



ECO Certificazioni S.p.A.

Luoyang I&C Technology Consulting Co.,Ltd.

**Test Report of Electric Forklift Truck
Test According to EN ISO 3691-1:2015+A1:2020**

Test Report Number: Z0001158-85-2



MANUFACTURER DETAILS

Manufacturer's name	HANGCHA GROUP CO., LTD
Manufacturer's address	666 Xiangfu Road, Lin'an District, Hangzhou City, Zhejiang Province 311305, P.R. China
Type	Industrial Truck
Product	Electric Forklift Truck
Models	CPD20-XC5, CPD25-XC5, CPD25-XLC5, CPD30-XC5, CPD35-XC5, CPD38-XC5, CPD20-XC5-I, CPD25-XC5-I, CPD25-XLC5-I, CPD30-XC5-I, CPD35-XC5-I, CPD38-XC5-I

Test details			
Type	Industrial Truck		
Product	Electric Forklift Truck		
Model	CPD20-XC5, CPD25-XC5, CPD25-XLC5, CPD30-XC5, CPD35-XC5, CPD38-XC5, CPD20-XC5-I, CPD25-XC5-I, CPD25-XLC5-I, CPD30-XC5-I, CPD35-XC5-I, CPD38-XC5-I		
Manufacturer's name	HANGCHA GROUP CO., LTD.		
Manufacturer's address	666 Xiangfu Road, Lin'an District, Hangzhou City, Zhejiang Province 311305, P.R. China		
Test standards	EN ISO 3691-1:2015+A1:2020 Industrial trucks — Safety requirements and verification Part 1: Self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks		
Location of test	The manufacturer		
Date of test	2 nd February 2023		
Inspector	Irving Guo		
Reason for test	New approval		
Test samples and serial numbers	CPD20-XC5	CPD25-XC5	CPD25-XLC5
	23BB01670	23BB01671	23BB01672
	CPD30-XC5	CPD35-XC5	CPD38-XC5
	23BB01673	23BB01678	23BB01683
	CPD20-XC5-I	CPD25-XC5-I	CPD25-XLC5-I
	23BB01674	23BB01675	23BB01677
	CPD30-XC5-I	CPD35-XC5-I	CPD38-XC5-I
	23BB01680	23BB01681	23BB01691

Conclusions			
The above mentioned machines were tested in accordance with the above mentioned standard and were found to comply in all respects.			
Inspector: Irving Guo		Date: 28 th February 2023	
Reviewer: Yueguang R.		Date: 28 th February 2023	
This test report have been check and the deliberation result is positive.			
Deliberation notes:			
No.	Deliberation	Modification	Result

List of annex		
Annex	Subject	Pages
A	Test photos	37~50

1. Product technical specifications

No.	Item		Unit	CPD20-XC5	CPD25-XC5	CPD25-XLC5	CPD30-XC5	CPD35-XC5	CPD38-XC5
1	Rated lifting capacity		kg	2000	2500	2500	3000	3500	3800
2	Load center distance		mm	500	500	500	500	500	500
3	Lift height	Max.	mm	3000	3000	3000	3000	3000	3000
4		Free	mm	140	140	140	135	140	140
5	Mast Tilt angle (front/back)		°	6/10	6/10	6/10	6/10	6/10	6/10
6	Max. travel speed		km/h	17	16.5	16.5	16.5	15	14.5
7	Max. lifting speed (full load)		mm/s	380	350	370	350	330	310
8	Max. gradeability (full load)		%	20	20	20	20	17	17
9	Min. outside turning radius		mm	1990	2055	2148	2195	2230	2400
10	Min. ground clearance		mm	120	120	120	120	120	120
11	Max. braking distance		m	6.7	6.7	6.7	6.7	5.5	5.5
12	Dimensions	L	mm	2295	2320	2460	2484	2578	2731
		W	mm	1185	1185	1235	1235	1260	1260
		H	mm	2160	2160	2160	2160	2167	2167
13	Service weight	Include battery box	kg	3650	4100	4230	4710	5300	5350
14	Battery	Model		5PZS525	5PZS600	4PZS360	4PZS480	4PZS480	4PZS480
15		Voltage/ Capacitance	V/Ah	48/525	48/600	80/360	80/480	80/480	80/480
16	Motor	Driven Motor	kw	18	18	18	18	18	18
		Pump Motor	kw	21	21	21	21	21	21
17	Tyre	Front/Quantity		23 × 9-10/2	23 × 9-10/2	23 × 9-10/2	23 × 9-10/2	23 × 10-12/2	23 × 10-12/2
		Rear/Quantity		18 × 7-8/2	18 × 7-8/2	18 × 7-8/2	18 × 7-8/2	200/50-10/2	200/50-10/2

No.	Item		Unit	CPD20-XC5-I	CPD25-XC5-I	CPD25-XLC5-I	CPD30-XC5-I	CPD35-XC5-I	CPD38-XC5-I
1	Rated lifting capacity		kg	2000	2500	2500	3000	3500	3800
2	Load center distance		mm	500	500	500	500	500	500
3	Lift height	Max.	mm	3000	3000	3000	3000	3000	3000
4		Free	mm	140	140	140	135	140	140
5	Mast Tilt angle (front/back)		°	6/10	6/10	6/10	6/10	6/10	6/10
6	Max. travel speed		km/h	17	17	17	17	15	14.5
7	Max. lifting speed (full load)		mm/s	380	350	370	350	330	310
8	Max. gradeability (full load)		%	20	20	20	20	17	17
9	Min. outside turning radius		mm	1990	2055	2170	2230	2270	2430
10	Min. ground clearance		mm	120	120	120	120	120	120
11	Max. braking distance		m	6.7	6.7	6.7	6.7	5.5	5.5
12	Dimensions	L	mm	2295	2320	2435	2558	2599	2752
		W	mm	1185	1185	1235	1235	1260	1260
		H	mm	2160	2160	2160	2160	2167	2167
13	Service weight	Include battery box	kg	3430	3690	3850	4370	4970	5000
14	Battery	Model		CATL	CATL	CATL	CATL	CATL	CATL
15		Voltage/ Capacitance	V/Ah	48/500	48/500	80/404	80/404	80/404	80/404
16	Motor	Driven Motor	kw	18	18	18	18	18	18
		Pump Motor	kw	21	21	21	21	21	21
17	Tyre	Front/Quantity		23 × 9-10/2	23 × 9-10/2	23 × 9-10/2	23 × 9-10/2	23 × 10-12/2	23 × 10-12/2
		Rear/Quantity		18 × 7-8/2	18 × 7-8/2	18 × 7-8/2	18 × 7-8/2	200/50-10/2	200/50-10/2

2. Test equipment details

Test equipment	Model	Serial number	Calibration expiry date
Digital multifunction tester	4102MF	9928791	28 th July 2023
Measuring tape	TN5019/(0~5) m	6926338000328	14 th November 2023
Digital protractor	IP65(± 90)	Pro036	14 th November 2023
Stop watch	A-306	IC008	14 th November 2023
Weather meter	NK3500 (Kestrel)	2758523	3 rd November 2023

3. Check and test according to EN ISO 3691-1:2015+A1:2020

Requirements	Check and test	Results
4. Safety requirements and/or protective measures		
4.1 General 概述 4.1.1 Overall requirements 一般要求 The truck shall comply with the safety requirements and/or protective measures of this clause.	See the following clauses	Pass
In addition, the truck shall be designed according to the principles of ISO 12100 for relevant but not significant hazards which are not dealt with by this document.	See the test report number: Z0001158-85-1	Pass
4.1.2 Normal climatic conditions 正常气候条件 For truck operation, the following climatic conditions apply: — average ambient temperature for continuous duty: +25 °C; — maximum ambient temperature, short term (up to 1 h): +40 °C; — lowest ambient temperature for trucks intended for use in normal indoor conditions: +5 °C; — lowest ambient temperature for trucks intended for use in normal outdoor conditions: 20 °C — altitude: up to 2 000 m	See the operation and maintenance manual.	Pass
4.1.3 Normal operating conditions 正常作业条件 Normal operating conditions are the following: — driving (travelling and lifting) on substantially firm, smooth, level and prepared surfaces — the surface conditions on which the truck is designed to operate shall be specified in the instruction handbook (see 6.2); — driving with the horizontal load centre of gravity approximately on the longitudinal centre plane of the truck; — travelling with the mast or fork arms tilted backwards, where applicable, and the load in the lowered (travel) position.	See the operation and maintenance manual.	P0ass
If the above is not sufficient to allow the conditions for stability of a particular truck type to be specified, then the operating conditions shall be according to the International Standards referenced for stability in 4.8.	The above is sufficient to allow the conditions for stability of this kind of truck.	Pass
4.1.4 Electrical requirements 电气要求 Electrical requirements are subject to regional requirements. See EN 16307-1:2020	See the test report number: Z0001158-85-3 Z0001158-85-4	Pass
4.1.5 Edges or angles 锐边和棱角 There shall be no sharp edges or angles posing a hazard in the area of the operator in the normal operating position or in the area of access and egress during normal operation and daily checks.	Truck has not such sharp edges or angles posing a hazard.	Pass
4.1.6 Stored energy components 蓄能部件 Components which store energy and that would cause a risk during removal or disassembly, e.g. hydraulic accumulator or spring-applied brakes, shall be provided with a means to release the energy before removal or disassembly.	No stored energy component.	NA
4.2 Starting/moving 启动/运行 4.2.1 Unauthorized starting 未经许可的启动 Trucks shall be provided with a device (e.g. key, code, magnetic card) which prevents starting without its use. Such devices for pedestrian-controlled and rider-controlled trucks manufactured by the same manufacturer shall not be interchangeable between the two truck types. Where devices, e.g. magnetic cards, are destined for an individual operator, one device may be used on both truck types but shall not allow starting by unauthorized persons.	Truck is provided with a key to prevent unauthorized starting/moving. The keys for pedestrian-controlled and rider-controlled trucks manufactured by the same manufacturer are not interchangeable between the two truck types.	Pass

Requirements	Check and test	Results
4.2.2 Unintended movement and inadvertent activation 意外移动和无意的促动 Truck movement from the holding position, other than by actuation of the controls by the operator, due to drift or creep (e.g. by leakage), shall be avoided.	Truck cannot move from the holding position, other than by actuation of the direction lever and the accelerator pedal by the operator.	Pass
4.2.2.1 Parking brakes 驻车制动 A parking brake complying with 4.3.1 shall be provided.	A parking brake complying with 4.3.1 is provided.	Pass
For sit-on rider trucks, the parking brake system should be manually operable by hand or foot from the normal operating position or automatically applied by leaving the normal operating position. Trucks with only non-automatically applied parking brake(s) shall have a warning to the operator to apply the brakes before leaving the truck.	The parking brake system is manually operable by hand from the normal operating position. The alarm will sound when the operator leaves the seat without applying the parking brake.	Pass
Failure of the control system of an automatically applied parking brake shall be indicated to the operator.	The parking brake is manually operated.	NA
4.2.2.2 Internal-combustion-engine powered trucks 内燃车辆 Internal-combustion-engine powered trucks shall be fitted with a device which prevents the engine being started while the transmission is engaged.	Electrical powered trucks	NA
4.2.2.3 Travel controls 行驶控制 Travel controls on internal-combustion-engine powered trucks shall be so arranged that on level ground the truck will not move from rest until the transmission has been engaged.	Electrical powered trucks	NA
4.2.2.4 Powered travel movement 动力行驶 Powered travel movement of the truck with a ride-on operator shall be possible only if the operator is in the normal operating position.	Seat switch serves as OPS. Truck is unable to travel when operator leaves seat.	Pass
Powered travel shall not occur automatically when the operator returns to the normal operating position without an additional operation, e.g. by requiring a resetting of the direction control or reactivation of the speed control.	So designed	Pass
4.2.2.5 Manual gearbox and manually operated clutch pedal 手动变速箱和人工操作的离合器踏板 A truck with an automotive-type manual gearbox and manually operated clutch pedal satisfies the requirements of 4.2.2.2 and 4.2.2.4.	Truck without manually operated clutch pedal.	NA
4.2.3 Travel speed 运行速度 4.2.3.1 Pedestrian-controlled trucks 步驾式车辆 Single-speed pedestrian-controlled trucks operating on level ground shall not exceed a travel speed of 4 km/h and an acceleration of 0,5 m/s ² and shall be designed for low-lift only.	Truck is not pedestrian controlled truck.	NA
Variable-speed pedestrian-controlled trucks operating on level ground shall be controllable by the operator to be aligned with their walking speed. The maximum speed is subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020	Truck is not pedestrian controlled truck.	NA
4.2.3.2 Stand-on trucks and pedestrian-controlled trucks with foldable platform 站驾式车辆和带有折叠式站板的步驾式车辆 The maximum speed on level ground of stand-on trucks and pedestrian-controlled trucks fitted with a foldable platform when the operator is on the platform is subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020 For trucks with a foldable operator platform, see 4.7.3.3. For trucks with stand-on options, see 4.7.3.2 and 4.7.3.4.	Truck is not stand-on truck and pedestrian controlled truck.	NA

Requirements				Check and test		Results
4.2.3.3 Travel with mast raised 带起升的门架运行 The speed of reach trucks shall be reduced automatically without causing a hazard to $V_{\max} \leq 6$ km/h as determined by the manufacturer when the elevated section of the mast is more than 400 mm above the height of the mast when fully lowered (see Figure 7). Travel with mast raised is subject to regional requirements. See EN 16307-1:2020				Not reach trucks.		NA
4.3 Brakes 制动装置 4.3.1 General 一般要求 All industrial trucks shall be designed with service and parking brakes. Brakes shall comply with ISO 6292.				The trucks are designed with service and parking brakes. Brakes comply with ISO 6292. See table below.		Pass
Brakes tests are carried out on model CPD38-XC5-I according to ISO 6292:2020.						
(1) Parking brake test Slop: 15%						
Travel direction		Load condition		Control force (N)		Required
Up the slop		Unladen		165		300
		Laden		170		300
Down the slop		Unladen		158		300
		Laden		163		300
Test results: the parking brake system can hold the laden and unladen truck on the specified gradient.						
(2) Service brake test						
Travel direction	Load condition	Velocity v (km/h)	Stop distance (m)		Control force (N)	
			Measured	Required	Measured	Required
Forward	Unladen	14.9	2.8	$0.15v+v^2/63.6 = 5.73$	155	450
	Laden	13.9	3.6	$0.15v+v^2/63.6 = 5.12$	160	450
Reverse	Unladen	14.4	3.9	$0.15v+v^2/63.6 = 5.42$	148	450
	Laden	13.6	3.5	$0.15v+v^2/63.6 = 4.95$	153	450
(3) Heat fade brake test (fifth consecutive stop distance)						
Travel direction	Load condition	Velocity V (km/h)	Stop distance (m)		Control force (N)	
			Measured	Required	Measured	Required
Forward	Unladen	14.9	3.3	$1.25 \times (0.15v+v^2/63.6) = 7.16$	164	450
	Laden	13.8	3.8	$1.25 \times (0.15v+v^2/63.6) = 6.33$	170	450
Reverse	Unladen	14.4	4.0	$1.25 \times (0.15v+v^2/63.6) = 6.78$	162	450
	Laden	13.5	3.7	$1.25 \times (0.15v+v^2/63.6) = 6.11$	171	450
The parking brake shall be equipped with a system preventing unintentional release. The parking brake force shall be applied by mechanical means.				The parking brake control lever is equipped with a button, only press the button the brake can release. The parking brake force is applied by mechanical means.		Pass
Braking requirements are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020				See the test report number: Z0001158-85-3		/

Requirements	Check and test	Results
4.3.2 Failure of energy supply to service brake 行车制动器供能故障 Failure of the energy supply to the service brake shall not result in a total loss of braking and shall enable a controlled stop.	Failure of the energy supply to the service brake will not result in a total loss of braking.	Pass
4.3.3 Stand-on and pedestrian-controlled trucks 站驾式和步驾式车辆 Stand-on and pedestrian-controlled trucks shall be equipped with a brake system that will automatically engage upon release of the brake actuating control by the operator. This system may serve as the service and parking brake.	Truck is not stand-on and pedestrian-controlled truck.	NA
4.4 Manual control actuators 手动控制装置 4.4.1 General 一般要求 4.4.1.1 Consistency with the truck motions 与车辆运动的一致性 Movement of these controls shall be consistent with the motions of the truck being operated, wherever practicable. They shall be confined within the plan view outline of the truck or tiller.	The controls are so designed.	Pass
4.4.1.2 Multiple operators 多个操作者 If additional operating positions are fitted, e.g. for more than one operator, the operation of these controls shall only be possible from one operating position at a time, excepting the emergency disconnect switch, which shall be operable from all positions.	One operator	NA
4.4.1.3 Multiple operating positions 多个操作者位置 If more than one operating position is fitted for a single operator, the use of the controls for one of these operating positions shall preclude the use of the controls of another operating position. The exception to this is the emergency disconnect switch, which shall be operable from all positions.	One operation position	NA
4.4.2 Travel and braking controls 行驶和制动控制 4.4.2.1 General 一般要求 The motion of the speed operating control shall be so designed that an increase in the movement of the control increases the travel speed. When the control is released, it shall return to the neutral position of the control actuator.	So designed.	Pass
4.4.2.2 Sit-on trucks 座驾式叉车 Trucks with pedal-operated travel and braking controls shall comply with ISO 21281.	Pedal-operated travel and braking controls comply with ISO 21281.	Pass
4.4.2.3 Stand-on trucks 站驾式叉车 The requirements for travel and braking controls for a stand-on truck are as follows. a) Travel control functions — Where a tiller is used, it shall be fitted with control devices for travel direction and speed. — Where a steering wheel or similar control is used, the controls for travel direction and speed shall be positioned in close proximity to the steering control.	Truck is not stand-on truck.	NA
The service brake function shall be engaged — automatically when the tiller is released, if operated by the tiller, — automatically when the travel-control is released, if operated by the travel-control, — automatically when releasing the pedal, if the brake function is foot-operated, — when activating the hand actuator, if the brake function is hand-operated.	Truck is not stand-on truck.	NA
b) Trucks with elevating operator platform up to 1 200 mm Means shall be provided to prevent travel while the platform is elevated more than 500 mm, unless the controls are elevated with the platform.	Truck is not stand-on truck.	NA

Requirements	Check and test	Results
4.4.2.4 Pedestrian-controlled trucks 步驾式叉车 The requirements for pedestrian-controlled trucks are as follows. a) The tiller shall be fitted with control devices for travel direction and speed.	Truck is not pedestrian-controlled truck.	NA
b) When the tiller is released, it shall automatically return to its upper rest position, cut off traction power in the travel direction and engage the brake.	Truck is not pedestrian-controlled truck.	NA
c) When the tiller is in its lowered position, the traction power in the travel direction shall be cut off and the brake shall be engaged.	Truck is not pedestrian-controlled truck.	NA
d) The tiller shall be fitted with a device to energize the direction of travel away from the operator until pressure on the device is relieved, or that stops the truck by applying the brakes, if the head of the tiller in its operating position comes into contact with a solid body (e.g. the operator's body).	Truck is not pedestrian-controlled truck.	NA
4.4.2.5 Differential locking 差速锁 It shall be possible to unlock the differential when the truck is moving. For trucks fitted with a pedal-operated differential lock, depression of the pedal shall lock the differential and shall be released when releasing the pedal.	No differential lock.	NA
4.4.2.6 Additional operation from outside the truck 从车辆外部进行的附加操作 If travel control from outside the truck is provided for the operator of sit-on or stand-on trucks and tractors, when operated from the outside the travel speed shall be limited to 6 km/h. These controls may be attached to the truck or a remote control may be provided, and the operating system shall be made operable by means of a separate switch or automatically when the operator leaves the normal operating position. a) General 1) If the control actuator is released, the drive unit shall switch off automatically and the brake shall be engaged automatically. Simultaneous operation from the operating positions shall be excluded. 2) Controls fitted at the outside of the truck shall be secured against unintentional activation. b) Additional requirements for cable-connected remote controls 1) The length and layout of the cables shall allow the operator to operate from outside of the area of hazard of the truck and have visibility of the path of travel. It shall not be possible for the cable to become entangled with the wheels. 2) On a portable control panel, the control elements, with the exception of the emergency stop, shall be guarded against unintentional operation. The portable control panel shall be fitted with an emergency stop device in accordance with ISO 13850. c) Additional requirements for cableless control 1) The transmission range shall be adequate to allow the operator to operate from outside the area of hazards of the truck and have visibility in the path of travel. 2) On the portable control panel, the control elements for operation, with the exception of the emergency stop, shall be guarded against unintentional operation. 3) The reliability level shall be at least 10 ⁻⁹ and the Hamming distance shall be 2. The remote control shall be in accordance with ISO 13849-1, performance level (PL) c. 4) The truck shall stop automatically when outside of the operator's direct view (90°) and/or out of range of the remote control. 5) No control interference shall be possible when more than one truck is operating under remote control at the same time. d) Additional requirements for trucks with trailer coupling 1) The controls (e.g. rear touch device) shall be arranged so that the operator does not have to step between the truck and the trailer in order to operate them. 2) The rear touch device shall be secured against unintentional operation. 3) During operation of the rear touch device, the travel speed of the truck shall not exceed 2,5 km/h.	Truck without additional operation from outside the trucks.	NA

Requirements	Check and test	Results
4.4.2.7 Additional operation from alongside pedestrian-controlled and stand-on trucks (coasting) 车辆旁的附加操作 The additional operation of pedestrian-controlled and stand-on trucks while the operator is walking alongside the truck shall only be possible with the truck's fork arms trailing. The additional operation of such trucks while the operator is walking alongside the truck, and the use of low-lift order-picking trucks provided with a system that allows for operation while walking alongside the truck, are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020.	There is no additional operation from outside the truck.	NA
4.4.3 Steering controls 转向控制 4.4.3.1 Steering direction 转动方向 The following applies. a) For stand-on or sit-on trucks, when travelling in the forward direction, clockwise rotation of the steering wheel, or equivalent movement of the steering control, shall steer the truck to the right.	So designed.	Pass
b) For trucks with an operator control position rotatable by more than 90°, or having duplicated control positions, in order to facilitate the operator facing in the opposite direction, clockwise rotation of the steering wheel, or equivalent movement of the steering control, shall steer the truck to the right as viewed from the new position — i.e. the steering control sense is reversed beyond 90° to facilitate the operator facing in the opposite direction.	The operator control position is not rotatable.	NA
c) Trucks with continuous 360° steering — i.e. the steering/drive wheel can move through 360° to propel the truck in the direction selected by the steering control — shall operate in the same sense as a), above, when travelling in the forward direction.	Truck without continuous 360° steering.	NA
d) For pedestrian-operated trucks fitted with a tiller, when travelling in the forward direction, clockwise movement of the tiller shall steer the truck to the right.	Truck is not pedestrian-operated trucks.	NA
e) Exceptionally, when requested by the user, end-control trucks may be equipped with “reverse steering” — i.e. clockwise rotation of the steering control will steer the truck to the left. Such trucks should be clearly identified.	No special requests by the user.	NA
4.4.3.2 Failure of power supply 供能故障 In the event of an interruption of the power supplied to the steering system (including a dead motor or engine), it shall be possible to maintain the path being steered until the truck is brought to a controlled stop.	Cut off the power supply to the steering system, truck can maintain the path being steered and be brought to stop.	Pass
4.4.4 Load-handling controls 载荷装卸控制 4.4.4.1 Controls 控制装置 Controls shall return to the neutral position when released and stop the corresponding load movement.	So designed.	Pass
When single levers are used to control a function on trucks other than reach trucks with retractable mast or forks, the lever closest to the operator shall control lifting and lowering, the second closest lever should control the tilt function, the third closest lever should control the side shift and the fourth closest lever should be for auxiliary functions.	The lever closest to the operator control lifting/lowering, the second closet lever control the tilt function.	Pass

Requirements	Check and test	Results																																																																	
When single levers are used to control a function on reach trucks with a retractable mast or forks, the lever closest to the operator shall control lifting and lowering, the second closest lever should control the displacement of the mast or forks, the third closest lever should control the tilt function, the fourth closest lever should control side shift and the fifth closest lever should be for auxiliary functions.	Truck is not a reach truck.	NA																																																																	
Trucks equipped with attachments which hold the load by power (e.g. paper clamp) shall feature control(s) with a secondary action to prevent unintentional release of the load. Table 1— Levers or handle-type controls with single operation, sequence of location and direction of movement <table border="1"> <thead> <tr> <th rowspan="2">Function (listed in sequence of location)</th><th colspan="2">Direction of movement</th></tr> <tr> <th>Motion of load or equipment</th><th>Predominant motion of operator's hand when actuating control handle while facing load</th></tr> </thead> <tbody> <tr> <td rowspan="2">Hoist</td><td>Up</td><td>Rearward or up</td></tr> <tr> <td>Down</td><td>Forward or down</td></tr> <tr> <td rowspan="2">Reach</td><td>Retract</td><td>Rearward</td></tr> <tr> <td>Extend</td><td>Forward</td></tr> <tr> <td rowspan="2">Tilt</td><td>Rearward</td><td>Rearward or up</td></tr> <tr> <td>Forward</td><td>Forward or down</td></tr> <tr> <td rowspan="2">Side shift</td><td>Right</td><td>Rearward or up</td></tr> <tr> <td>Left</td><td>Forward or down</td></tr> <tr> <td rowspan="2">Push-pull</td><td>Rearward</td><td>Rearward</td></tr> <tr> <td>Forward</td><td>Forward</td></tr> <tr> <td rowspan="2">Rotate laterally</td><td>Clockwise</td><td>Rearward or up</td></tr> <tr> <td>Counter clockwise</td><td>Forward or down</td></tr> <tr> <td rowspan="2">Rotate longitudinally</td><td>Rearward</td><td>Rearward or up</td></tr> <tr> <td>Forward</td><td>Forward or down</td></tr> <tr> <td rowspan="2">Load stabilizer</td><td>Down</td><td>Rearward or up</td></tr> <tr> <td>Up</td><td>Forward or down</td></tr> <tr> <td rowspan="2">Fork position</td><td>Together</td><td>Rearward or up</td></tr> <tr> <td>Apart</td><td>Forward or down</td></tr> <tr> <td rowspan="2">Grip</td><td>Engage</td><td>Rearward or up</td></tr> <tr> <td>Release</td><td>Forward or down</td></tr> <tr> <td rowspan="2">Truck stabilizer</td><td>Raise</td><td>Rearward or up</td></tr> <tr> <td>Lower</td><td>Forward or down</td></tr> <tr> <td rowspan="2">Clamp</td><td>Clamp</td><td>Rearward or up</td></tr> <tr> <td>Release</td><td>Forward or down</td></tr> </tbody> </table>	Function (listed in sequence of location)	Direction of movement		Motion of load or equipment	Predominant motion of operator's hand when actuating control handle while facing load	Hoist	Up	Rearward or up	Down	Forward or down	Reach	Retract	Rearward	Extend	Forward	Tilt	Rearward	Rearward or up	Forward	Forward or down	Side shift	Right	Rearward or up	Left	Forward or down	Push-pull	Rearward	Rearward	Forward	Forward	Rotate laterally	Clockwise	Rearward or up	Counter clockwise	Forward or down	Rotate longitudinally	Rearward	Rearward or up	Forward	Forward or down	Load stabilizer	Down	Rearward or up	Up	Forward or down	Fork position	Together	Rearward or up	Apart	Forward or down	Grip	Engage	Rearward or up	Release	Forward or down	Truck stabilizer	Raise	Rearward or up	Lower	Forward or down	Clamp	Clamp	Rearward or up	Release	Forward or down	Truck not equipped with attachments.	NA
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4.4.4.2 Manual-lift systems 手动起升系统 The hand power forces and the layout of controls of manually operated lifting systems shall comply with ISO 3691-5.	The lifting systems are not manually operated.	NA																																																																	
4.4.5 Multi-function controls 多功能控制装置 Where a control is designed and constructed to perform more than one function, each separate function shall be clearly marked. Each control function shall return to the neutral position when released and stop the corresponding load movement.	Truck without multi-function controls.	NA																																																																	
4.4.6 Controls for automated functions 自动功能控制装置 The controls for automated functions shall comply with ISO 24134.	Truck without controls for automated functions.	NA																																																																	
4.4.7 Marking Graphic symbols used for marking controls shall comply with 6.3.1.4.	See 6.3.1.4	Pass																																																																	

Requirements	Check and test	Results
4.5 Power systems and accessories 动力系统及其附件	Truck is electrical truck.	NA
4.5.1 Exhaust and cooling systems 排气和冷却系统		
4.5.1.1 Exhaust systems 排气系统 The exhaust system shall be designed in accordance with 4.7.6 and such that engine exhaust is directed away from the operator position. Materials used in the vicinity of exhaust systems shall be non-flammable and shall be chosen and protected such that they are not adversely affected by heat from the exhaust system.	Truck is electrical truck.	NA
4.5.1.2 Cooling systems 冷却系统 The air flow through the cooling system shall be arranged so as to avoid discomfort to the operator.	Truck is electrical truck.	NA
4.5.2 Fuel tank 燃油箱	Truck is electrical truck.	NA
4.5.2.1 Tank isolation 燃油箱的隔离 If a fuel tank is within or adjacent to the engine compartment and excessively high temperatures can occur, the tank and/or filling arrangement shall be isolated from the electrical and exhaust systems by suitable protection, e.g. a separate enclosure or baffles. The tank location and facilities for filling shall be such that spillage or leakage will not drain into the engine or operator's compartment or onto electrical or exhaust system parts.	Truck is electrical truck.	NA
4.5.2.2 Fuel spillage 燃油的溢出 Fuel spillage shall not be possible under normal operating conditions.	Truck is electrical truck.	NA
4.5.3 Access to engine and other compartments 发动机舱和其他隔间的入口	/	/
4.5.3.1 Engine covers 发动机罩 An enclosed engine compartment shall satisfy fan guarding requirements when the manufacturer's recommended routine maintenance is performed with the engine off.	Truck is electrical truck.	NA
If a fan can start (e.g. temperature switch) when the engine is off, the fan shall be guarded. A safety warning sign shall be provided, and included in the instruction handbook (see 6.2). Warnings shall comply with 6.3.3.4.	Truck is electrical truck.	NA
Access from underneath is considered guarded if the access ground clearance is less than 600 mm between the underside of the truck and level ground.	Truck is electrical truck.	NA
4.5.3.2 Unintentional closure 意外关闭 Where unintentional closure could cause injury, access covers (i.e. traction battery or engine covers) shall be provided with means for preventing unintentional closure. Those means shall be permanently affixed to the truck or stored in a safe place on the truck.	An air spring support bar is provided for the battery container cover. The support bar is permanently affixed to the truck.	Pass
4.5.4 Liquefied petroleum gas (LPG)-powered trucks 液化石油气车辆	Truck is electrical truck.	NA
4.5.4.1 Containers 容器 The following applies to the containers of trucks powered by LPG.		
a) LPG containers shall be either permanently fixed to the truck or removable.	Truck is electrical truck.	NA
b) When LPG containers are removable, their fastenings shall permit easy handling and checking of the installation after the exchange of containers.	Truck is electrical truck.	NA
c) Removable LPG containers that incorporate a pressure-relief valve shall be so positioned on the truck that the pressure-relief valve opening is always in communication with the vapour space at the top of the container. This may be accomplished, for example, by an indexing pin which positions the container when the container is properly installed.	Truck is electrical truck.	NA

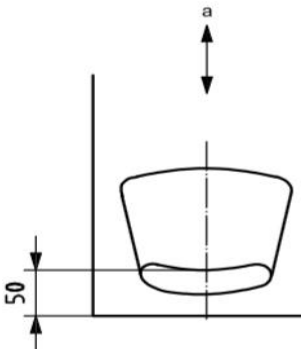
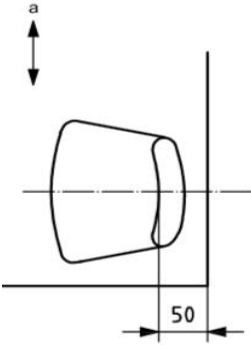
d) LPG containers shall be securely mounted to the truck to prevent movement. Fastening shall withstand static loading of four times the filled container weight in any direction without permanent visible deformation.	Truck is electrical truck.	NA
e) LPG containers shall be fitted on the truck such that exposure to abrasion, shock and the corrosive action of the products handled by the truck is reduced.	Truck is electrical truck.	NA
f) LPG containers and their connections shall be installed such that there are no projections outside the plan view outline of the truck.	Truck is electrical truck.	NA
g) If LPG containers are installed in a compartment, this compartment shall have permanent openings at the bottom. The total surface area of these ventilation openings shall be at least 200 cm ² allowing adequate ventilation to outside the truck.	Truck is electrical truck.	NA
h) If an additional LPG container is carried on the truck, it shall be secured in the same manner as the main container.	Truck is electrical truck.	NA
i) LPG containers, whether fixed or removable, shall be equipped with a device to prevent unintentional emission of gas or liquid, e.g. in the case of a pipe system failure. This does not apply to pressure-relief valves.	Truck is electrical truck.	NA
j) Pipe fittings and accessories on LPG containers shall be protected against mechanical damage when used as specified by the manufacturer.	Truck is electrical truck.	NA
k) The fuel take-off on the LPG container shall be equipped with an easily and quickly accessible manually operated valve. The position and method of operation of this valve shall be clearly marked on the valve handle or on the outside of the truck near the valve.	Truck is electrical truck.	NA
l) The fuel take-off shall be in a liquid form, unless the LPG container and engine are specially equipped for a direct vapour withdrawal.	Truck is electrical truck.	NA
m) Permanently mounted LPG containers to be filled by the user shall be fitted with the following: 1) a pressure-relief valve connected to the vapour space of the container that, when fitted inside the compartments of trucks, shall have the discharge side of the relief valve piped to the atmosphere away from the operator and that shall comply with 4.5.4.3 d); 2) an 80 % fill stop valve; 3) maximum liquid level devices suitable for the LPG in use, indicating the maximum product level and which shall not vent to the atmosphere.	Truck is electrical truck.	NA
n) LPG containers shall be positioned such that they are not exposed to the damaging effects of heat, particularly heat from the engine or the exhaust system. If it is necessary to fit a heat shield, this shall not inhibit ventilation.	Truck is electrical truck.	NA

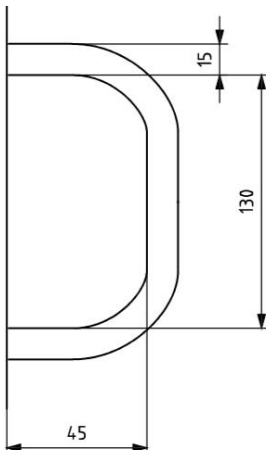
Requirements	Check and test	Results
4.5.4.2 Piping 管路 The following applies to the piping used on trucks powered by LPG.	/	/
a) Connecting piping and all associated parts shall be easily accessible, protected against excessive heat radiation, damage and wear, and shall be flexible enough to withstand vibration and deformation in service, as follows: — piping shall be so arranged that damage or leaks are easily detectable and that checks and maintenance can be carried out; — piping shall be installed such that it cannot be damaged by any excessive heat radiation from hot parts of the truck; — fully rigid pipes shall not be used for connecting the container to equipment on the engine; — piping shall be so arranged that there are no projections outside the plan view outline of the truck.	Truck is electrical truck.	NA
b) Pressure hoses operating above 1 bar shall be supported at least every 500 mm. Rigid pipes shall be supported at least every 600 mm.	Truck is electrical truck.	NA
c) Hoses, pipes and all connections operating at pressures above 1 bar shall be suitable for a working pressure of 25 bar and shall withstand without bursting a test pressure of 75 bar. Hoses, pipes and all connections operating below 1 bar shall withstand without bursting a test pressure of five times the maximum working pressure.	Truck is electrical truck.	NA
d) Pressure shall not exceed the working pressure rating of components in any section of pipe work containing LPG in liquid form between two shut-off valves that are closed; a pressure-relief valve, for example, or other suitable means, may be used if necessary.	Truck is electrical truck.	NA
e) Aluminium piping shall not be used.	Truck is electrical truck.	NA
f) Hoses shall be as short as practical.	Truck is electrical truck.	NA
g) Pressure unions and joints operating above 1 bar shall be made of metal, except for any constrained sealing washers.	Truck is electrical truck.	NA
4.5.4.3 Equipment 设备 The following applies to the equipment used on trucks powered by LPG.	/	/
a) The supply of gas shall be automatically cut off when the engine stops, irrespective of whether or not the ignition system has been switched off.	Truck is electrical truck.	NA
b) For multi-fuel applications, the system shall be designed to avoid the possibility of LPG entering any other fuel container and to shut off each fuel source before the alternative one is opened.	Truck is electrical truck.	NA
c) If the truck is equipped with two or more containers to supply fuel, they shall be connected via a multi-way valve or other suitable means, so that LPG can only be drawn from one container at a time. The use of two or more containers at the same time shall not be possible.	Truck is electrical truck.	NA
d) Pressure-relief valves or liquid-level indicators shall be installed such that they cannot discharge in the direction of the operator or onto truck components that could be a source of ignition.	Truck is electrical truck.	NA
e) If corrosion of a part would interfere with its proper functioning, that part shall be provided with a corrosion-resistant protective coating.	Truck is electrical truck.	NA
f) All fuel system components shall be firmly secured to the truck.	Truck is electrical truck.	NA
g) Pressure-reducing valves shall be readily accessible for inspection and maintenance.	Truck is electrical truck.	NA
h) The engine compartment shall be designed in accordance with 4.5.4.1 g), in order to avoid any LPG accumulation.	Truck is electrical truck.	NA

Requirements	Check and test	Results
4.5.4.4 Regional requirements 区域性要求 LPG-powered trucks are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020: 4.1.6 Liquefied petroleum gas (LPG) trucks For Australia, the following applied to LPG-powered trucks: — LPG components installations for trucks shall comply with the requirements of AS 4983.	Truck is electrical truck.	NA
4.6 Systems for lifting and tilting 起升和倾斜系统 4.6.1 Lift chains 起升链条 The truck or mast manufacturer shall have on record a certificate from the chain manufacturer giving the breaking load of the chains used. When the lifting mechanism includes a chain or chains, the truck manufacturer shall only use leaf or roller chains. These shall provide a minimum factor, K_1 , when supporting the maximum capacity load and assuming no friction in the mast structure, which is given by the following equation: $K_1 = (L_c \times n) / (R + w)$ where K_1 is the safety factor of the lifting mechanism; L_c is the minimum breaking load for new chain; n is the number of chains; R is the maximum load capacity of the truck; w is the dead weight of the lifting mechanism supported by the chains. The K_1 factor is subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020.	See the test report number: Z0001158-85-3	Pass
Pulley diameters shall be in accordance with the chain manufacturer's instructions.	Pulley diameters are in accordance with the chain manufacturer's instructions.	Pass
4.6.2 Mechanical lifting systems 机械起升系统 4.6.2.1 General The lifting system shall comply with the requirements of 4.6.3.3.	The lifting system is hydraulic lifting system.	NA
4.6.2.2 Failure of lifting/lowering mechanism 起升/下降装置故障 In the event of failure of a single lifting/lowering part of the mechanism (e.g. gearwheel, chainwheel or spindle), it shall not cause the elevated load or operator's platform to descend uncontrolled.	The lifting system is hydraulic lifting system.	NA
4.6.2.3 Lowering speed 下降速度 The lowering speed of the lifting mechanism with its rated load shall not exceed 0,6 m/s.	The lifting system is hydraulic lifting system.	NA

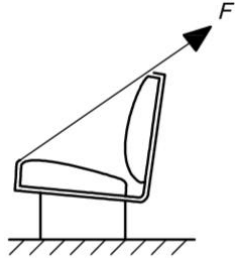
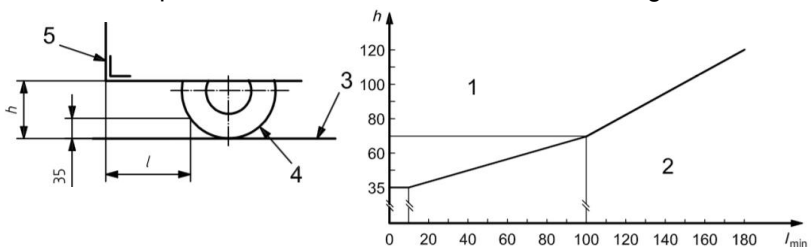
Requirements	Check and test	Results
4.6.3 Hydraulic lifting and tilting systems 液压起升和倾斜系统 4.6.3.1 Hydraulic lifting systems 液压起升系统 The hydraulic lifting system shall be designed such that, with the hydraulic fluid at normal operating temperature, the mast substantially vertical and carrying rated capacity load, the descent of the load caused by internal leakage in the first 10 min shall not exceed — 100 mm for trucks up to and including 10 000 kg rated capacity, — 200 mm for trucks over 10 000 kg rated capacity.	By test, the descent of the load caused by internal leakage in the first 10 min is 6 mm.	Pass
4.6.3.2 Lowering speed limitation 下降速度限制 A device shall be incorporated in the lift circuit which, in the event of a failure of the hydraulic circuit excluding the hydraulic lift cylinder(s) — shall restrict the rate of descent of the lifting mechanism with its rated load to 0,6 m/s maximum. The device shall be fitted directly at the lifting cylinder(s).	Both speed limiting device and flow regulator are equipped. By test, the lowering speed with rated load is 0.4 m/s.	Pass
4.6.3.3 Limitation of stroke 行程限制 The lift assembly shall be fitted with a positive means to prevent over-travel. In addition, positive means (e.g. mechanical stop) shall be provided to prevent the fork carrier and moving elements of the mast structure from unintentionally disengaging from the upper end of the mast.	The mast is equipped with stop block so as to prevent over-travel. It is also equipped with device to prevent the fork carrier and moving elements of the mast structure from unintentionally disengaging from the upper end of the mast.	Pass
4.6.3.4 Hydraulic tilting systems 液压倾斜系统 The internal leakage rate of the complete hydraulic tilting system (i.e. cylinder, valve, etc.), with the oil at normal operating temperature, shall allow no more than 5° forward movement of the mast in 10 min from the vertical mast position, when the rated load is at a height of 2 500 mm or, in the case of trucks with lift heights less than 2 500 mm, at their maximum lift height. The average tilting speed allowed by internal leaks shall not exceed 0,5°/min for trucks with a maximum forward tilt of less than 5°.	By test, the forward movement of the mast in 10 min from the vertical mast position, when the rated load is at a height of 2 500 mm is 0.1°.	Pass
4.6.3.5 Mast tilt and carriage isolation 门架倾斜和货叉架的自锁 For ride-on trucks, mast tilt and carriage movement shall not be possible through operation of the primary load-handling control when the operator is not in the normal operating position.	Seat switch serve as OPS to meet this requirement.	Pass
Isolation of attachment movement is subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020.	See the test report number: Z0001158-85-3.	Pass
4.6.4 Hydraulic systems 液压系统 4.6.4.1 Hydraulic circuits 液压回路 Hoses, piping and connections subjected to internal pressure shall be capable of withstanding, without bursting or permanent deformation, a pressure equal to at least three times the operating pressure.	No bursting and permanent deformation after test	Pass
Pipes and hoses shall be located and, if necessary, restrained, so that deterioration, sharp edges and other damage-causing sources are minimized.	Pipes and hoses are so located and restrained.	Pass
4.6.4.2 Pressure controls 压力控制 All hydraulic systems shall include a device which prevents the pressure in the system from exceeding a preset level. The device shall be so designed and fitted that unintentional loosening or adjustment is avoided and so that a tool or key is required to alter the pressure setting.	Only the internal hexagonal wrench could be used to adjust the pressure.	Pass

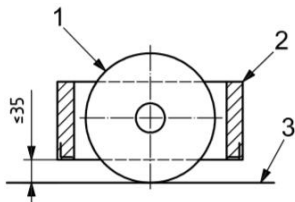
Requirements	Check and test	Results
4.6.4.3 Failure of energy supply to hydraulic circuits 液压回路供能故障 In the case of a fault or interruption of the supply of energy, the design of the hydraulic system shall be such that it does not allow any uncontrolled motion of equipment or attachment.	Turning off the pump motor, no uncontrolled motion of equipment happened.	Pass
4.6.4.4 Fluid purification 液压油净化 The hydraulic system(s) shall be protected against the risk of contamination of the hydraulic fluid, e.g. by means of magnet(s) or filter(s).	By filter.	Pass
4.6.5 Load-handling and -stacking attachments 搬运和堆垛载荷属具 4.6.5.1 Unintentional displacement or detachment 意外移动或脱落 Means shall be provided to prevent the unintentional lateral displacement or unintentional detachment of attachments from the truck. Movement of the attachment and its parts shall be mechanically limited at the extreme positions.	No such attachments	NA
4.6.5.2 Malfunction in the power supply system 功能系统故障 Attachments that hold the load by power shall be designed such that the maximum load they are intended to handle is automatically retained for at least 10 min when the truck's manual controls are in the neutral position or in the event of a malfunction in the power supply system for the attachment.	No such attachments	NA
4.6.5.3 Hydraulic system for attachment 属具的液压系统 If an attachment has its own separate hydraulic system, it shall comply with 4.6.4.	No such attachments	NA
4.6.5.4 Combined hydraulic systems 组合液压系统 If an attachment has a hydraulic system connected to the truck hydraulic system, the two systems shall be compatible and the combined systems shall comply with 4.6.4.	No such attachments	NA
4.6.5.5 Attachments for lifting freight containers 起升货物集装箱的吊具 An attachment for lifting freight containers shall be equipped with indicator lights according to ISO 15871. The attachment shall have a device(s) to prevent unintentional disengagement of a container. Means shall be provided to prevent lifting of the container for transport unless all interface mechanisms are fully engaged and locked. If multiple containers are lifted at the same time, the same requirements are valid for all containers. Travel speed shall be restricted to a maximum of 10 km/h if the container is not locked to the attachment in a manner that will prevent unintentional drop (e.g. lifting with grapple arms).	No such attachments	NA
4.6.5.6 Fork arms 货叉 4.6.5.6.1 Solid-section fork arms shall be manufactured and tested in accordance with ISO 2330, except with respect to safety factors. The safety factors are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020.	In accordance with ISO 2330. See the fork test report.	Pass
4.6.5.6.2 The total capacity of all fork arms fitted to a truck shall not be less than the actual capacity of the truck.	The total capacity of all fork arms is less than the actual capacity.	Pass
4.6.5.6.3 Means shall be provided to prevent unintentional lateral displacement of the fork arms on the fork carrier.	The lateral displacement of the fork arms is controlled by the joystick.	Pass
4.6.5.6.4 Fork-arm extensions shall be designed to prevent accidental disengagement from the fork arms, and shall be in accordance with ISO 13284.	No fork-arm extensions	NA
4.6.5.7 Fork carriers 货叉架 Hook-on type fork carriers shall be in accordance with ISO 2328.	Hook-on type fork carriers are in accordance with ISO 2328.	Pass

Requirements	Check and test	Results
4.7 Operator positions 操作者位置 4.7.1 Dimensions 尺寸 The operator's seat or standing position shall be so located that the operator has sufficient room while operating the truck so as to remain within the plan view outline of the truck.	So designed	Pass
The dimensions shall be of suitable and ergonomic shape to accommodate at least a 5th percentile to a 95th percentile of the population, as shown in ISO 3411:2007, Figures 1 to 3, within the plan view outline of the truck. The seat shall not extend beyond the plan view outline of the truck.	So designed	Pass
The minimum distance from the top edge of the seat back to the plan view outline shall be 50 mm (see Figures 1 and 2).	The distance from the top edge of the seat back to the plan view outline is 980 mm.	Pass
  a Direction of travel. Figure 1 Front-seated operator Figure 2 Side-seated operator		
For stand-on pedestrian- and centre-controlled ride-on trucks employing a tiller, the tiller steering control movement may extend beyond the plan view.	No tiller	NA
4.7.2 Operator access and egress 操作者出入口 4.7.2.1 General 一般要求 Trucks shall be designed to permit safe and easy access and egress and to minimize the risk of slipping, falling and tripping.	No risk of slipping, falling and tripping.	Pass
Steps, running boards and hand holds (grab handles, fixed parts of the truck structure, etc.) shall be provided above a step height of 350 mm to give three-point contact at all heights (i.e. one hand and two feet or two hands and one foot).	Grab handle is provided.	Pass
Step width, instep clearance and toe clearance shall comply with ISO 2867.	So designed.	Pass
4.7.2.2 Steps 踏脚 Steps shall have slip-resistant surfaces or covering (e.g. expanded metal, abrasive coating). The first step shall be not more than 550 mm from the ground and succeeding steps shall be 250 mm to 350 mm, preferably at equal intervals.	Steps have slip-resistant surfaces. First step: 435 mm Second step: 257 mm	Pass
4.7.2.3 Compartment floors 车厢地板 The compartment floor frequented by the operator, steps and walkways shall be free of obstacles and shall have a slip-resistant surface, e.g. ribbed mats, abrasive coating, expanded metal.	No obstacles on the compartment floor. The surface of the compartment floor is slip-resistant.	Pass
4.7.2.4 Walkways 行走通道 Walkways more than 2 000 mm from the ground shall have guard rails. The guard rails shall have a height of 900 mm to 1 100 mm and shall be capable of withstanding, without permanent deformation, a force of 900 N applied in a horizontal direction from the inside to the outside.	No walkway.	NA

Requirements	Check and test	Results
4.7.2.5 Hand holds 抓手 For access to, and egress from, the normal operating position with a floor height above 300 mm, hand hold(s) shall be provided; these may be part of the truck structure. The clearance dimension for a hand hold shall be at least of 45 mm width, 130 mm length and diameter of 15 mm (see Figure 3). 	A handle with suitable dimensions is provided. Width: 65 mm Length: 400 mm Diameter: 23 mm	Pass
4.7.3 Platforms 操作平台 4.7.3.1 General 一般要求 Operator stand-on platforms on pedestrian-controlled and stand-on end-controlled trucks shall be dimensioned in accordance with 4.7.1 and shall be capable of withstanding a compression force corresponding to 2,5 times the mass of the laden truck applied along the longitudinal axis of the truck with the outermost projection of the platform against a flat vertical surface. For the purpose of this requirement, the operator platform includes any surrounding reinforcement or parts of the truck which provide resistance to crushing of the platform, except for pedestrian-controlled stand-on trucks employing a tiller.	No stand-on platforms.	NA
4.7.3.2 Platforms overhanging the truck chassis 外伸于车架的操作平台 Platforms overhanging the truck chassis on tiller-operated stand-on trucks, capable of travelling more than 6 km/h, shall, in addition to 4.7.3.1, be provided with a guard at either the sides or the front of the platform. The guards shall be capable of withstanding a horizontal force of 900 N acting from inside to outside applied in line with the centre of the operator's standing position without permanent deflection. The side guards shall be at a minimum height of 700 mm above the platform in its protective position.	No platforms overhanging the truck chassis	NA
4.7.3.3 Pedestrian-controlled trucks with foldable platforms 带有折叠站板的步驾式车辆 Operator stand-on platforms that are fitted to pedestrian-controlled trucks and overhang the truck's chassis may be capable of being folded or pivoted to an upright position when the operator leaves the platform; this may be done automatically.	Truck is not pedestrian controlled trucks with foldable platforms.	NA
For platforms which do not act automatically, devices shall be provided to prevent the truck manoeuvring or travelling unless the operator is standing on the platform or the platform is in its upper rest position.	Truck is not pedestrian controlled trucks with foldable platforms.	NA
Travelling of more than 6 km/h shall only be possible when the platform is pivoted down and guards are in their protective position.	Truck is not pedestrian controlled trucks with foldable platforms.	NA

Requirements	Check and test	Results
4.7.3.4 Stand-on platforms 站立操作平台 Operator stand-on platforms which are built within the plan view outline of pedestrian-controlled trucks, where the operator stands to the side of the motor housing, shall be equipped with an additional grab rail for operator stability when riding. This grab rail shall be capable of withstanding a horizontal force of 900 N applied in line with the operator's standing position, without permanent deformation. The requirements of 4.7.3.2 do not apply for this configuration of pedestrian-controlled truck.	No stand-on platform	NA
4.7.3.5 Trucks with foldable platforms and foldable side guards 带有折叠站板和折叠式侧面防护装置的车辆 On trucks with side guards and platforms of the folding or pivoting type as described in 4.7.3.2 and 4.7.3.3, travelling movement shall only be possible when the side guard or platform is in a protective position or an inactive rest position. No travelling movement is allowed with the platform or side guard in an intermediate position.	No foldable platform and foldable side guard	NA
4.7.4 Operator's seat 操作者座椅 The seat shall be designed and located to provide easy access to the controls, shall provide a position for the truck operator in accordance with ergonomic principles and shall meet the following requirements.	The seat is so designed and located.	Pass
a) If the seat has a facility allowing fore and aft adjustment, this shall be possible without the use of tools.	The seat is so designed.	Pass
b) If a weight-adjustable seat is fitted to reduce vibration transmitted to the operator, the adjustment shall accommodate operator weights of 55 kg to 110 kg. Manual adjustment of the weight mechanism shall be possible without the use of tools.	The seat is so designed.	Pass
c) If a seat has a facility allowing it to swivel about a vertical axis, this shall be possible at all seat adjustment positions without unintentional operation of the controls.	The seat can not swivel.	NA
d) The seat mounting shall be able to withstand the forces which can occur during operation, e.g. braking forces, as well as the forces imposed by the operator restraint specified in 4.7.8.	The seat mounting can withstand the forces which can occur during operation, as well as the forces imposed by the operator restraint specified in 4.7.8.	Pass
e) The requirements of a) to d), above, also apply to additional operator's seats.	No additional operator's seat	NA
f) When using an auxiliary seat on a stand-on industrial truck, a padded seat surface and backrest is sufficient. If the operating space of the stand-on operator is restricted, the auxiliary seat shall be capable of being folded or pivoted.	Truck is not stand-on industrial truck.	NA

Requirements	Check and test	Results
g) The seat anchorage to the battery cover or engine cover of sit-on counterbalanced trucks, as well as the latching method of the cover to the truck chassis, shall have sufficient strength in the event of a backwards tip-over of the truck from a loading dock. The seat anchorage shall be able to withstand a force of 2 250 N at a $45^\circ \pm 5^\circ$ angle, as shown in Figure 4. Verification of this requirement shall be by means of a type test carried out using a strap wrapped around the seat as shown in Figure 4.  F — force, 2 250 N Figure 4 — Seat anchorage pull test	The seat anchorages to engine cover as well as the latching method of the cover to the truck chassis has sufficient strength. By test, the seat anchorage is able to withstand a force of 2 250 N at a $45^\circ \pm 5^\circ$ angle.	Pass
The specification and marking of the operator's seat is subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020.	See the test report number: Z0001158-85-3.	Pass
4.7.5 Protection from road wheels and objects thrown up by the wheels 车轮和车轮甩出物的防护 4.7.5.1 Ride-on trucks 乘驾式车辆 In the normal operating position, the operator shall be protected against contact with the truck wheels and against objects thrown up by the wheels (e.g. mud, gravel, debris). The protection device for the steered wheels need only cover the wheels when in a straight-line position.	In the normal operating position, the operator is protected against contact with the truck wheels and against objects thrown up by the wheels.	Pass
4.7.5.2 Pedestrian-controlled trucks 步驾式车辆 The operator in the normal operating position shall be protected against contact with the drive and stabilizing wheels. The position of these wheel protections shall be in accordance with Figure 5.  Either: $h < 35 \text{ mm}$; $l_{\min} = 10 \text{ mm}$ Or: $h = 35 \text{ mm to } 70 \text{ mm}$; $l_{\min} = 2,57 \times h - 80 \text{ mm}$ $h = 70 \text{ mm to } 120 \text{ mm}$; $l_{\min} = 1,60 \times h - 12 \text{ mm}$ Key 1—frame 2—foot space 3—ground/floor 4—wheel 5—frame edge h—height from ground or floor to frame edge l— horizontal distance from end of frame to point on wheel 35 mm above ground or floor Figure 5 — Free space for operator's feet	Truck is not pedestrian-controlled truck.	NA

Requirements	Check and test	Results
If, for pedestrian-controlled trucks, the driving and stabilizing wheel protection specified in 4.7.5.2 cannot be complied with, a wheel guard (deflector) as shown in Figure 6 shall be installed. For castors, the deflector need only be mounted on the side on which the conditions specified in 4.7.5.2 are not met.  Key 1—wheel 2—deflector 3—ground (floor) Figure 6 —Foot protection	Truck is not pedestrian-controlled truck.	NA
4.7.6 Protection from burning 防止烫伤 All parts of the truck within reach of the operator in the normal operating position or when the operator is entering or leaving the operating position shall be insulated or shielded so that the surface temperature, generated by heat sources in the truck, of bare metal parts does not exceed 65 °C, and that of painted or plastic parts does not exceed 83 °C.	All the high temperature parts are insulated or shielded to meet this requirement.	Pass
The temperature of the air at the heater outlet, where fitted, shall not exceed 60 °C.	No heater outlet	NA
4.7.7 Protection against crushing, shearing and trapping 防止挤压、剪切和夹住 4.7.7.1 General 一般要求 Parts that move relative to one another and that are within reach of the operator in the normal operating position shall be adequately guarded. If hazards still exist, they shall be identified according to 6.2 and on the truck in accordance with 6.3.3.4.	Parts that move relative to one another and that are within reach of the operator in the normal operating position are adequately guarded.	Pass
Fixed guards and their mounting systems and fixed and/or removable guard systems are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020.	See the test report number: Z0001158-85-3	Pass
4.7.7.2 Minimum distances 最小距离 Parts separated by the following minimum distances satisfy the adequate guarding requirements of 4.7.7.1: a) places where only the operator's fingers can be trapped: min. 25 mm; b) places where only the operator's hands or feet can be trapped: min. 50 mm; c) places where the operator's arms or legs can be trapped: min. 100 mm.	The minimum distance between parts where the operator's fingers can be trapped: 45 mm. The minimum distance between parts where the hands or feet can be trapped: 75 mm. No parts can trap the operator's hands and legs.	Pass
Moving parts that need to be in contact with, or move in close proximity to, one another shall be guarded.	Moving parts that need to be in contact with, or move in close proximity to, one another are guarded.	Pass
Any openings in such guarding shall be small enough to prevent an 8 mm diameter probe from passing through them. If such hazards still exist, they shall be identified on the truck in accordance with 6.3.3.4.	The widest opening is 7 mm in width.	Pass

Requirements	Check and test	Results
4.7.7.3 Attachments 属具 Crushing and shearing hazards to the operator in the normal operating position associated with attachments, except at the load supporting points, shall also meet the relevant requirements of 4.7.7.1. If such hazards still exist, they shall be identified according to 6.2 and on the attachment by a warning sign in accordance with 6.3.3.4.	No such attachment	NA
4.7.7.4 Foot protection 脚防护 Trucks with a side-facing seated or standing operator shall be so built that when travelling, the operator cannot unintentionally place his feet outside the confines of the truck; or, alternatively, the truck shall be equipped with a traction cut off (e.g. dead-man switch), enabled whenever an operator's foot is not in the safeguarded position.	Truck equipped a front-facing seat.	NA
4.7.8 Operator restraint 操作者约束 Sit-on counterbalanced lift trucks with a rated capacity up to and including 10 000 kg and sit-on, single side-loading trucks shall have a restraint device, system or enclosure intended to reduce the risk of entrapment of the operator's head and/or torso between the truck and the ground in the event of a tip-over.	Safety belt is provided.	Pass
Such means shall not unduly restrict the operation of the truck, e.g. the operator's access, egress, and/or visibility.	Safety belt cannot restrict the operation of the truck.	Pass
Warnings and instructions on the purpose, use and action to be taken in the event of a tip-over, so as to reduce the risk associated with the operator's head impacting a solid surface, shall be provided on the truck and described in the instruction handbook (see 6.2).	See the operation and maintenance manual	Pass
If a restraint system with a belt is used, this system shall be in accordance with ISO 24135-1.	In accordance with ISO 24135-1. See the safety belt declaration.	Pass
4.7.9 Additional operator positions 附加操作者位置 Additional operator position(s) shall be in accordance with 4.7.1 to 4.7.8.	No additional operator position.	NA

Requirements	Check and test	Results
4.8 Stability 稳定性 4.8.1 General 通用要求 In order to reduce the hazards of longitudinal and lateral tip-over in the operating conditions foreseen by the manufacturer, the trucks specified below shall comply with the stability requirements given in the applicable part of ISO 22915, without permanent deformation of the structure (see 5.2): — basic test criteria and requirements for all applicable truck types, ISO 22915-1; — counterbalanced trucks with mast, ISO 22915-2; — reach and straddle trucks, ISO 22915-3; — pallet stackers, double stackers and order-picking trucks with operator position elevating up to and including 1 200 mm lift height, ISO 22915-4; — bidirectional and multidirectional trucks, ISO 22915-7; — industrial variable-reach trucks, ISO 22915-11; — order-picking trucks with operator position elevating above 1 200 mm, ISO 22915-21.	The stability tests are completed according to ISO 22915-1 and ISO 22915-2. (1) Longitudinal test (stacking, test 1) Test platform slop: 4% with load, max. lift height, mast vertical (2) Longitudinal test (travelling, test 2) Test platform slop: 18% with load, travel lift height (300 mm), mast full rearward (3) Lateral test (stacking, test 3) Test platform slop: 6% with load, max. lift height, mast full rearward (4) Lateral test (travelling, test 4) Test platform slop: $(15+1.4v) \% = 35.9\%$, without load, travel lift height (300 mm), mast full rearward After the tests, the trucks without permanent deformation of the structure.	Pass
The stability of trucks lifting less than 500 mm shall be tested according to the test requirements defined for travelling by the appropriate International Standard for stability for a similar truck design equipped with a mast.	The lift height of trucks is not less than 500 mm.	NA
Stability requirements are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020.	See the test report number: Z0001158-85-3.	Pass
4.8.2 Specific operating conditions 特殊作业条件 For specific operating conditions foreseen by the manufacturer, additional stability tests shall be carried out in accordance with the following parts of ISO 22915, as applicable: — trucks operating in the special condition of stacking with mast tilted forward and load elevated, ISO 22915-8; — trucks operating in the special condition of stacking with load laterally displaced by powered devices, ISO 22915-10; — trucks operating in the special condition of offset load, offset by utilization, ISO 22915-20.	No specific operation conditions.	NA
4.8.3 Levelling indicator for rough-terrain trucks 越野叉车使用的水平仪 Rough-terrain trucks shall be equipped with a levelling indicator to permit the operator in the operating position to keep the truck within the tilt limitations (for longitudinal and lateral axes) foreseen by the manufacturer.	Truck is not rough-terrain truck.	NA

Requirements	Check and test	Results																								
4.9 Protective devices 防护装置 4.9.1 Overhead guard 护顶架 4.9.1.1 General 一般要求 Ride-on trucks with a maximum lift height of more than 1 800 mm above the floor shall be fitted with an overhead guard complying with ISO 6055 to protect the operator from falling objects. 表 1 护顶架冲击试验载荷 <table border="1"> <thead> <tr> <th>车辆额定起重量/kg</th><th>试验冲击功 E_{test} /J</th><th>试验载荷最小质量/kg</th></tr> </thead> <tbody> <tr> <td>1 000 以下</td><td>3 600</td><td>340</td></tr> <tr> <td>1 000~1 500</td><td>5 400</td><td>340</td></tr> <tr> <td>1 501~2 500</td><td>10 800</td><td>680</td></tr> <tr> <td>2 501~3 500</td><td>21 760</td><td>1 360</td></tr> <tr> <td>3 501~6 500</td><td>32 640</td><td>1 360</td></tr> <tr> <td>6 501~10 000</td><td>43 520</td><td>1 360</td></tr> <tr> <td>10 000 以上</td><td>48 960</td><td>1 360</td></tr> </tbody> </table> ^a $l_{drop} = E_{test} / (9.8 \times m_{test})$ 式中: l_{drop} —— 下落距离,单位为米(m); m_{test} —— 试验载荷的实际质量,单位为千克(kg)。	车辆额定起重量/kg	试验冲击功 E_{test} /J	试验载荷最小质量/kg	1 000 以下	3 600	340	1 000~1 500	5 400	340	1 501~2 500	10 800	680	2 501~3 500	21 760	1 360	3 501~6 500	32 640	1 360	6 501~10 000	43 520	1 360	10 000 以上	48 960	1 360	Truck is equipped a overhead guard according to ISO 6055:2004 Width opening: 120 mm (≤ 150 mm) Vertical clearance: 1025 mm (≥ 903 mm) Dynamics test Test object: 45 kg Dropped distance: 1.5 m Test times: 10 After test, the maximum permanent vertical deformation: 10 mm (≤ 20 mm) Impact drop test Test energy: 32 640 J Test load: 1360 kg Drop distance: 2.45 m After test, the overhead guard meets the requirements of ISO 6055:2004.	Pass
车辆额定起重量/kg	试验冲击功 E_{test} /J	试验载荷最小质量/kg																								
1 000 以下	3 600	340																								
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Trucks with an elevating operator position up to and including 1 200 mm that feature a lift height of the load of more than 1 800 mm above the operator platform shall be fitted with an overhead guard complying with ISO 6055 to protect the operator from falling objects.	The operator position can not be elevated.	NA																								
4.9.1.2 Additional fitting against falling small objects 防止小物体坠落的附加装置 The overhead guard specified in 4.9.1.1 shall, when handling a load above 1 800 mm lift height, be constructed in such a manner that it can be provided with an additional fitting making it possible in those special cases to increase the protection of the operator against falling small objects.	Load backrest extension is provided to meet this requirement.	Pass																								
4.9.1.3 Pedestrian-controlled trucks with foldable platform 带有折叠板的步驾式车辆 Pedestrian-controlled trucks with a foldable platform as specified in 4.7.3.3 shall be provided with means to prevent lifting over 1 800 mm from the floor when the side guards are in their protective position. This does not apply if an overhead guard as specified in 4.9.1.1 is fitted on the truck.	Truck is not pedestrian-controlled truck.	NA																								
4.9.2 Load backrest extension 挡货架 4.9.2.1 Provision for load backrest extension 挡货架的规定 Trucks fitted with fork arms with a lift height of more than 1 800 mm shall be designed so that they can be fitted with a load backrest extension.	Load backrest extension is fitted to meet this requirement.	Pass																								

Requirements	Check and test	Results
4.9.2.2 Size of openings 开口尺寸 Load backrest extensions, if provided, shall have height, width, and size openings sufficient to minimize the possibility of the load falling toward the mast when the mast is in a position of maximum rearward tilt. The size of openings in the load backrest extension, if provided, shall not exceed 150 mm in one of the two dimensions.	Load backrest extensions are optional part. Width opening: 134 mm	Pass
4.9.3 Warning device 报警装置 Trucks shall be equipped with an operator-controlled audible warning device.	The horn and back-up buzzer are equipped.	Pass
4.9.4 Wheels with split wheel rims for inflatable tyres 分离式轮辋上安装充气轮胎 When split wheel rims are used with pneumatic tyres, the truck shall be provided with means to prevent the user from separating the halves of the wheel before removing it from the axle. Information on the proper means of removing the tyre from the wheel shall be provided in the instruction handbook (see 6.2).	See the operation and maintenance manual	Pass
4.9.5 Traction battery compartment 牵引蓄电池箱 4.9.5.1 Unauthorized access 未经许可的接触 On trucks with a nominal battery voltage exceeding 120 V d.c. if a lockable cover is not present on the battery enclosure, facilities shall be provided to enable the battery compartment to be secured so as to prevent unauthorized access to the battery.	Nominal battery voltage is not exceeding 120 V d.c.	NA
4.9.5.2 Metal cover 金属盖 A metal cover for a battery compartment or battery enclosure shall have either a) sufficient strength and rigidity, in conjunction with an air spacing of at least 30 mm provided between it and the battery terminals, so that the battery terminals are not short-circuited when a 980 N force is applied to any area 300 mm × 300 mm of the cover, or b) an air space reduced to a minimum of 10 mm, provided covers or live parts of the battery are insulated in such a way that disintegration and/or displacement of the insulation is prevented.	The metal cover for the battery enclosure has sufficient strength and rigidity, in conjunction with an air spacing of 45 mm provided between it and the battery terminals.	Pass
4.9.5.3 Non-metallic cover 非金属盖 For non-metallic covers of battery compartments, the following applies. a) The cover shall have a burn rating of V0 or V1 in accordance with IEC 60695-11-10. b) The cover shall comply with an impact test of 136 J, the impact being produced by dropping a steel sphere having a diameter of 100 mm and mass of 4,11 kg from a height of 3,3 m. If the battery is located under an overhead guard, the impact may be reduced to 68 J, produced by dropping a steel sphere having a diameter of 100 mm and mass of 4,11 kg from a height of 1,65 m. There shall be no live parts exposed or impact that causes physical damage to the battery. c) If metallic parts project into the battery compartment, then 4.9.5.2 applies.	The cover is metal cover.	NA

Requirements	Check and test	Results
4.9.5.4 Ventilation 通风 The compartment and enclosure that houses a battery shall be provided with means for ventilation that reduce the likelihood of accumulation of explosive hydrogen-air mixture during truck operation.	There are openings in the enclosure that houses a battery. So the accumulation of explosive hydrogen-air mixture can not occur.	Pass
When openings are positioned such that gases can escape freely, these shall be located away from the operator's position. Ventilation openings are usually satisfactory if they provide a cross-section, in square millimetres, equal to half the number of cells, multiplied by the rated capacity in Ampere-hours. This level of ventilation is not intended to cover the charging condition.	Openings are positioned such that gases can escape freely, and they are located away from the operator's position.	Pass
4.9.5.5 Resistance to electrolyte 耐电解液 The battery enclosure, in accordance with ISO 20898, shall be resistant to the chemical effects of the electrolyte.	The surface of battery enclosure is spray-paint to resist to the chemical effects of the electrolyte.	Pass
4.9.6 Battery-restraint devices 蓄电池限位装置 On battery-powered trucks, means shall be provided to retain the battery from moving more than 15 mm in a horizontal direction.	So designed	Pass
In addition, on ride-on type trucks where the displacement of the traction battery may pose a risk of injury to the operator due to a tip-over a battery-restraint device(s) shall restrict the battery displacement to no more than 100 mm into the space normally occupied by the operator or from moving more than 100 mm in a lateral direction beyond the limits of the battery compartment. A tip-over may be simulated by allowing a static truck to fall free from its critical balance point impacting on a horizontal plane. A complete truck is not required for this test, but all battery compartment related parts shall be fitted.	The displacement is less than 100 mm.	Pass
The movement of the battery shall not interfere with the operator's egress from the truck.	The location of the battery is not interfere with the operator's egress from the truck.	NA
The battery housing shall be constructed, located and the battery installed so as to avoid electrolyte being spilled onto the operator in the event of tip-over and/or to avoid the accumulation of vapours in places occupied by the operator.	The construction, location of the battery case and the installation of battery can avoid the accumulation of vapours.	Pass
The battery cover, if any, of a compartment that is an integral part of the truck, or a separate enclosure such as a tray and cover, shall be secured.	The battery cover of enclosure is secured.	Pass
4.9.7 Starter battery requirements 启动蓄电池的要求 The starter battery on engine-powered trucks shall be restrained from movement.	Truck is electrical truck	NA
4.9.8 Handling of batteries 蓄电池的搬运 Battery-powered trucks should be designed such that batteries with a mass in excess of 25 kg can be easily removed using a means which supports the weight of the battery during removal, e.g. an opening for slings in the overhead guard or rollers.	Hoist the battery carefully by the hoisting tool which mounted using an opening in the overhead guard.	Pass
4.10 Visibility and lighting 视野和照明装置 4.10.1 Visibility 视野 Requirements for all-round visibility from unladen trucks up to and including 10 000 kg rated capacity shall be in accordance with ISO 13564-1.	There is a wide field vision on the operator position of the truck.	Pass
For visibility with load, see 6.2.2, considering that, if direct visibility is limited by the load, aids can be used.	See the operation and maintenance manual.	Pass

Requirements	Check and test	Results
Visibility requirements are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020. NOTE Visibility requirements for trucks over 10 000 kg were being developed at the time of publication of this part of ISO 3691.	See the test report number: Z0001158-85-3	Pass
4.10.2 Lighting照明装置 Ride-on trucks shall be so designed that it is possible, referring to the manufacturer's instructions, to equip them with travel lights, working lights and signal lights.	Truck is equipped with stop lamps, direction lamps, working lamp and reverse lamp.	Pass
4.11 Environmental conditions环境条件 4.11.1 Operator's cab驾驶室 4.11.1.1 General一般要求 If a cab is fitted in lieu of an overhead guard, it shall comply with 4.9.1.	Truck without cab.	NA
4.11.1.2 Fire resistance防火（阻燃） All material and components of the cab shall be fire-resistant, with a maximum burning speed of 250 mm/min when the standard test piece is tested in accordance with ISO 3795.	Truck without cab.	NA
4.11.1.3 Ventilation通风 If a totally enclosed cab is fitted, provision shall be made for efficient ventilation.	Truck without cab.	NA
4.11.1.4 Heater, demister and defroster加热、除雾和除霜 If a totally enclosed cab is fitted with a heater/demister, the air intake should be connected to a fresh air inlet; recycling of the air is permissible.	Truck without cab.	NA
The heater shall be securely fixed. The heater shall be so designed that the requirements of 4.7.6 can be met. A demist/defrost capability shall be provided for the windscreen and rear window.	Truck without cab.	NA
4.11.1.5 Wipers and washers刮水器和洗涤器 Windscreen wiper(s) and washer(s) shall be fitted to allow the operator a clear view of the operating area. Wiper(s) and washer(s) for the rear window may be omitted if the truck is driven predominantly in the forward direction, e.g. tow tractors. Wiper(s) and washer(s) may be omitted entirely if the truck only operates within an enclosed area.	Truck without cab.	NA
If glass is used in the window apertures, it shall be toughened or laminated.	Truck without cab.	NA
4.11.1.6 Access and emergency exit入口和紧急出口 The cab shall have an access and an emergency exit complying with ISO 2867. The emergency exit, which may be a window, shall allow escape in a different direction than that of the normal exit.	Truck without cab.	NA
4.11.1.7 Storage of instruction handbook使用说明书存放 Provision shall be made for the storage of the instruction handbook (see 6.2) so that it does not obstruct the normal operating position.	Truck without cab.	NA
4.11.1.8 Additional operator's position附加操作者位置 If an additional operator's position is equipped within a cab, it shall meet the requirements of 4.11.1.1 to 4.11.1.6.	Truck without cab.	NA
4.11.2 Noise emissions噪声 Noise emissions are subject to regional requirements. See EN 16307-1:2020.	See the test report number: Z0001158-85-3 Z0001158-85-5	Pass

Requirements	Check and test	Results
4.11.3 Vibration 振动 Whole-body vibrations transmitted to the operator are subject to regional requirements. See EN 16307-1:2020	See the test report number: Z0001158-85-3 Z0001158-85-6	Pass
4.11.4 Electromagnetic compatibility 电磁兼容 EMC EMC is subject to regional requirements. See EN 16307-1:2020.	See the test report number: Z0001158-85-3 Z0001158-85-7	Pass
4.11.5 Transport 运输 4.11.5.1 Location for lifting and/or slinging points 起吊点位置 When a truck can be lifted without disassembling, locations for lifting and/or slinging points shall be provided and shall be indicated on the truck and/or in the instruction handbook (see 6.2).	Locations for lifting and slinging points are provided and indicated on the truck and in the operation and maintenance manual. See the operation and maintenance manual	Pass
When individual assemblies of the truck can be removed for normal operation and/or transport, then lifting and/or slinging points shall be provided and these shall be indicated on the assemblies and/or in the instruction handbook.	The vehicle can be lifted without disassembling.	NA
Slinging points for transportation of the truck shall be arranged such that there is no possibility of sudden movement.	Slinging points for transportation of the trucks are arranged to prevent sudden movement.	Pass
4.11.5.2 Tie-down points 束缚点 Tie-down points for transportation of the assembled truck shall be provided and indicated on the truck or in the instruction handbook (see 6.2).	Tie-down points for transportation of the assembled trucks are provided and indicated on the trucks.	Pass
4.11.5.3 Slinging of removable attachments 可拆卸属具的起吊 Locations for the slinging of a removable attachment shall be provided and shall be indicated on the attachment (see 6.3.1.2) and/or in the instruction handbook. Slinging points for transportation of the attachment shall be arranged such that there is no possibility of sudden movement.	No removable attachment	NA
4.12 Devices for towing 牵引装置 Trucks used for towing trailers shall be fitted with towing or coupling devices designed, constructed and arranged to reduce hazards of connection and disconnection and to prevent accidental disconnection during use.	Truck is not tractor.	NA

Requirements	Check and test	Results
5 Verification of safety requirements and/or protective measures 安全要求和/或保护措施的验证 5.1 General一般要求 The manufacturer shall have verification that the safety requirements and/or protective measures given in Clause 4 have been incorporated into the design and manufacture of the truck. Either one or a combination of the following shall be used to achieve verification: a) by design, e.g. verification of drawings and documents, or calculation; b) by measurement, e.g. tests of travelling and lowering speed or lift and tilt leakage; c) by visual examination, e.g. no permanent deformation after tests, verification of the marking of the truck; d) by further testing.	The manufacturer has verification that the safety requirements and protective measures given in Clause 4 have been incorporated into the design and manufacture of the truck. with the combination of the following used to achieve verification: a) by design; b) by measurement; c) by visual examination; d) by further testing.	Pass
5.2 Structural tests结构试验 These tests are to be performed on a sample that is representative of series production. The structural components of the truck and its attachments shall carry static loads of $1,33 Q_1$ and $1,33 Q_2$ for 15 min each, Where Q_1 is the rated capacity at the standard lift height and standard load centre distance in accordance with the information on the capacity plate; Q_2 is the actual capacity at maximum lift height in accordance with the information on the capacity plate. The truck shall be on substantially level ground with the mast in the substantially vertical position and may be anchored to prevent tip-over. The loads may be applied at the corresponding height by means independent of the truck. The test shall not result in any visual permanent deformation or damage.	Test load at standard lift height: $1,33 Q_1$. Test load at max lift height: $1,33 Q_2$. After test, there are no any visual permanent deformation and damage.	Pass
5.3 Functional verification功能验证 Functional verification shall be carried out on each truck to verify that it is able to perform the tasks for which it was designed. These tests shall be done according to the manufacturer's instructions. They shall be performed by trained persons either operating and testing the truck according to the manufacturer's instructions or simulating these tests by any method giving an equivalent effect and producing substantially the same result. Each truck shall be inspected to ensure that the travelling, braking, steering, load-handling controls and combined functions, if any, are appropriately identified and operate correctly. The correct operation of warning devices, safety devices and lighting, if any, shall also be checked.	The functions of travelling, braking, steering, lighting, warning device, safety device, load-handling controls, OPS device(seat switch), and safety belt protection switch are tested according to the manufacturer's instructions. The functional tests verify that it is able to perform the tasks for which it was designed.	Pass

Requirements	Check and test	Results
6 Information for use 使用信息 6.1 General 一般要求 Each truck and removable attachment shall be supplied to the user with an instruction handbook(s), covering operating and regular servicing and addressing all identified hazards, printed in the language(s) of the country in which the truck is to be used, where required by national law. See also ISO 12100:2010, 6.4.5. There is no need for the workshop and parts handbooks intended for use by specialized personnel employed by the manufacturer or his authorized representative to be supplied with each truck, and these can be printed in the language of the country where the truck is to be used, as required by national law. In other cases, the instructions shall be in a language agreed between the truck supplier and purchaser.	See the operation and maintenance manual See the service manual	Pass
6.2 Instruction handbook 使用说明书 6.2.1 Truck/attachments 车辆/属具 The instruction handbook(s) shall include, as applicable, at least the following information:	/	/
a) name and address of the manufacturer or authorized representative;	See the operation and maintenance manual	Pass
b) designation of type, e.g. counterbalanced, side-loading truck;	See the operation and maintenance manual	Pass
c) description of the truck and accessories;	See the operation and maintenance manual	Pass
d) attachments supplied with the truck and their assembly precautions;	No attachments supplied with the truck.	NA
e) details of use of a removable load backrest extension;	Load backrest extension is not removable.	NA
f) details for the installation of a fire extinguisher, if required by the application of the truck;	Without fire extinguisher	NA
g) admissible wheel rims and tyres with inflation pressures for pneumatic tyres;	See the operation and maintenance manual	Pass
h) description of safety devices and warning labels.	See the operation and maintenance manual	Pass
Instructions on truck/attachments are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020.	See the operation and maintenance manual	Pass
6.2.2 Operation of truck 车辆操作说明 The instruction handbook(s) shall include, as applicable, at least the following information:	/	/
a) intended uses of the truck and attachments, and examples of hazardous misuse;	See the operation and maintenance manual	Pass
b) training requirements for the operator;	See the operation and maintenance manual	Pass
c) function of operating controls and displays;	See the operation and maintenance manual	Pass
d) pre-shift checks before the truck is put into operation;	See the operation and maintenance manual	Pass
e) instructions for adjustment of the operator's seat;	See the operation and maintenance manual	Pass
f) instructions for operation with/without cab, with/without doors;	No cab and doors	NA
g) instructions for access and egress;	See the operation and maintenance manual	Pass

Requirements	Check and test	Results
h) instructions for safe handling by the operator, e.g. when changing attachments or moving fork arms;	See the operation and maintenance manual	Pass
i) requirements of the ground/floor where the truck is to be used;	See the operation and maintenance manual	Pass
j) instructions for starting, driving and stopping the truck;	See the operation and maintenance manual	Pass
k) instructions for handling loads, warning about the hazards due to the action of wind forces;	See the operation and maintenance manual	Pass
l) instructions when operating on a gradient;	See the operation and maintenance manual	Pass
m) instructions for towing the truck;	See the operation and maintenance manual	Pass
n) instructions for parking the truck;	See the operation and maintenance manual	Pass
o) warning of risks during the use of the truck and its attachments, including crushing and shearing hazards;	See the operation and maintenance manual	Pass
p) climatic conditions in which the truck is designed to operate;	See the operation and maintenance manual	Pass
q) information about the direction of turning of the truck in relation to rotation of the steering wheel for end-controlled trucks;	Not end-controlled trucks.	NA
r) information about operating the truck with loads causing insufficient visibility;	See the operation and maintenance manual	Pass
s) information on the use of any visual aid that may be provided;	See the operation and maintenance manual	Pass
t) information and conditions for the use of the drawbar;	No drawbar	NA
u) instructions when operating a rear touch device;	No rear touch device	NA
v) information or instructions on action to be taken in the event of a malfunction;	See the operation and service manual	Pass
w) information for operation of the truck by a remote control device, e.g. visibility;	No remote control device	NA
x) the normal operating conditions as defined by the manufacturer, i.e. those for which the truck has been designed and the manner in which the truck will be used;	See the operator's manual	Pass
y) instructions on the use of the operator-restraint device, system or enclosure, and guidance on the operator's behaviour in the event of a tip-over;	See the operator's manual	Pass
z) information about lighting of the working area;	See the operation and maintenance manual	Pass
aa) the procedure for movement of inoperative trucks;	See the operation and maintenance manual	Pass
bb) instructions against operating truck with guarding removed;	It is forbidden to operate the truck with guarding remove.	NA
cc) lift height for travelling;	See the operation and maintenance manual	Pass
dd) crushing and shearing hazards for the operator of pedestrian-controlled trucks featuring foldable platforms and reach trucks, between parts of the environment and the truck during travelling forward;	Not pedestrian-controlled truck and reach truck	NA
ee) instructions to the operator of a stand-on end-control truck to step off and away from the truck in the event of a tip-over or off-dock accident;	Not stand-on end-control truck	NA
ff) information and instructions for using attachments, e.g. load bearing clamp.	Not equipped with attachment	NA

Requirements	Check and test	Results
gg) information or instructions regarding modification of the truck, which can introduce hazards or risks not considered by manufacturers and can invalidate the existing truck risk assessments.	See the operation and maintenance manual	Pass
Instructions on the operation of the truck are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020.	See the operation and maintenance manual	Pass
6.2.3 Details for battery-powered trucks 蓄电池车辆的详细信息 The instruction handbook(s) shall include, as applicable, at least the following information:	/	/
a) specification of approved batteries and on-board battery chargers;	See the operation and maintenance manual	Pass
b) procedure for safe handling of batteries, including installation, removal and secure mounting on the truck;	See the operation and maintenance manual	Pass
c) warning of risks of accumulation of hydrogen under covers;	See the operation and maintenance manual	Pass
d) battery charging procedures and instructions;	See the operation and maintenance manual	Pass
e) service mass of battery and ballast when required.	See the operation and maintenance manual	Pass
6.2.4 Details for internal-combustion-engine powered trucks 内燃车辆的详细信息 The instruction handbook(s) shall include at least the following information:	/	/
a) approved fuels;	Not internal combustion engine powered trucks	NA
b) procedure for safe handling of fuels;	Not internal combustion engine powered trucks	NA
c) procedure for refuelling;	Not internal combustion engine powered trucks	NA
d) warning of the effect of exhaust emissions in confined spaces;	Not internal combustion engine powered trucks	NA
e) warning of the effect of exhaust emissions for the operator.	Not internal combustion engine powered trucks	NA
6.2.5 Service and maintenance 车辆维护保养 The instruction handbook(s) shall include, as applicable, at least the following information:	/	/
a) training and qualifications needed for service and maintenance staff;	See the operation and maintenance manual	Pass
b) safe procedure for the identification, detection and correction of faults;	See the operation and maintenance manual	Pass
c) instructions for changing tyres or wheels;	See the operation and maintenance manual	Pass
d) instructions for verification that markings, e.g. decals, are in place and legible;	See the operation and maintenance manual	Pass
e) instructions for de-energizing of stored energy components;	See the operation and maintenance manual	Pass
f) access to maintenance while working at height;	Maintenance working at ground	NA
g) servicing operations for which no specific skills are required;	See the operation and maintenance manual	Pass
h) use of approved spare parts;	See the operation and maintenance manual	Pass
i) drawings and diagrams necessary for truck service and maintenance;	See the operation and maintenance manual See the service manual	Pass

Requirements	Check and test	Results
j) instructions for disposing of waste material (e.g. oils and battery);	See the operation and maintenance manual	Pass
k) type and frequency of inspections and maintenance operations, with particular attention to the replacement and durability of wear and serviceable parts, emissions, and to the user's logbook (e.g. filter, brakes, chains, hydraulic hoses);	See the operation and maintenance manual	Pass
l) instructions for removing and reattaching guarding;	See the operation and maintenance manual	Pass
m) instructions for regular verification of seat belt related to 1) cut or frayed straps, 2) worn or damaged hardware, including anchor points, 3) buckle or retractor malfunction, 4) loose stitching.	See the operation and maintenance manual	Pass
6.2.6 Transportation, commissioning and storage 运输调试和储存 The instruction handbook(s) shall include, as applicable, at least the following information:	/	/
a) mass and overall dimensions of the truck and dismantled parts for transport, commissioning and storage;	See the operation and maintenance manual	Pass
b) procedures for transporting, including loading and unloading;	See the operation and maintenance manual	Pass
c) procedure for truck reassembly and mounting of attachments, as applicable, the procedure for truck mounting.	See the operation and maintenance manual	Pass
d) functional tests on completion of commissioning;	See the operation and maintenance manual	Pass
e) procedure for movement of inoperative trucks;	See the operation and maintenance manual	Pass
f) procedure for prolonged shut down and storage of trucks.	See the operation and maintenance manual	Pass
Transportation, commissioning and storage are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020	See the operation and maintenance manual	Pass
6.2.7 Truck modification 车辆改装 Truck modification outside Europe is subject to regional requirements (see EN 16307-1:2020).	See the test report number: Z0001158-85-3	Pass
6.3 Marking 标志 6.3.1 Information plates 信息铭牌 6.3.1.1 Trucks 车辆 Trucks shall be marked legibly and indelibly (e.g. weather-proofed, profiled letters) with at least the following details:	Name plate and load chart plate are provided.	Pass
a) name and address of the manufacturer or his authorized representative;	See the nameplate	Pass
b) designation of the machinery, designation of series or type and the mandatory marking;	See the nameplate	Pass
c) serial number and year of manufacture;	See the nameplate	Pass
d) unladen mass of the truck in working order and without removable attachments, and without battery in the case of battery-powered trucks, but with fork arms or integral attachments, the actual mass being permitted to vary from the stated mass by up to 5 % or 1 000 kg, whichever is the lower of the two;	See the nameplate	Pass
e) actual capacity at maximum lift height with load centre distance; where a secondary lift is fitted to a truck, the capacity at maximum lift shall be determined with the secondary mast fully elevated;	See the nameplate	Pass

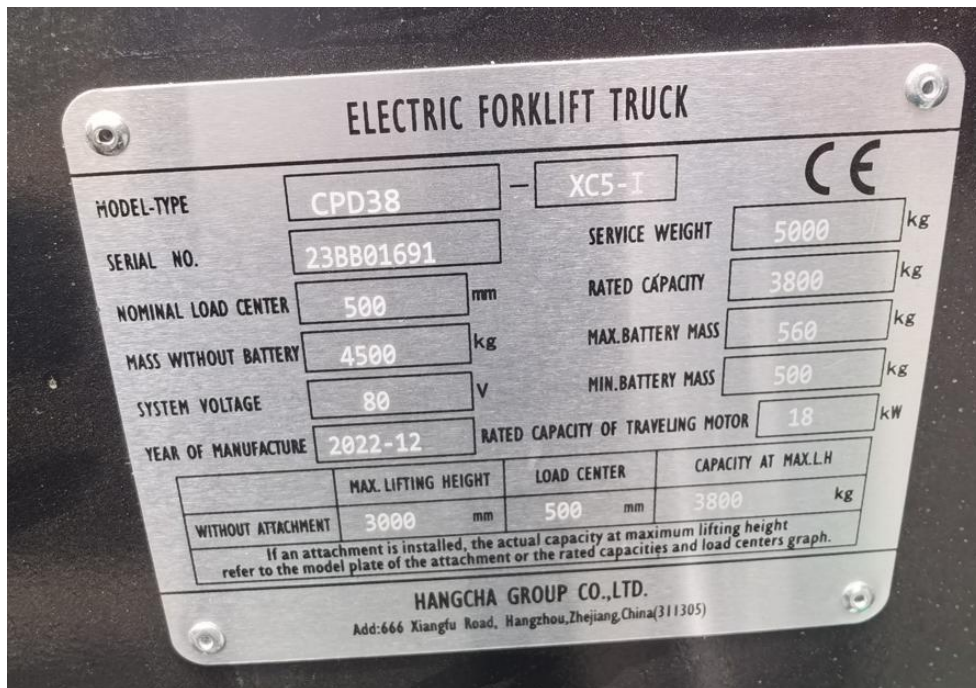
Requirements	Check and test	Results
f) actual capacities at other lift heights and load centre distances, if applicable;	See the load chart plate	Pass
g) actual capacity with each removable attachment fitted at the manufacturer's authorized lift height(s) and load centre(s), these actual capacities being easily readable by the operator in the normal operating position;	No removable attachment	NA
h) on battery-powered trucks, the authorized maximum and minimum battery mass and the system voltage;	See the nameplate	Pass
i) if fitted, the maximum supporting force on the towing point connection, in newtons;	No supporting force on the towing point connection	NA
j) if fitted, the drawbar pull on the towing point connection, in newtons;	Truck is not tractor.	NA
k) the nominal power in kilowatts, e.g. marked on the engine or electric motor.	The nominal power is marked on electric motor.	Pass
Marking requirements are subject to regional requirements, additional to the requirements of this part of ISO 3691. See EN 16307-1:2020.	See the nameplate	Pass
6.3.1.2 Removable attachments 可拆卸属具 Removable attachments shall be marked legibly and indelibly (e.g. weather-proofed, profiled letters) with at least the following details: a) name and address of the attachment manufacturer or his authorized representative;	No removable attachment	NA
b) model or type;	No removable attachment	NA
c) serial number and year of manufacture;	No removable attachment	NA
d) mass of attachment, which may vary from the stated figure by up to 5 % or 200 kg, whichever is the lower of the two;	No removable attachment	NA
e) distance of the centre of gravity of the attachment from its mounting face on the truck;	No removable attachment	NA
f) rated capacity;	No removable attachment	NA
g) in the case of hydraulically or pneumatically operated attachments, the maximum operating pressure recommended by the attachment manufacturer;	No removable attachment	NA
h) load centre, if applicable;	No removable attachment	NA
i) lost load centre distance;	No removable attachment	NA
j) the instruction "The capacity of the truck and attachment combination shall be complied with".	No removable attachment	NA
6.3.1.3 Tractors 牵引车 Tractors shall be marked legibly and indelibly (e.g. weather-proofed, profiled letters) with at least the following details: a) name and address of the manufacturer or the authorized representative;	Truck is not tractor	NA
b) designation of series or type;	Truck is not tractor	NA
c) unladen mass of the tractor in working order without battery for battery-powered tractors; the mass may vary from the figure shown by up to 5 % or 1 000 kg, whichever is the lower;	Truck is not tractor	NA
d) serial number and year of manufacture;	Truck is not tractor	NA
e) on battery-powered tractors, the authorized minimum and maximum battery mass and the system of voltage;	Truck is not tractor	NA
f) the nominal power in kilowatts, e.g. marked on the engine or electric motor;	Truck is not tractor	NA
g) the maximum supporting force on the tow-hook, in newtons;	Truck is not tractor	NA
h) the drawbar pull, in newtons, and the period of time during which this pull can be exerted.	Truck is not tractor	NA

Requirements	Check and test	Results
6.3.1.4 Marking of controls 控制装置的标志 Controls shall be legibly and indelibly marked (e.g. weather-proofed, profiled letters) with graphic symbols indicating the function(s), except where these are obvious, e.g. accelerator pedal. Each symbol shall be affixed on, or in close proximity to, the control to which it applies. Control symbols shall comply with ISO 3287, for existing symbols.	Controls are legibly and indelibly marked with graphic symbols indicating the functions. Each symbol are affixed on, or in close proximity to, the control to which it applies. Control symbols comply with ISO 3287, for existing symbols.	Pass
6.3.2 Information plate for trucks operating in special conditions 特殊条件下作业的车辆信息牌 If a truck is designed to operate in special conditions (see 4.1.1. and 4.8.2), the manufacturer shall provide, where appropriate, and in addition to the information provided in the instruction handbook, an information plate on the truck identifying those special conditions of use, including capacity if different from the capacity during normal operation (see 4.1.2).	Truck not work in special condition.	NA
6.3.3 Other information 其他信息 6.3.3.1 Marking for slinging of trucks 车辆的起吊标志 Locations for slinging shall be clearly indicated on the truck or shall be declared in the instruction handbook (see 6.2).	Locations for slinging are clearly indicated on the truck.	Pass
6.3.3.2 Pneumatic tyre inflation pressure 充气胎的充气压力 The specified inflation pressures shall be clearly indicated on the truck.	The specified inflation pressures are indicated on the truck.	Pass
6.3.3.3 Filling points 加油位置 Filling points for fuel and hydraulic fluid shall be clearly indicated on the truck in accordance with ISO 3287.	Filling point for hydraulic fluid is clearly indicated on the truck in accordance with ISO 3287.	Pass
6.3.3.4 Warning signs 警示标志 Symbols giving warnings of remaining hazards shall be affixed to the truck and attachments on, or in close proximity to, the hazard concerned.	Symbols giving warnings of remaining hazards are affixed in close proximity to the hazard concerned.	Pass
On stored energy devices (see 4.1.6), a warning label and the method for removing any stored energy shall be affixed to that component and noted in the service handbook.	No stored energy component.	NA
Warnings shall be in accordance with ISO 15870.	Warnings are in accordance with ISO 15870.	Pass
6.3.4 Languages 语音 If any of the information in 6.3.1 to 6.3.3 is in words, it shall be written in the language(s) of the country in which the truck is to be used, in accordance with national law. In other cases, the instructions shall be in a language agreed between the truck supplier and purchaser.	All information is written in English.	Pass
6.3.5 Operator restraint 操作者的约束装置 Information or symbols giving instructions for the use of the operator restraint system or enclosure shall be easily readable by the operator in the normal operating position.	Information and symbols are easily readable by the operator in the normal operating position.	Pass

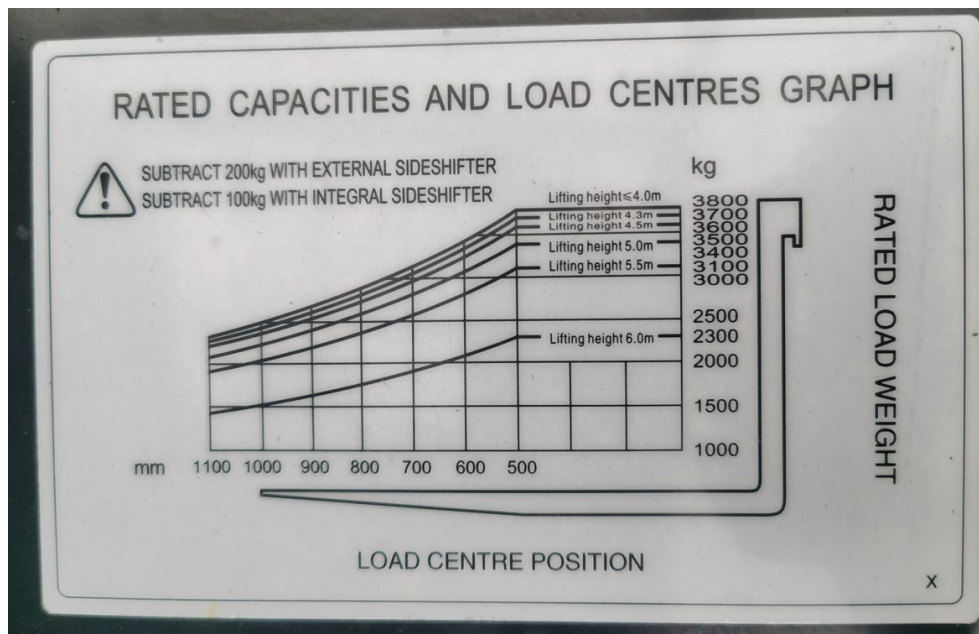
Annex A
Test photos



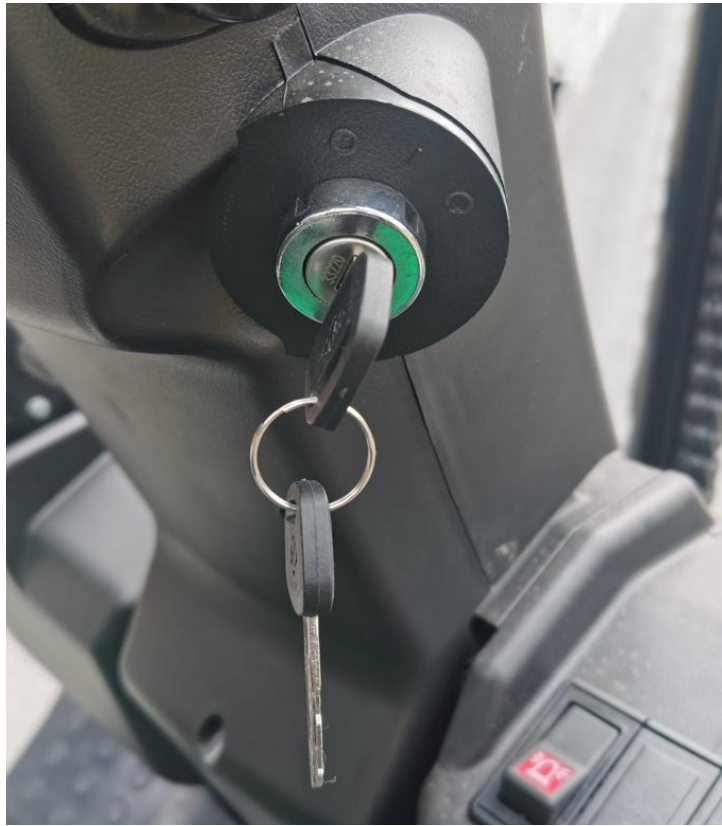
Picture 1~4 Sample appearances



Picture 5 Name plate



Picture 6 Load charts



Picture 7 Key switch



Picture 8 Emergency stop



Picture 9 Parking brake lever



Picture 10 Brake pedal and accelerator pedal



Picture 11 Load control levers



Picture 12 Steering wheel, traveling direction control, horn control and lights control



Picture 13 Access handle



Picture 14 Access step and compartment floor



Picture 15 Overhead guard



Picture 16 Load backrest extension



Picture 17 Operator's seat and safety belt



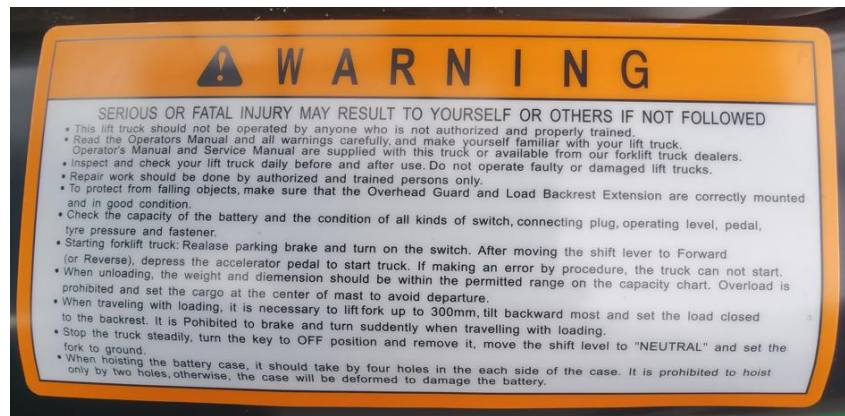
Picture 18 Tie down point



Picture 19 Slings points



Picture 20 Battery compartment



Picture 21~24 Warning labels



Picture 25 Parking brake test



Picture 26 Noise test



Picture 27 Hydraulic lifting and tilting system test



Picture 28 Structural test (1.33Q)



Picture 29~32 Stability tests



Picture 33~34 Dielectric test and insulation tests

----- END OF THE TEST REPORT -----