Intertek

TEST REPORT EN 1154						
Building hardware- Controlled door closing devices						
r	Requirements and test methods					
Report Reference No	131129003GZU-001					
	Supersede report No.131129003GZU-001 dated December 11, 2013					
Tested by (name and signature):	Alan Lai Alem Lou					
Approved by (name and signature):	Credy Chen Credy Chen					
Date of issue	December 20, 2013					
Contents	Total test report 13 pages including:					
	Report text: 7 pages					
	Appendix A for product photo and product drawing: 2 pages Appendix B for Product Drawing and Bill of Material: 1 page Appendix C for Installation Instruction: 2 pages Revision page : 1 page					
Testing Laboratory name	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch					
Address	Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China					
Testing location	Same as above					
Applicant's name:	The Parkside Group Ltd					
Address	Unit 5, 17 Willow Lane, Mitcham, Surrey, CR4 4NX, United Kingdom					
Test specification						
Standard	EN 1154:1996/A1:2002/AC:2006					
Non-standard test method	None					
Test Report Form No	TTRF EN 1154: 1997 A					
TTRF Originator	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch					
Master TTRF	Dated 2008-01					
Test item description:	Surface mounted door closer					
Trade Mark:	AXIM					
Model and/or type reference:	FC-1500 BC					
Manufacturer HENGKUO Co., Ltd.						
Rating(s):	3 8 5 0 1 2					
Summary of testing The submitted samples COMPLIED WITH all applicable mechanical performance requirements of EN						

1154:1996/A1:2002/AC:2006 for the ratings.

TTRF EN 1154: 1997 A Originator: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

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Test item particulars					
Classification of installation and use:	For all internal and external doors for use by the public, and others with little incentive to take care.				
Test case verdicts					
Test case does not apply to the test object	N/A				
Test item does meet the requirement	P (Pass)				
Test item does not meet the requirement	F (Fail)				
Testing					
Date of receipt of test item:	February 21, 2012 and July 2, 2012				
Date(s) of performance of test:	February 21, 2012 to September 17, 2012				
General remarks					
This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or bas ever been under an Intertek certification program.					
"(See remark #)" refers to a remark appended to the report. "(See Appendix #)" refers to an appendix appended to the report. Throughout this report a comma (point) is used as the decimal sepa	arator.				
When determining the test result, measurement uncertainty has been considered.					
General product information: Surface mounting door closer, Model FC-1500 BC Top Jamb application and power size 1 to 4 for pa optional 120° or 180° per different installation dim function. Whole test was base on standard applica	C, claimed adjustable power size 2 to 5 for Standard & arallel arm application, with maximum open angle thensions, with Backcheck function, without Delay ation with 120° open.				
Schedule of Components:					
See Appendix B.2 – Bill of Material for componen	t list and raw material information.				
Detail "Ratings" information listed as following:					
First digit (Category of use): Grade 3 - For closing) doors from at least 105 $^\circ$ open;				
Second digit (Durability): Grade 8 - 500 000 test	cycles;				
Third digit (Door closer power size): power size 2	to 5;				
Fourth digit (suitability for use on fire/smoke doors assemblies;	s): Grade 0 - Not suitable for use on fire/smoke door				
Fifth digit (Safety): Grade 1 - all door closers are in use;	required to satisfy the essential requirement of safety				
Sixth digit (Corrosion resistance): Grade 2 - Mod	erate resistance.				

EN 1154									
Clause	use Requirement – Test Result - Remark								
4	CLASSIFICATION								
4.1	Door closer shall be classified by six digit coding system:								
4.2	Category of	use		3					
4.3	Durability			8					
4.4	Door closer	power size .		2 to 5					
4.5	Suitability for use on fire/smoke doors			0					
4.6	Safety			1					
4.7	Corrosion re	sistance		2					
5	REQUIREM	ENTS							
5.1	 Product information A door closer manufactured to this standard shall be supplied with clear, detailed instructions for its installation, regulation and maintenance, which shall include any limitations of opening angle. Where a door closer is recommended for fitting in other than a standard application, these instructions shall clearly define the door closer power size for each application of fitting position stated.: 						P		
	Table 1: Door closer Power size	0° Nm min. 9	Clo to 4° Nm max. <13	osing m 88 Nn 3	noment s° to 92° n min.	Any other angle Nm min. 2	Opening moment 0° to 60° Nm max. 26	Door closer efficiency 0° to 4° % min. 50	
	2	13	<18	4		3	36	50	
	3	18	<26	6		4	47	55	
	4	26	<37	9		6	62	60	
	5	37	<54	12		8	83	65	
	6	54	<87	18	}	11	134	65	
	7 87 <140 29 18 215 65								

EN 1154							
Clause	Requirement – Test	Result - Remark					Verdict
5.2.1	General	See blow clauses					Р
	When tested in accordance with clauses 6 and 7,the door closer shall satisfy the relevant performance requirements of 5.2.2 to 5.2.11, and 5.2.12 to 5.2.18 as appropriate:						
5.2.2	Durability	500 000 cycles					Р
	The door closer shall be able to close a test door conforming to 6.1.1 and 6.2 from an opening angle of 90°, for a minimum of 500, 000 test cycles:						
5.2.3	Closing moment	—	Powe	r Size 2	Powe	er Size 5	Р
After 5000 test cycles and after 500,000 test cycles the measure closing moments shall be not les than the value stated in Table 1:	After 5000 test cycles and after 500,000 test cycles the measured	Cycles:	5K	500K	5K	500K	
	closing moments shall be not less than the value stated in Table 1:	Closing moment (0° and 4°) (Nm)	14,7	14,8	45,5	44,7	
		Closing moment (88° and 92°) (Nm)	16,8	18,4	26,9	26,1	
		Minimum closing moment (any other angle) (Nm)	13,1	13,0	20,5	18,9	
5.2.4	Opening moment	Power Size 2:			•		Р
	After 5000 test cycles the measured closing moments shall	Maximum opening moment between 0° and 60°: 28,2					
	be not less than the value stated in Table 1:	Power Size 5:					
		Maximum opening mor Nm	nent betv	ween 0°	and 60°	2:64,6	
5.2.5	Efficiency	_	Powe	r Size 2	Powe	er Size 5	Р
	After 5000 test cycles and after 500,000 test cycles the	Test Cycles:	5K	500K	5K	500K	
	measured efficiency shall be not less than value stated in Table 1:	Efficiency (%):	56	59	71	79	

Report No.: 131129003GZU-001

EN 1154						
Clause	Requirement – Test	Result - Remark			Verdict	
5.2.6	Closing time	_	Power Size	€5 P		
	After 5000 test cycles and after 500,000 test cycles, the closing time, from a door opening angle of 90 degree, shall be capable of adjustment to 3 seconds or less, and 20 seconds or more. After	Test Cycles:	5K 500K	5K 500	к	
		The adjustable range of closing time	1"79 1"94 ~ >10' >10'	1"75 1"7 ~ ~1'4 >10 40	8	
	time set at 5000 test cycles, the closing time set at 5000 test cycles shall not have increased by more than 100%, or decreased by more than 30 %:	Closing time	3"33 3"58	3"18 4"1	1	
5.2.7	Angles of operation	Power Size 2:			Р	
	The door closer shall permit the	Maximum open angle: 1	120°			
	test door to open according to its grade and on closing shall	The controlled angle: 11	15°			
	control the door from a minimum	Power Size5:				
	angle of 70 degree:	Maximum open angle: 1	120°			
		The controlled angle: 110°				
5.2.8	Overload performance	Power Size 2:				
	The door closer shall be capable	After 5000 and 500 000 test cycles				
	overload tests	Applied 18 kg overload weight ten times and functioned normally after overload.				
		Power Size 5:				
		After 5000 and 500 000	test cycles			
		Applied 27 kg overload functioned normally after	weight ten tim er overload.	es and		
5.2.9	Temperature dependence	_	Power Size	2 Power Size	€5 P	
A set closing time of at an ambient temp	A set closing time of 5 seconds at an ambient temperature of 20 degree C, shall not increase to	Closing time at 20°C	4"95	5"03		
	more than 25 seconds or decrease to less than 3 seconds	Closing time at -15°C	12"93	11"21		
	when tested at –15 degree C and 40 degree C:	Closing time at 40°C	4"61	4"57		
5.2.10	5.2.10 Fluid leakage Not found any fluid leakage throughout the test					
	Throughout the test programme there shall be no leakage of fluid from the door closer					

Page 6 of 13

EN 1154						
Clause	Requirement – Test	Result - Remark	Verdict			
5.2.11	Damage	Not found any damage throughout the test	Р			
	Throughout the test programme there shall be no damage to the door closer or its arms that would adversely affect its performance to this standard					
5.2.12	Latch control (optional)	Latch control could be adjustable to enable accelerated	Р			
	Accelerated closing shall be effective over a maximum range of 15 degree from the closed position, and shall be adjustable.					
5.2.13	Backcheck (optional)	Before and after 100k backcheck cycle test, the door	Р			
	The door closer shall be capable of arresting the test door before 90 degree position:	closer can be capable of arresting the test door before 90° both in power size 2 and 5.				
5.2.14	Delay closing (optional)	No delayed closing function	N/A			
	The delay time shall not be less than 20 seconds.					
	The delay zone shall not extend below the 65 degree open position.					
	The moment required to override manually the delay action shall not exceed 150 Nm.	m.				
	The delay time at the conclusion of 500 test cycles shall be between 10 seconds to 30 seconds:					
5.2.15	Adjustable closing force (optional)	Power Size 2 to 5, refers to relevant requirement.	Р			
	If provided with an adjustable closing function, the door closer shall comply with the performance at both the minimum and maximum power settings claimed by manufacture					
5.2.16	Zero position (for double action door closers only)	Not applicable for single action door closer.	N/A			
	The amount of free play at the zero position of a new door closer shall not exceed 3 mm, and after 500,000 test cycles shall not exceed 6 mm:					

EN 1154						
Clause	Requirement – Test	Result - Remark	Verdict			
5.2.17	Corrosion resistance	Power size 2:	Р			
	The requirement shall be according to EN 1670. The closing moment of the door closer shall be not less than 80% of the closing moment measured prior to the test. The acceptance conditions of EN 1670 shall be met for all surfaces of the door closer which are visible:	Before test, Closing moment between 0° and 4°: 14,8Nm Closing moment between 88° and 92°: 18,4Nm Minimum closing moment at any other angle: 13,0Nm After 48 hours exposure of neutral salt spray: Closing moment between 0° and 4°: 14.3Nm Closing moment between 88° and 92°: 18,2Nm Minimum closing moment at any other angle: 12,7Nm Not found any rust or blister in the visible surface of the sample				
5.2.18	Fire/smoke door suitability A door closer for use on a fire/smoke door assembly shall meet the necessary requirements of Annex A	Not suitable for use on fire/smoke door assemblies	N/A			

Appendix A

Product Photo



TTRF EN 1154: 1997 A Originator: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Page 9 of 13

Report No.: 131129003GZU-001





Appendix B Product Drawing and Bill of Material

TTRF EN 1154: 1997 A Originator: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch



Appendix C Installation Instruction

C.1. Installation Instruction (1)

TTRF EN 1154: 1997 A Originator: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

Page 12 of 13



TTRF EN 1154: 1997 A Originator: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

Revision Page

Revision No.	Date	Changes	Author	Reviewer
0	December 11, 2013	First issue	Alan Lai	Credy Chen
1	December 20, 2013	Add the trade mark "AXIM" on first page.	Alan Lai	Credy Chen