



Lloyd's
Register

Type Approval Certificate Extension

This is to certify that Certificate No. 94/00017(E3) for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

PRODUCER	Sargam Metals Private Ltd. 2 Ramavaram Road Manapakkam Chennai-600 089 Tamil Nadu India
DESCRIPTION	Weld-on, clamp-on, leg-mounted or bolt-on sacrificial aluminium anodes.
TYPE	ATC Series: 051, 096, 117, 130, 160, 190, 200, 230, & 280 ATW Series: 040, 051, 077, 096, 117, 130, 160, 190, 200, 230, & 280 AHW Series: 016, 025, 034, 044, 050, 056, 072, 080, 084, 093, 098, 112A, 116, 119, 130, 152, 163, 180, 220, 243, & 333 AHB Series: 014, 016, 029, 033, 048, 053, 064, 073, 107, 113, 120, 127 & 177 AJW Series: 400, 460, 580, 660, 760, 870, 900, 1185 & 1820 APR Series: 1170, 1650, 2060, 3000 & 3600 A370 W
APPLICATION	To reduce sea water corrosion on hulls, sea chests and ballast tanks or other steel structures such as dolphins, buoys, off shore platforms and wharf piles by cathodic protection.

Certificate No.	15/20009
Issue Date	20 January 2015
Expiry Date	10 May 2019
Sheet	1 of 2


Torsten Schröder
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RATINGS

Nett weight [kg]		1.2 to 359
Anode capacity [Ah/kg]		2550
Consumption rate [kg/ ampere year]		3.4
Min closed circuit potential [V]		-1.07 or more negative to Ag/AgCl electrode in synthetic sea water
Composition [%]	Zinc	2.0 – 5.0
	Copper	0.05 max.
	Silicon	0.13 max.
	Iron	0.13 max.
	Indium	0.01-0.05
	Aluminium	remainder

STANDARDS

Lloyd's Register's Rules and Regulations for the Classification of Ships 2014;
Sargam Metals Anode Alloy Specification CAP.DOC.002;
IS 2062: 2006 Hot rolled medium and high tensile structural steel - Specification

OTHER CONDITIONS

Aluminium alloy anodes are permitted in tanks that may contain explosive or flammable vapour, but only at locations where the potential energy does not exceed 275 joules.

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The attached Design Appraisal Document No. HTS/ENS 32008-15, Issue No. 0, dated 20.01.2015 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No. 94/00017(E3) to which this extension should be attached.

Certificate No.	15/20009
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Marine Design Appraisal Document

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Date
20 January 2015

Please quote this reference number on all future communications
HPC 1461016/32008-15/DS/TS/MCG

THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2002
ISSUED TO: SARGAM METALS PRIVATE LTD.
FOR: WELD-ON, CLAMP-ON, LEG-MOUNTED OR BOLT-ON SACRIFICIAL ALUMINIUM ANODES.
TYPE APPROVAL CERTIFICATE NO. 15/20009

This Marine Design Appraisal Document supersedes and cancels
document number 94/00017(E3), dated 24.05.2010

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register's Type Approval System, 2002 and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Form 2571	Application for Type Approval	27.03.2014
94/00017(E3)	Previous Marine Design Appraisal Document	24.05.2010
CAP.DOC.002	Sargam Metals specification for aluminium alloy anodes	15.01.2003
SM010-99	Drawing ATW040 aluminium tank anode – weldable type	01.04.2010
SM010-99	Drawing ATW077 aluminium tank anode – weldable type	01.04.2010
SM003-99	Drawing AHW044 aluminium anodes –weldable type	27.10.2011
SM009-99	Drawing AHW093 aluminium anodes –weldable type	01.04.2010
SM11-3008	Drawing AHW112-A aluminium anodes –weldable type	30.08.2011

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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TEST REPORTS

BOM 1400789

Lloyd's Register Asia visit report for Type Approval

22.09.2014



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Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the products referred to herein have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the LR Type Approval System Procedure.

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Part 1B
 Subject: Cathodic Protection
 Product: Sacrificial Anodes (Part 1B)

Producer/Licence No.		Description of Product			Cert. No.
Type	Details of Approval	Application	Remarks		
ATC ATW AHW AHB AJW APR A370W Series	Weld-on, clamp-on, leg-mounted or bolt-on sacrificial aluminium anodes: Nett weight [kg] Anode capacity [Ah/kg] Consumption rate [kg/ ampere year] Min closed circuit potential [V] Composition [%] Zinc Copper Silicon Iron Indium Aluminium	To reduce sea water corrosion on hulls, sea chests and ballast tanks or other steel structures such as dolphins, buoys, off shore platforms and wharf piles by cathodic protection.	Expires: 10May 2019 Other conditions: Aluminium alloy anodes are permitted in tanks that may contain explosive or flammable vapour, but only at locations where the potential energy does not exceed 275 joules.	15/20009	