

# SS 310MoLN, WNR 1.4466, UNS S31050, AISI 310MoLN, Grade 310MoLN, AFNOR Z 1 CND25.22AZ

## Introduction :

Aesteiron continues to expand its product line in UNS S31050 to meet the emerging customer needs, and whereas Aesteiron Steels Pvt. Ltd. is ISO 9001 : 2008 Certified, ASPL has a great Projects in this grade in all parts of the world with renowned suppliers presenting the wide range of services. We pride ourselves in the quality of our products, our competitive pricing and our exceptional customer service. We have been recognized for our outstanding customer service in satisfaction surveys of top- ranked mills in india and all over the world. ASPL, with iron and steel as its main business, manufactures premium steel products with high technologies and a high added value and fosters three major product categories, namely carbon steel, stainless steel and special steel. Through our worldwide marketing network, these premium products not only satisfy the demand on the domestic market but are also exported to more than forty countries and regions in Asia, Africa, Europa and America, extensively applied to various. We are a highly qualified by our customers worldwide as a sustainable and trustworthy to meet their request and need at the right time and the right area. We strive and stand committed to maintain this respectable position by catering to the requirements of our customers in the best possible way leaving no room for complaints.

## Products Available

### in forms :

- SS 310MoLN, WNR 1.4466, UNS S31050, AISI 310MoLN Plates
- SS 310MoLN, WNR 1.4466, UNS S31050, AISI 310MoLN Pipes
- SS 310MoLN, WNR 1.4466, UNS S31050, AISI 310MoLN Round Bar
- SS 310MoLN, WNR 1.4466, UNS S31050, AISI 310MoLN Tube
- SS 310MoLN, WNR 1.4466, UNS S31050, AISI 310MoLN Flanges
- SS 310MoLN, WNR 1.4466, UNS S31050, AISI 310MoLN Wire
- SS 310MoLN, WNR 1.4466, UNS S31050, AISI 310MoLN Fittings

## Standard Available

### in forms :

- ASTM A213 / ASME SA213
- ASTM A312 / ASME SA312

## The grade is characterized by:

- Excellent resistance to corrosion in ammonium carbamate and nitric acid
- Excellent resistance to intergranular corrosion
- High resistance to pitting and crevice corrosion
- Good weldability

## Chemical Composition

|            | SS 310MoLN | WNR 1.4466 | UNS S31050 | AISI 310MoLN | GRADE 310MoLN | AFNOR Z 1 CND25.22AZ |
|------------|------------|------------|------------|--------------|---------------|----------------------|
| Carbon     | 0.020max   | 0.020max   | 0.020max   | 0.020max     | 0.020max      | 0.020max             |
| Manganese  | 2.00max    | 2.00max    | 2.00max    | 2.00max      | 2.00max       | 2.00max              |
| Chromium   | 24.0-26.0  | 24.0-26.0  | 24.0-26.0  | 24.0-26.0    | 24.0-26.0     | 24.0-26.0            |
| Phosphorus | 0.025max   | 0.025max   | 0.025max   | 0.025max     | 0.025max      | 0.025max             |
| Sulfur     | 0.010max   | 0.010max   | 0.010max   | 0.010max     | 0.010max      | 0.010max             |
| Molybdenum | 2-2.50     | 2-2.50     | 2-2.50     | 2-2.50       | 2-2.50        | 2-2.50               |
| Nickel     | 21.0-23.0  | 21.0-23.0  | 21.0-23.0  | 21.0-23.0    | 21.0-23.0     | 21.0-23.0            |
| Nitrogen   | 0.10-0.16  | 0.10-0.16  | 0.10-0.16  | 0.10-0.16    | 0.10-0.16     | 0.10-0.16            |
| Silicon    | 0.70max    | 0.70max    | 0.70max    | 0.70max      | 0.70max       | 0.70max              |
| Iron       | Bal        | Bal        | Bal        | Bal          | Bal           | Bal                  |

## Mechanical Properties

|                            | SS 310MoLN                | WNR 1.4466                | UNS S31050                | AISI 310MoLN              | GRADE 310MoLN             | AFNOR Z 1 CND25.22AZ      |
|----------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Tensile Strength, Mpa(ksi) | 540-740<br>(78320-107327) | 540-740<br>(78320-107327) | 540-740<br>(78320-107327) | 540-740<br>(78320-107327) | 540-740<br>(78320-107327) | 540-740<br>(78320-107327) |
| Yield Strength, Mpa(ksi)   | 250(36259)                | 250(36259)                | 250(36259)                | 250(36259)                | 250(36259)                | 250(36259)                |
| Elongation %               | 40                        | 40                        | 40                        | 40                        | 40                        | 40                        |
| Reduction in Area, %       | -                         | -                         | -                         | -                         | -                         | -                         |
| Hardness, Brinell          | 95                        | 95                        | 95                        | 95                        | 95                        | 95                        |

## Applications:

- Stripper Tubes
- Outerlayer of bimetallic
- Ferrules
- Carbamate Condensers
- Decomposers
- Reactor Coils

## General corrosion

- S31050 was originally developed for stripper tubes used in the production of urea.
- S31050 has excellent corrosion resistance in urea/carbamate solutions at high pressures and temperatures.
- S31050 is also highly resistant to inorganic acids

## Intergranular corrosion

- S31050 is highly resistant to intergranular corrosion after welding.

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## Pitting and crevice corrosion

- S31050 has very good resistance to pitting, and is also far more resistant to crevice corrosion than ASTM 316L.

## Stress corrosion cracking (SCC)

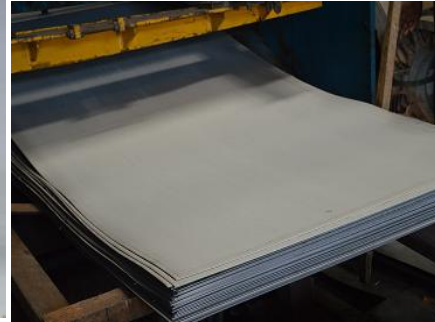
- Conventional austenitic stainless steels of type ASTM 304 and 316 are susceptible to stress corrosion cracking (SCC) in chloride-bearing solutions at temperatures exceeding about 60°C (140°F). The higher nickel content makes S31050 slightly more resistant

## Erosion corrosion

- The good mechanical strength of S31050 makes it resistant to erosion-corrosion. Ferrules for urea strippers are one application where this property is utilised.

## Weldability

- The weldability of S31050 is good. Welding must be carried out without preheating, and normally there is no need for any subsequent heat treatment.
- S31050 has low thermal conductivity and high thermal expansion.



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