forklift travels from when the operator depresses the brake pedal to when it comes to a complete stop at rated speed (≤ 3m when unloaded, ≤ 4m when loaded). It is a key indicator for judging the effectiveness of the braking system.

3.5 Safety Aisles

Dedicated aisles reserved in forklift operation areas (width ≥ forklift width + 0.5m) for forklift travel, meeting, and turning. Piling materials or occupying these aisles is prohibited.

4 Responsibility Assignment

4.1 Forklift Operators

• Work with a valid Special Equipment Operator Certificate (category: Site (Factory) Special Motor Vehicle Operation) and participate in re-examination every 4 years during the certificate validity period;

• Strictly implement this instruction, responsible for pre-operation inspections (daily/pre-startup), startup operation, in-operation risk control, shutdown completion, and safe operation during charging/refueling;

• Closely monitor the forklift's operating status (e.g., abnormal noise, brake failure, oil/electric leakage) during operation and immediately stop the forklift if abnormalities are found;

• Correctly wear personal protective equipment (PPE), participate in forklift emergency drills, and master emergency disposal procedures for accidents such as tipping, load falling, and charging fires;

• Regularly participate in HSE training (once a quarter) and occupational health examinations (once a year) to ensure no diseases that impede safe operation (e.g., epilepsy, color blindness, hypertension). Fatigue driving is strictly prohibited.

4.2 Operation Guards

• Inspect safety conditions in the operation area (e.g., aisle smoothness, ground load-bearing capacity, lighting, fire prevention measures in charging/refueling areas) before operation and set up warning signs;

• Monitor the forklift's travel route during operation, prevent unrelated personnel from entering the operation area, and remind the operator to avoid obstacles (e.g., temporarily piled materials, pedestrians);

• Assist the operator in inspecting key forklift components (e.g., forks, tires, charging ports) and confirm the integrity of lifting tools (e.g., pallets, fork sleeves);

• Participate in on-site cleaning after operation, confirm compliant forklift parking and no hazards in charging/refueling areas, and fill out the Forklift Operation Guard Record.

4.3 Equipment Management Department

• Responsible for regular maintenance of forklifts (daily inspection, weekly inspection, monthly maintenance, annual inspection) to meet the requirements of GB/T 3811 and GB 10827;

• Establish forklift safety technical files (including factory qualification certificates, acceptance reports, maintenance records, inspection certificates, fault repair records) and retain the files until the forklift is scrapped;

• Organize training, assessment, and certificate re-examination for forklift operators to ensure 100% training coverage and 100% assessment pass rate. Training content includes safe operation of charging/refueling;

• Formulate forklift fault repair procedures, replace damaged components (e.g., brake pads, tires, hydraulic hoses, charging cables), and ensure the forklift passes no-load/load tests before being put into use after repair;

• Procure forklifts and accessories that meet HSE requirements (e.g., forklifts with overhead guards, explosion-proof forklifts for hazardous chemical areas, dedicated charging equipment and fuel storage facilities);

• Demarcate dedicated forklift charging/refueling areas, equip with fire-fighting equipment (e.g., dry powder fire extinguishers, fire blankets) and leakage disposal tools (oil-absorbing cotton, leak-proof pallets).

4.4 Quality, Health, Safety and Environmental Department (QHSE Department)

• Supervise the implementation of this instruction and investigate non-compliant operations (e.g., overloading, carrying passengers, operating under the influence of alcohol, non-compliant charging/refueling);

• Participate in the annual safety inspection of forklifts and verify the compliance of inspection reports (issued by qualified third-party institutions);

• Responsible for permit approval for high-risk forklift operations (e.g., handling hazardous chemicals, night operations, heavy-load operations on ramps) and issue the Forklift Operation Permit;

• Investigate accidents related to forklift operations (including charging fires and fuel leakage), analyze causes, formulate preventive measures, and update this instruction.

4.5 Operation Leaders

• Confirm operation tasks (material name, weight, transportation route, charging/refueling needs) before operation and prohibit blind command;

• Organize safety technical disclosure (with full participation and signature confirmation), clarify risk points (e.g., meeting in narrow aisles, heavy-load uphill, fire prevention in charging areas) and control measures;

• Equip with required auxiliary tools (e.g., anti-slip pallets, fork anti-slip pads, charging protective gloves) and confirm that the load weight ≤ the forklift's rated lifting capacity;

• Prohibit arranging forklift operations in severe weather (e.g., heavy rain, heavy snow, visibility < 50m) or when there are major risks in the operation area (e.g., ground collapse, poor ventilation in charging areas).

4.6 User Departments (Newly Added)

• Propose forklift usage requirements and clarify the operation time, material characteristics (e.g., whether they are hazardous chemicals), and on-site environmental requirements;

• Responsible for on-site operation environment management: clear obstacles in aisles, level the operation ground, ensure sufficient lighting, and demarcate temporary warning zones for charging/refueling;

• Cooperate with forklift safety inspections and promptly report hazards in the operation area (e.g., ground oil stains, deformed shelves);

• Assist in on-site cleaning after operation, recover auxiliary tools (e.g., straps, pallets), and confirm no residual safety risks.

5 Operation Process (HSE Full-Link Control)

5.1 Pre-operation Preparation (HSE Pre-control)

5.1.1 Personnel Preparation (Led by Operators)

1. Qualification and Status Confirmation:

◦ Operators present the Special Equipment Operator Certificate, confirm the certificate is within the validity period, and pass the Company's internal training and assessment (including charging/refueling operation);

◦ Inspect personal status: No fatigue, alcohol consumption (blood alcohol content ≤ 0mg/100ml), or medication effects that affect operation; maintain good mental state. Continuous operation for more than 4 hours is strictly prohibited (to prevent fatigue);

◦ Wear PPE: Safety helmets (with chin straps), anti-smash safety shoes (with steel toes), reflective vests (for outdoor/night operations); operators of reach trucks must wear goggles (to prevent debris); wear insulating gloves during charging.

2. Safety Disclosure:

◦ Operation leaders organize disclosure, covering content such as material weight (check labels, estimation is prohibited), transportation route (avoid crowded areas/high-voltage lines), risk points (ramp angle ≤ 15°, no open flames in charging areas), and emergency contact methods;

◦ All personnel sign after disclosure, and the Forklift Operation Safety Technical Disclosure Record is retained.

5.1.2 Equipment Inspection (Operators + Maintenance Personnel, Supplementary Weekly Inspection)

Implement inspections at three levels: "Daily Inspection (before each operation)", "Weekly Inspection (last working day of each week)", and "Monthly Inspection (last working day of each month)". Record inspection results in the Daily Forklift Inspection Record (Appendix A):

1. Daily Inspection Content:

◦ Appearance: No deformation of the forklift body, intact overhead guard, no cracks/wear on forks (wear ≤ 10% of thickness), secure fork positioning pins, intact load backrest;

◦ Braking System: Test service brakes (brake after driving ≥ 5m when unloaded, no deviation) and parking brakes (no rolling when parked on ramps ≥ 5°);

◦ Steering System: Flexible steering wheel operation, no jamming/deviation, normal turn signals;

◦ Hydraulic System: No leakage of hydraulic hoses, smooth lifting/lowering, fork settlement ≤ 10mm within 10 minutes when lifted to maximum height;

◦ Electrical System: Normal headlights, turn signals, horn, reverse warning lights (including buzzers); no damage/electric leakage at electric forklift charging ports; normal ignition system for internal combustion forklifts;

◦ Tires: Normal air pressure for pneumatic tires (marked on the sidewall), no damage/bulges; no cracks on solid tires.

2. Weekly Inspection Content (Newly Added, Led by Equipment Management Department):

◦ Electric Forklifts: Battery power (display of full charge status), no looseness/corrosion of battery connections, no damage to charging cables;

◦ Internal Combustion Forklifts: Fuel level (within the range of the oil level gauge), cooling water level, oil level, no leakage of fuel lines;

◦ Transmission System: No abnormal noise from the gearbox, smooth clutch shifting, no slipping of drive wheel transmission;

◦ Chains: Proper tension of mast lifting chains (sag ≤ 20mm), no rust/broken links, apply grease.

3. Monthly Inspection Content:

◦ Metal Structure: No cracks in frame welds, no looseness of fork beam connection bolts (torque meets requirements);

◦ Safety Devices: Clear reverse image (if equipped), effective speed limiting device (≤ 5km/h indoors, ≤ 10km/h outdoors), qualified overhead guard strength;

◦ Hydraulic Oil/Fuel: Hydraulic oil level within the range of the gauge, no turbidity of oil quality; clean fuel filter for internal combustion forklifts;

◦ Charging/Refueling Facilities: Good grounding of charging sockets, sealed fuel storage barrels, fire-fighting equipment within validity period.

5.1.3 Environment and Load Confirmation (Led by Operation Guards + User Departments)

1. Operation Environment Inspection:

◦ Site: Flat indoor operation ground (slope ≤ 3°), no oil stains/ponding; compacted outdoor operation ground (load-bearing capacity ≥ forklift ground pressure); well-ventilated charging/refueling areas (air change rate ≥ 6 times/hour), no open flames/flammable materials;

◦ Aisles: Safety aisle width ≥ forklift width + 0.5m (e.g., 1.2m wide for 3t forklifts, aisle ≥ 1.7m); no obstacles (materials/toolboxes) in aisles; reserved space ≥ 1.5 times the forklift length at turns;

◦ Lighting: For night or dim indoor operations, lighting brightness ≥ 50lux (measured by illuminance meter); add temporary lighting in stacking/charging areas;

◦ Weather: For outdoor operations, wind speed ≤ 8.0m/s (Level 5 wind), no heavy rain (rainfall < 10mm/h), visibility ≥ 50m; otherwise, operation is prohibited.

2. Load and Lifting Tool Confirmation:

◦ Load: Confirm load weight ≤ forklift's rated lifting capacity; load center of gravity matches the forklift's load center distance (adjust eccentric load to the center); hazardous chemicals must be well-sealed;

◦ Lifting Tools: Use standard pallets (size matching forks), no damage/deformation of pallets; use nylon straps (wire is prohibited) to secure materials; place soft materials under sharp materials;

◦ Charging/Refueling Preparation: Confirm the charging area is free for electric forklifts; confirm sufficient fuel (or ready refueling equipment) for internal combustion forklifts; equip with leakage disposal tools (oil-absorbing cotton).

5.2 In-operation Operation (HSE Process Control)

5.2.1 Startup and Travel (Supplementary Startup Inspection, Charging/Refueling)

1. Startup Inspection (Newly Added):

◦ Enter the driver's seat, adjust the seat/rearview mirror, and fasten the seatbelt (must be fastened when the forklift is moving);

◦ Electric Forklifts: Insert the key to start, check the battery power on the instrument panel (≥ 80% for operation), test fork lifting/lowering;

◦ Internal Combustion Forklifts: Start the engine, idle for 3 minutes, check normal oil pressure and water temperature, no abnormal noise/leakage;

◦ Sound the horn three times as a warning, confirm no personnel/obstacles nearby, and slowly drive out of the parking area.

2. Travel Specifications:

◦ Speed: ≤ 10km/h outdoors in the factory area, ≤ 5km/h indoors in workshops/warehouses, ≤ 3km/h at turns/ramps/crowded areas, ≤ 2km/h in charging/refueling areas;

◦ Route: Travel along designated aisles, avoid right-angle turns (reduce speed to 1km/h and sound the horn when turning is necessary); no reverse travel; "slow down, look around, and pass" at intersections;

◦ Meeting: Maintain a safety distance of ≥ 1m when meeting other forklifts/vehicles; unloaded forklifts yield to loaded forklifts, downhill forklifts yield to uphill forklifts, and branch road forklifts yield to main road forklifts;

◦ Ramps: Drive with forks forward (load facing forward) when going uphill; drive with forks backward (load facing backward) when going downhill; no turning/parking on ramps; travel speed ≤ 2km/h on ramps;

◦ Avoidance: Sound the horn 3m in advance when encountering pedestrians, reduce speed to below 1km/h, and pass after confirming pedestrians have avoided; no passing directly in front of/behind pedestrians; carrying passengers (other than the operator) is strictly prohibited.

3. Safe Operation for Charging/Refueling (Newly Added):

◦ Electric Forklift Charging:

ⅰ. Drive to the designated charging area, turn off the forklift power, and remove the key;

ⅱ. Inspect no damage/oil stains on the charging port, wear insulating gloves, and connect the charging plug (connect the forklift end first, then the power supply end);

ⅲ. Open the battery box cover during charging (for ventilation and heat dissipation); no covering of charging cables; no smoking/using open flames in the charging area;

ⅳ. After charging, disconnect the power supply end plug first, then the forklift end plug; organize the charging cable and record the charging duration/power;

◦ Internal Combustion Forklift Refueling:

ⅰ. Turn off the engine, turn off the ignition switch, remove the key, and the operator gets off (refueling while sitting in the driver's seat is prohibited);

ⅱ. Confirm no open flames/flammable materials in the refueling area; place fire-fighting equipment (dry powder fire extinguisher) nearby;

ⅲ. Slowly open the fuel barrel / 加油机 valve to prevent fuel splashing; monitor the oil level during refueling (overfilling and spilling are prohibited);

ⅳ. After refueling, tighten the fuel tank cap, clean spilled fuel (with oil-absorbing cotton), retrieve refueling equipment, and wait 5 minutes before restarting the engine.

5.2.2 Loading, Unloading and Stacking (Detailed Stacking Requirements)

1. Loading and Unloading Operations:

◦ Approach Materials: Slowly drive to the front of the pallet, align the forks with the pallet fork holes, apply the parking brake, and pull the handbrake tightly;

◦ Fork Adjustment: Adjust the fork spacing (matching the pallet width), lift the forks to a height ≤ 10cm, slowly insert them into the pallet (insertion depth ≥ 2/3 of the pallet length); single-side fork picking is prohibited;

◦ Lifting and Withdrawal: Lift the forks to 20-30cm above the ground (to prevent scraping the ground), tilt the forks backward by 10° (to prevent load slipping), slowly drive away from the loading/unloading point; sudden acceleration/steering is prohibited;

◦ Prohibited Behaviors: Hitting materials with forks, overwidth loads (extending ≤ 20cm beyond each side of the forks), allowing personnel to stand on loads or placing flammable materials on loads.

2. Stacking Operations:

◦ Approach Shelves: Drive to the front of the shelf, adjust the fork height to be flush with the shelf layer (error ≤ 5cm), and apply the parking brake;

◦ Alignment and Placement: Slowly move the forks forward, place the materials stably on the layer; tilt the forks forward by 5°; after confirming the materials are centered without deviation, slowly pull out the forks;

◦ Stacking Height Limit: Indoor stacking height ≤ the forklift's maximum lifting height (marked on the nameplate); outdoor stacking height ≤ 3m (for windproof and anti-tipping); no stacking exceeding the shelf's rated load;

◦ Inspection: Get off and check if the materials are stable after stacking; adjust immediately if deviation is found; staying under the shelf is prohibited.

5.2.3 Safe Operation Principles (Integrating "Ten 'No-Lifting' Principles" and "Ten 'No-Doing' Principles")

1. Ten "No-Lifting" Principles:

a. No lifting if the command signal is unclear or the command violates regulations;

b. No lifting if the load weight is unknown or exceeds the rated capacity;

c. No lifting if materials are not securely bound or pallets are damaged;

d. No lifting if the load center of gravity deviates from the fork center;

e. No lifting if safety devices (brakes, lights) are faulty;

f. No lifting if visibility is poor in the operation area (heavy fog/dim light);

g. No lifting if there are personnel on the load or flammable/explosive materials;

h. No lifting if loading/unloading on ramps or turning on ramps;

i. No lifting if the narrow aisle width is insufficient (< forklift width + 0.3m);

j. No lifting if hazardous chemicals are handled without explosion-proof forklifts or if seals are damaged.

2. Ten "No-Doing" Principles (Newly Supplemented):

a. No operation without a certificate or with an expired certificate;

b. No fatigue driving (continuous operation exceeding 4 hours without rest);

c. No steering with one hand or using mobile phones while operating;

d. No using inertia to pick up goods or using brake inertia to slide goods;

e. No non-compliant operation in hazardous environments (e.g., flammable/explosive areas);

f. No leaving goods suspended for a long time (suspend operation only after goods are placed on the ground);

g. No non-compliant charging (e.g., unauthorized wiring, covering charging equipment);

h. No refueling internal combustion forklifts without turning off the engine;

i. No unauthorized removal or covering of safety devices (overhead guards/speed limiters);

j. No adjusting fork height or cleaning loads while the forklift is moving.

5.2.4 Operations in Special Circumstances (Supplementary Night Operations, Pedestrian Avoidance)

1. Night Operations (Newly Added):

◦ Turn on forklift headlights (low beam), position lights, and reverse warning lights; add temporary lighting in the operation area (brightness ≥ 50lux);

◦ Reduce travel speed (≤ 3km/h), increase horn frequency (sound once every 20m), and enhance observation of the surrounding environment;

◦ Arrange dedicated personnel to guide in the operation area (holding reflective sticks) to prevent pedestrians from entering; solo night operations are prohibited.

2. Pedestrian Avoidance (Newly Added):

◦ Strictly implement the "pedestrian priority" principle; immediately reduce speed/stop if pedestrians are found in the operation area;

◦ Sound the horn in advance at turns and aisle intersections, reduce speed to 1km/h, and pass after confirming no pedestrians;

◦ Maintain a safety distance of ≥ 1m from pedestrians; passing closely (< 0.5m) on both sides of pedestrians is prohibited.

5.3 Post-operation Completion (HSE Closed-loop Control)

5.3.1 Shutdown Operation (Detailed Parking Specifications)

1. Parking Requirements:

◦ Drive to the designated parking area (marked with "Forklift Parking Area" on the ground), select a flat ground (slope ≤ 1°), apply the parking brake, and pull the handbrake tightly;

◦ Lower the forks to the ground (height ≤ 5cm), tilt the forks to a horizontal position, turn off the power, and remove the key;

◦ Electric Forklifts: Perform charging according to the charging process if needed; Internal Combustion Forklifts: Check the fuel level and refill to more than 1/2 if insufficient;

◦ Place chocks on both sides of the wheels when parking outdoors on ramps; lock the operator's cab door and close the battery box cover (for electric forklifts);

◦ Prohibited Parking Areas: Safety aisles, fire-fighting aisles, emergency exits, under shelves, charging/refueling areas (when not in operation).

2. Equipment Inspection and Recording:

◦ Inspect the forklift for bumps, no leakage in the hydraulic system/fuel lines, no tire damage, and sealed charging ports/fuel tank caps;

◦ Clean debris (pallet scraps/oil stains) from the forks and wipe the operator's cab glass to keep the equipment clean;

◦ Fill out the Forklift Operation Record, recording the operation time, load weight, charging/refueling status, and equipment abnormalities (e.g., soft brakes, slow charging).

5.3.2 Maintenance and Handover (Supplementary Daily Maintenance Details)

1. Daily Maintenance:

◦ Electric Forklifts: Clean battery terminals (to prevent oxidation), add battery distilled water if needed, and inspect no damage to charging cables;

◦ Internal Combustion Forklifts: Clean the air filter, check oil/cooling water levels, tighten tire bolts, and clean oil stains around the fuel tank cap;

◦ General Maintenance: Lubricate fork hinges and steering shafts (every 10 operating hours), apply grease, and check the tension of mast chains;

◦ Charging/Refueling Facilities: Organize charging cables, clean refueling equipment, check the validity period of fire-fighting equipment, and clean spilled oil.

2. Handover and Recording:

◦ Operators hand over the equipment status to the next-shift operator, focusing on explaining abnormalities (e.g., "abnormal noise from reverse buzzer", "increased charging time");

◦ Maintenance personnel collect the Daily Forklift Inspection Record, Operation Record, and Fault Repair Record, and file them in the equipment file. Report for repair immediately if major issues are found (e.g., fork cracks, battery bulging).

6 HSE Special Safety Requirements

6.1 Health Protection Requirements

1. Operator Health Protection:

◦ Operation Time: Continuous operation ≤ 2 hours, with a 15-minute break; daily cumulative operation time ≤ 8 hours; fatigue driving is prohibited;

◦ Indoor Operations: Well-ventilated warehouses (ventilation rate ≥ 3 times/hour) to reduce dust (metal scraps) and odor concentration; regular air quality testing (dust ≤ 8mg/m³);

◦ Noise Control: Forklift operation noise ≤ 85dB (measured in the operator's cab); wear earplugs (noise reduction value ≥ 20dB) for long-term operation (≥ 4 hours per day); conduct hearing tests quarterly;

◦ Charging/Refueling Protection: Wear insulating gloves (for electric shock prevention) when charging electric forklifts; wear oil-resistant gloves (for oil contact prevention) when refueling internal combustion forklifts; avoid direct skin contact with fuel/hydraulic oil.

2. Auxiliary Personnel Protection:

◦ Riggers wear anti-slip gloves (to prevent pallet scratches) and anti-smash safety shoes during operation; touching sharp materials with bare hands is prohibited;

◦ Operation guards wear sun hats (in summer) and cold-proof gloves (in winter) for outdoor operations; wear anti-static clothing for operations in charging/refueling areas.

6.2 Safety Prohibition Clauses (Violators will be handled in accordance with the Company's HSE Reward and Punishment System)

1. Strictly prohibit operation without a certificate, operation under the influence of alcohol, unauthorized transfer of forklift keys or charging equipment;
2. Strictly prohibit overloading (including exceeding the rated load by more than 10%), eccentric loading, or using forks to lift personnel;
3. Strictly prohibit carrying passengers (other than the operator), using mobile phones, eating, or smoking while the forklift is moving;
4. Strictly prohibit high-speed driving (exceeding speed limits), sudden braking, sudden turning, or hitting shelves/walls with the forklift;
5. Strictly prohibit unauthorized removal or covering of safety devices (overhead guards, speed limiters, reverse warning lights);
6. Strictly prohibit non-compliant charging of electric forklifts (unauthorized wiring, covering charging equipment, charging in non-designated areas);
7. Strictly prohibit refueling internal combustion forklifts without turning off the engine, smoking/using open flames during refueling, or starting the forklift before cleaning spilled fuel;
8. Strictly prohibit mixed handling of hazardous chemicals and ordinary materials (except for explosion-proof forklifts) or leaving loads suspended for a long time;

9. Strictly prohibit adjusting fork height, cleaning loads, or staying under shelves while the forklift is moving;
10. Strictly prohibit forced operations in severe weather (strong wind/heavy rain/low visibility) or when there are major hazards in the operation area.

6.3 Environmental Compliance Requirements

1. Pollution Prevention and Control:

◦ When hydraulic oil, engine oil, or battery electrolyte leaks, immediately clean with oil-absorbing cotton; place waste oil-absorbing cotton/electrolyte in hazardous waste collection barrels (handled by qualified units); random discharge is prohibited;

◦ When electric forklift batteries are scrapped, the Equipment Management Department shall recycle them uniformly and hand them over to professional institutions for disposal; random discarding is prohibited;

◦ Classify pallet scraps and packaging materials generated during operation into recyclable waste bins; promptly clean oil stains in charging/refueling areas to prevent ground pollution;

◦ Exhaust emissions of internal combustion forklifts must meet national standards (e.g., National VI Emission Standard); regularly test exhaust emissions; repair over-standard forklifts before use.

2. Energy Conservation and Consumption Reduction:

◦ Reasonably plan transportation routes to reduce invalid travel (avoid repeated trips) and lower fuel/electricity consumption (electric forklifts operate for ≥ 8 hours on a single charge);

◦ Turn off the engine (for internal combustion forklifts) or power (for electric forklifts) when the forklift is idle for more than 30 minutes; long-term idling or no-load travel is prohibited;

◦ Prioritize repair and reuse of scrapped forklift components (tires, forks, hydraulic hoses); handle unreparable components as hazardous waste; random discarding is prohibited;

◦ Avoid peak electricity consumption during charging; purchase fuel from compliant suppliers to reduce environmental impact.

7 Emergency Disposal (HSE Risk Response)

7.1 Common Faults and Accident Disposal Measures (2 Types Added)

7.1.1 Brake Failure (No Response from Service Brakes)

1. Operators remain calm, immediately release the accelerator, turn on the emergency lights, and continuously sound the horn as a warning;
2. For hydraulic brakes, continuously step on the brake pedal (using residual pressure) and slowly pull the handbrake;

3. Drive to a safe area (open space) to avoid colliding with personnel/materials; if necessary, lightly hit fixed objects (e.g., walls) with the forklift side to reduce speed;
4. After stopping, set up a warning sign ("Equipment Fault, No Entry"), report to the Equipment Management Department, and prohibit further operation until the forklift passes repair and inspection.

7.1.2 Forklift Tipping (Ground Collapse, Sudden Turning)

1. Operators immediately grip the steering wheel tightly and lean their bodies in the opposite direction of the tip (e.g., lean left if tipping right) to avoid being crushed by the overhead guard; jumping off the forklift is strictly prohibited (to prevent crushing);
2. After the forklift stabilizes, confirm no danger before slowly exiting the driver's seat and check for personal injuries;
3. Operation guards evacuate surrounding personnel, set up a warning zone (with warning tape), and check for other injured personnel: if there are injuries, immediately call 120 for emergency rescue and stop bleeding/fix fractures for the injured;
4. Report to the QHSE Department (Tel: XXX-XXXXXXX), protect the accident scene, prohibit unauthorized movement of the forklift, and wait for accident investigation and professional rescue.

7.1.3 Load Falling (Strap Breakage, Pallet Damage)

1. Operators immediately stop the forklift, cut off the power, and prohibit moving the forklift to prevent secondary injuries;
2. Operation guards set up a warning zone, prohibit personnel from entering the falling area, and check if the load is hazardous chemicals and if there is leakage;
3. For ordinary materials: Use another forklift to assist in cleaning (slowly lift the load, replace with intact pallets, and rebind);
4. For leaking hazardous chemicals: Activate the Hazardous Chemical Leakage Emergency Plan, wear protective equipment (gas masks, chemical protective clothing), and block the leakage point with absorbent cotton to prevent leakage spread;
5. Record the accident situation, report to the QHSE Department, analyze the cause of the fall (e.g., insufficient strap strength, damaged pallet), and formulate preventive measures (replace with high-strength straps/regularly inspect pallets).

7.1.4 Charging Fire / Fuel Leakage (Newly Added)

1. Charging Fire:

◦ Immediately disconnect the charging power supply (first turn off the main switch, then pull out the plug); use dry powder fire extinguishers (or fire blankets) to put out the fire; water is prohibited (to prevent electric shock);

◦ If the battery catches fire, use a dedicated battery fire extinguisher; evacuate surrounding personnel to prevent smoke poisoning;

◦ After the fire is extinguished, cool the battery to room temperature, clean the site, report to the Equipment Management Department, and identify the cause of the fire (e.g., short circuit/overload);

2. Fuel Leakage:

◦ Immediately turn off the engine of the internal combustion forklift, close the fuel tank cap, prohibit smoking/using open flames, and evacuate surrounding personnel;

◦ Cover the leaked area with oil-absorbing cotton to prevent fuel spread; use explosion-proof tools to clean the leaked material; iron tools are prohibited (to prevent sparks);

◦ Inspect the leakage point (fuel hose/fuel tank cap); temporarily seal minor leaks; tow severely leaking forklifts to the repair area; continued operation is prohibited;

◦ After cleaning, ventilate for more than 30 minutes; resume operation only after confirming no fuel vapor remains.

7.2 Emergency Contact and Drills

1. Emergency Contact List:

Contact Object	Contact Number	Responsibilities
Emergency Medical Center	120	Emergency rescue for injured personnel
Fire Rescue	119	Rescue for charging fires and fuel fires
Equipment Management Department		Technical support for forklift fault repair and emergency disposal
QHSE Department		Accident reporting, investigation, and hazard inspection
Project Department Emergency Team		Emergency disposal and personnel evacuation at construction sites
User Department Leader		Reporting of on-site hazards and personnel coordination

1. Emergency Drills:

◦ The Company organizes forklift emergency drills once every six months, covering disposal of brake failure, tipping, load falling, charging fire, and fuel leakage. All operators, operation guards, maintenance personnel, and User Department personnel must participate;

◦ Formulate a drill plan (including scenario setting, personnel assignment, and material preparation) before the drill; hold a summary meeting after the drill to evaluate disposal effectiveness and optimize the emergency plan (e.g., supplement lighting measures for night charging fires);

◦ Operators must be familiar with the location of emergency tools (first-aid kit under the driver's seat, chocks, fire extinguishers in charging areas) and master basic first-aid skills (hemostasis, cardiopulmonary resuscitation, smoke poisoning prevention).

8 Supplementary Provisions

8.1 This instruction shall come into force on the date of issuance. In case of any inconsistency between existing forklift operation-related regulations and this instruction, this instruction shall prevail.

8.2 This instruction shall be revised under the leadership of the Company's Equipment Management Department, with coordination from the QHSE Department and User Departments. The revision cycle is 2 years; timely revision is required if national regulations or Group requirements are updated, or if forklift accidents (including charging/refueling accidents) occur.

8.3 For matters not covered in this instruction, refer to Safety Technical Specification for Site (Factory) Special Motor Vehicles (GB/T 3811), Safety Code for Powered Industrial Trucks (GB 10827), Safety Inspection Technical Requirements for Factory Motor Vehicles, and 's Factory Motor Vehicle Safety Management Measures.

8.4 This instruction shall be distributed to all forklift operators, operation guards, maintenance personnel, User Department personnel, and relevant management departments. The

electronic version shall be uploaded to the HSE column on the Company's intranet for easy access and learning.

Appendices: 1. Daily Forklift Inspection Form (Template) 2. Forklift Operation Safety Technical Disclosure Record (Template) 3. Forklift Operation Record (Template) 4. Forklift Maintenance Cycle Table (Template) 5. Forklift Accident Emergency Disposal Flowchart

9 Appendices (Newly Added/Integrated)

Appendix A: Daily Forklift Inspection Form (Template)

Inspection No.	Inspection Item	Inspection Content	Inspection Standard	Inspection Result	Handling Measure
1	Appearance Structure	Overhead guard, load backrest, forks	No deformation/cracks; fork wear ≤ 10%; secure positioning pins	□Qualified □Unqualified	
2	Braking System	Service brake, parking brake	No deviation when braking unloaded; no rolling on 5° ramps	□Qualified □Unqualified	
3	Steering System	Steering wheel, turn signals	Flexible operation; no jamming; normal turn signals	□Qualified □Unqualified	
4	Hydraulic System	Hoses, cylinders, lifting/lowering function	No leakage; smooth lifting; settlement ≤ 10mm/10min	□Qualified □Unqualified	
5	Electrical System	Headlights, horn, reverse warning, charging port	Normal functions; no damage/leakage at charging port	□Qualified □Unqualified	
6	Tires	Air pressure (pneumatic	Air pressure meets marking; no	□Qualified □Unqualifie	

		tires), wear (solid tires)	damage/bulges; clear patterns	d	
7	Internal Combustion Forklift Specific	Fuel lines, cooling water level, oil level	No leakage; levels within gauge range	□Qualified □Unqualified	
8	Electric Forklift Specific	Battery power, connections, charging cable	Power ≥ 80%; no looseness; no cable damage	□Qualified □Unqualified	
9	Safety Devices	Speed limiter, reverse image (if equipped)	Speed limit ≤ 10km/h; clear image	□Qualified □Unqualified	
10	Auxiliary Tools	Straps, pallets, oil-absorbing cotton	No strap breakage; no pallet damage; sufficient cotton	□Qualified □Unqualified	
Inspector's Signature		Inspection Date	Year Month Day	User Department Confirmation	□No Objection □Needs Rectification

Appendix B: Forklift Maintenance Cycle Table (Template)

Maintenance Item	Daily (After Each Operation)	Weekly	Monthly	Quarterly	Annual	Responsible Department
Appearance Cleaning	✓					Operator
Tire Inspection	✓	✓	✓			Operator / Maintenance

						Personnel
Braking System Inspection	✓	✓	✓			Operator / Maintenance Personnel
Hydraulic Oil Inspection		✓	✓			Maintenance Personnel
Chain Lubrication		✓				Maintenance Personnel
Transmission System Inspection			✓			Maintenance Personnel
Battery Maintenance (Electric)			✓			Maintenance Personnel
Exhaust Emission Test (Internal Combustion)				✓		Maintenance Personnel
Comprehensive Safety Inspection					✓	Third-Party Institution
Fire-Fighting Equipment Inspection			✓			Equipment Management Department

Appendix C: Competence Requirements for Forklift Operation Personnel (Newly Added)

C1 Basic Requirements

• Aged 18 or above, in good health, no diseases that impede safe operation (epilepsy, color blindness, hypertension, heart disease);

• Junior high school education or above, with basic reading and writing skills (able to recognize safety signs and fill out records);

• Pass the Special Equipment Operator Certificate exam and pass the Company's internal training and assessment.

C2 Skill Requirements

• Familiar with the structure, performance, and operation methods of the operated forklift (including charging/refueling operation);

• Master the full-process operation of forklift pre-operation inspection, travel, loading/unloading/stacking, and shutdown;

• Possess fault judgment ability (able to identify abnormal noise, leakage, brake abnormalities, etc.);

• Master emergency disposal skills (preliminary handling of tipping, fire, and leakage).

C3 Knowledge Requirements

• Understand relevant laws and standards such as Special Equipment Safety Supervision Regulations, GB/T 3811, and GB 10827;

• Master the safety requirements of this instruction ("Ten 'No-Lifting' Principles", "Ten 'No-Doing' Principles", charging/refueling safety);

• Familiar with on-site operation risk points and control measures (e.g., ramps, narrow aisles, hazardous chemical handling);

• Understand basic forklift maintenance knowledge (e.g., chain lubrication, battery charging precautions).

Appendix D: Forklift Accident Emergency Disposal Flowchart (Newly Added)

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flowchart TD
    A[Accident Occurs (Tipping/Fire/Leakage/Falling)] --> B[Immediately Stop Forklift/Power Off/Shut Down Engine]
    B --> C[Evacuate Surrounding Personnel and Set Up Warning Zone]
    C --> D{Are There Injured Personnel?}
    D -->|Yes| E[Call 120 for Emergency Rescue, Conduct Preliminary First Aid (Hemostasis/CPR)]
    D -->|No| F[Identify Accident Type]
    E --> F
    F -->|Tipping| G[Prohibit Jumping Off, Evacuate After Stabilization, Report to QHSE Department]
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    F -->|Fire| H[Use Appropriate Fire Extinguisher (Dry Powder for Charging, Dry Powder/Fire Blanket for Fuel), Report to Equipment Management Department]
    F -->|Leakage| I[Clean with Oil-Absorbing Cotton, Inspect Leakage Point, Report to Equipment Management Department]
    F -->|Falling| J[Prohibit Moving Forklift, Clean Load (Protect for Hazardous Chemicals), Report to QHSE Department]
    G/H/I/J --> K[Protect Accident Scene and Cooperate with Investigation]
    K --> L[Formulate Rectification Measures and Update Procedures]
    L --> M[Record and File (Accident Report/Rectification Record)]
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