NIPPON STEEL

NSSC SERIES

FERRITIC

High Corrosion Resistant Ferritic Stainless Steel

NSSC 190L

19Cr-2Mo-Nb-V-LC,N／Similar grade : SUS 444

Features and Applications

NSSC 190L was developed on the basis of NSSC 190, exclusively for usage as heavy plate, and it exhibits high-performance toughness and weldability in the shape of plates with a large thickness.

1. High performance of toughness in both base metal and weld zones at temperatures over 0°C.
2. Exquisite performance of stress corrosion cracking resistance.
3. Higher level of pitting corrosion resistance and crevice corrosion resistance than SUS 304, and especially as high performance of pitting corrosion resistance as SUS 316.
4. Susperior to SUS 304 in acid resistance, and to SUS 316 in organic acid resistance.
5. Recommended as material for end plates, welded tubes, clad plates or others because of its high-performance weldability and formability.

[Applications] Petroleum refining equipment, Petro-chemical equipment, Desalinization equip ment, Industrial heat exchangers, Town gas manufacturing facility, Cl^-containing device, Hot water tanks

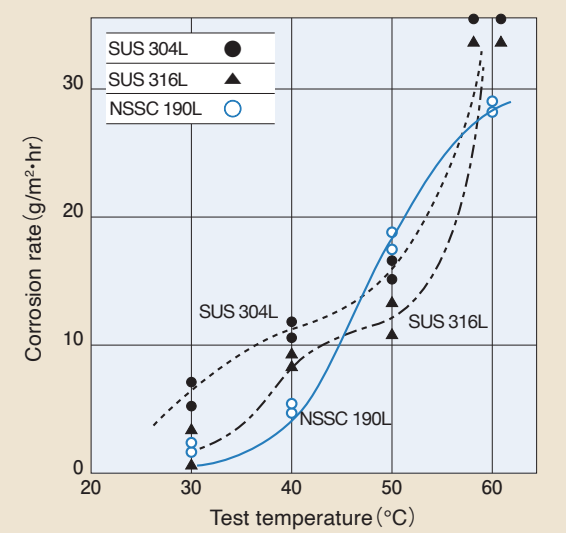
Characteristics

[Mechanical properties]

		Yield strength 0.2% offset N/mm²	Tensile strength N/mm²	Elongation %	Hardness HBW	Bending 180
Specification		≧275	≧410	≧22	≦217	t<8mm r=0.5t (t:thickness t≧8mm r=1.0t \ r:inside radius
Typical values	t=6mm	412	500	35	166	No cracking
	t=12mm	392	500	35	170	No cracking

[Pitting corrosion resistance]

(Test conditions)
Test solution:50g/l $FeCl_3$+HCl
Test period:48hr
Test piece: 6mmt×30mmϕ
Surface finish:Full surface finished with #320 polish



[Stress corrosion cracking resistance in High-temperature chloride solution]

(Test conditions)
Cl^-:600ppm and NaCl added (Test solution was renewed every 100 hours)
Test temperature:300°C
Pressure:87kg/cm²
Test piece:U-bent type for stress test

Base metal	Welding material	Welding method	Heat input KJ/cm	Result of microscopic observation
NSSC 190L	D316UL	TIG	10.8	No occurrence of stress corrosion cracking
			14.4	No occurrence of stress corrosion cracking
			19.3	No occurrence of stress corrosion cracking
			24.0	No occurrence of stress corrosion cracking
		Arc manual welding	13.4	No occurrence of stress corrosion cracking
SUS 304L	D308L	Arc manual welding	15.0	Transgranular-type stress corrosion cracking in base metal
SUS 316L	D316L	Arc manual welding	15.0	Transgranular-type stress corrosion cracking in base metal and weld zone

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