



**CERTIFICATE OF APPROVAL OF MANUFACTURERS OF
MATERIALS
No. 2022XI01144**

This is to certify that the manufacture of the product identified below is in compliance with the applicable requirements of the RINA Rules for the Approval of Manufacturers of Materials.

<i>Description</i>	Seamless steel tubes and pipes in austenitic and austenitic-ferritic (duplex) stainless steel
<i>Type</i>	Steel bars
<i>Applicant</i>	Grade 303, 304, 304L, 316, 316L, 316Ti, 317, 321, 321H, 347, 347H, 31803, 32205, 17-4PH, 405, 410, 420, 431, 431 DIN, 430 F DIN, 430, 430L
<i>Manufacturer</i>	M/s.Welspun Specialty Solutions Ltd.
<i>Place of manufacture</i>	Plot No. 1. GIDC Industrial Estate, Valia Road. Jhagadia. Dist. Bharuch. Gujarat. India. 393110 Bharuch (Gujarat-24) INDIA
<i>Reference standards</i>	RINA Rules for the approval of manufacturers of materials

Issued in RINA India Marine on June 14, 2022. This Certificate is valid until June 10, 2027




RINA Services S.p.A.
Aswin Palliath

This certificate consists of this page and 1 enclosure



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Grade 303, 304, 304L, 316, 316L, 316Ti, 317, 321, 321H, 347, 347H, 31803, 32205, 17-4PH, 405, 410, 420, 431, 431 DIN, 430 F DIN, 430, 430L

Enclosure - Page 1 of 1

APPROVAL CONDITIONS

Size range:

Hot rolled bars: Diameter-20mm ~250mm & RCS 55mm ~ 300mm

Bright bars: Diameter-18mm~240mm

Seamless Hot finished pipe: Outer diameter-42.20mm~168.30mm/Wall thickness-3.56mm~13.49mm

Seamless Cold finished pipe: Outer diameter-10.30mm~168.30mm/Wall thickness-1.24mm~17.12mm

Seamless Cold finished tube: Outer diameter-03.00mm~114.30mm/Wall thickness- 0.50mm~05.54mm

Manufacturing process :

Steel bar made by Hot Rolling from Cast ingot

Steel pipes made by Hot/Cold rolling from round bars

Steel tubes made by Cold rolling from round bars

Heat treatment :

Solution Annealing and Annealing to minimum temperatures as below for various grades and quenching by cooling rapidly with water or Air

Grade	Process	Minimum Temperature
303, 304, 304L, 316, 316L, 316Ti, 317, 321, 321H, 347, 347H	Solution Annealing	1040 ~ 1080 Deg. C
31803, 32205	Solution Annealing	1080 ~ 1130 Deg. C
17-4PH	Solution Annealing	1040 ±15 Deg. C
405, 410, 420	Annealing	820 ~ 850 Deg. C
431, 431 DIN	Annealing	680 ~ 750 Deg. C
430, 430L	Annealing	820 ~ 850 Deg. C
405, 410, 420, 431, 431 DIN	Annealing	950 ~ 1050 & 650 ~ 750 Deg. C

Survey conditions:

The pipes are to be in compliance in all respects with the requirements specified in Part D, Ch-2, Sec-1&2 of the RINA Rules and are to be tested accordingly.

General conditions for the approval:

-The approval is granted on condition that the RINA Rules for the approval, manufacture, testing and certification of materials are complied with in all respects.

-RINA is to be notified of any change of materials, manufacturing process, quality control routines that may affect the validity of this certificate.