

Approval No. ST147RO
Certificate No. TA17216E

APPROVAL OF MANUFACTURING PROCESS

This is to certify that

**Outokumpu Stainless AB, Avesta Works
Bergnäsatan 11, Avesta
Sweden**

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 1, Part 1 of the Society's "Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use".

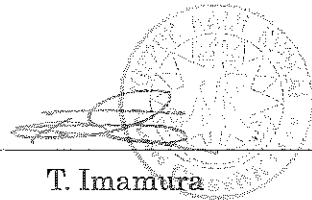
MATERIALS : Rolled Stainless Steels

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 17 February 2017 until 16 February 2022.
Issued at Tokyo on 17 February 2017.

Initial Approval Date: 17 February 2017



T. Imamura
General Manager
Material and Equipment Department

List of PARTICULARS OF APPROVAL

	Ref. No.	Issue Date
1.	TA17217E	17 FEB. 2017

No. : TA17217E

Date : 17 February 2017

PARTICULARS OF APPROVAL

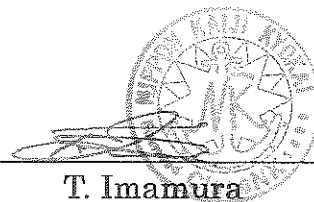
Approval Conditions for Manufacturing Process of Rolled Stainless Steels

1. Manufacturer : Outokumpu Stainless AB,
Avesta Works
2. Kind of Product : Slabs
3. Grade : KSUS329J3L, ASTM Type 2205, UNS S32205,
UNS S31803, EN 1.4462
4. Max. Thickness : 200mm
5. Steel Making Process : Electric Arc Furnace and AOD
AOD : Argon Oxygen Decarburization
6. Casting Process : Continuous Casting
7. Chemical Composition : Table 1
8. Remarks :

(a) Chemical composition for ASTM Type 2205, UNS S32205, UNS S31803 and EN 1.4462 are to comply with requirements specified in Table 1.

Table 1 Chemical Composition (%)

Grade	C	Si	Mn	P	S	Ni	Cr	Mo	N
ASTM Type 2205, UNS S32205	0.030 max.	1.00 max.	2.00 max.	0.030 max.	0.020 max.	4.5 ~ 6.5	22.0 ~ 23.0	3.0 ~ 3.5	0.14 ~ 0.20
UNS S31803, EN 1.4462	0.030 max.	1.00 max.	2.00 max.	0.030 max.	0.020 max.	4.5 ~ 6.5	21.0 ~ 23.0	2.5 ~ 3.5	0.08 ~ 0.20



T. Imamura

General Manager

Material and Equipment Department