

NEAO GMT HARDWARE ENTERPRISE CO., LTD.

TEST REPORT

SCOPE OF WORK

EN 1634-1:2014+A1:2018 TESTING ON Floor Spring w/o Oil, MODEL OF NF-168

REPORT NUMBER

190201002SHF-001-R1

ISSUE DATE

05/06/19

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2019/5/6

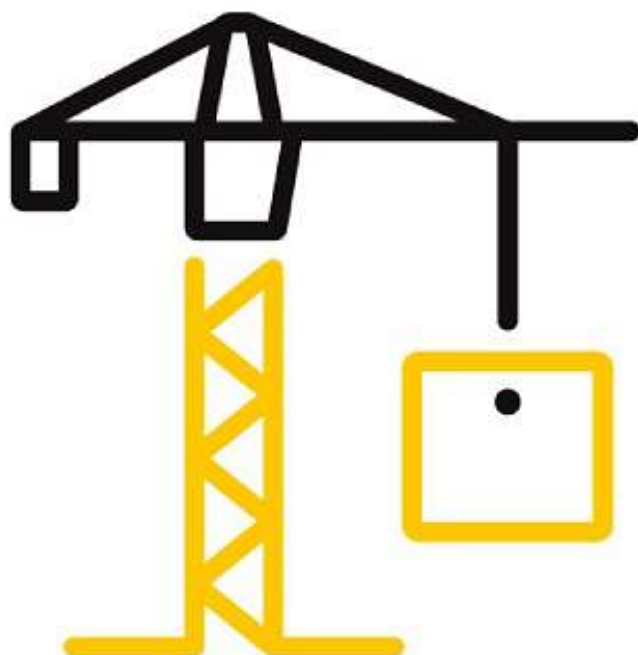
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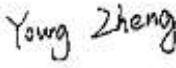
SECTION 1 SCOPE

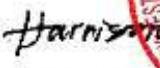
Intertek has conducted an evaluation for Neao GMT Hardware Enterprise Co., Ltd. to determine the fire resistance characteristics of Floor Spring w/o Oil, Model of NF-168. This evaluation began on February 25, 2019 and was completed on May 06, 2019. The test was conducted on April 24, 2019.

The test was conducted in accordance with EN 1634-1:2014+A1:2018, Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Part 1: Fire resistance test for door and shutter assemblies and openable windows.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

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SECTION 2

TEST RESULTS

Product Name: Floor Spring w/o Oil

Series/Model: NF-168

The test assembly satisfied the performance requirements for the following periods:

PERFORMANCE CRITERIA	RESULTS
Integrity	Sustained flaming 260 minutes
	Gap gauge 260 minutes
	Cotton pad 260 minutes
Insulation	19 minutes

The test was discontinued after a period of 260 minutes at the request of the sponsor.

SECTION 3

TEST METHOD

The specimen was evaluated in accordance with the following:

EN 1634-1:2014+A1:2018, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Part 1: Fire resistance test for door and shutter assemblies and openable windows*

EN 1363-1:2012, *Fire resistance test – Part 1: General Requirements*

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SECTION 4

MATERIAL SOURCE/INSTALLATION

A description of the test assembly is given in the table below. The description of the specimen is based on a survey of the specimen and information provided by the sponsor of the test. All values quoted below are nominal, unless tolerances are given.

Door	Type	Single Leaves Single Action Swing Steel Fire Door Assembly					
	Nominal Size	838mm wide by 2055 mm high by 50 mm thick					
	Facing	Material	1.2mm Q235A Galvanized steel sheet				
	Stiffener	Steel stiffener:	22 mm wide, 1.4 mm thick Q235A steel, Spacing: 155 mm				
		Edge Channel Steel:	22 mm x 3 mm, Q235A galvanized steel sheet				
	Core	Material:	Aluminum silicate wool				
		Density:	120kg/m ³				
Frame	Nominal Size	942 mm wide		2117 mm high		150 mm thick	
	Material	1.4mm thick Q235A Galvanized steel sheet					
Hardware	Lock	Lock type:	OT-LZ				
		Lock case size:	235mm x 85.5mm x 20mm				
		Backset:	55mm	Latch throw:		12mm	
		Latch Operation:	Latch:	Engaged		Dead Bolt:	Disengaged
	Floor spring w/o oil	model:	NF-168				
		Manufacturer:	Neao International Co., Ltd				
		Manufacture address:	5F. GIFC II, No. 1438, Hongqiao Road, Changing District, Shanghai 201103, China				
		Brand Name:	Neao				

The sample ID number assigned by the test lab is S190201002SHF.001.

The drawings of fire door assembly, hardware and test wall construction can be found in Section 6, 7 and 8 respectively.

The test assembly was installed in a steel restraint frame. The test door was built into a concrete masonry unit partition, with fully mortared joints. The test assembly was moved in front of the furnace for the fire exposure. Prior to the commencement of the EN 1634-1 fire test, the specimen to be test was checked for operability in the fire test frame by operating from fully closed to fully open, for 25 cycles. The test measurement data was shown in Section 9.

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The test door can either open away from or into the furnace.

The nominal dimensions of the test wall were 3 m high by 2 m wide.

After positioning the assembly frame over the furnace opening, the burners were ignited, and the timer was started. Temperatures within the furnace were monitored using thermocouples and the data was recorded. The burners were controlled to keep the furnace temperatures within the allowable limits specified in the test standards. After 5 minutes, the furnace pressure was adjusted so that the neutral plane was established at a maximum of 500 mm above notional floor level. Periodic observations were made of the surfaces of the test assembly during the fire resistance test.

Door deflection relative to the frame, where applicable, was monitored throughout the test. Position for measurement of deflection and unexposed temperature was presented in the drawing of Section 9

SECTION 5 TEST RESULTS

Integrity

The assembly withstood the fire resistance test without passage of flame or gases hot enough to ignite cotton waste for 260 minutes. No through openings or penetrations were evident on assembly at this 260-minute fire exposure portion of the test and the door latch remained engaged to the strike. During this 260-minute fire exposure period no significant flaming was observed on the unexposed face of the assembly.

After exposed to the fire for a period of 260 minutes, the test was discontinued at the request of the sponsor.

This assembly therefore met the criteria of the test standards for integrity performance of 260 minutes.

Insulation

Transmission of heat through the assembly during the fire resistance test of 19 minutes did not raise the average temperature on the unexposed surface by more than 140°C above its initial value and did not raise the maximum temperature on the unexposed surface by more than 180°C above the initial mean unexposed face temperature. In addition, the transmission of heat through

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the assembly did not raise the maximum temperature of the unexposed surface of the frame by more than 360°C for 19 minutes.

After exposed to the fire for a period of 19 minutes, the mean temperature on unexposed surface increased by more than 140°C, insulation failure was deemed to occur.

This assembly therefore met the criteria of the test standards for insulation performance of 19 minutes.

A full set of test data is included in Section 10, and photographs have been presented in Section 11.