



MARINE DIVISION

Certificate number: 19448/B0 BV

File number: MAT 62545 - 2007

Product code: 90111

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## APPROVAL CERTIFICATE for MATERIALS

*This certificate is issued to*

**ELVAL S.A.**  
Inofita-Viotia - GREECE

*for the type of product*

### WROUGHT ALUMINIUM ALLOY PRODUCTS

Plates, sheets and strips in grade 5083 and 5086

**Requirements:**

Bureau Veritas Rules on Materials and Welding for the Classification of Marine Units

*This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 29 May 2017**

For BUREAU VERITAS,

At BV PIRAEUS, on 29 May 2012,

Dimitris DIMITROPOULOS



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site [www.veristar.com](http://www.veristar.com). Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

Wrought aluminium alloy products  
Rolled products : Plates, sheets and strips.

Aluminium Alloy	Temper condition	Maximum thickness
5083	O/H111	12.7mm
	H116	12.7mm
	H321	12.7mm
5086	O/H111	12.7mm
	H116	12.7mm

Alloys and slabs are made at casting sections.  
Rolled products made by hot rolling followed or not by cold rolling as applicable.

### 2. DOCUMENTS AND DRAWINGS :

- Documentation issued by ELVAL S.A. and received the 29 March 2007.
- Mechanical properties for products delivered in O/H111 temper condition are to be as per EN485-2:

Aluminium Alloy	Rp0.2 (N/mm <sup>2</sup> )	Rm (N/mm <sup>2</sup> )	Elongation A%
5083	115 min.	240 min. - 345 max.	15 min.
5086	100 min.	240 min. - 310 max.	16 min.

### 3. TEST REPORTS :

- Documentation issued by ELVAL S.A. and received the 29 March 2007.
- Photomicrographs issued by ELVAL S.A and received the 23 May 2007.

### 4. APPLICATION / LIMITATION :

As per Bureau Veritas Rules for Classification.

### 5. PRODUCTION SURVEY REQUIREMENTS :

The wrought aluminium alloy products are to be manufactured, examined and tested by ELVAL S.A. in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

Arrangements shall be made for a Society's Surveyor to attend the relevant tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme (BV Mode I) has been agreed. Relevant Bureau Veritas certificate will be issued after satisfactory completion of the procedure.

### 6. MARKING OF PRODUCT :

As per Bureau Veritas Rules for Classification.

### 7. OTHERS :

This certificate cancels and replaces approval number 19448/A0 BV dated 25 May 2007 and 19448/A1 BV dated 8 June 2011.

**\*\*\* END OF CERTIFICATE \*\*\***