

SS 254 SMO, WNR 1.4547, UNS S31254, TYPE 254 SMO Grade 254 SMO, AFNOR Z1CNDU 20.18.06 AZ

Introduction :

Aesteiron continues to expand its product line in UNS S31254 to meet the emerging customer needs, and where as Aesteiron Steels LLP. is ISO 9001 : 2015 Certified Company,

254 SMO is a stainless steel which is initially created to use in seawater and other aggressive chloride-bearing situations. It includes very high end austenitic stainless steel. It has impact toughness resistance to corrosion cracking, with pitting and crevice corrosion resistance. It is double the strength of 300 series stainless steels.

It is treated as a "6% Moly" grade because of the molybdenum content; the 6% Moly family has the ability to resist high temperatures and keep up strength under evaporative conditions. It has exceeded its unique expectation and covered into many different industries demonstrating helpfulness owing to its high level of molybdenum amount other elements, which allows it to be used effectively as a part of different applications such as flue gas desulfurization and chemical environments.

Chemical Composition

	SS 254 SMO	WNR 1.4547	UNS S31254	TYPE 254 SMO	GRADE 254 SMO	AFNORZ1 CNDU 20.18.06
Chromium	0.010	0.010	0.010	0.010	0.010	0.010
Molybdenur	6.1	6.1	6.1	6.1	6.1	6.1
Iron Chromium	55.69	55.69	55.69	55.69	55.69	55.69
Nickel	20.0	20.0	20.0	20.0	20.0	20.0
Nitrogen	18.0	18.0	18.0	18.0	18.0	18.0
	0.20	0.20	0.20	0.20	0.20	0.20

Mechanical Properties

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Tensile Strength [Mpa]psi	680 [98600]	95 min	95 min	95 min	95 min	95 min
Yield Strength [Mpa]psi	300 [4350]	45 min	45 min	45 min	45 min	45 min
Elongation %	50	50	50	50	50	50
Reduction in Area, %	-	-	-	-	-	-
Hardness Brinell	210	210	210	210	210	210

Standard Available in forms :

- ASTM A182/ ASME SA182 Stainless Steel Pipe Fittings
- ASTM A213 / ASME SA213 Seamless Stainless Steel Pipes
- ASTM A240/ ASME SA240 Stainless Steels Sheets / Plates
- ASTM A249/ ASME SA249 Stainless Steel Welded Tubes
- ASTM A269/ ASME SA269 Stainless Steel Tubes
- ASTM A270/ ASME SA270 Stainless Steel Sanitary Tubes
- ASTM A312/ ASME SA312 Stainless Steel Pipes
- ASTM A403/ ASME SA403 Stainless Steel Pipe Fittings
- ASTM A554/ ASME SA554 Stainless Steel Welded Tubes
- ASTM A731/ ASME SA731 Stainless Steel Pipes
- ASTM A789/ ASME SA789 Stainless Steel Tubes
- ASTM A790/ ASME SA790 Stainless Steel Pipes
- ASTM A791/ ASME SA791 Stainless Steel Tubes

Products Available in forms :

- SS 254 SMO, WNR 1.4547, UNS S31254, TYPE 254 SMO Plates
- SS 254 SMO, WNR 1.4547, UNS S31254, TYPE 254 SMO Round Bar
- SS 254 SMO, WNR 1.4547, UNS S31254, TYPE 254 SMO Tube
- SS 254 SMO, WNR 1.4547, UNS S31254, TYPE 254 SMO Flanges
- SS 254 SMO, WNR 1.4547, UNS S31254, TYPE 254 SMO Wire
- SS 254 SMO, WNR 1.4547, UNS S31254, TYPE 254 SMO Fittings

Fabricaton and Heat Treatment Machinability

- Stainless steel grade 254 SMO is quite tough to machine due to the extremely high work hardening rate and lack of sulfur content;
- However using sharp tools, over powered machine tools, positive feeds, good amount of lubrication, and slow speeds tend to provide good machining results.

Welding

- Welding of stainless steel grade 254 SMO requires filler material without which it results in poor strength properties.
- Filler metals such as AWS A5.14ERNiCrMo-3, and alloy 625 are recommended.
- To match with AWSA5.11ENiCrMo-12 electrodes are used in the process

Annealing

- Annealing of this material should be per formed at 1149-1204°C [2100-2200°F], which should be followed by a water quench.

Hot Working

- Forging, up setting and other operations relating to this material can be performed at 982 - 1149°C [1800 - 2100°F].
- The temperatures donot exceed this range as it would result in reduction and scaling in the work ability of it.
- It is advisable to perform post-processannealing in order to re-attain maximum corrosion resistant properties.

Cold Working

- Cold working can be carried out using all the traditional methods; however the process would be tough due to its high work hardening rate.
- It will provide in creased toughness and strength.

Hardening

- Stainless steel grade 254 SMO does not respond to heat treatment. Hardening is possible only through cold reduction.

Applications

- Saltwaterhandling
- Tall oil distillation columns
- Flue gas desulfurization scrubbers
- Components used in petroleum production
- Food processing equipment
- Process equipment in chemical industry
- Bleaching equipment in the pulp and paper industry
- Flue-gas cleaning
- Desalination
- Heat exchangers



**9/A, 9th Floor, Mehta Mehal,
15th Mathew Road, Opera House,
Charni Road, Mumbai - 400 004, India.**

**web: www.aesteiron.com
email: info@aesteiron.com**

Tel: +91-22-67776700 - 6799 - 6777



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