



Approval No. AL3RO

Certificate No. TA23702E

APPROVAL OF MANUFACTURING PROCESS

This is to certify that

C.S. Aluminium Corporation

No.17, Donglin Road, Siaogang District, Kaohsiung City 812050,
Taiwan, Republic of China

has been approved for the manufacturing process of undermentioned materials by the NIPPON KAIJI KYOKAI in accordance with the requirements of 1.2, Part K of the Society's "Rules for the Survey and Construction of Steel Ships" and Chapter 5, Part 1 of the Society's "Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use".

MATERIALS : Aluminium Alloys

The details of the relevant approval conditions are given in the PARTICULARS OF APPROVAL listed in the reverse of this certificate.

The products for the ships classed with the Society are to be manufactured, tested and inspected in compliance with the Rules.

This Certificate is valid from 12 July 2023 until 11 July 2028.

Issued at Tokyo on 21 June 2023.


Y. Takao
General Manager
Material and Equipment Department



List of PARTICULARS OF APPROVAL

	Ref. No.	Issue Date
1.	TA18934E	16 AUG. 2018
2.	TA18935E	16 AUG. 2018

No. : TA18934E

Date : 16 August 2018

PARTICULARS OF APPROVAL

Approval Conditions for Manufacturing Process of Aluminium Alloys

- | | |
|---------------------|--------------------------------|
| 1. Manufacturer | : C. S. Aluminium Corporation |
| 2. Kind of Product | : Rolled Products |
| 3. Grade | : 5083P |
| 4. Temper Condition | : O, H111, H112, H116 and H321 |
| 5. Max. Thickness | : 50mm |
| 6. Remarks | : |

- (1) 5083P-H116 and 5083P-H321 manufactured by C. S. Aluminium Corporation are not applicable to the marine hull construction or the marine application where frequent direct contact with seawater is expected.
- (2) 5083P-O and 5083P-H321 manufactured by C. S. Aluminium Corporation are not applicable to the extremely low temperature such as tanks for liquefied gas carrier.

Alcabazas

H. Kobayashi

General Manager

Material and Equipment Department



No. : TA18935E

Date : 16 August 2018

PARTICULARS OF APPROVAL

Approval Conditions for Manufacturing Process of Aluminium Alloys

1. Manufacturer : C. S. Aluminium Corporation
2. Kind of Product : Rolled Products
3. Grade : A5083P (JIS H 4000)
4. Temper Condition : H32 (Stabilizing treatment after work hardened)
specified in JIS H 0001
5. Max. Thickness : 6mm
6. Remarks :

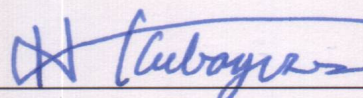
- (1) Chemical composition and mechanical properties are to comply with the requirements specified in Table 1 and Table 2 according to A5083P-H32.
- (2) Items not specified in this PARTICULARS OF APPROVAL including the procedure of the testing and inspection for products are to be in accordance with Chapter 1, Chapter 2 and Chapter 8, Part K of the NK Rules.

Table 1 Chemical Composition (%)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others		Al
								Each	Total	
0.40 max.	0.40 max.	0.10 max.	0.40 ~ 1.0	4.0 ~ 4.9	0.05 ~ 0.25	0.25 max.	0.15 max.	0.05 max.	0.15 max.	Remainder

Table 2 Mechanical Properties

0.2 % Proof stress (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)
215 ~ 295	305 ~ 380	10 min.



H. Kobayashi

General Manager

Material and Equipment Department

