

# Test Report

No. GZHGR2009017020

Date: SEP 16, 2009

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SPORTS PLUS HELMET CORPORATION  
NO.10, RD, SHONGBAI, YULV VILLAGE, GONG-MING TOWN, GUANGMING NEW DISTRICT,  
SHENZHEN CITY, CHINA

The following sample(s) was / were submitted and identified on behalf of the client as:

Sample Description	:	PEDAL CYCLE HELMETS
Style / Item No.	:	J61
Sample Receiving Date	:	JUN 26, 2009
1 <sup>ST</sup> Sample Resubmission Date	:	JUL 28, 2009
2 <sup>ND</sup> Sample Resubmission Date	:	SEP 07, 2009
Test Performing Date	:	JUN 26, 2009 to SEP 15, 2009
Claimed Helmet Size	:	55-59CM
Helmet Position Index(HPI)	:	39mm
Type of Helmet	:	Bicycle Helmet
Helmet Materials <sup>1</sup>	:	Shell : PVC Liner : EPS Sizing/comfort pads : VELVET Webbing : POLYPROPYLENE Retention Buckles : POLYPROPYLENE
Liner Density <sup>1</sup>	:	75g/L
Accessories	:	none

**Note 1: above information are provided by the manufacture and the laboratory does not accept responsibility for the accuracy of this information**

### Test Required:

For compliance with: AS / NZS 2063:2008

Test Results: Pass

-Detail Test Result See Attached Sheets -

Signed for and on behalf of  
SGS-CSTC Co., Ltd.

Sunny Sun  
Senior Engineer

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**Test Conducted: Based on AS/NZS 2063-2008 Bicycle helmets**

Clause	Test Method/Requirement	Result
5	Construction	--
5.1	General	--
5.1.1	<p>Components</p> <p>The helmet shall consist of —</p> <p>(a) a means of absorbing impact energy;</p> <p>(b) a means of distributing load; and</p> <p>(c) a retention system.</p> <p>All components of the helmet shall be permanently attached. Removable comfort pads are not considered as part of the protective system.</p>	Pass
5.1.2	<p>Attachment of components</p> <p>None of the above components, or any accessories, shall be fitted to the helmet in such a way that they are likely to cause injury to the wearer in the event of an impact.</p>	Pass
5.2	<p>Retention system</p> <p>(a) the system includes a retaining strap to be worn under the lower jaw;</p> <p>(b) the system is adjustable to produce tension on straps between all fixing points when the retaining strap is properly fastened.</p> <p>(c) any part of the retaining strap that, when properly fastened, contacts the throat on the underside of the wearer's jaw shall not be less than 15mm wide; and</p> <p>NOTE: The width requirement reflects the ability of the fastened, contacts the throat on the case of an impact. Comfort pads on the retaining strap are not considered to be load bearing components.</p> <p>(d) the system meets the requirements of Clauses 7.3 and 7.6.</p>	Pass
5.3	Projections	--
5.3.1	<p>General</p> <p>Refer to Figure 1 for illustrations of types of projections and methods of measurement.</p>	--
5.3.2	<p>External projections</p> <p>Rigid projections and irregularities on the continuous curve of the outer surface of the helmet, except for ventilation holes and associated depressions, shall not be greater than 5 mm in height when measured normal to the general outer surface of the helmet as shown in Figure 1.</p> <p>A fairing becomes a projection when the included angle is greater than 45° as shown in Figure 1. The angle of the projection only applies to flat surfaces that have been faired to the surface of the shell</p> <p>NOTE: Irregularities in the shell should be smoothed to minimize resistance to tangential impact forces brought about by friction or snagging.</p>	Pass

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5.3.3	<p>Internal projections</p> <p>A fixture within the liner or an internal projection shall not be greater than 5 mm and shall be subjected to either impact energy attenuation testing or load distribution testing or both. This requirement applied to fixtures and projection above or below the test line.</p> <p>The helmet should have no internal projections or irregularities likely to cause injury to the wearer in an impact.</p>	Pass
5.4	<p>Materials</p> <p>Except as specifically provided for in this Standard, the characteristics of the materials used in the manufacture of helmets shall be established by the manufacturer as being suitable for the purpose.</p> <p>NOTE: The manufacturer should have regard to the provisions of Appendix A.</p>	N/T
5.5	<p>Ventilation</p> <p>The helmet shall incorporate features designed to transfer heat from the head.</p>	Pass
7	Test Requirement	--
7.1	<p>General</p> <p>Not more than 10% by mass of any helmet shall become detached as a result of testing.</p>	Pass
7.2	<p>Horizontal peripheral vision clearance</p> <p>When measured at the basic plane in accordance with AS/NZS 2512.6, the peripheral vision clearance of the helmet shall be not less than 105° on each side of the mid-sagittal plane. In addition, the brow opening of the helmet, and on peaked helmets the outer edge of the peak, shall be at least 25 mm above all points in the basic plane that are within the specified angle of peripheral vision clearance.</p>	Pass
7.3	<p>Static helmet stability</p> <p>When tested in accordance with AS/NZS 2512.7.1, using a force of 50±0.5N for a period of not less than 15s and not greater than 30 s, the helmet shall neither completely expose, nor completely obscure the test band. If the helmet has a detachable peak, the peak shall be removed for the test.</p> <p>Helmets for bicycles shall be tested on the Amod or Jmod headforms specified in AS 2512.7 as appropriate to the helmet's size range.</p> <p>Where the helmet size range covers more than one headform size, the helmets shall be tested on both Amod or Jmod headforms. If the helmet size falls between two headform sizes, it shall be tested on the smaller of those two headforms.</p>	Pass
7.4	<p>Impact energy attenuation</p> <p>When the helmet is tested in accordance with AS/NZS 2512.3.1, using a flat anvil; only and a free-fall height of 1500+30,-5mm, the headform acceleration shall not exceed 250g peak. In addition, the cumulative duration of acceleration shall not exceed-</p> <ul style="list-style-type: none"> <li>a. 3.0 ms for accelerations greater than 200 g; and</li> <li>b. 6.0 ms for accelerations greater than 150 g.</li> </ul>	Pass
7.5	<p>Load distribution</p> <p>When the helmet is tested in accordance with AS/NZS 2512.9 using a fall height of 1000+15,-5 mm, the following conditions shall be met:</p> <ul style="list-style-type: none"> <li>a. Loading measured by the force transducer shall not exceed 500 N measured over a circular area of 100 mm<sup>2</sup>.</li> <li>b. The anvil shall not contact the surface of the headform.</li> </ul>	Pass

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7.6	<p>Dynamic strength of retention system When tested in accordance with AS/NZS 2512.5.2, using a drop height of 250 -0, +5mm, the dynamic displacement shall not exceed 30 mm. Where the retention system consists of components, which can be independently fastened without securing the complete assembly, each such component shall independently comply with the requirements of this Clause.</p>	Pass
7.7	<p>Peak deflection When tested in accordance with AS/NZS 2512.8, using a suspended mass of 2 kg for 30 s, the peak shall not break and the deflection of the peak shall not be less than 6.0 mm. Detachable peak may be fixed to the helmet for this test if they are likely to become detached from the helmet during the test.  NOTE: Suitable fixing methods include gluing, riveting and the like.</p>	N/A
8	<b>Marking</b>	---
8.1	<p><b>On the helmet</b> Each helmet shall be permanently and legibly marked in letters no less than 1.5mm high with the following information:  <ul style="list-style-type: none"> <li>a. Registered name and address of the manufacturer and /or Australian agent.</li> <li>b. Shell and liner construction material(s)</li> <li>c. Model and Brand designation.</li> <li>d. An indication of the front or rear of the helmet.</li> <li>e. Size</li> <li>f. Month and year of manufacture( May be spelled out, e.g. "November 2008" , or in numerals, e.g. "11/2008" or "2008/11").</li> </ul>           Each helmet shall also be marked in such a manner that it can be easily read without removal of the comfort padding or any permanent part with the following, verbatim, instructions to the user:           <ul style="list-style-type: none"> <li>i. Bicycle helmet — Not intended for use in motor sports or by motor cyclists.</li> <li>ii. Helmet can be seriously damaged by substances such as petrol, paint, adhesives, or cleaning agents</li> <li>iii. Make no modifications.</li> <li>iv. Fasten helmet securely under the jaw.</li> <li>v. If helmet shows signs of damage, destroy and replace it.</li> <li>vi. If helmet receives a severe blow, even if apparently undamaged, destroy and replace it.</li> </ul> </p>	Pass
8.2	<p><b>Durability of marking</b> The wording on labels fixed to the product shall be easily legible when rubbed by hand for 15 s with a piece of cloth soaked in water, allowed to dry and rubbed for 15 s with a piece of cloth soaked with liquid domestic dishwashing detergent.</p>	Pass

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<p>8.3</p>	<p><b>On the package</b>          If a helmet is packaged, the following information shall be clearly and legibly visible without removal of the helmet:</p> <ol style="list-style-type: none"> <li>Manufacturer's registered brand name.</li> <li>Model designation</li> <li>Size</li> <li>A list of the sizes available in the model range together with the nominal mass for each size.</li> <li>The activity/ activities for which the helmet is designed.</li> </ol> <p>NOTES:</p> <ol style="list-style-type: none"> <li>The information in Item(e) above may be presented pictorially.</li> <li>Manufacturers making a statement of compliance with this Australian Standard on a product, packaging, or promotional material related to that product are advised to ensure that such compliance is capable of being verified.</li> </ol> <p>It is the responsibility of the manufacturer to ensure that a helmet meets the design requirements of the sport(s) for which it is marked as suitable.</p>	<p>N/T</p>
<p>9</p>	<p><b>INSTRUCTIONS FOR USE AND CARE</b>          In addition to the marking requirements of Clauses 8.1 and 8.2, each helmet shall be accompanied by a brochure or label which shall include the following, verbatim, in letters no less than 2.0 mm high:</p> <ol style="list-style-type: none"> <li>No helmet can protect the wearer against all possible impacts.</li> <li>The helmet is designed to be retained by a trap under the lower jaw.</li> <li>To be effective, a helmet must fit and be worn correctly. To check for correct fit, place helmet on head and make any adjustments indicated. Securely fasten retention system. Grasp the helmet and try to rotate it to the front and rear. A correctly fitted helmet should be comfortable and should not move forward to obscure vision or rearward to expose the forehead.</li> <li>No attachments should be made to the helmet except those recommended by the helmet manufacturer.</li> <li>The helmet is designed to absorb shock by partial destruction of the shell and liner. This damage may not be visible. Therefore, if subjected to a severe blow, the helmet should be destroyed and replaced even if it appears undamaged.</li> <li>The helmet may be damaged and rendered ineffective by petroleum and petroleum products, cleaning agents, paints, adhesives and the like, without the damage being visible to the user.</li> <li>A helmet has a limited lifespan in use and should be replaced when it shows obvious signs of wear.</li> <li>This helmet should not be used by children while climbing or doing other activities where there is a risk of hanging or strangulation if the child gets trapped whilst wearing the helmet.</li> </ol>	<p>Pass</p>

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	<p>Information shall be provided, in words (with letters no less than 2.0 mm high) and pictures, on the following:</p> <p>(i) Instructions on the correct method of positioning, adjustment and fastening of the helmet.</p> <p>(ii) Both the correct and incorrect fitment and wearing position of that approximate type of helmet shall be shown by a graphical representation of minimum height 25 mm. The correct wearing position, as recommended by the manufacture, shall be shown in a circle, and the incorrect (showing the helmet tilted back at a grossly incorrect attitude) shall be shown in a circle with a slash through it. The two depictions shall be the same height.</p> <p>NOTE: Information on graphic representation and the circle with slash are given in AS 2342</p> <p>(iii) Cleaning method and agent(s)</p> <p>(iv) Details regarding suitability of helmet of helmet in relation to specific activities.</p> <p>(v) Australian distributors'/agents' name and address if not manufactured locally.</p>	<p>Pass</p>
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**Remark:**

1. N/A means not applicable.
2. N/T means not tested as per client's request.
- 3.

**Size: 55-59cm      Test headform: J ISO**

**Appendix 1:**

Helmet marked weight: 215g

Mass of the samples:

Sample No.	Mass before test (g)	Sample No.	Mass before test (g)	Sample No.	Mass before test (g)
1	210	5	210	9	210
2	209	6	209	10	209
3	211	7	211	11	
4	207	8	207	12	

**Appendix 2:**

Horizontal peripheral vision clearance:

Test specification: AS/NZS 2512.6

Headform: J ISO

Positioning Index: 39mm

Ambient temperature at time of test: 22°C

Peripheral Vision clearance: >105°

Brow Opening: 35mm

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### Appendix 3

Helmet stability test:

Test specification: AS/NZS 2512.7.1

Headform: J<sub>mod</sub>

Positioning Index: 39mm

Ambient temperature at time of test: 22°C

Condition	Test result description	Result
AMBIENT No.1	Neither completely expose or obscure the test band	Pass

Headform: A<sub>mod</sub>

Positioning Index: 37mm

Ambient temperature at time of test: 22°C

Condition	Test result description	Result
AMBIENT No.1	Neither completely expose or obscure the test band	Pass

### Appendix 4

Impact energy attenuation test:

Test specification: AS/NZS 2512.3.1

Headform: J ISO

Positioning Index: 39mm

Ambient temperature at time of test: 22°C

condition	Impact site	Peak deceleration (g)	Duration at 200g (ms)	Duration at 150g (ms)	Assessment
AMBIENT No.1	Front	141.0	0.00	0.00	Pass
	Right side	146.5	0.00	0.00	Pass
	Left side	174.4	0.00	1.87	Pass
	Back	108.6	0.00	0.00	Pass
HOT No.2	Front	139.5	0.00	0.00	Pass
	Right side	145.5	0.00	0.00	Pass
	Left side	182.4	0.00	1.90	Pass
	Back	112.6	0.00	0.00	Pass
COLD No.3	Front	145.0	0.00	0.00	Pass
	Right side	145.5	0.00	0.00	Pass
	Left side	186.8	0.00	1.91	Pass
	Back	104.6	0.00	0.00	Pass
WET No.4	Front	134.5	0.00	0.00	Pass
	Right side	137.5	0.00	0.00	Pass
	Left side	174.4	0.00	1.98	Pass
	Back	105.6	0.00	0.00	Pass

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**Appendix 5**

Load distribution test

Test specification: AS/NZS 2512.9

Ambient temperature at time of test: 22°C

Headform: Radius 70mm

Condition	Test site	Force (N)	Assessment
AMBIENT No.5	1	176.3	Pass
	2	92.0	Pass
	3	115.9	Pass
	4	87.3	Pass
HOT No.6	1	116.5	Pass
	2	150.8	Pass
	3	204.8	Pass
COLD No.7	4	139.9	Pass
	4	138.8	Pass
	5	409.2	Pass
	6	125.3	Pass
WET No.8	7	91.5	Pass
	4	133.6	Pass
	5	175.2	Pass
	6	116.5	Pass
	7	134.1	Pass

**Appendix 6**

Retention system test

Test specification: AS/NZS 2512.5.2

Headform: J ISO

Positioning Index: 39 mm

Ambient temperature at time of test: 22 °C

Condition	Total elongation (mm)	Assessment
AMBIENT No.1	29.5	Pass
HOT No.2	28.9	Pass
COLD No.3	28.2	Pass
WET No.4	27.9	Pass
AMBIENT No.5	27.9	Pass
HOT No.6	27.9	Pass
COLD No.7	28.9	Pass
WET No.8	28.6	Pass

Remark: Photo appendix is included

\*\*\*End of Report\*\*\*

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