



COMMERCIAL IN CONFIDENCE

TEST REPORT

IFCC/001/17078

Report of the witnessing of Testing in accordance with BSEN1154:1997/A1:2002 of an Astra Door Controls Ltd Concealed Door Closer Model No. Astra 4003

Report for: Astra Door Controls Ltd
Astra Business Centre,
Roman Way, Preston
PR2 5AP
United Kingdom

Test Date Start: **11th September 2017**

Test Completed: **13th February 2018**

1. INTRODUCTION

The test was conducted by the manufacturer Astra Door Controls Ltd. at their premises at Astra Business Centre, Roman Way, Preston PR2 5AP, United Kingdom and witnessed by IFC Certification Ltd. in its capacity as a UKAS accredited certification body (No.0175).

2. SPONSORS

Astra Door Controls Ltd
Astra Business Centre,
Roman Way, Preston PR2 5AP
United Kingdom

3. LOCATION AND DATE

At Astra Door Controls Ltd factory at Astra Business Centre, Roman Way, Preston PR2 5AP United Kingdom.

Tests Witnessed by;
Mr I. Laithwaite (IFC Certification Ltd.)

Test Observed by;
Mr P. Gallagher (Astra Door Controls Ltd.)
Mrs H. Hull (Astra Door Controls Ltd.)

4. RESULTS SUMMARY

Clause No.	Description	Compliance
5.1	Instructions for installation shall contain	
5.1.1	Instructions for installation, regulation and Maintenance	Yes
5.1.1	Details of limitation of opening angle	Yes
5.1.2	Power sizes for non-standard applications	Yes
5.2	Performance requirements	
5.2.2	Durability	Yes
5.2.3	Closing moment after 5000/500,000 cycles	Yes
5.2.4	Opening moment after 5000 cycles	Yes
5.2.5	Efficiency after 5000/500,000 cycles	Yes
5.2.6	Max & Min closing time after 5000/500,000 cycles	Yes
5.2.6	Change of closing time 5000 to 500,000 cycles	Yes
5.2.7	Angles of operation	Yes
5.2.8	Overload performance at 5000/500,000 cycles	Yes
5.2.8	Overload performance for delayed action closers	N/A
5.2.9	Temperature dependence	Yes

5.2.10	Fluid leakage	Yes
5.2.11	Damage	Yes
5.2.12	Latch control (Optional)	N/A
5.2.13	Backcheck (Optional)	N/A
5.2.14	Delayed closing (Optional)	N/A
5.2.15	Adjustable closing force (Optional)	N/A
5.2.16	Zero position (Double action closers only)	N/A
5.2.17	Corrosion resistance	Pass
5.2.18	Additional requirements for fire door closers	Pass
8	Marking	Pass

No inference can be made regarding performance against other requirements of this standard not referenced above.

Results marked as N/A are not applicable to the type of device tested.
Results marked as N/T cannot be applied to the type of device tested.

5. Observations

Clause 3.1 device must contain all parts required for installation and operation.

Closer was supplied with:-

Component	Supplied	Description
Body	Yes	Concealed in door
Arms	N/A	
Fixing Bracket(s)	N/A	
Shoes or straps	N/A	
Top Centres	N/A	
Floor pivots	N/A	
Fixing Screws	Yes	Wood screws
Covers	N/A	
Special Tools	No	Not supplied

Clause 5.1 Information supplied with closer (Device must be supplied with instructions containing the following information):-

	Supplied	Details
Clear fixing instructions	Yes	Documentation provided
Regulation instructions	Yes	Documentation provided
Maintenance instructions	Yes	Documentation provided
Opening angle limitations	Yes	Documentation provided
Closer power for each application and fixing position	Yes	Power Size 3

Clause 8 Markings of closer and accessories (must be marked with):-

	Marked	Details
Manufacturers name/trademark or other means of identification	Yes	Documentation provided
Product Model identification	Yes	Documentation provided
Standard No.	Yes	Documentation provided
Week/Year of Manufacture	Yes	Documentation provided

Each closer must be marked with its classification according to clause 4.

Category	No. of Test Cycles	Test Door Mass	Fire Resistance	Safety	Corrosion Resistance
3	8	3	1	1	5

6. Test Results

Clause 5.1 – Product Information (see Section 5)

Clause 5.2.12 – Latch angle (optional). If applicable must be effective over a maximum range of 15 Degs & shall be adjustable.

Measured latch angle N/A
 Latch effect adjustable N/A

Clause 5.2.18 Additional requirements for closers intended for fire or smoke doors:-

Requirement	Test Information	Result
Capable of closing the door from any angle to which it may be open	105 Degs	Pass
Power Size	Size 3	Pass
No hold open unless electrically powered	No hold open	N/A
Regulators must be concealed or operated by a tool	Concealed	Pass
It must not be possible to inhibit closing action without use of a tool	Not possible	Pass
Delayed action closers must be capable of adjustment to less than 120 secs from 120 Degs	Not delayed action	N/A
Must have been subjected to a fire test	Yes	Report No.WF391562

SAMPLE A

Clause 7.2 – General requirements & operation at extremes of temperature

Closer Temp Degs	Conditioning time (8hrs min)	Test Requirement	Measured closing time (secs)				Result Pass/Fail
			1	2	3	Avg	
Sample: Closer strength Size 3 Test Door Mass = 60kg							
+20	8 hours	Set to 5 secs	4.24	4.68	4.22	4.38	Pass
-15	8 hours	3 secs min	10.15	11.86	12.23	11.41	Pass
+40	8 hours	25 secs max	3.86	3.89	4.34	4.03	Pass

Close condition after testing: Satisfactory

Sample B

Clause 7.3 – Mechanical performance and durability

	Test requirement	Test Result	Pass/Fail
Closer strength – Size 3	Test Door Mass 60Kg	60Kg	Pass
Max Opening angle	105 Degs Grade 3 180 Degs Grade 4	105 Degs	Pass
Door Closes from	105 Degs Grade 3 180 Degs Grade 4	105 Degs	Pass
Door under control from	70 Degs minimum	105 Degs	Pass
Set closing time 90 Degs to 0 Degs	3 – 7 Secs	3.37	Pass
Set Opening time 0 Degs to 90 Degs	2 – 3 Secs	2.91	Pass

Clause 7.3.4 – Tests after 5000 cycles

	Test requirement	Test Result	Pass/Fail
Cycles completed	5000	5000 Cycles	Pass
Ambient Temp	15 – 30 Degs C	21 Degs C	Pass
Closer Temp	Within 2 Degs of ambient	19.8 Degs C	Pass
Opening moment Closer Size 3	Max Opening torque 0 – 4 Degs	1 – 22 2 – 22.5 3 – 23 Avg = 22.5	N/A
	Max Opening torque 0 – 60 Degs Size 3 = less than 47Nm	1 – 29.5 2 – 31.3 3 – 30 Avg = 30.27	Pass
	Max Opening torque 88 – 92 Degs	1 – 26.9 2 – 26.8 3 – 26.9 Avg = 26.86	N/A
Closing moment Closer Size 3	Max Closing torque 0 – 4 Degs Size 3 = Greater than 18Nm less than 26Nm	1 – 20 2 – 19.8 3 – 20.7 Avg = 20.17	Pass
	Max Closing torque 88 – 92 Degs Size 3 = Greater than 6Nm	1 – 20.3 2 – 20.1 3 – 20.3 Avg = 20.23	Pass
	Min Closing torque at any angle Size 3 = Greater than 4Nm	1 – 17.7 2 – 17.2 3 – 17.5 Avg = 17.47	Pass
Efficiency	Size 3 Closer / Min Value 55%	89.64%	Pass
Closing time	Min less than/equal to 3 Secs Max greater than/equal to 20 Secs	1.78 secs 145 secs	Pass
Closing Overload Test	Abuse weight Closing time 90 – 0 Degs set to 10 secs Overload abuse weight arrest at 15 Degs 10 Abuse tests performed	Size 3 = 21Kg 9.88 secs 15 Degs Yes	Pass
Delayed Action Tests			N/A

Continued cycling 5000 to 500,000 cycles

Specification	Requirement	Test Result	Pass/Fail
Delayed action closers only			N/A
Closing time	Closing time 90 – 0 Degs set to 3 – 7 secs	3.67	Pass
Back Check			N/A
None backcheck closers cycle from 500 – 500000 cycles		500,000	Pass

Clause 7.3.4 – Tests after 500,000 cycles

	Test requirement	Test Result	Pass/Fail
Cycles completed	500000	500000 Cycles	Pass
Ambient Temp	15 – 30 Degs C	17.5	Pass
Closer Temp	Within 2 Degs of ambient	16.9	Pass
Opening moment Closer Size 3	Max Opening torque 0 – 4 Degs	1 – 27.0 2 – 26.1 3 – 27.2 Avg = 26.76	N/A
	Max Opening torque 0 – 60 Degs Size 3 = less than 47Nm	1 – 30.2 2 – 31.0 3 – 30.83 Avg = 30.67	Pass
	Max Opening torque 88 – 92 Degs	1 – 28.0 2 – 27.3 3 – 27.8 Avg = 27.7	N/A
Closing moment Closer Size 3	Max Closing torque 0 – 4 Degs Size 3 = Greater than 18Nm less than 26Nm	1 – 20.3 2 – 20.7 3 – 20.7 Avg = 20.56	Pass
	Max Closing torque 88 – 92 Degs Size 3 = Greater than 6Nm	1 – 18.9 2 – 20.0 3 – 19.4 Avg = 19.43	Pass
	Min Closing torque at any angle Size 3 = Greater than 4Nm	1 – 16.0 2 – 16.7 3 – 17.2 Avg = 16.63	Pass
Efficiency	Size 3 Closer / Min Value 55%	74.2 %	Pass
Closing time	Min less than/equal to 3 Secs Max greater than/equal to 20 Secs	1.65 secs 178 secs	Pass
Closing Overload Test	Abuse weight Closing time 90 – 0 Degs set to 10 secs Overload abuse weight arrest at 15 Degs 10 Abuse tests performed	Size 3 = 21Kg 10.77 secs 15 Degs Yes	Pass
Delayed Action Tests			N/A

SAMPLE C

Clause 7.4 Corrosion Resistance tests

Specification	Requirement	Test Result	Pass/Fail
Sample C	Closer set to min strength		Pass
Ambient Temp	15 – 30 Degs C	21	Pass
Closer Temp	Within 2 Degs of ambient	19.8	Pass
Closing Moment (Avg of 3 tests) Closer Size 3	Max Closing torque 0 – 4 Degs Size 3 = Greater than 18Nm less than 26Nm	1 – 11.9 2 – 12.2 3 – 11.8 Avg = 11.97	Pass
	Max Closing torque 88 – 92 Degs Size 3 = Greater than 6Nm	1 – 11.0 2 – 11.1 3 – 11.0 Avg = 11.03	Pass
	Min Closing torque at any angle Size 3 = Greater than 4Nm	1 – 9.7 2 – 9.7 3 – 9.3 Avg = 9.56	Pass
Grade of Corrosion resistance	Test report 4788338944 Exposure time =	480 Hours	Pass
Ambient Temp	15 – 30 Degs C	20.0	Pass
Closer Temp	Within 2 Degs of ambient	21.0	Pass
Closing Moment (Avg of 3 tests) Closer Size 3	Max Closing torque 0 – 4 Degs Greater than 80% of above	1 – 11.9 2 – 11.5 3 – 11.0 Avg = 11.45 (95.65%)	Pass
	Max Closing torque 88 – 92 Degs Greater than 80% of above	1 – 9.3 2 – 9.7 3 – 10.1 Avg = 9.7 (%)	Pass
	Min Closing torque at any angle Greater than 80% of above	1 – 13.2 2 – 13.2 3 – 13.2 Avg = 13.2 (81.1%)	Pass

No visual evidence of corrosion was evident on the sample.

Clause 8 – Marking (See Section 5)

Section 7. Comments

The Astra 4003 concealed door closer was fully tested to BS EN 1154 at power size 3, met with the temperature, durability and Corrosion test requirements.