Element Materials Technology
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BS EN 1906:2012
LEVER HANDLES & KNOB FURNITURE

ASSESSMENT OF SPRUNG LEVER FURNITURE

A Report To:	Units 9 & 10, Mitcham Industrial Estate, Streatham Road, Mitcham, Surrey, CR4 2AP
Document Reference:	WIL - 544186
Product:	Various Lever Furniture

Date:	16/07/2024
Copy:	**Final**
Issue No:	No 1

Element Materials Technology Wednesbury Limited
Fire & Building Products
Registered in England & Wales
Registered Office: 10 Lower Grosvenor Place, London, SW1W 0EN, United Kingdom
Company Registration No: 11446650

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ASSESSMENT CONCLUSIONS

Samples of:
Manufacturer Frelan
Product Sprung Lever Furniture
Model Various – See Annex A
have been tested in accordance with: BS EN1906:2012 Building Hardware-Lever handles and knob furniture.
by Element Materials Technology [a UKAS accredited Testing Laboratory (No. 0621).
At Unit 3 Wednesbury One, Black Country New Road, Wednesbury, WS10 7NZ
Results as detailed below:

CLAUSE NO	DESCRIPTION	COMPLIANCE
5	Requirements at Grade 3	Yes
5.2	Check of Spindle and Fastening Elements	Yes
5.3	Rotational Torque Strength	Yes
5.4	Axial strength of lock or latch furniture and fixing	Yes
5.5	Free play	Yes
5.5.2	Safety requirements	Yes
5.6	Free angular movement or misalignment	Yes
5.7	Torque of return mechanism	Yes
5.8	Durability of mechanism	Yes
5.9	Repeat of Axial strength of lock furniture and fixing	Yes
5.10	Repeat of Free play measurement	Yes
5.11	Repeat of Free angular movement or misalignment	Yes
5.12	Repeat of Torque of return mechanism	Yes
5.13	Axial strength for safety furniture(optional)	Yes
5.14	Corrosion resistance	Yes
8	**Marking**	Yes
C.2	**Requirements for lock furniture for use on fire doors**	Yes

No inferences can be made regarding performance against other requirements of this standard

NOTE.
Assessments marked “NA” are not applicable to the type of device under test.
Assessments marked “NT” cannot be applied to the type of device under test
Assessments and the use of opinions & interpretations are not covered by Element Wednesbury’s scope of accreditation

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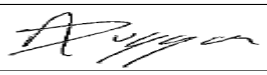
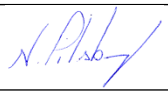
AUTHORISATION

Tests performed by:	Andrew Duggan – Test Engineer
Report issued by:	Andrew Duggan – Test Engineer
Signed:	
Date:	16/07/2024
For and on behalf of ELEMENT MATERIALS TECHNOLOGY	
Report authorised by:	Nathan Pilsbury - Hardware Manager
Signed:	
Date:	16/07/2024
For and on behalf of ELEMENT MATERIALS TECHNOLOGY	
Report issued:	16/07/2024
Peer review by:	Steve Wilkes – Deputy Manager
Signed:	
NOTE: Assessments and the use of opinions & interpretations are not covered by Element Wednesbury's scope of accreditation.	

The laboratory has tested the material/items supplied by the customer as sampled in accordance with the customer's own requirements. Results apply only to samples as received, and may not be indicative of a type or batch.

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ASSESSMENT DETAILS

CLIENT DETAILS

Company name	Frelan Hardware
Address	Units 9 & 10, Mitcham Industrial Estate, Streatham Road, Mitcham, Surrey
Post code	CR4 2AP
Contact	Andy McMeechan

ORDER DETAILS

Order number	309311
Dated	06/03/2024

SAMPLE DETAILS

Product	Sprung Lever Furniture
Model Number	Various – see Annex A
Mounting Details	Rose
Fixing Details	Through Bolts
Material Details	Stainless Steel
Basic Dimensions	Various
Special Safety Furniture	No
Burglar Resistant Furniture	No
Markings	Confirmed
Manufacturer	Frelan Hardware
Date of Manufacture	Unknown
Other Information	None

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TEST DETAILS

Test specification	BS EN 1906:2012 Building Hardware-Lever Handles & Knob Furniture
Test Reference Nos	WIL 544186
Full Test	No
Test to Clause	Sample 1 requirements
Date sample received	06/03/2024
Date test started	27/06/2024
Date test completed	28/06/2024
Special Test requirements	None
Other reports to be used in conjunction with this report	WIL 318241, WIL 346151, WIL 335920 & WF 421627 Issue 3

STANDARD REQUIREMENTS

Category of Use	Grade 3
Durability	200,000 Cycles
Security Grade	Grade 0
Safety Grade	Grade 0 - Normal Use
Corrosion Resistance Grade	Grade 3: high resistance
Fire Resistance	Grade B - Suitable For Use on smoke control and Fire resistant Doors
Sample Picture	

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INITIAL OBSERVATIONS

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TEST RESULTS

Pre Durability Tests - Sample 1

CLAUSE NO.	REQUIREMENTS	TEST RESULTS	P = Pass F = Fail
5.2 / 7.3.1 Test 1 (All)	**Check of spindle elements and fastening elements.** The spindle and fastening elements must be supplied or specified by Manufacturer. Range of door thicknessses must be stated. Rotation of spindle for spring assisted and sprung furniture must be stated.	 Supplied 35mm to 54mm Specified angle Not shown Measured angle ° 360	Pass
5.4 / 7.3.2 Test 2 (All)	**Axial strength of lock or latch furniture and fixing.** Apply load of 15 N, 50mm from axis of rotation. Measure distance door face to handle. Apply test load 50mm from axis of rotation Grade 1 = 300 N Grade 2 = 500 N Grade 3 = 800 N Grade 4 = 1000 N Hold for 60m secs Reduce load to 15N, 50 mm from axis of rotation Measure distance door face to handle. Permanent deformation < 2 mm for all grades Furniture still operates after test.	 15N 60.38mm 500N 60secs 15N 61.20mm 0.82mm Yes	Pass

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CLAUSE NO.	REQUIREMENTS	TEST RESULTS	P = Pass F = Fail
5.5 / 7.3.3 Test 3 (All)	**Free play** Furniture at rest position. Force of 15N applied towards door 50mm from axis of rotation Distance door to furniture 75 mm from axis of rotation. Force of 15N applied away from door 50mm fron axis of rotation Distance door to furniture 75 mm from axis of rotation. Free play = difference between measurements. Grades 1 & 2 < 10mm Grades 3 & 4 < 6 mm Furniture at 60° position or max angle Force of 15N applied towards door 50mm from axis of rotation Distance door to furniture 75 mm from axis of rotation. Force of 15N applied away from door 50mm fron axis of rotation Distance door to furniture 75 mm from axis of rotation. Free play = difference between measurements. Grades 1 & 2 < 10mm Grades 3 & 4 < 6 mm **Safety.** Are there any sharp edges. Are there any screws above backplate or rose. Does Fastening element protrude by more than 1mm permitted Is Finger trapping possible over range of rotation	 15N 58.71mm 15N 60.75mm 2.04mm 60° 15N 58.68mm 15N 60.34mm 1.7mm No No No No	Pass
5.6 / 7.3.4 Test 4 (All)	**Free angular movement.** Furniture one side fixed. Force of 15 N applied to free side 50 mm from axis of rotation in direction of rotation. Difference in position between fixed and free sides 75 mm from axis of rotation measured. Maximum free play or misalignment. 10mm Grades 1 & 2 5mm Grades 3 & 4	 15N Position of fixed side 187.66mm Position of free side 182.76mm Difference 4.9mm	Pass

5.7/ 7.3.5 Test 5 (SLLH)	**Torque of return mechanism.** At rest position Lever must rotate through minimum of 60° or maximum design angle Lever at rest angle after release from full angle of rotation Maximum Torque to operate through 60° or max Grades 1 & 2 1.5 Nm Grades 3 & 4 2.4 Nm Return to rest position must be within ±4° grade 1 ±2° grade 2 ±1° grades 3 & 4	0° 360° –0.60° 1.4Nm from ° to ° 5° 1.70° 15° 1.45° 25° 1.25° 35° 1.25° 45° 0.35° 55° 0.20°	Pass

Predurability tests completed on sample 1

Durability Test – Sample 1

CLAUSE NO.	REQUIREMENTS	TEST RESULTS	P = Pass F = Fail
5.8 / 7.3.6 Test 6 (SLLH)	**Durability of mechanism.** Downward Load. **L** Grades 1 & 2 60 N Grades 3 & 4 100N Outward Force. **P** Grades 1 & 2 60 N Grades 3 & 4 100N Return Spring force Grades 1 & 2 10N Grades 3 & 4 10N Angle of rotation > 50° < 60° or 10° < max Number of cycles Grades 1 & 2 100,000 Cycles Grades 3 & 4 200,000 Cycles	 60N 60N 10N 55° 200,00 Cycles	Pass

Condition of sample 1 after durability

No apparent damage or wear

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Post Durability Tests – Sample 1

CLAUSE NO.	REQUIREMENTS	TEST RESULTS	P = Pass F = Fail
5.9 / 7.3.7 Test 6 (SLLH)	**Axial strength of lock or latch furniture and fixing.** Apply load of 15 N, 50mm from axis of rotation. Measure distance door face to handle. Apply test load 50mm from axis of rotation Grade 1 = 300 N Grade 2 = 500 N Grade 3 = 800 N Grade 4 = 1000 N Hold for 60m secs Reduce load to 15N, 50mm from axis of rotation Measure distance door face to handle. Permanent deformation < 2 mm for all grades. Furniture still operates after test.	 15.0N 60.93mm 800N 60secs 15N 61.58mm 0.65mm Yes	 Pass
5.10 / 7.3.8 Test 7 (SLLH)	**Free play** Furniture at rest position. Force of 15N applied towards door 50mm from axis of rotation. Distance door to furniture 75mm from axis of rotation. Force of 15N applied away from door 50mm fron axis of rotation Distance door to furniture 75mm from axis of rotation. Free play = difference between measurements. Grades 1 & 2 < 10mm Grades 3 & 4 < 6 mm Furniture at 60° position or max angle Force of 15N applied towards door 50mm from axis of rotation. Distance door to furniture 75mm from axis of rotation. Force of 15N applied away from door 50mm fron axis of rotation Distance door to furniture 75mm from axis of rotation. Free play = difference between measurements. Grades 1 & 2 < 10mm Grades 3 & 4 < 6 mm	 15.0N 58.85mm 15.0N 60.44mm 1.59mm 55° 15.0N 58.93mm 15.0N 60.52mm 1.59mm	 Pass
5.10 / 7.3.8 Test 8 (SILH)	**Free angular movement.** Furniture one side fixed. Force of 15 N applied to free side 50 mm from axis of rotation in direction of rotation. Difference in position between fixed and free sides 75 mm from axis of rotation measured. Maximum free play or misalignment. 10mm Grades 1 & 2 5mm Grades 3 & 4	 15.0N Position of fixed side 186.40mm Position of free side 184.00mm Difference 2.40mm	 Pass

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CLAUSE NO.	REQUIREMENTS	TEST RESULTS	P = Pass F = Fail
5.12 / 7.3.10 Test 10 (SLLH)	**Torque of return mechanism.** At rest position Lever must rotate through minimum of 60° or maximum design angle Lever at rest angle after release from full angle of rotation Maximum Torque to operate through 60° or max Grades 1 & 2 1.5 Nm Grades 3 & 4 2.4 Nm Return to rest position must be within ±4° grade 1 ±2° grade 2 ±1° grades 3 & 4	0° 55° 0° 1.49Nm from ° to ° 5° 0.55° 15° 0.60° 25° 0.30° 35° 0.15° 45° 0.25° 55° 0°	Pass

Optional tests for safety furniture only – Sample 1

CLAUSE NO.	REQUIREMENTS	TEST RESULTS	P = Pass F = Fail
5.13 / 7.3.11 Test 11	Apply force to handle away from block 1500 N grades 1 & 2 2500 N grades 3 & 4 for 60 secs. Device remains fixed to block. Does not have to operate after test.	NT	NT

Special safety tests completed.

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5.3/ 7.3.12 Test 12 (All)	**Rotational torque strength.** Spindle fixed into torque plate. Torque of 1 Nm applied. Position of lever / knob 50 mm from spindle Applied Torque of 20 Nm – grade 1 30 Nm – grade 2 40 Nm - grade 3 60 Nm - grade 4 for 60 secs Torque of 1 Nm applied. Position of lever / knob 50 mm from spindle Permanent deformation < 5 mm	 1Nm 22.66mm 40Nm 60secs 1Nm 18.16mm 4.5mm	 Pass

Condition of sample 1 after test.

Satisfactory

Corrosion resistance – Sample 2

CLAUSE NO.	REQUIREMENTS	TEST RESULTS	P = Pass F = Fail
5.14 / 7.4 Test 13	Required exposure time. Sample operates before exposure. Exposure start time Exposure finish time Actual exposure period Tarnishing of uncoated surfaces. Corrosion spots < 1 per 650mm^2 Device operates after test	Grade 3 - 96 Hrs Yes 0hrs 96hrs 96hrs N/a Yes Yes	 Pass

Comment on condition after corrosion

No Visible corrosion apparent

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Annex C - Suitable for Use on fire door assemblies:

Tested in a door assembly which satisfies criteria of EN 1634 – 1

Test report No. WF 421627 Issue 3

Classification achieved

Category of use	Durability	Door mass	Fire resistance	Safety	Corrosion resistance	Security	Type of operation
1 - 4	**6 or 7**	**---**	**0,A,B or C**	**0 or 1**	**0 - 4**	**0 – 4**	**A, B, or U**
3	7	-	B	0	3	0	B

Clause 8 marking

Product and or literature, packing etc Should be marked with:

Manufacturer's name or Trade mark.	Frelan
Product model identification	See Annex A
Classificationaccording to clause 4	Yes
Standard number	EN1906:2012
Door thickness range	35mm – 54mm
The year and week of manufacture (may be in coded form)	Confirmation supplied

Additional marking for security furniture

Maximum and minimum door thickness	N/a
If lock cylinder is to be used details of suitable types of cylinder.	N/a
Fixing instructions Show method of fixing – written instructions in English, French or German.	N/a
Drilling template to be included	N/a
Dimensions of backplate and cylinder as detailed in A.2.1.2	N/a

Marking requirements satisfactory require changes or additions

tolerances.

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OBSERVATIONS AND COMMENTS

All test results in this report were assessed from report number WIL 346151, which is based on testing the JSS13 model, which in our opinion is a more onerous product. It is therefore our opinion that the results for this testing are also valid for the models contained in Annex A in this report.

Markings were confirmed by the client.

- End of report –

Annex A

JSS12	JSS412	JPS480	JV710	JC6002
JSS/PS701	JPS412	JSS380	JV502	JC6003
JSS/PS702	JSS360	JPS380	JV504	JV850
JSS213	JPS360	JV435	JV507	JV860
JPS213	JSS403	JV3001	JV508	JV861
JSS405	JPS403	JV3002	JV509	JV845
JPS405	JSS402	JV765	JV520	JV849
JSS406	JPS402	JV420	JV550	JV848
JPS406	JSS580	JV430	JV555	JV847
JSS01	JPS580	JV465	JV690	JV600
JPS01	JSS385	JV466	JV760	JV851
JPS13	JPS385	JV467	JV780	JV852
JSS501	JS 480	JV482	JV790	JV853

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REVISION HISTORY

Issue No :	Re - Issue Date : Click here to enter a date.
Revised By:	Approved By:
Reason for Revision:	

Issue No :	Re - Issue Date : Click here to enter a date.
Revised By:	Approved By:
Reason for Revision:	