Report number: GJ-70242-2025

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TESTING

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Inspection Report

Type of inspection: commissioned inspection

Product model: R18-DP

Product name: Hydraulic excavator driver protection device

Entrusting unit: Shandong Lipai Machinery Group Co., LTD

National Construction and Urban Construction Machinery Quality Supervision and Inspection Center

检验检测专用章

product name	Hydraulic excavator driver protection device	ts	R18-DP
		trademark	/
client	Shandong Lipai Machinery Group Co., LTD	kind of inspection	consignment
Address of the client	Jining High-tech Zone Sixth Industrial Park A zone		
production unit	Shandong Lipai Machinery Group Co., LTD	date of manufacture	February 2025
Address of the producing unit	Jining High-tech Zone Sixth Industrial Park A zone		
sample size	One	Sample number	SLP250225D01
Host manufacturer	Shandong Lipai Machinery Group Co., LTD		
Host type	hydraulic crawler excavator	Host model	/
Date of sample delivery	April 9, 2025	The person who delivered it	Shao Zhutong
examination date	April 9th to 10th, 2025	inspection personal	Zhou Shichao is named Yang
place of survey	361 Yinpen South Road, Yuelu District, Changsha		
inspection standard	See appendix C	inspecting item	See appendix E
inspect the conclusion	Based on the criteria: 1. GB/T 19932-2005 2. ISO 10262:1998 3. GB/T 19930-2005 4. ISO 12117:1997 The test was carried out on the hydraulic excavator driver protection device sample with the maximum main machine mass of 1818kg, which has met the minimum performance requirements of the standard. Date of issue: 22 April 2025		
remarks	Appendix A Overview and sample photos Appendix B Sample identification mark Appendix C Test basis Appendix D Test environmental conditions Appendix E test items and test results Appendix F Test photos		

ratify： examine and verify： Lead Inspector:

Appendix A Overview and Prototype Photos

R18-DP type hydraulic excavator driver protection device is developed by Shandong Lipai Machinery Group Co., LTD.

Entrusted by Shandong Lipai Machinery Group Co., LTD., the National Construction and Urban Construction Machinery Quality Supervision and Inspection Center conducted commissioned inspection on the samples provided by them from April 9 to April 10,2025 at No.361 Yinpen South Road, Yuelu District, Changsha City.

Photo of the Sample

Appendix B Sample Identification Mark B1 Machine

Type: hydraulic excavator

Manufacturer: Shandong Lipai Machinery Group Co., LTD. Test main engine model/work quality: / / 1818kg Number: /

Machine part number: SLP25022502

B2 Driver protection device

B2.1 Front Protection Device

Manufacturer: Shandong Lipai Machinery Group Co., LTD

Model: R18-DP

number： /

Protection device number: SLP250225D01

B2.2 Top Protection Device

Manufacturer: Shandong Lipai Machinery Group Co., LTD

Model: R18-DP

number： /

Protection device number: SLP250225D01

B2.3 Tipping Protection Structure

Manufacturer: Shandong Lipai Machinery Group Co., LTD

Model: R18-DP

number： /

Protection device serial number: /

B3 Materials of Fasteners and Main Load-Bearing Parts

Bolt specification and strength grade: M12×40-10.9

Nut size and strength grade: M12-10

Material of structural main load-bearing parts: Q235

B4 SIP Point Location Diagram

The SIP point position is shown in Figure 1 below

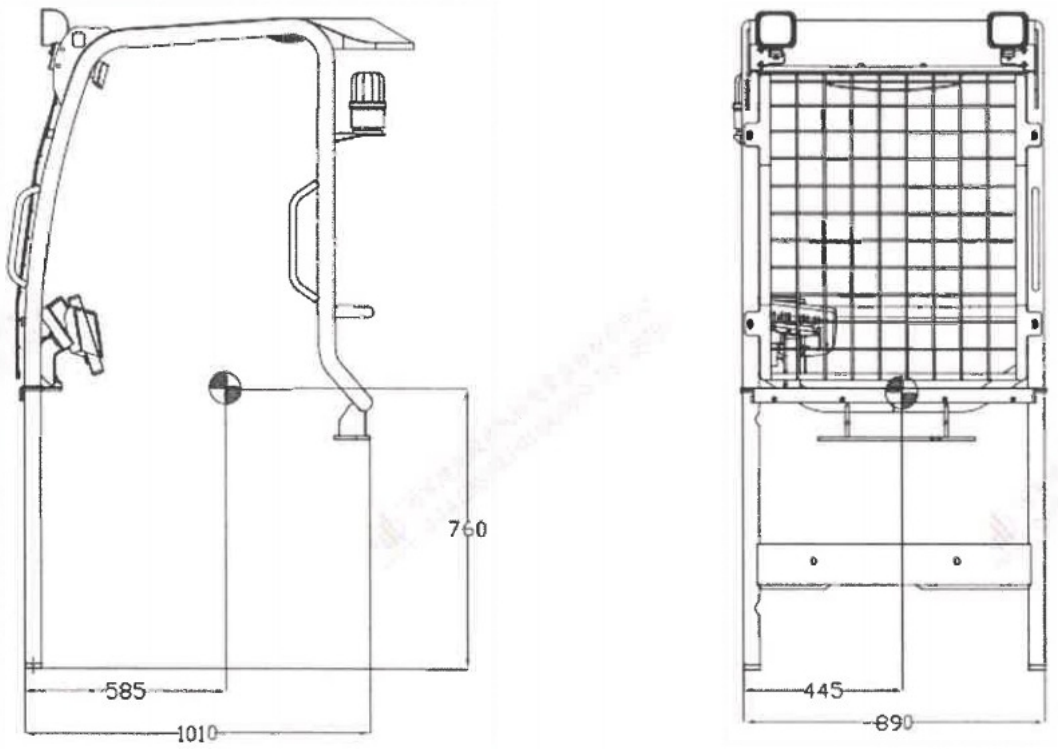

Figure 1. SIP Point Location Diagram

Appendix C Basis for Testing

The inspection basis is shown in Table 1

Table 1

order number	inspection standard
1	GB/T 19932-2005 Laboratory test and performance requirements for protective devices for hydraulic excavators of earthmoving machinery
2	ISO 10262:1998《Earth-moving machinery-Hydraulic excavators-Laboratory tests and performance requirements for operator protective guards》
3	GB/T 19930-2005 Laboratory test and performance requirements of tipping protection structure for small excavators of earthmoving machinery
4	ISO 12117:1997《Earth-moving machinery-Tip-Over Protection Structure(TOPS)for compact excavators-Laboratory tests and performance requirements》

Appendix D Test Environmental Conditions

The inspection environmental conditions are shown in Table 2

Table 2

order number	inspecting item	proving time	weather	temperature ℃	wind speed m/s
1	Energy absorption capacity of top protection device	April 9, 2025	fine	25	(indoor)
2	Energy absorption capacity of front protection device	April 9, 2025	fine	25	(indoor)
3	Invert the lateral energy absorption capacity of the protective structure	April 9, 2025	fine	25	(indoor)
4	Invert the longitudinal energy absorption capacity of the protective structure	April 10,2025	fine	25	(indoor)
5	Low temperature test of materials	April 10,2025	fine	25	(indoor)

Appendix E Inspection Items and Inspection Results

E1 Energy absorption capacity test of top protection device

The energy absorption capacity of the top protection device is shown in Table 3

Table 3

order number	inspecting item	Design or standard requirements	result	conclusion	remarks
1	Energy absorption capacity of top protection device	The top protection device shall not penetrate the DLV under initial or subsequent impact under the 1365J energy reference	After the hammer impact energy of 1365 J, the top protection device was not penetrated after impact, the maximum vertical residual deformation of the top protection device was 27mm, and the top protection device did not invade DLV	qualified	

E2 energy absorption capacity test of front protection device

The energy absorption capacity of the front protection device is shown in Table 4

Table 4

order number	inspecting item	Design or standard requirements	result	conclusion	remarks
1	Energy absorption capacity of front protection device	The front protection device shall not penetrate the DLV under the 700J energy reference	The loading point displacement is 119 mm, the absorbed energy reaches 709J, and the front protection device does not invade DLV	qualified	

E3 rollover protection structure lateral energy absorption capability test

Test of lateral energy absorption capacity of overturning protection structure are shown in Table 5

order number	inspecting item	Design or standard requirements	result	conclusion	remarks
]	Invert the lateral energy absorption capacity of the protective structure	The absorbed energy is not less than 1544J, and the tipping protection structure does not invade DLV	When the loading force is 19kN, the displacement of the loading point is 119mm, and the absorbed energy reaches 1573J. The tipping protection structure does not invade DLV	qualified	

E4 longitudinal energy absorption capacity test of rollover protection structure

The test results of vertical energy absorption capacity of overturning protection structure are shown in Table 6

order number	inspecting item	Design or standard requirements	result	conclusion	remarks
1	Invert the longitudinal energy absorption capacity of the protective structure	The absorbed energy is not less than 511J, and the protective structure does not invade DLV	The loading point displacement is 70mm, the absorbed energy reaches 530J, and the protective structure does not invade DLV	qualified	

E5 material low temperature test

The low temperature test results of materials are shown in Table 7

Table 7

order number	inspecting item		Design or standard requirements	result	conclusion	remarks
1	Low temperature test of materials	Guardrail sample size (10mm×7.5mm×55mm)	The absorption capacity is at least 9.5J	18J	qualified	V-shaped notch pendulum impact, test temperature -30℃
		Height of specimen (10mm×7.5mm×55mm)	The absorption capacity is at least 9.5J	40J	qualified	

Appendix F Test Photos

Photo-F-1 Hammer drop test

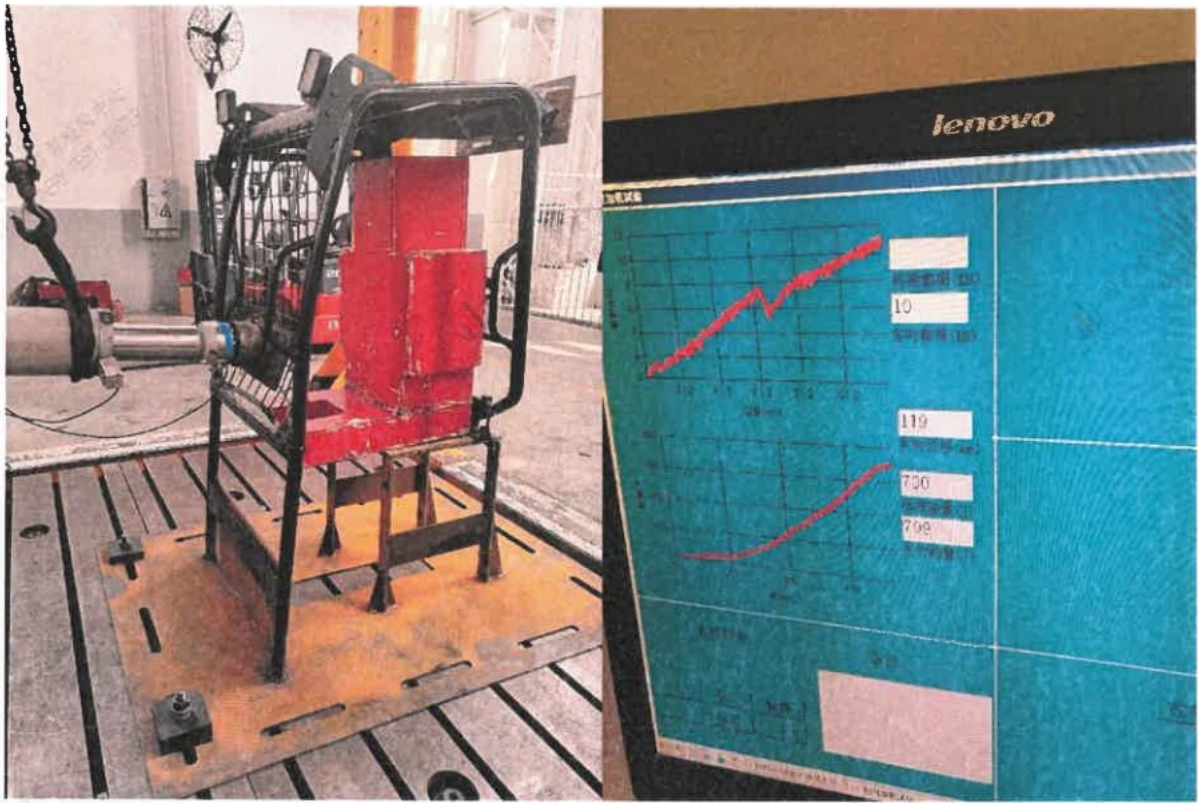

Photo F-2 front protection loading test

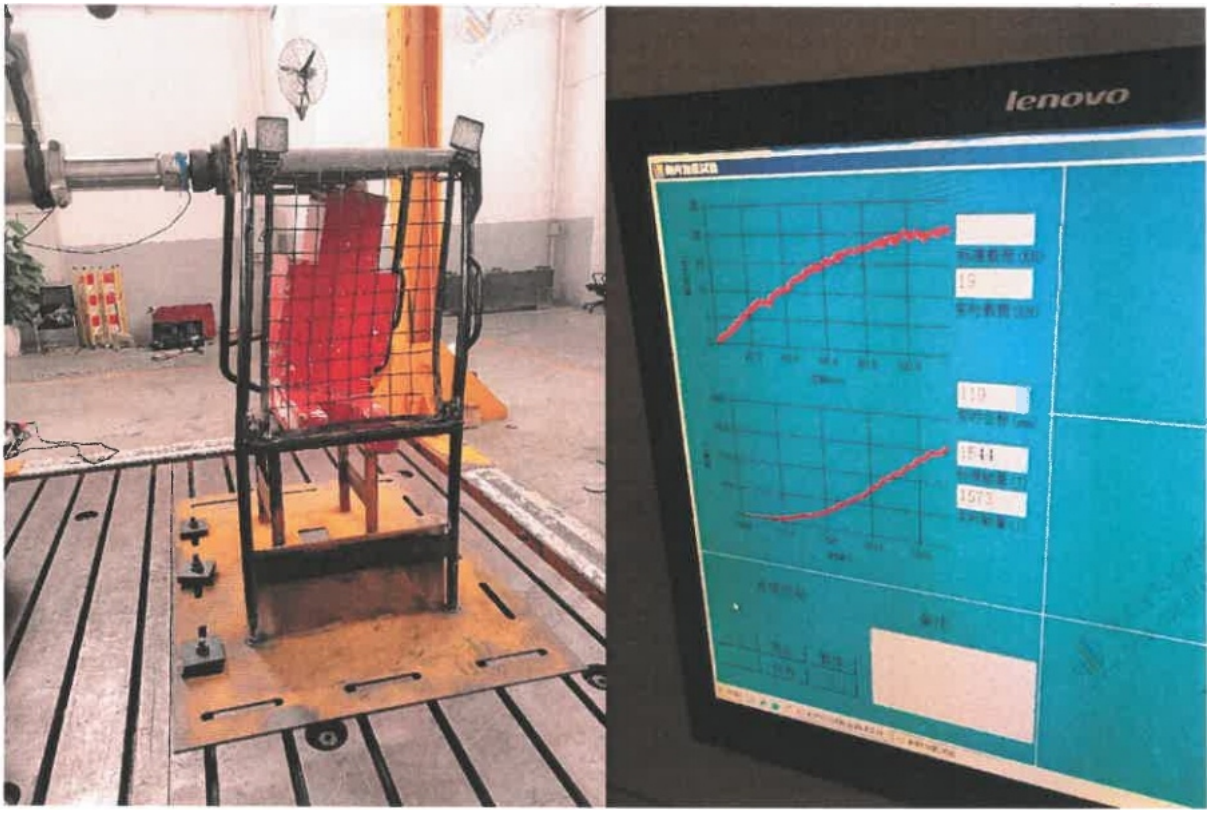

Photo F-3 side loading test

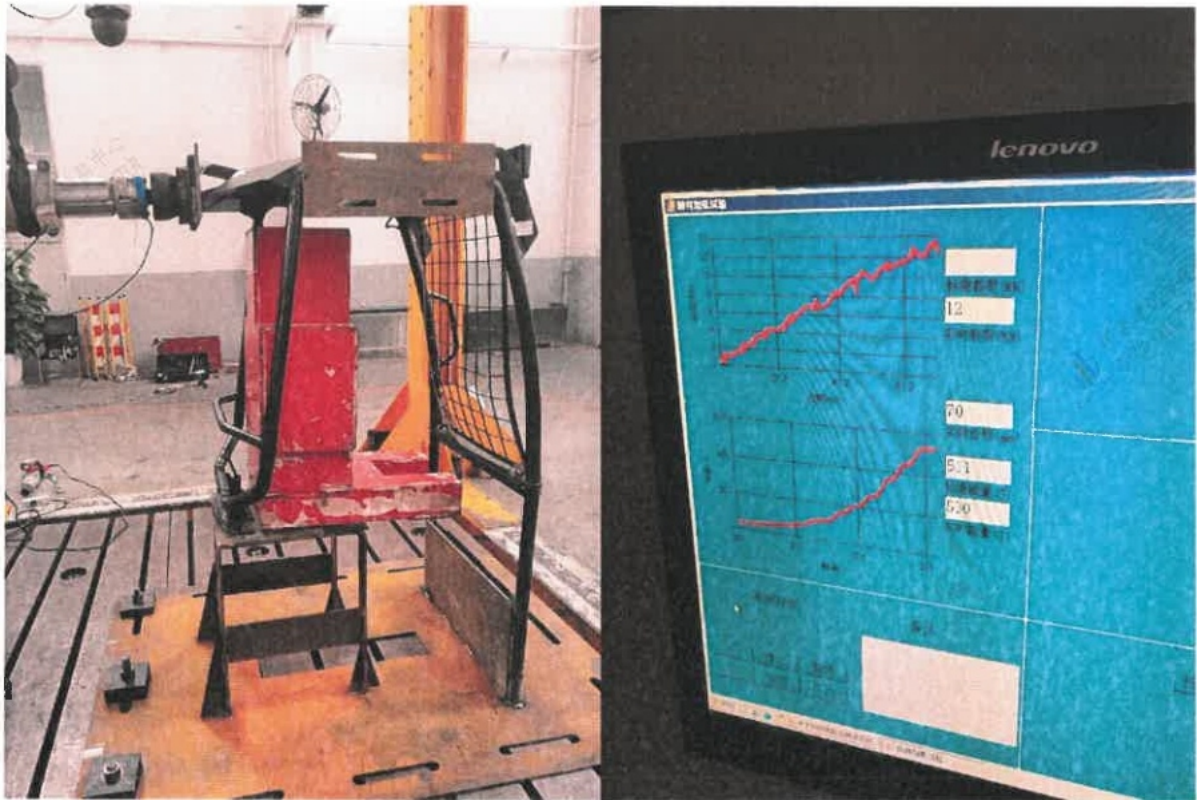

Photo-F-4 vertical loading test

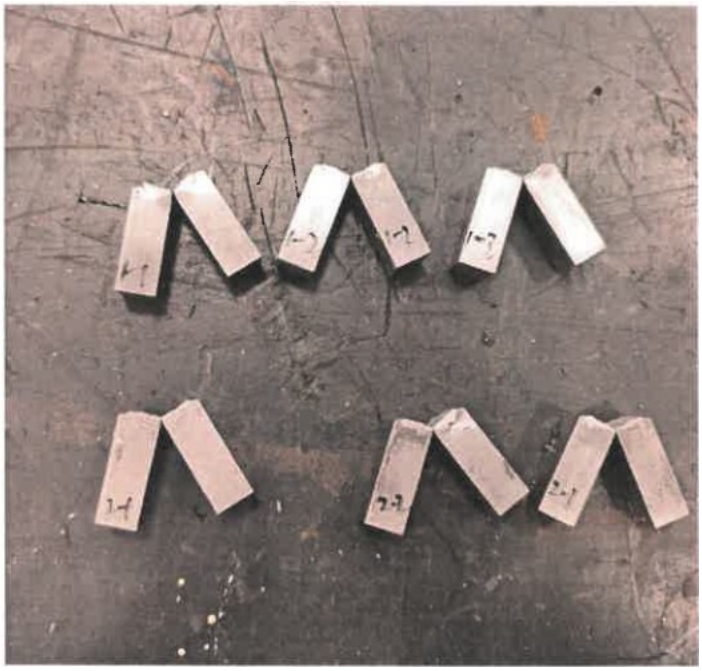

Photo F-5 material low temperature test

———— Nothing Below — — — —

Conference Sign-in Sheet

Page / total! Pages

Theme of the conference	Special training on appraisal and review related issues	
Meeting Time	2. 25. 4. 18	
congress venue	Conference room on the second floor	
compere		

Attendance and staff sign-in records

order number	sign one's name	order number	sign one's name	order number	sign one's name
1	Follow the crowd	15		29	
2		16		30	
3	come	17		31	
4		18		32	
5	compare	19		33	
6		20		34	
7	aged	21		35	
8		22		36	
9		23		37	
10		24		38	
11		25		39	
12		26		40	
13		27		41	
14		28		42	
remarks					

Personnel Training Registration Form

No:2075o41Yo1

Training themes	Special training on appraisal and review related issues		
Train teachers	Liu Bo-heng	Mode of training	On-site training
time	April 18,2025	place	Conference room on the second floor

List of trainees (total 9):

Song Jiguang, Liu Boheng, Guo Wenjie, Zhu Long, Tan Weiqiang, Zhao Yu, Yang Tao, Yuan Wenbin, Li Zihang.

Summary of training:

1. Fill in the method of content and record **the modification of door gap and door lock engagement value of passenger elevator, freight elevator and hydraulic elevator in the training instruction manual.**

2. The fault locking verification and stopping distance detection method for the project of escalator step depression and missing steps training are not carried out.

3. Safety operation procedures for training and debris elevator shaft project before inspection.

4. Assess relevant projects.

Training effect and experience:

After studying the questions raised by the appraisal and review experts, we communicated the revised content and filling methods of the work instruction to the inspectors, and strengthened the learning of the relevant operation methods of the work instruction. The effect of this training was verified through an examination, which improved the standardization of the inspectors' future work.

Recorder: 2	April 818,2018

Examination papers

Specialized Examinations

surname and personal name： Wu Tan Wei Qiang　　fraction： 0

1. Measurement method of empty stop distance test during detection of escalator and moving walkway

What are the types? What are the specific measurement requirements?

Answer: Instrument measurement and marking with lines

Use qualified instruments for testing

Mark the measurement by marking the escalator and running the escalator at nominal speed to the marked position.

If the escalator stops and abandons, the stopping distance is measured and whether it meets the requirements is judged.

2. What is the test method of fault locking function in the process of escalator and moving walkway detection? Please explain in detail.

answer：

The fault lock can only be manually reset, and the fault lock function will be invalid after the electrical release

3. In the process of detection of escalators and moving walkways, there are some items requiring fault locking function

which？ Step pedals

Answer: Non-manipulative reversal, working brake monitoring, absence of a control pedal, descent.

Drive file protection.

4. What protection should be confirmed before the inspection of the elevator shaft project?

Answer: the effectiveness of the door lock of the door, and the effectiveness of the emergency stop and closure of the transfer top

Effectiveness of maintenance equipment

Specialized Examinations

Surnames: 郭文杰 Number of votes: 94

1. What are the measurement methods for the test of empty stop distance in the process of detection of escalator and moving walkway? What are the specific measurement requirements?

answer： 鼍 Fang Zhang Futi comprehensive treatment

2 Method 2: After aligning the marking line and the ladder, overlap the lines to be marked. Press the emergency stop button to measure the image. Measure the alignment or take three times of the average value

2. What is the test method for the fault locking function during the detection of escalators and moving walkways? Please explain in detail.

Answer: Switching operation fault. After the switch is operated, power is cut off. Check whether the fault exists. If it exists, the function of the fault lock chamber is effective.

6

3. What are the fault locking functions required in the detection process of escalator and moving walkway?

1. Skillfully start the decoration industry, 2. Protect the components, 3. Safeguard the steps and treads of the elevator, the floor and the safety protection of the step plate

4. What protection should be confirmed before the inspection of the elevator shaft project?

Answer: 1-Hall door lock

2 Please wait

Specialized Examinations

surname and personal name：  fraction： 96

1. What are the measurement methods for the test of empty stop distance in the process of detection of escalator and moving walkway? What are the specific measurement requirements?

Answer: The measurement method and instrument method measured the mean value twice

Marking method: Mark and observe the ladder pole

After that, stop the horse or press the emergency stop. Measure the distance above and below

Instrumentation Method Measurement by instrument

2. What is the test method of fault locking function in the process of escalator and moving walkway detection? Please explain in detail.

Answer:After the failure occurs. Is power cut and restart allowed? Is equipment inspection necessary? Is there a failure? Is equipment able to operate?

Y

3. What are the fault locking functions required in the detection process of escalator and moving walkway?

Answer: Work brake concept monitoring drive element protection

Ladder pit protection Non-operational reverse rotation

Ladder protection is missing

4. What protection should be confirmed before the inspection of the elevator shaft project?

answer：汲 Emergency stop door of the car roof is sharp and fixed in the rain

There is a need to determine the maintenance of the top repair