ALCOLite
ROAD SAFETY PRODUCTS

KNOW YOUR WAY, EVEN AT NIGHT

Solar Raod stud

Product code: AL-201

Dimension:132 x 122 x 72mm
Direction: Two way Reflective
Color: Red,Amber
Shank: Available
LED: 3 No. Each Side

Visit More:
www.alcolite.co.in

Non-Transferable

TESTREPORT
(Development Test)

Test Report No.: C D 0 L S 6 4 3 7	Date:	03.05.2023

1.0 NAME AND ADDRESS OF THE CUSTOMER : **M/s. Alcolite India Road Safety Pvt. Ltd. H-14, DSIIDC Industrial Complex, Ground Floor, Front side half portion, Rohtak Road, Nangloi, West Delhi, Udyog Nagar – 110041**

2.0 CUSTOMER REFERENCE : IOCS Redg. No: CCDALCTSD166439 Dated: 25.04.2023

3.0 DESCRIPTION OF TEST COMPONENT:

Alcolite Solar Stud, Qty: 17 Nos.

ICAT Sample Identification : ICAT/PHL/166439/SSTD/01 to 17/2023-24

Manufactured by : Same as mentioned in Sr.No.1.0 above.

Trade Name/Trade Mark : Alcolite

4.0 DATE OF RECEIPT OF SAMPLES(DUT) : 14.04.2023

5.0 CONDITION OF SAMPLES : No damage observed and found satisfactory

6.0 FUNCTIONAL VERIFICATION : Functionality checked and found satisfactory.

7.0 DATE OF PERFORMANCE TEST : 27.04.2023 to 02.03.2023

8.0 OBJECTIVE AND PROCEDURE:

To carry out Body material, Dimension Tests, Water Resistance Test, Temperature Cycling Test and Compressive Strength and as per MoRTH Section 800 & ASTM D4280 respectively on specific request of customer as a part of development exercise.

9.0 TESTRESULTS:

Please refer Test Results and Photographs in Annexure-I of this report.

Prepared By	Checked & Authorized By	Approved By	
MANISH SHARMA	AKASH BISWAS	MAHENDAR PAL	Page 1 of 6 [166439]
Sr. Engineer	Asst. Manager	Asst. General Manager	

TestReportNo. C D 0 L S 6 4 3 7	Date:	03.05.2023

ANNEXURE -I

1.0 TEST RESULTS:

1.1 Performance

1.1.1 Body Material (Cl.No.804.6, MoRTH Section 800)

Sr.No.	Test	Specifications	Result	Remarks
1	Body Material	The Solar Studs shall be made of Aluminium Alloy and poly carbonate material. (Proof of material Certificates to be provided by Manufacturer.)	Proof of material Certificates to be provided by Manufacturer.(Attached as Annexure II)	Passed DUT Sample Id: ICAT/PHL/166439/SSTD/17/2023-24

1.1.2 Visibility Test (Cl.No.804.6, MoRTH Section 800)

Sr. No.	Test	Specifications	Result	Remarks
1	Visibility Test	It shall have super bright LEDs so as to provide long visibility from a distance of more than 800m.	Visibility detected from a distance of 800m.	Passed DUT Sample Id: ICAT/PHL/166439/SSTD/14/2023-24

Prepared By	Checked & Authorized By	
Manish	Akash Biswas	
MANISH SHARMA	AKASH BISWAS	
Sr. Engineer	Asst. Manager	

Test Report No. C D 0 L S 6 4 3 7	Date:	03.05.2023

1.1.3 Temperature Cycling Test(Cl.No.804.6, MoRTH Section 800)

Sr. No.	Test	Specifications	Result	Remarks
1	Temperature Cycling Test	It should be able to give the prescribes performance in the temperature range of -40°C to +55°C.	Temperature Cycling test for the temperature range of -40°C to +55°C was performed for 24 hrs (referring SOP as per ASTM D 4280-04) and performance found the same	Passed DUT Sample Id: ICAT/PHL/166439/SSTD/04 to 13/2023-24

1.1.4 Dimensions (Cl.No.804.6, MoRTH Section 800)

Sr.No.	Test	Required Specifications	Result	Remarks
1	Dimensions	Height : Solar Stud height shall be a minimum of 10 mm	Height : 22.90 mm	Passed DUT Sample Id: ICAT/PHL/166439/SSTD/17/2023-24
2		Width : Solar Stud width shall be a minimum of 100 mm	Width : 123.52 mm	
3		Length : Solar Stud length shall be a minimum of 100 mm	Length :132.52 mm	

Prepared By	Checked & Authorized By	
Manish	Akash Biswas	
MANISH SHARMA	AKASH BISWAS	
Sr. Engineer	Asst. Manager	

Test Report No. C D 0 L S 6 4 3 7	Date:	03.05.2023

1.1.5 Water Resistance Test (Cl. No.804.6, MoRTH Section 800) / (STP referred as per IEC 60529:2001, Cl. No. 14.2.8)

Sr.No	Test	Required Specifications	Results	Remarks
1	Water Resistance Test	**Dust-tight (6X)** : Dust- proof sample (first characteristics IP numeral 6) has been tested in a dust chamber, in which talcum powder has been maintained in suspension by an air current. The chamber was contain 2kg of powder for every cubic metre of its volume. The talcum powder used was able to pass through a square-meshed sieve whose nominal wire diameter is 50 µm and whose nominal free distance between wires is 75µm. Testing duration 3hrs.	No dust particle found inside the sample after IP6X	Passed DUT Sample Id: ICAT/PHL/ 166439/SST D/15/2023-24
		Jet-proof (X5) : (second characteristic IP numeral 5) Water jet hose nozzle with 6.3 mm dia at a distance of 2.3 mm to 5 mm. Water flow rate : 12.5 l/min ±5% at 1 min/sqm for at least 3 mins.	No dust particle found inside the sample after IPX5	

Prepared By	Checked & Authorized By	
Manish	Akash Biswas.	
MANISH SHARMA	AKASH BISWAS	
Sr. Engineer	Asst. Manager	

INTERNATIONAL CENTRE FOR AUTOMOTIVE TECHNOLOGY * MANESAR *

Test Report No. C D 0 L S 6 4 3 7	Date:	03.05.2023

1.1.6 Compressive Strength (As per ASTM D4280, Cl. No. 6.2.3.2):

TEST REQUIREMENT:

Condition markers at 73.4 ± 3.6 °F (23.0 ± 2.0 °C) for 4 h prior to testing.
Position marker base down at the center of a 0.5-in. (13-mm) thick flat steel plate larger than the marker. On top of the marker, place a 0.37-in. (9.5-mm) thick elastomeric pad larger than the marker and having a Shore a durometer of 60. On top of the elastomeric pad, place a 0.5-in. (13-mm) thick flat steel plate larger than the marker.
Apply a load at a rate of 0.1 in. (2.5 mm)/min.

ACCEPTANCE CRITERIA: A marker shall support a load of 13635 kg without breakage or significant deformation of the marker. Significant deformation shall be understood to be 0.13 in. (3.3 mm).

TEST RESULTS / OBSERVATION:

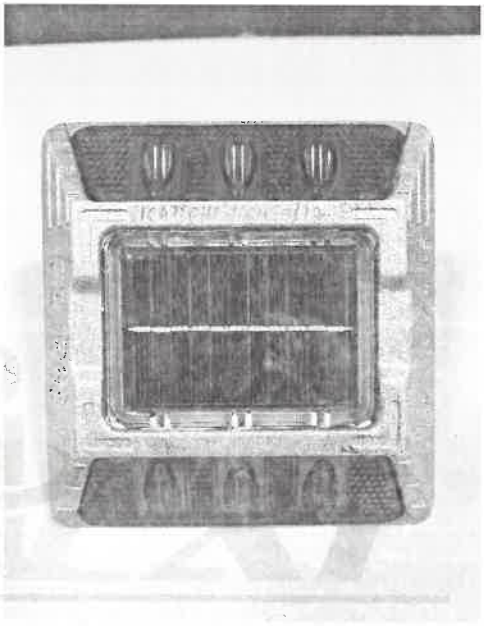
Sr. No.	Sample Id.	Parameter	Test Results / Observations
1	DUT Sample Id: ICAT/PHL/ 166439/SSTD/1 to 3/2023-24	**Standard Compressive Strength Load : Deformation Allowed :**	13635 Kg <3.3 mm (without breakage)
		Compressive Strength Load Provided : Deformation Detected :	13635 Kg 2.9 mm (no breakage)
Sample Photographs			
			
Before Test		**During Test**	**After Test**

Prepared By	Checked & Authorized By	
Manish	Akash Biswas	
MANISH SHARMA	AKASH BISWAS	
Sr. Engineer	Asst. Manager	

Test Report No. C D 0 L S 6 4 3 7	Date:	03.05.2023

ANNEXURE –II A

1.2 Photograph of the Sample:



Prepared By	Checked & Authorized By	
Manish	Akash Biswas	
MANISH SHARMA	AKASH BISWAS	
Sr. Engineer	Asst. Manager	

NATIONAL ALUMINIUM COMPANY LIMITED
SMELTER PLANT , ANGUL ,ORISSA

STANDARD PRODUCTS OF NALCO

ALLOY INGOT

SL.NO	PRODUCT	PRODUCT DESCRIPTION	APPROX.WT	SPECIFICATIONS							PRODUCT CODE
				%Si	%Fe	%Mg	%Cu	%Zn	%Mn	%Ni	
01	Alloy Ingot	Aluminium Alloy Ingot (LM-2)	10kg	9.0 to 11.5	1.0 max.	0.30 max.	0.70 to 2.5	2.00 max	0.50 max	0.50 max	IA 10
02	Alloy Ingot	Aluminium Alloy Ingot (LM-4)	10kg	4.0 to 6.0	0.80 max.	0.15 max.	2.0 to 4.0	0.50 max	0.30 to 0.70	0.30 max	IA 20
03	Alloy Ingot	Aluminium Alloy Ingot (LM-6)	10kg	10.0 to 13.0	0.60 max.	0.10 max.	0.10 max.	0.10 max	0.50 max	0.10 max	IA 30
04	Alloy Ingot	Aluminium Alloy Ingot (LM-24)	10kg	8.0 to 9.5	1.0 max.	0.30 max.	3.0 to 4.0	1.00 max	0.50 max	0.50 max	IA 40
05	Alloy Ingot	Aluminium Alloy Ingot (ALSI-132)	10kg	11.0 to 12.5	0.50 to 0.70	0.05 max.	1.90 to 2.5	0.10 max	0.10 max	0.15 max	IA 50
06	Alloy Ingot	Aluminium Alloy Ingot (ADC-12)	10kg	10.5 to 12.0	1.3 max	0.30 max.	1.50 to 3.50	1.00 max	0.50 max	0.50 max	IA 70
07	Alloy Ingot	Aluminium Alloy Ingot (LM-13)	10kg	11.0 to 13.0	0.80 max	0.80 to 1.50	0.50 to 1.30	0.10 max	0.50 max	0.70 to 2.50	IA 80

INTERNATIONAL CENTRE FOR AUTOMOTIVE TECHNOLOGY * MANESAR *

LIST OF ABBREVIATIONS

ABBREVIATION	EXPANDED FORM	ABBREVIATION	EXPANDED FORM
Al	Aluminium	Imp	Impurities
Approx	Approximate	Max	Maximum
Cr	Chromium	Min	Minimum
Cu	Copper	Mg	Magnesium
Fe	Iron	Mn	Manganese
Sl.No	Serial Number	Ni	Nickel
Ti	Titanium	OI	Other Impurities
Si	Silicon	Zn	Zinc
		V	Vanadium

Non-Transferable

TESTREPORT
(Development Test)

Test Report No. C D 0 L S 6 9 9 7	Date:	08.11.2023

1.0 NAME AND ADDRESS OF THE CUSTOMER : **M/s. Alcolite India Road Safety Pvt. Ltd. H-14, DSIIDC Industrial Complex, Ground Floor, Front side half portion, Rohtak Road, Nangloi, West Delhi, Udyog Nagar – 110041**

2.0 CUSTOMER REFERENCE : IOCS Redg. No: CCDALCTSK170301 Dated: 21.09.2023

3.0 DESCRIPTION OF TEST COMPONENT:

Component	:	Alcolite Solar Stud, Qty: 01 No.
ICAT Sample Identification	:	ICAT/PHL/170301/SSTD/01/2023-24
Manufactured by	:	Same as mentioned in Sr.No.1.0 above.
Trade Name/Trade Mark	:	Alcolite

4.0 DATE OF RECEIPT OF SAMPLES (DUT) : 06.09.2023

5.0 CONDITION OF SAMPLES : No damage observed and found satisfactory

6.0 FUNCTIONAL VERIFICATION : Functionality checked and found satisfactory.

7.0 DATE OF PERFORMANCE TEST : 21.09.2023

8.0 OBJECTIVE AND PROCEDURE:

To carry out Flashing Rate Test as per MoRTH Section 800 on specific request of customer as a part of development exercise.

9.0 TESTRESULTS:

Please refer Test Results and Photographs in Annexure-I of this report.

Prepared By	Checked & Authorized By	Approved By	
PRIYANSHU RAJ	AKASH BISWAS	PRITAM SINGH SAWARIYA	
Sr. Tech. Assistant	Asst. Manager	Sr. Manager	Page 1 of 3 [170301]

Test Report No. C D 0 L S 6 9 9 7	Date:	08.11.2023

ANNEXURE -I

1.0 TEST RESULTS:

1.1 Flashing Rate (Cl.No.804.6, MoRTH Section 800)

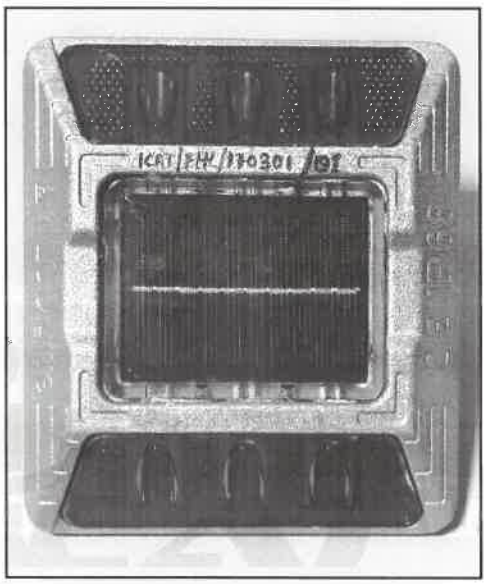
Sr.No.	Test	Required Specifications	Result	Remarks
1	Flashing Rate	Its Flashing Rate shall not be less than 1Hz	>60 Flashes in 1min (i.e. > 1Hz)	Passed DUT Sample Id: ICAT/PHL/170301 /SSTD/01/202 3-24

Prepared By	Checked & Authorized By	
PRIYANSHU RAJ	AKASH BISWAS	
Sr. Tech. Assistant	Asst. Manager	

Test Report No. C D 0 L S 6 9 9 7	Date:	08.11.2023

ANNEXURE –I

1.2 Photograph of the Sample:



Prepared By	Checked & Authorized By	
PRIYANSHU RAJ	AKASH BISWAS	Page 3 of 3 [170301]
Sr. Tech. Assistant	Asst. Manager	