

TEST REPORT

Bullard

Test Report

SCOPE OF WORK

Industrial Hard Hat (ANSI) Testing, brand name Bullard Standard Series, model S61

REPORT NUMBER

105009656CRT-001

ISSUE DATE

3/30/2022

PAGES

8

DOCUMENT CONTROL NUMBER

GFT-OP-10i (6-July-2017)

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TEST REPORT

Bullard
1898 Safety Way
Cynthiana, Kentucky 41031-9303
United States

SEI Reference Number	HD BUL 06
Reference Number/PO Number:	187962
Certification Type (Initial/Annual/Class I):	Class I/ Annual
Product Type:	Industrial Hard Hat (ANSI)
Brand Name:	Bullard Standard Series
Model:	S61
Type (I or II):	Type I
Class (C,E, or G):	Class E, G, & C
Suspension:	4 Point, ratchet and pinlock
Optional Requirements:	Reverse Donning, HT (Higher Temperature), LT (Lower Temperature)
Sample Control Number:	CRT2203241544-001
Sample Received Date:	3/24/2022
Number of Samples Received:	36
Condition received in:	Production Samples
Type of Testing Entity:	Third Party Testing Laboratory ANSI/ISEA Z89.1-2014 (R2019)
Test Standard:	American National Standard for Industrial Head Protection
Evaluation/Testing Location:	Intertek, 3933 US Rt. 11, Cortland, NY 13045 Bullard
Manufacturer's Name and Address:	1898 Safety Way Cynthiana, Kentucky 41031-9303 United States
Date(s) of Testing:	3/30/2022

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Dear Josef,

Intertek has completed the evaluation of Industrial Hard Hat brand name Bullard Standard Series, model S61, to the following client specified clauses of ANSI/ISEA Z89.1-2014 (R2019). The evaluation was performed at Intertek located in Cortland, NY on the dates posted below. The results of these tests are as indicated below.

Test Completed	Test Date	ANSI/ISEA Z89.1-2014 (R2019) Clause	Pass/Fail
Instructions and Markings	3/30/2022	6	Pass*
Flammability	3/30/2022	10.1	Pass
Force Transmission	3/30/2022	10.2	Pass
Apex Penetration	3/30/2022	10.3	Pass
Impact Energy Attenuation (Type II Only)	N/A	10.4	N/A
Off-Center Penetration (Type II Only)	N/A	10.5	N/A
Chin Strap Retention (Type II Only)	N/A	10.6	N/A
Electrical Insulation	3/30/2022	10.7	Pass
High Visibility Testing	N/A	10.8	N/A

Note: *Compliant per email dated 3/29/22 with updated labeling

The test was authorized by a laboratory service agreement, signed by Ms. Patricia Gleason representing the client, The Safety Equipment Institute.

The Industrial Hard Hat identified as brand name Bullard Standard Series, model S61, manufactured by Bullard, did meet the above testing requirements identified by Safety Equipment Institute as applicable for minimum performance requirements defined in ANSI/ISEA Z89.1-2014 (R2019), American National Standard for Industrial Head Protection and authorized by submittal dated 03/15/2022 for SEI Reference number HD BUL 06.

Tested By,



Brandon Wood
Technician

Reviewed by,



Jesse Lloyd
Reviewer

REPORT REVISION		
Date	Revision Description	Reviewer
3/30/2022	Original report: 105009656CRT-001	Jesse Lloyd

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Conditioning Requirements

Clause 8.3 & 8.5 (ANSI/ISEA Z89.1-2014 (R2019))

Actual Conditions

	Required Temperature	Actual Temperature
Ambient Temperature	20°C to 26°C	20.5°C - 21.0°C
High Temperature	47°C to 51°C	N/A
Low Temperature	-16°C to -20°C	N/A
Water Temperature	20°C to 26°C	N/A
Higher Temperature (Optional)	58°C to 62°C	59.3°C - 60.5°C
Lower Temperature (Optional)	-28°C to -32°C	-30.0°C - -31.2°C
Relative Humidity		32.0% - 53.0%

Instructions and Marking Requirements

Clause 6 (ANSI/ISEA Z89.1-2014 (R2019))

Clause / Requirement	Pass/Fail
6.1 - Each helmet shall be accompanied by manufacturer's instructions explaining the proper method of size and adjustment, use, care, useful service life guidelines and, if applicable, reverse wearing.	Pass
6.2 - Each helmet shall bear permanent markings in at least 1.5 mm(0.06 in.) high letters stating the following information	
6.2a - Name or identification mark of the manufacturer	Pass
6.2b - The date of manufacturer	Pass
6.2c - The American National Standard Designation, ANSI/ISEA Z89.1 - 2014 (R2019)	Pass
6.2d - The applicable Type and Class Designations, followed by the optional criteria markings, if applicable	Pass
If optional criteria are applied, the appropriate markings shall follow the sequence as specified below	
Reverse Donning	Pass
LT - Lower Temperature	Pass
HT - Higher Temperature	Pass
HV - High Visibility	N/A

The test samples were marked with the following date code(s): 1/22

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Instrumentation Check

Required Drop Height (in.): 33.50
Required Velocity (m/s): 3.97 - 4.03

Pre Test		
Impact Number	Velocity (m/s)	Force (lbs.)
1	4.01	2179.78
2	4.01	2180.64
3	4.01	2183.95
Average Force (lbs.)		2181.46

Post Test		
Impact Number	Velocity (m/s)	Force (lbs.)
1	3.98	2179.22
2	4.01	2184.13
3	4.01	2182.52
Average Force (lbs.)		2181.96

Pre-Post Difference (<5%) 0.02%

Flammability

Clause 10.1 (ANSI/ISEA Z89.1-2014 (R2019))

Helmets shall be tested in accordance with Section 10.1 anywhere above the Static Test Line (STL). No flame shall be visible 5.0 seconds after the removal of the test flame.

Sample	Location	After flame (sec.)	Pass/Fail
12	Rear	0.0	Pass

Force Transmission

Clause 10.2 (ANSI/ISEA Z89.1-2014 (R2019))

Helmets shall be tested in accordance with Section 10.2 and shall not transmit a force to the test headform that exceeds 4450 N(1000lbs). Additionally, for each test condition specified, the maximum transmitted force of individual test samples shall be averaged. The averaged values shall not exceed 3780 N(850 lbs).

Velocity Range (m/s) 5.45 - 5.55
Actual Drop Height (in) 61
Impactor Mass (kg) (3.55kg - 3.65 Kg) 3.62

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Hot Conditioning			
Sample	Velocity (m/s)	Force (lbs.)	Pass/Fail
1	5.49	432.50	Pass
2	5.48	444.63	Pass
3	5.48	446.78	Pass
4	5.48	436.08	Pass
5	5.49	456.96	Pass
6	5.50	450.91	Pass
7	5.48	445.79	Pass
8	5.48	444.55	Pass
9	5.50	461.60	Pass
10	5.49	444.29	Pass
11	5.48	451.35	Pass
12	5.54	442.21	Pass
Average		446.47	Pass
R1	5.49	451.49	Pass
R2	5.48	454.25	Pass
R3	5.49	457.73	Pass
Average		454.49	Pass

Cold Conditioning			
Sample	Velocity (m/s)	Force (lbs.)	Pass/Fail
13	5.56*	692.30	Pass
14	5.49	672.35	Pass
15	5.48	710.56	Pass
16	5.48	682.15	Pass
17	5.48	669.18	Pass
18	5.48	527.35	Pass
19	5.49	681.47	Pass
20	5.49	665.89	Pass
21	5.50	677.31	Pass
22	5.49	681.81	Pass
23	5.50	675.99	Pass
24	5.50	674.64	Pass
Average		667.58	Pass
R4	5.54	633.37	Pass
R5	5.49	692.89	Pass
R6	5.55	708.00	Pass
Average		678.09	Pass

Note: *Over velocity, compliant

Apex Penetration

Clause 10.3 (ANSI/ISEA Z89.1-2014 (R2019))

Helmets shall be tested in accordance with Section 10.3. The penetrator shall not make contact with the top of the test headform.

Velocity Range (m/s) 6.9- 7.1
 Headform Used: J
 Penetrator Mass (0.95Kg - 1.05Kg): 1.00

Hot Conditioning		
Sample	Velocity (m/s)	Pass/Fail
25	7.04	Pass
26	7.02	Pass
27	7.02	Pass

Cold Conditioning		
Sample	Velocity (m/s)	Pass/Fail
28	7.02	Pass
29	7.01	Pass
30	7.04	Pass

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Electrical Insulation

Clause 10.7 (ANSI/ISEA Z89.1-2014 (R2019))

Helmets shall be tested in accordance with Section 10.7.

For **Class E** helmets 20,000 Volts shall be applied for a duration of 3 minutes and the leakage(mA) shall not be greater than 9.0 mA. Then the voltage shall be increased to 30,000 Volts looking for burn through.

Sample	Leakage (mA)	Burn Through	Did Flashover Occur (Yes/No)	Pass/Fail
1	3.45	No	No	Pass
13	3.30	No	No	Pass

System Calibration - Pre Test

Clause 10.2.4 (ANSI/ISEA Z89.1-2014 (R2019))

Impactor Weight (lbs): 7.98
Drop Height (in.) 8.25

	Load Cell	Accelerometer	
Impact	Peak lbs.	Peak g	Peak g's Converted to lbs.
1	840.47	104.77	836.06
2	840.69	104.82	836.46
3	840.43	104.70	835.51
4	840.50	104.71	835.59
5	840.26	104.77	836.06
Average	840.47	104.75	835.94
Percent Difference(< 2.5%)			0.54%

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Measurement Uncertainty

Test	Relative MU (dMU)
Section 6 - Instructions and Markings	1.0%
Section 10.1 - Flammability	1.0%
Section 10.2 - Force Transmission	3.1%
Section 10.3 - Apex Penetration	3.4%
Section 10.4 - Impact Energy Attenuation(2)	3.1%
Section 10.5 - Off Center Penetration (2)	3.4%
Section 10.6 - Chin Strap Retention (2)	NA
Section 10.7 - Electrical Insulation	0.0%
Section 10.8 - High Visibility	NA

Sample Pictures

