OSHA Requirements for checklists before putting a forklift into use

What does OSHA require regarding forklift checklists?

The Occupational Safety and Health Administration (OSHA) requires that all forklift operator training programs include instruction explaining how operators are to "examine" forklift trucks before placing them in operation.
Standard 1910.178(l)(3) reads:
"Training program content. Powered industrial truck operators shall receive initial training in the following topics, except in topics which the employer can demonstrate are not applicable to safe operation of the truck in the employer's workplace...Any vehicle inspection and maintenance that the operator will be required to perform; 1910.178(l)(3)(i)(J)."

Despite this requirement, A very high percentage of forklift users are not aware that they are violating an OSHA mandate if they fail to perform these inspections. This examination requirement is found in OSHA's rules for Powered Industrial Trucks, 1910.178.

The specific requirement is found in OSHA **Reg: 1910.178(q)(7) and reads,**
"Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. Where industrial trucks are used on a round-the-clock basis, they shall be examined after each shift. Defects when found shall be immediately reported and corrected."

Exactly what components of their forklift trucks does OSHA require an operator to examine? This seems clear enough to those of us in the forklift business, but how clear is this to the average, possibly non-technically inclined, customer? If customers seek clarification in the OSHA regulations, they may find that this resource is not much help. There is NO specific regulation of what must be checked, just that a preshift checklist be done. The closest the OSHA regulations come to clarifying exactly what the operator is examining for in 1910.178(q)(7) is found in the first sentence of 1910.178(q)(10),

"Industrial trucks shall be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks."
Besides the general guidelines OSHA covers in 1910.178(q)(10), all the daily checklists I've been exposed to include checks of fluid levels and safety checks not specifically listed in 1910.178.

What should an operator check during the ***visual*** pre-start check?

- General condition and cleanliness.
- Floor - clear of objects that could cause an accident.
- Overhead - no obstructions---interfering with safe forklift usage.
- Nearby objects to avoid as you drive away.
- Fire extinguisher - present and charged.
- Engine oil level, fuel level, radiator water level (LPG, gas and diesel forklifts).
- Battery - fully charged; no exposed wires; plug connections not loose, worn or dirty; vent caps not clogged; electrolyte levels in cells is adequate; secured in place by holddowns or brackets.
- Bolts, nuts, guards, chains, or hydraulic hose reels not damaged, missing or loose.

- Wheels and tires - check for wear, damage, and air pressure, if pneumatic tires.
- Forks - forks not bent; no cracks present; positioning latches in good working condition; carriage teeth not broken, chipped or worn.
- Chain anchor pins - not worn, loose or bent.
- Fluid leaks - no damp spots or drips.
- Hoses - held securely; not loose, crimped, worn or rubbing.
- Horn - working and loud enough to be heard in working environment; other warning devices operational.
- Seatbelt and/or operator restraint device (if equipped) - belts and restraints work properly; no visible wear or damage; anchors, buckles, etc. function properly.
- Overhead guard - no damaged areas.

What should an operator check during the ***operational*** pre-start check?

- Foot Brake - pedal holds, unit stops smoothly.
- Parking Brake - holds against slight acceleration.
- Lift Mechanism - operates smoothly (check by raising forks to max height then lowering forks).
- Tilt Mechanism - moves smoothly, holds (check by tilting mast all the way forward and backward).
- Deadman Seat Brake - holds when operator rises from seat.
- Clutch and Gearshift - shifts smoothly with no jumping or jerking.
- Dash Control Panel - all lights and gauges are operational.
- Steering - moves smoothly.
- Cylinders and Hoses - not leaking after above checks.
- Listen for any unusual sounds or noises.
- Lights - headlights and warning lights are operational.

Report any problems in daily check to the supervisor immediately.

SAMPLE PAPER CHECKLIST

Int Comb Engine Industrial Truck - Gas/LPG/Diesel Truck

Record of Fuel Added

Date		Operator		Fuel	
Truck#		Model#		Engine Oil	
Department		Serial#		Radiator Coolant	
Shift		Hour Meter		Hydraulic Oil	

SAFETY AND OPERATIONAL CHECKS (PRIOR TO EACH SHIFT)

Have a **qualified** mechanic correct all problems.

Engine Off Checks	OK	Maintenance
Leaks – Fuel, Hydraulic Oil, Engine Oil or Radiator Coolant		
Tires – Condition and Pressure		
Forks, Top Clip Retaining Pin and Heel – Check Condition		
Load Backrest – Securely Attached		
Hydraulic Hoses, Mast Chains, Cables and Stops – Check Visually		
Overhead Guard – Attached		

Finger Guards – Attached		
Propane Tank (LP Gas Truck) – Rust Corrosion, Damage		
Safety Warnings – Attached (Refer to Parts Manual for Location)		
Battery – Check Water/Electrolyte Level and Charge		
All Engine Belts – Check Visually		
Hydraulic Fluid Level – Check Level		
Engine Oil Level – Dipstick		
Transmission Fluid Level – Dipstick		
Engine Air Cleaner – Squeeze Rubber Dirt Trap or Check the Restriction Alarm (if equipped)		
Fuel Sedimentor (Diesel)		
Radiator Coolant – Check Level		
Operator's Manual – In Container		
Nameplate – Attached and Information Matches Model, Serial Number and Attachments		
Seat Belt – Functioning Smoothly		
Hood Latch – Adjusted and Securely Fastened		
Brake Fluid – Check Level		
Engine On Checks – Unusual Noises Must Be Investigated Immediately	OK	Maintenance
Accelerator or Direction Control Pedal – Functioning Smoothly		
Service Brake – Functioning Smoothly		
Parking Brake – Functioning Smoothly		
Steering Operation – Functioning Smoothly		
Drive Control – Forward/Reverse – Functioning Smoothly		
Tilt Control – Forward and Back – Functioning Smoothly		
Hoist and Lowering Control – Functioning Smoothly		
Attachment Control – Operation		
Horn and Lights – Functioning		
Cab (if equipped) – Heater, Defroster, Wipers – Functioning		
Gauges: Ammeter, Engine Oil Pressure, Hour Meter, Fuel Level, Temperature, Instrument Monitors – Functioning		

Operator's Daily Checklist - Electric Industrial Truck

Record of Fluid Added

Date		Operator		Battery Water	
Truck#		Model#		Hydraulic Oil	
Department		Serial#			
Shift		Drive Hour Meter Reading		Hoist Hour Meter Reading	

SAFETY AND OPERATIONAL CHECKS (PRIOR TO EACH SHIFT)

Have a **qualified** mechanic correct all problems.

Motor Off Checks	OK	Maintenance
Leaks – Hydraulic Oil, Battery		
Tires – Condition and Pressure		
Forks, Top Clip Retaining Pin and Heel -- Condition		
Load Backrest Extension – Attached		
Hydraulic Hoses, Mast Chains, Cables & Stops – Check Visually		
Finger Guards – Attached		
Overhead Guard – Attached		
Safety Warnings – Attached (Refer to Parts Manual for Location)		
Battery – Water/Electrolyte Level and Charge		
Hydraulic Fluid Level – Dipstick		
Transmission Fluid Level – Dipstick		
Operator's Manual in Container		
Capacity Plate Attached – Information Matches Model, Serial Number and Attachments		
Battery Restraint System – Adjust and Fasten		
Operator Protection Sitdown Truck - Seat Belt – Functioning Smoothly Man-up Truck – Fall protection/Restraining means - Functioning		
Brake Fluid – Check level		
Motor On Checks (Unusual Noises Must Be Investigated Immediately)	OK	Maintenance
Accelerator Linkage – Functioning Smoothly		
Parking Brake – Functioning Smoothly		
Service Brake – Functioning Smoothly		
Steering Operation – Functioning Smoothly		
Drive Control – Forward/Reverse – Functioning Smoothly		
Tilt Control – Forward and Back – Functioning Smoothly		
Hoist and Lowering Control – Functioning Smoothly		
Attachment Control – Operation		
Horn – Functioning		
Lights & Alarms (where present) – Functioning		
Hour Meter – Functioning		
Battery Discharge Indicator – Functioning		
Instrument Monitors – Functioning		

ALL OPERATORS MUST BE TRAINED AND EVALUATED ON THE TYPES OF INDUSTRIAL TRUCKS AND ATTACHMENTS THEY WILL BE OPERATING.

Different Types and Styles of Forklift Forks

”Standard” Forks

Utilizing Class 2 ITA type carriages. Mount and slide on carriage with locking pins

Stainless Steel Clad Forks

For use in highly sanitary applications such as the food and beverage industry

Gypsum / Drywall Handling Forks

Provides optimum product protection when handling gypsum wallboard

Shaft Forks / Pin Forks

Typically found on forklifts with a capacity greater than 12,000 lbs @ 24” load center

Drum Handling Forks

Fast material handling of barrels and drums

Brick Forks & Block Forks

Allows secure handling of bricks and blocks

Quick Disconnect Forks

Designed to be easily and quickly removed from the lift truck carriage

Folding Forks

These forks fold up so lift trucks can maneuver in areas where movement is restricted, ie elevators

Fork Extensions

Used to temporarily extend the length of the fork blade when handling longer loads

Lumber Forks / Plywood Forks

Available with forged heel, square heel, single taper, double taper, with or without peek-a-boo backs and more

Coil Handling Forks

Fork blade is contoured to handle coils. Fork capacity is reduced according to the size of the coil

How often should forklift forks be inspected?

Daily: Operators should make visual inspection of forks during the pre-start-up check, with special attention for damage, bending distortions and cracks.
Six months: A thorough inspection of forks should be done every six months, preferably by a trained individual wear caliper, to check for any cracks and distortion. Forks may need inspections more often, depending on the use of the equipment.

Where can I get more information on forklift wear calipers?

https://www.cascorp.com/web2/downloads.nsf/links/3014162/$file/forkarmwearcaliperguide.pdf

What if I can see excessive wear on the bottom of my forks?

If excessive wear is showing on the “elbows” of the forks----it is an indication that the forks may be set too low and the carriage chain may need adjustment. Train the operator NOT to “drag” the forks on the floor while traveling (loaded or unloaded). This will lead to excessive wear of the “elbow” and premature replacement requirement of the forks.

Do excessively worn forks effect my forklift’s lifting capacity?

Yes!!! A 10% reduction in fork blade thickness results in 20% reduction in operating capacity! ANSI/ITSDF B56.1 – 6.2.8.1 (f) recommended practices advise that forks be withdrawn from service when the thickness of the blade has worn by 10% (90% of original thickness)

What if I see a difference in the angle (tip) of my forks?

The fork should be withdrawn from use if the deviation from straightness exceeds 3 degrees.

What if my fork blade or upright shank are not straight?

If the deviation from straightness exceeds .5% of the length of the blade and or the height of the upright shank---the fork shall not be returned to service until it has been repaired back to acceptable specifications.

What are some important points of a periodical (six months) fork inspection?

- Check fork blades for wear. Forks are constantly subjected to abrasion by concrete floors, steel shelving, etc. This abrasion can reduce the thickness of a fork until it cannot lift loads up to the designed capacity.
- Check for distortion. Forks can be bent out of shape. Depending on distortion, some forks can be straightened. The fork manufacturer is best qualified to correct this. Your local forklift supplier can make the arrangements.
- Check for cracks in heel and hanger. Cracks may appear on forks where attachments are welded on or in the inside radius of the bend area. Periodic inspection using a magnetic particle or dye penetrant test can detect cracks. Approved grinding methods may grind out and polish these blemishes, depending on the depth of the crack. Contact your forklift supplier or the manufacturer for additional information.
- Replace, when necessary, with good quality forks. When ordering or reordering forks, make sure you are getting high quality forks that will do your lifting jobs safely. Insist on forged forks or ones with an upset heel.
- Use the proper forks. Custom-designed forks may be needed for:
  - unusual lifting conditions
  - spark-free areas
  - high heat furnace areas
  - special object lifting

ANSI CHECKLIST REQUIREMENTS FOR FORKLIFTS

ITSDF/ANSI B56.1 Standards COPIED FROM THE ITSDF WEB SITE

AS THEY RELATE TO ROUTINE *DAILY CHECKS AND MAINTENANCE*

ITSDF/ANSI B56.1 2012 PART II—FOR THE USER

There is a mandated OSHA Regulation that requires a pre-shift examination of the lift truck. It does require completion of a check-off but does not specify who is to complete the assessment. Note the subsequent ITSDF Standards that follow the pre-shift check off concerning use of truck and planned maintenance schedules. Documentation should be a part of a truck inspection and maintenance program.

5.5 Operator Care of the Truck Routine daily checks

5.5.1 At the beginning of each shift and before operating the truck, check its condition, giving special attention to the following:

(a) condition of tires

(b) if pneumatic tires, check inflation pressures

(c) warning and safety devices

(d) lights

(e) battery

(f) controls

(g) lift and tilt systems

(h) load-engaging means

(i) chains and cables

(j) limit switches

(k) brakes

(l) steering mechanism

(m) fuel system(s)

(n) additional items or special equipment as specified by the user and/or manufacturer

5.5.2 If during operation the truck becomes unsafe in any way, the matter shall be reported immediately to the user's designated authority, and the truck shall not be operated until it has been restored to safe operating condition.

If a deficient item arises and that deficiency affects safety, the truck MUST be removed from service until repaired or corrected.

5.5.3 Do not make repairs or adjustments unless specifically authorized to do so.

TEA applies – No one can service or repair a PIT unless they have been Trained, Evaluated, and Authorized. Training must be commensurate with the level of repair being performed. This includes any servicing procedures performed by operators during a routine daily check.

Is there an OSHA regulation for maintaining checklist documents?

This is another area of the regulation that OSHA could be clearer about------ how to document these examinations and how long documentation must be maintained. This question was specifically addressed by Richard Fairfax, OSHA directorate of enforcement programs, in May 2000. Responding to a question about an employer's right to require employees to fill out a written examination form prior to forklift operation, Fairfax wrote, "Although the standard (1910.178(q)(7)) requires that the examination be conducted, there is no OSHA requirement that the examination be recorded in writing on a checklist such as the one you provided. However, as an employer, it is well within your rights to implement additional safety practices that go beyond OSHA's requirements such as the completion of your written checklist." Customers who desire to use written examination checklists may ask how long they should keep the written examination forms. Again, no standard requires the use of a written form in the first place, but I recommend keeping at least a month's worth of documentation. This should be enough history to assure anyone auditing for compliance that the customer is fulfilling its obligations.

What happens if there is an event prompting an OSHA inspection where written documentation of checklists does not exist?

According to Stanford Thiergood, OSHA's duty officer on the date of contact and senior compliance officer, the customer is at the mercy of what their employee(s) tell the OSHA investigator. The employee(s) will be asked open-ended questions about what they did from the time they started work until the time forklift operation began.

The investigator will be listening for unsolicited information verifying verbally that a forklift examination occurred prior to its operation. If they get this verbal confirmation, that will be accepted as proper verification by the investigator. Thiergood went on to say that if he learns from the employee that a defect was noted during the examination, he will then look for written documentation that the defect was addressed properly before the forklift was allowed to return to service. 1910.178(q)(1) states,

"Any power-operated industrial truck not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel."

His position for requiring written documentation is that any defect serious enough to take a forklift out of service should have a repair order of some type generated proving that the defect was corrected. One customer, who kept written documentation of its forklift examinations, told me that it was cited during an investigation for gaps in the printed documentation it kept on file.

This customer explained to the OSHA investigator that the gaps existed because the forklift wasn't used on the days where written documentation was missing. This inspector explained to the customer that since it kept written records of examinations, it should have kept written documentation on the days where the gaps existed to document that the forklift wasn't used.

While it can be argued that 1910.178(q)(7) is not perfect, when executed as intended, there can be no disputing its importance in helping to improve forklift safety and productivity. During these difficult times, the little things a distributor does for customers can make an important difference in helping to keep them loyal to that distributor. Offering them unsolicited help in understanding and complying with 1910.178(q)(7) is a good way to distinguish yourself from your competition. Nothing else I've ever provided to our customers has generated anywhere near the amount of positive customer feed-back as providing them information about 1910.178(q)(7) has. As you can see, there's quite a bit of 1910.178(q)(7) that is open to interpretation by both the forklift user and OSHA. OSHA may continue to provide releases clarifying these issues---so keep on the lookout for them.

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- **Has PRE-START (motor off) items and then POST-START (motor on) items**
- **Generate OSHA reports on all checklist events---and vehicle usage**
- **Completely programmable checklist for each vehicle in your fleet**
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- **FMS software can run custom reports on vehicle or operator checklists**
- **Ability to display checklist items in multiple languages (see below)**
- **Shut down after critical items (FAILED) and require supervisor interface**
- **Accountability of checklist (each event time/date stamped to the second)**
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- **NO PAPERWORK! NO pens, NO paper, NO turning in, NO storing , retrieving etc**

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