

SAFETY AND COMPLIANCE TESTING FOR ASTM F1952-15 HELMETS USED FOR DOWNHILL MOUNTAIN BICYCLE RACING

Brand : Not Specified
Model : DH-619
Tested Size : 47-52 cm
Stock / Model Number : Not Specified
Country of Origin : China
Age Grading : Not Specified
Children's Product : Not Specified

Prepared For:

Strategic Sports Ltd.
The Third of Liu Huang District,
Chashan Town, Dongguan City,
Guangdong Province, China



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Tested By:

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Technician: Edward Wang

Test Date: 25 March 2020



HELMET DATA

HELMET BRAND NAME: Not Specified

HELMET MODEL DESIGNATION: DH-619

HELMET MANUFACTURER: STRATEGIC SPORTS LTD

HELMET SIZE: 47-52 cm

DATE OF MANUFACTURE 03/20

BUCKLE DESCRIPTION: ITW Nexus/A

LOT NUMBER: Not Specified

EPS COLOR: Black

HELMET COVERAGE: Partial Full: Complete: X

TEST HEADFORM SIZE: EN960 E

HELMET POSITIONING INDEX: 20 mm

AGE GRADING: Not Specified

Helmet Number:	Weight (g):	Helmet Number:	Weight (g):
1.Ambient	649	4.Wet	649
2.Hot	648	5.Ambient	651
3. Cold	648		

Conditioning Temperatures	
Lab Humidity:	57%
Ambient:	22°C
Hot:	50°C
Cold:	-15°C
Wet:	21°C

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TEST SUMMARY

Test Requirements	Pass/Fail
Peripheral Vision	Pass
Projections	Pass
Positional Stability	Pass
Dynamic Strength Retention	Pass
Impact Attenuation	Pass
Chin Bar Rigidity Test	Pass
Labels and Warnings	Pass

Reviewed by: John Bogler

Tested By: Edward Wong

Comments:

1. All helmets were received in undamaged condition and were appropriate for testing.
2. These helmets appear to be constructed of materials that are not known to cause skin irritation or disease.
3. Weights listed above for helmets 1-5 are as tested with visor removed.
4. This helmet met all ASTM F1952 requirements.

LABELING

Section	Labeling - Each helmet shall be marked with durable labeling so that the following information is legible and easily visible to the user:	Present on Helmet? Yes / No
F1446: Standard Test Methods for Equipment and Procedures Used in Evaluating the Performance Characteristics of Protective Headgear		
12.4	Each helmet shall contain labels with at least the following information, using terms and symbols commonly known and easily visible to users. The label(s) should be likely to remain on the helmet and legible throughout the intended design life of the helmet.	Yes
12.4.1	The number of the standard specification which the manufacturer certifies that it meets, including the two-digit version year appended to the number.	Yes
12.4.2	Model designation	Yes
12.4.3	Name of manufacturer	Yes
12.4.4	Month and year of manufacture	Yes
12.4.5	A label that warns the user that no helmet can protect against all possible impacts and that for maximum protection the helmet must be fitted and attached properly to the wearer's head in accordance with the manufacturer's fitting instructions.	Yes
12.4.6	A label that warns the user that the helmet may, after receiving an impact, be damaged to the point that it is no longer adequate to protect the head against further impacts, and that this damage may not be visible to the user. This label should also state that a helmet that has sustained an impact should be returned to the manufacturer for competent inspection or be destroyed and replaced.	Yes
12.4.7	A label that warns the user that the helmet can be damaged by contact with common substances (for example, certain solvents, cleaners, hair tonics, etc.) and that this damage may or may not be visible to the user. This label should also list any recommended cleaning agents or procedures, or both.	Yes
12.4.8	Any other warnings, cautions, or instructions specified in the individual standard specification.	Yes
12.4.9	Each helmet shall have accompanying fitting and positioning instructions including graphic representation of proper positioning.	Yes (In manual)
Section	Labeling - Each helmet shall be marked with durable labeling so that the following information is legible and easily visible to the user:	Present on Helmet? Yes / No
F1952-15 Standard Specification for Helmets Used for Downhill Mountain Bicycle Racing		
3.2	Shall have the words "For downhill mountain bicycle racing."	Yes



505.0158.002 – DH-619

Standard: ASTM F1952-15
 Model: DH-619 SIZE: 47-52CM
 Weight: 720g
 Date of Manf: 03/2020
 Made In China By STRATEGIC SPORTS LTD
 Unit 16,10/F., Concordia Plaza, No.1 Science Museum
 Road, Tsim Sha Tsui, Kowloon, HONG KONG(China)



MEETS ASTM F1952-15 Standard Specification for helmets Used for downhill mountain bicycle racing
WARNING! - No helmet can prevent all head injuries. Even in very low speed accidents, serious injury or death can occur. - For best protection, follow manual fitting instructions: Helmet must fit snugly. Wear chin strap comfortably tight against throat. Fasten buckle securely. - Destroy and replace helmet after impact. Protection may not be adequate in future impacts. Damage can be invisible. - Do not clean with solvents, bleaches and strong detergents. They can damage helmet, sometimes invisibly. Use mild soap and water only. Read manual before using or cleaning helmet. Made in China by Strategic Sports Ltd. Unit 16,10/F., Concordia Plaza, No.1 Science Museum Road, Tsim Sha Tsui, Kowloon, Hong Kong. Date:2020/03

505.0158.002 – Labels

SUMMARY REPORT

<u>HELMET ID</u>	<u>Condition</u>	<u>Brand Name</u>	<u>Model</u>	<u>Date of Manufacture</u>	<u>Helmet Size</u>	<u>Headform Size</u>
1	Ambient	Not Specified	DH-619	03/20	47-52 cm	EN960 E
2	Hot	Not Specified	DH-619	03/20	47-52 cm	EN960 E
3	Cold	Not Specified	DH-619	03/20	47-52 cm	EN960 E
4	Wet	Not Specified	DH-619	03/20	47-52 cm	EN960 E
5	Ambient	Not Specified	DH-619	03/20	47-52 cm	EN960 E

RETENTION SYSTEM STRENGTH TEST

<u>HELMET ID</u>	<u>Model</u>	<u>Headform Size</u>	<u>Condition</u>	<u>Maximum Elongation (mm)</u>	<u>Residual Elongation (mm)</u>	<u>Pass/Fail</u>
2	DH-619	EN960 E	Hot	11.3	4.1	Pass
3	DH-619	EN960 E	Cold	12.3	5.0	Pass
4	DH-619	EN960 E	Wet	14.0	3.5	Pass

Comment:

1. Dynamic Strength Retention Test: The retention system shall not elongate more than 30 ± 0.8 mm.

CHIN BAR RIGIDITY TEST

<u>HELMET ID</u>	<u>Model</u>	<u>Condition</u>	<u>Maximum Elongation (mm)</u>	<u>Residual Elongation (mm)</u>	<u>Pass/Fail</u>
5	DH-619	Ambient	40.5	18.3	Pass

Comment:

1. Chin Bar Rigidity: The maximum deflection of the chin bar shall not exceed 60 mm.



SYSTEM CHECK – IMPACT ATTENUATION

SYSTEMS CHECK	TEST RECORD	HEADFORM POSITION	DROP (meters)	VEL. (m/s)	PEAK (g)
PRETEST	Pre 1	Crown	1.55	5.4053	388.7
	Pre 2	Crown	1.55	5.4426	403.4
	Pre 3	Crown	1.55	5.4375	403.4
PRETEST AVERAGE		XXXX	XXXX	XXXX	398.5
POSTTEST	Post 1	Crown	1.55	5.4019	385.9
	Post 2	Crown	1.55	5.4471	403.0
	Post 3	Crown	1.55	5.4458	387.3
POSTTEST AVERAGE		XXXX	XXXX	XXXX	392.1

IMPACT TEST SUMMARY

Helmet ID	Impact Site #	Impact Location	Anvil	Condition	Velocity (m/sec)	Peak Acc. (g)	Pass/Fail
1	1	LF Side	Flat	Ambient	6.2016	216.2	Pass
1	2	Front	Flat	Ambient	6.1595	165.0	Pass
1	3	RT Side	Hemi	Ambient	5.6689	125.2	Pass
1	4	Rear	Curb	Ambient	5.6137	120.4	Pass
2	1	LF Side	Flat	Hot	6.1869	165.9	Pass
2	2	Front	Flat	Hot	6.1126	154.1	Pass
2	3	RT Side	Hemi	Hot	5.5906	121.4	Pass
2	4	Rear	Curb	Hot	5.6040	116.6	Pass
3	1	LF Side	Flat	Cold	6.1364	160.2	Pass
3	2	Front	Flat	Cold	6.0651	178.7	Pass
3	3	RT Side	Hemi	Cold	5.6326	125.6	Pass
3	4	Rear	Curb	Cold	5.6087	117.6	Pass
4	1	LF Side	Flat	Wet	6.2175	166.4	Pass
4	2	Front	Flat	Wet	6.1791	164.5	Pass
4	3	RT Side	Hemi	Wet	5.5915	126.6	Pass
4	4	Rear	Curb	Wet	5.6245	119.0	Pass

Comment:

1. Impact Attenuation: The peak acceleration of any impact shall not exceed 300 g.

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EQUIPMENT LIST AND CALIBRATION SCHEDULES

Testing Equipment						
<u>ID No.</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model</u>	<u>S/N</u>	<u>Date Last Checked</u>	<u>Date Next Check</u>
H1002	Monorail	Cadex	Series 2000	None	N/A	---
H1015	Positional Stability Fixture	Protec	N/A	None	N/A	---
H1043	ISO Headform A	Cadex	ISO	4272	16 Sep 2019	15 Sep 2020
H1044	ISO Headform C	Cadex	ISO	6938	16 Sep 2019	15 Sep 2020
H1045	ISO Headform E	Cadex	ISO	4146	16 Sep 2019	15 Sep 2020
H1046	ISO Headform J	Cadex	ISO	4148	16 Sep 2019	15 Sep 2020
H1047	ISO Headform M	Cadex	ISO	4131	16 Sep 2019	15 Sep 2020
H1048	ISO Headform O	Cadex	ISO	4151	16 Sep 2019	15 Sep 2020
H1053	System Check MEP Pad	Cadex	345_08_MP60	30051201	16 Sep 2019	15 Sep 2020
H1060	Anvil	Cadex	Hemispherical	None	16 Sep 2019	15 Sep 2020
H1062	Anvil	Cadex	Flat	None	16 Sep 2019	15 Sep 2020
H1055	Anvil	Cadex	Curb	None	16 Sep 2019	15 Sep 2020
H1057	Anvil	Cadex	Edge	None	16 Sep 2019	15 Sep 2020
H1056	Anvil	Cadex	Cylinder	None	16 Sep 2019	15 Sep 2020
H1061	Anvil	Cadex	Blade	None	16 Sep 2019	15 Sep 2020
H1030	High Temp Cabinet	Shanghai Boxun	92*9240MBE	8285	25 Jun 2019	24 Jun 2020
H1031	High Temp Cabinet	/	DHG-9426	1503338018	24 Oct 2019	23 Oct 2020
H1032	Low Temp Cabinet	Haier	DW-25W300	BE062100NO OB29578VMO	25 Jun 2019	24 Jun 2020
H1033	Low Temp Cabinet	Haier	DW-50W225	F8LMJ	24 Oct 2019	23 Oct 2020
H1034	Water Conditioning Container	Rubbermaid	None	None	N/A	N/A
H1026	Laser Test Line Table	Cadex	SB005	TLTV2KB	N/A	N/A
---	Computer	DELL	Optiplex 5040	3K51LF2	N/A	N/A
H1010	Control Center System	Cadex	Pc4300	CCS120090331-1	N/A	N/A
H1011	Impact Machine Control System	Cadex	DX3000	None	N/A	N/A
H1064	Control Center System	Cadex	CCS-PC 4400	CCS120120810-1	N/A	N/A
H1027	Peripheral Vision Apparatus	Hongtu	H-002	0.7°	26 Oct 2018	25 Oct 2020

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Calibrated Measurement Equipment						
Item No.	Description	Manufacture and Model	Serial No.	Accuracy	Calibration	
					Last	Next
H1003	Velocity Gate	Cadex	HVTG120120810-1	0.16msec	02 Oct 2019	01 Oct 2020
H1004	Velocity Gate	Cadex	HVTG120090331-1	0.16msec	23 Jan 2020	22 Jan 2021
H1006	Accelerometer	PCB - 353B18	131607	9.932 mV/g	04 Oct 2019	03 Oct 2020
H1007	Accelerometer	PCB - 353B18	86079	10.30 mV/g	04 Oct 2019	03 Oct 2020
H1014	LVDT	Volfa - LWE-200	2002572	0.01	24 Oct 2019	23 Oct 2020
H1012	LVDT Amplifier	Schaevitz - C20101007753	J72863	-	24 Oct 2019	23 Oct 2020
H1036	Environmental Monitoring	Anymeter TH-602F	3238	2%	25 Jun 2019	24 Jun 2020
H1025	Scale	Shanghai Yousheng BT-6	12230126	0.2g	25 Jun 2019	24 Jun 2020
H1008	Digital Tape	Starrett	5027526-B	0.1mm	26 Jun 2019	25 Jun 2020
H1009	Digital Tape	Starrett	5027526	0.1 mm	25 Oct 2019	24 Oct 2020
H1073	Height Gauge	Guanglu	03000002	0.01 mm	29 Sep 2019	28 Sep 2020

END OF REPORT

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