



Test Report # T18085-01-1 Issue 1
ANSI/ISEA Z89.1-2014 (R2019)
Changzhou Sunnergy Energy Technology Co., Ltd.
SNHL9– Industrial Safety Helmet
26 May 2023



Approved by:

Sarah Henderson
Head Protection, Hand Protection &
Athletic Equipment - Laboratory Manager

Prepared by:

Shelley Brady
Head Protection & Athletic Equipment -
Laboratory Administrator

- a) Reports are issued pursuant to the ICS standard Terms and Conditions agreement.
- a) Reports are issued pursuant to AF 1.4-03 “ICS Terms and Conditions” (the final page of this report, unnumbered)
- b) The contents of this test report are confidential. Reproduction of the report is prohibited except in full (this cover page, numbered body pages & ICS AF 1.4-03), unless approved in writing by ICS Laboratories, Inc.
- c) Unless otherwise indicated, the test results contained in this report apply only to the samples tested and not to lots or batches from which they were taken.
- d) Where applicable, test data provided by subcontractor is uniquely identified in the test report.
- e) Where applicable, test data not covered under our ISO/IEC 17025 Accreditation is uniquely identified in the test report.

WARNING: This Test Report may contain technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S. C., Sec 2751, et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. and which may not be exported, released or disclosed to non-U.S. persons (i.e. persons who are not U.S. citizens or lawful permanent residents [“green card” holders]) inside or outside the United States, without first obtaining an export license. Violations of these export laws are subject to severe civil, criminal and administrative penalties.

ICS Laboratories, Inc. • 1072 Industrial Parkway North • Brunswick, Ohio 44212 USA
Phone: 330.220.0515 Fax: 330.220.0516

Issued to: Changzhou Sunnergy Energy Technology Co., Ltd.
 Rm. 801 Building 3 Shimao Plaza
 New District Changzhou
 Jiangsu, China

Date: 26 May 2023
 Report: T18085-01-1
 Issue: 1
 Page: 1 of 4

Objective:

Contract testing to ANSI/ISEA Z89.1-2014 (R2019) “American National Standard for Industrial Head Protection”.
 -Type I, Class E, G & C

Sample(s):

SNHL9* - Industrial Safety Helmet

Description	Qty	Date Code	Material	Date Received	Sample ID
White Shell (Full Brim) w/ Ratchet Suspension (6-8 pt.), Non-Vented w. Chin Strap/Cup	30	4/23	-	10 May 2023	9A-x

Procedures:

Testing protocols in accord with good laboratory practice were employed unless otherwise specified, for all tests.

Testing procedures as specified within Section 10 of ANSI/ISEA Z89.1-2014 (R2019) were followed. Testing was performed at room temperature 23°C ± 3°C (73.4°F ± 5.4°F) per ANSI/ISEA Z89.1 – 2014 (R2019).

Equipment:

Cadex Twin Wire Test Platform
 Environmental Conditioning Chambers
 Cadex Impact Software V6.9U
 Hanco Dielectric Strength Chamber

Assessment Summary:

Date Tested: 24 May 2023 – 26 May 2023
 Test Performed By: Joe McGreal – Engineering Technician

Requirements	Compliant	Non-Compliant
6 Instructions and Marking	<i>Excluded</i>	
7 Performance Requirements		
7.1 Requirements for Type I Helmets		
7.1.1 Flammability	X	
7.1.2 Force Transmission	X	
7.1.3 Apex Penetration	X	
7.1.4 Electrical Insulation Requirement		
7.1.4.3 Electrical Insulation Requirement - Class E		X
7.3 Requirements for Optional Testing		
7.3.1 Reverse Wearing		
-Force Transmission		
7.3.2 High-Visibility	Not Applicable	
7.3.3 Higher Temperature		
7.3.4 Lower Temperature		

Samples as assessed meet the mechanical performance requirements of ANSI/ISEA Z89.1 2014 (R2019) for Type I, Class C.

Samples as assessed **do not** meet the mechanical performance requirements of ANSI/ISEA Z89.1 2014 (R2019) for Type I, Class E.

Issued to: Changzhou Sunnergy Energy Technology Co., Ltd.
Rm. 801 Building 3 Shimao Plaza
New District Changzhou
Jiangsu, China

Date: 26 May 2023
Report: T18079-01-1
Issue: 1
Page: 2 of 4

Results:

7.1.1 Flammability

Sample ID	Afterflame (sec)	Pass	Fail
9A-12	0	X	
Specification:	< 5		

7.1.2 Force Transmission

Sample ID	Conditioning (°C)	Velocity (m/s)	Force (N)	Specified Value (N)	Observations	Pass	Fail
9A-1	49 ± 2	5.50	2360	≤ 4450	-	X	
9A-2		5.50	2400		-	X	
9A-3		5.51	2361		-	X	
9A-4		5.51	2380		-	X	
9A-5		5.51	2360		-	X	
9A-6		5.51	2423		-	X	
9A-7		5.51	2338		-	X	
9A-8		5.50	2383		-	X	
9A-9		5.52	2379		-	X	
9A-10		5.51	2443		-	X	
9A-11		5.51	2465		-	X	
9A-12		5.50	2361		-	X	
Average			2388	≤ 3780		X	
9A-13	-18 ± 2	5.51	3382	≤ 4450	-	X	
9A-14		5.51	3427		-	X	
9A-15		5.52	3406		-	X	
9A-16		5.52	3154		-	X	
9A-17		5.52	3319		-	X	
9A-18		5.52	3346		-	X	
9A-19		5.53	3343		-	X	
9A-20		5.52	3075		-	X	
9A-21		5.51	3141		-	X	
9A-22		5.52	3187		-	X	
9A-23		5.51	3385		-	X	
9A-24		5.52	3142		-	X	
Average			3275	≤ 3780		X	
Specification:		5.50 ± 0.05					

Observations:
(-) No observation

Issued to: Changzhou Sunnergy Energy Technology Co., Ltd
Rm. 801 Building 3 Shimao Plaza
New District Changzhou
Jiangsu, China

Date: 26 May 2023
Report: T18085-01-1
Issue: 1
Page: 3 of 4

7.1.3 Apex Penetration

Sample ID	Conditioning (°C)	Velocity (m/s)	Electrical Contact (No / Yes)	Observations	Pass	Fail
9A-25	49 ± 2	7.0	No	-	X	
9A-26		7.0	No	-	X	
9A-27		7.0	No	-	X	
9A-28	-18 ± 2	7.1	No	-	X	
9A-29		7.1	No	-	X	
9A-30		7.1	No	-	X	
Specification:		7.0 ± 0.1	No Electrical Contact Allowed			

Observations:
(-) No observation

7.1.4.3 Electrical Insulation Requirements (Class E)

Sample ID	Leakage (mA)	Burn Through (No / Yes)	Observations	Pass	Fail
9A-1	-	Yes	1		X
9A-13	-	Yes	1		X
Specification:		Class E: ≤ 9 mA	No Burn Through Allowed		

Class E - 20,000 volts, 60 Hz, 3 minutes, 30,000 volts no burn through.
Note: Test line lowered to prevent flashover

Observations:
(-) No observation
1 – Held at 4.6 mA for approximately 30 seconds until burn through at impact location

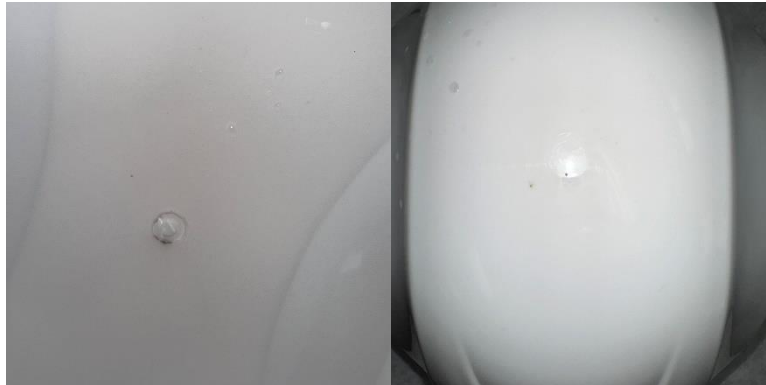
Sample Photographs:



Issued to: Changzhou Sunnergy Energy Technology Co., Ltd
Rm. 801 Building 3 Shimao Plaza
New District Changzhou
Jiangsu, China

Date: 26 May 2023
Report: T18085-01-1
Issue: 1
Page: 4 of 4

Observation Photographs:



Burn through

1. Client acknowledges that ICS Laboratories (ICS) performs testing services only as specified by Client. ICS does not design, warrant, supervise or monitor compliance of products or services except as specifically agreed to in writing. By their very nature, testing, analysis, and other ICS services are limited in scope and subject to expected measurement variability.
2. Client retains the right to clarify test requests and reasonable access to monitor test work, with reference to test queue and obligations regarding the confidentiality of other clients.
3. ICS shall keep documents and information related to Client confidential and will not disclose any such information to third parties without written consent. ICS will disclose such information in response to compulsory legal process, (only after providing Client with notice-of and/or a copy of such process).
4. ICS Reports apply only to the standards or procedures identified therein and to the sample(s) assessed. Test results are not definitively indicative of the qualities of the lot from which the sample was taken or of apparently identical or similar products.
5. ICS Test Reports and their insignia are for the exclusive use of the Client. Reports, in their entirety, may be utilized at the discretion of Clients and/or their authorized agents for purposes including, but not limited to, research & development, recordkeeping, product packaging, educational and promotional materials in various formats, certification, and compliance. As an accredited independent testing laboratory, ICS maintains an interest in preventing the misrepresentation of the contents of its test reports. As such, Clients may NOT use, reproduce or otherwise disseminate excerpted, partial, redacted or otherwise altered ICS test reports without the prior review of such use by ICS and its granting of approval in writing. Further, Clients are prohibited from manipulating data and/or extrapolating-from-it statistics or conclusions that contradict or eclipse the empirical results of testing as reflected by the totality of the report. Clients are to refrain from utilizing ICS Test Reports and/or the ICS logo in a manner that suggests any extra-report conclusions are provided and/or endorsed by ICS Laboratories.
6. The name(s) listed as the "Issued to" party on test reports may not reflect the actual entity submitting and/or contracting the assessment.
7. ICS shall retain copies of testing job files (including reports) for a period of at least six (6) years and when applicable, evidentiary test samples for a length of time agreed to or deemed appropriate. If Client requests additional copies of Reports during this period, an additional charge will apply for the preparation and delivery of such reports.
8. Test reports are valid for certification purposes for one year from date of issue, inclusive of retest or variant additions, which must be performed within one year of date of issue to avoid full retest.
9. Client is responsible for procuring, at its cost, insurance protecting the value of its property, extending to provided samples.
10. For the safety of our personnel, Client must advise if samples are known or suspected to contain hazardous substances. Safety Data Sheets must be provided upon request.
11. ICS represents that Services shall be performed according to terms and specification agreed to by Client, and in a manner consistent with good laboratory practice. No other Representations to client, express or implied, and no warranty or guarantee is included or intended in this agreement, or in any other report or document related to the services. ICS does not guarantee product performance or compliance.
12. Schedules are confirmed upon acceptance of quotation. All reasonable efforts will be made to comply with provided timeline. Guarantees are neither implied nor promised.
13. Certain work may be subcontracted to ICS-approved laboratories as required or applicable. Client will be notified of this in advance.
14. Client agrees to pay any and all additional costs associated with unexpected or above-standard communications and/or consultations with Client or third parties as designated by Client.
15. Client agrees to pay any and all additional costs for work additional to the original scope of work as agreed to by Client.
16. Client understands and agrees that ICS, in entering into this Contract and by performing services hereunder, does not assume, abridge, abrogate or undertake to discharge any duty or responsibility of Client to any other party or parties. No one other than Client shall have any right to rely on any Report or other representation or conduct of ICS and ICS disclaims any obligations of any nature whatsoever with respect to such third parties.
17. For statements of conformity (pass/fail/"meets") regarding qualitative test results, ICS utilizes simple acceptance as its basis. For most statements of conformity relating to quantitative test results, the decision rule and associated uncertainty is inherent in the standard method. As such, simple acceptance is typically applied. Results on or near pass/fail thresholds or otherwise upon Client request or appeal will be evaluated with reference to the measurement uncertainty of relevant testing practices, equipment and other inputs/variables.
18. Client agrees, in consideration of ICS undertaking to perform the test(s) hereunder, to protect, defend and indemnify ICS from any and all claims, damages, expenses either direct or consequential for injuries to persons or property arising out of or in consequence of the performance of the testing, inspection and reporting hereunder and/or the performance of the products tested or inspected hereunder, unless caused by the negligence of ICS.
19. It is agreed that if ICS should be found liable for any losses or damages attributable to the services hereunder in any respect, its liability shall not exceed the amount of the fee paid by Client for services rendered and Client's sole remedy at law or in equity shall be the right to recover that sum.
20. Quotations are valid for 30 days from date of issue. Standard Terms: 30% Laboratory/Testing fees invoiced and payable upon acceptance of quotation. 15 days net. Any change to these terms requires written approval by the President, Executive Vice President or Accounting Manager. ICS retains the right to require prepayment in full at any time. Cancelled jobs will be invoiced for work performed and/or set-up costs incurred. All jobs will be assessed a \$25 sample disposition fee. Shipping costs over \$25 incurred by ICS for sample returns will be invoiced at cost +10%.
21. ICS hereby objects to any conflicting terms contained in any order, acceptance or other subsequent correspondence submitted by Client.
22. In the event that payment is not received within 15 days of invoice date, Client agrees to pay a late payment charge on the unpaid balance equal to 1-1/2% per month or the maximum charge allowed by law, whichever is less, and all costs and expenses, including attorney's fees where recovery of the same is not prohibited by law, incurred by ICS in collecting such invoices.
23. All costs associated with compliance with any subpoena (s) for documents, testimony in a court of law, or for any other purpose relating to work performed by ICS in connection with work performed for that Client, shall be paid by Client. Client shall also pay costs related to deposition and trial testimony.
24. Cancelled/discontinued orders: Client responsible for all administrative and testing charges up to point of cancellation.