

TSG INTERNATIONAL AG
BUELACHSTRASSE 5, 8057 ZUERICH SWITZERLAND

Sample Description : ELBOW ALL GROUND
Item No. : 72009
Buyer : TSG INTERNATIONAL AG
Manufacturer : ENCHESH INTL. LTD
Supplier : ENCHESH INTL. LTD
Country of Origin : CHINA
Country of Destination : CHINA

As above test item and its relevant information regarding to the submission are provided and confirmed by the applicant. SGS is not liable to either the test item or its relevant information, in terms of the accuracy, suitability, reliability or/and integrity accordingly.

Range : C
Level : 1
Sample Receiving Date : Dec 10, 2020
Sample Resubmission Date : Jan 14, 2021
Test Performing Date : Dec 10, 2020 to Jan 22, 2021
Test Performed : EN 14120:2003+A1:2007
Test Result(s) : For further details, please refer to the following page(s)

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Lell Wu
Authorized Signatory



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Test Conducted: Based on **EN 14120:2003+A1:2007** Protective clothing –Wrist, palm, knee and elbow protectors for user of roller sports equipment – requirements and test methods.

Test Results:

Clause	Test Method/Requirement	Result
4	Performance levels	
4.1	Level 1: Protectors intended to be suitable for normal roller sports.	Level 1
4.2	Level 2: Protectors intended to be suitable for use in acrobatic roller sports.	
5	Requirements	
5.1	General performance requirements shall be based on 3 weight ranges as follows: a) range A : Users of up to 25 kg body weight ; b) range B : Users of body weight between 25 kg and 50 kg ; c) range C : Users of body weight above 50 kg. Combined protectors such as wrist protectors shall meet the requirements for each protector.	Range C
5.2	Ergonomics Protectors shall be so designed and manufactured that in the foreseeable conditions of use for which they are intended the user can perform the roller sports normally and unhindered whilst enjoying protection at the specified limit.	Pass
5.3	Innocuousness Protectors shall be safe to use and fit for their purpose. They shall be designed and manufactured to provide protection when used according to the manufacturer's instructions, without endangering the user or others.	Pass
	There shall not be hard or sharp edges, seams, buckles or other items on the surfaces of the products that could harm the user or others during normal use. Examination shall be made according to 6.3.	Pass
	Construction materials and incorporated substances shall not harm those coming into contact with them.	Pass
	The manufacturer shall list in the information supplied with the protectors the main composition of the protectors and shall label any protector containing substances or preparations generally known to be hazardous. Information about determining the chemical innocuousness of protectors is given in annex A.	NT
5.4	Sizing Protectors shall be marked with a size. The size shall be designated by the range of body of the intended users, see 5.1.	NT



<p>5.5</p>	<p>Restraint Protectors shall not be easily displaced from the areas they are designed to protect during normal movements and when subjected to impacts. When subjected to impacts. When tested in accordance with 6.4 the central point of a protector shall not move more than the appropriate value in Table 1.</p> <p>Table 1: Maximum movement of protectors during testing.</p> <table border="1"> <thead> <tr> <th rowspan="2">Kind of protectors</th> <th colspan="3">Maximum movement (mm)</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>Elbow protectors</td> <td>20</td> <td>40</td> <td>50</td> </tr> <tr> <td>Knee protectors</td> <td>30</td> <td>50</td> <td>60</td> </tr> <tr> <td>Wrist protectors</td> <td>20</td> <td>20</td> <td>20</td> </tr> <tr> <td>Palm protectors</td> <td>20</td> <td>20</td> <td>20</td> </tr> </tbody> </table>	Kind of protectors	Maximum movement (mm)			A	B	C	Elbow protectors	20	40	50	Knee protectors	30	50	60	Wrist protectors	20	20	20	Palm protectors	20	20	20	<p>Pass See annex 1</p>																	
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<p>5.6</p>	<p>Abrasion resistance When tested in accordance with 6.5 the abrasion resistant layer of the protector shall not be perforated.</p>	<p>Pass See annex 2</p>																																								
<p>5.7</p>	<p>Impact strength When tested in accordance with 6.6 the abrasion resistant layer of the knee, elbow, wrist or palm protector shall not break or split.</p> <p style="text-align: right;">Unit: J</p> <table border="1"> <thead> <tr> <th rowspan="3">Kind of protectors</th> <th colspan="3">Level 1</th> <th colspan="3">Level 2</th> </tr> <tr> <th colspan="6">Range of body mass</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>Knee protectors</td> <td>25±2</td> <td>45±2</td> <td>65±2</td> <td>30±2</td> <td>50±2</td> <td>70±2</td> </tr> <tr> <td>Elbow protectors</td> <td>20±2</td> <td>40±2</td> <td>60±2</td> <td>20±2</td> <td>40±2</td> <td>60±2</td> </tr> <tr> <td>Wrist and Palm protectors</td> <td>30±2</td> <td>40±2</td> <td>50±2</td> <td>30±2</td> <td>40±2</td> <td>50±2</td> </tr> </tbody> </table>	Kind of protectors	Level 1			Level 2			Range of body mass						A	B	C	A	B	C	Knee protectors	25±2	45±2	65±2	30±2	50±2	70±2	Elbow protectors	20±2	40±2	60±2	20±2	40±2	60±2	Wrist and Palm protectors	30±2	40±2	50±2	30±2	40±2	50±2	<p>Pass See annex 3</p>
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5.8	Impact performance for knee, palm and elbow protectors							Pass See annex 4											
	A protector complies with this standard if the mean value of the peak force does not exceed the value in Table 2 when tested in accordance with 6.7.																		
	Kind of protector	Protectors level 1							Maximum peak force kN										
		Range of body mass																	
		A		B		C													
		r	e	r	e	r	e												
		mm	J	mm	J	mm	J												
	Knee protectors	25	3	35	8	50	12		6										
	Elbow protectors	12.5	1	17.5	4	25	6		4										
	Palm protectors	100	3	100	4	100	5		3										
Kind of protector	Protectors level 2						Maximum peak force kN												
	Range of body mass																		
	A		B		C														
	r	e	r	e	r	e													
	mm	J	mm	J	mm	J													
Knee protectors	25	15	35	20	50	25	6												
Elbow protectors	12.5	7.5	17.5	10	25	15	4												
Palm protectors	100	6	100	8	100	10	3												
r is the radius of curvature of the anvil e is the impact energy																			
5.9	Specific requirements for wrist protectors																		
5.9.1	Adjustment The restraint system shall be continuously adjustable. Testing in accordance with 6.1						NA												
5.9.2	Stiffness Wrist protectors shall be sufficiently stiff that when tested according to 6.8 the extension of the artificial wrist joint is between $\angle A > 35^\circ < A1$ and 55° . NOTE Extension of the wrist joint is the bending of the hand backwards from a position in a straight line with the forearm. Unit: N-m						NA												
		<table border="1"> <tr> <td rowspan="2">Moment of force</td> <td colspan="3">Range</td> </tr> <tr> <td>A</td> <td>B</td> <td>C</td> </tr> <tr> <td></td> <td>2</td> <td>3</td> <td>3</td> </tr> </table>						Moment of force	Range			A	B	C		2	3	3	
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5.9.3	Dimensions of stiffness elements		NA
	Wrist protectors shall have stiffening elements that exceed the dimensions in table 3. The reference point for measurements shall be the plane of the wrist of an appropriate size of subject, who has put on the protector. The position of the plane of the wrist of the subject shall be determined according to EN 1082-1		
	Unit: mm		
	Location of stiffness elements	Range of body mass	
		A B C	
	Length from the wrist up to the arm	30 40 50	
	Length from the wrist towards the finger tip	40 50 60	
	Width in the palmer region	15 20 25	
7	Marking		
	Protectors shall be durably and clearly marked with the following:		NT
	a.	name of trademark of the manufacturer or his authorized representative within the European Union;	NT
	b.	designation of the protector, commercial name of that uniquely identifies the protector;	NT
	c.	size of the protector (see also 5.4)	NT
	d.	name of this standard and the performance level;	NT
	e.	clear indication whether the protector is for left or right fitting, if appropriate;	NT
	f.	international care label symbols;	NT
	g.	year of manufacture (date or code);	NT
h.	the following pictogram, instructing the user to see the information supplied by the manufacture.	NT	
8	Information supplied by the manufacturer		
	Protectors shall be supplied with information and instructions for fitting and use to promote their safe and effective use. The information shall be precise and comprehensible and in the official languages of the country or region in which the equipment is to be placed on the market. At least the following information and instructions shall be given:		NT
	a.	all the information specified in clause 7;	NT
	b.	full address of the manufacturer or importer	NT
	c.	instructions on how to select protectors of the correct performance level and explanation of the performance level of the protectors specified in this standard;	NT
	d.	instructions on how to choose the correct size of protector and check its fit;	NT
	e.	details of the size of protectors and the body dimensions to which they relate;	NT
f.	instructions on how to adjust the protectors;	NT	



g.	warning about any changes in environmental conditions, such as temperature, that would significantly reduce the performance of the protector;	NT
h.	warning that no protector can offer full protection against injuries;	NT
i.	warning about any contamination, alteration to the protector, or misuse that would dangerously reduce the performance of the protector;	NT
j.	list of the substances in the main components of the protector;	NT
k.	instructions for caring for and cleaning the protector;	NT
l.	instructions concerning the expected service life of the protector, inspections to carry out, repairs that may be made, and advice on when discard the protector because it might no longer perform adequately.	NT

Model: 72009

Range: C

Level: 1

Annex 1: Restraint test result

Test Specification: EN 14120:2003+A1:2007-6.4

Ambient temperature at time of test: 22.2 °C

Style	Sample No.	Movement for upwards (mm)	Movement for downwards (mm)	Maximum movement requirement (mm)	Result
Elbow protector	4	9	23	Range A: 20mm Range B: 40mm Range C: 50mm	Pass
		11	28		
		13	31		

Annex 2: Abrasion resistance test result

Test Specification: EN 14120:2003+A1:2007-6.5.2

Ambient temperature at time of test: 22.2 °C

Style	Sample No.	Test result description	Result
Elbow protector	7	Not Perforated	Pass
	8	Not Perforated	

Annex 3: Impact strength test result

Test Specification: EN 14120:2003+A1:2007-6.6

Ambient temperature at time of test: 22.2 °C

Style	Sample No.	Test result description	Result
Elbow protector	5	Not break or split	Pass
	6	Not break or split	



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Annex 4: Impact performance test result

Test Specification: EN 14120:2003+A1:2007-6.7

Ambient temperature at time of test: 22.2 °C

Style	Sample No.	Impact site	Peak force (kN)	Average (kN)	Requirement	Result
					Max. peak force (kN)	
Elbow protector	1	1	1.19	1.40	4	Pass
		2	1.42			
	2	3	1.22			
		4	1.66			
	3	5	1.24			
		6	1.66			

Remark:

1. Pass means the test sample met the requirement of the test item.
2. NA means not applicable.
NT means not tested as per client's request.

Sample photos:



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