



YU 444 (可替代316L之高耐蝕肥粒鐵鋼種)

YU 445 (可替代304之耐蝕肥粒鐵鋼種)

# YU 444

## 產品特性

- 1. 耐蝕性與316L相當。**  
中鉻含鉬之肥粒鐵不銹鋼，耐蝕性與316L鋼種相當。
- 2. 兼具低熱膨脹、高熱傳導特性。**  
比一般300系不銹鋼更適用於高溫/溫度變化環境。
- 3. 焊接性良好。**  
添加鈮或鈦進行穩定化，可避免焊接後的晶界腐蝕。
- 4. 具成本優勢。**  
因不添加鎳等貴重合金，故相較於316L具有較低成本之優勢。
- 5. 耐燃一級材料。**  
通過CNS 14705-1之耐燃一級材料。
- 6. 低碳排綠色材料。**  
以電爐生產，碳排放量比高爐生產的碳鋼/鋁錠為低。

## Product Features

- 1. Corrosion resistance is equivalent to 316L**  
The corrosion resistance of ferrite stainless steel with medium chromium contains molybdenum equivalent to grade 316L stainless steel.
- 2. Low thermal expansion and high heat conductivity**  
More capable than 300 series stainless steel in high temperature /temperature variation environment.
- 3. Excellent weldability**  
Niobium added for stabilization and preventing from intergranular corrosion after welding.
- 4. Cost advantage**  
Higher Cost-competitive than 316L stainless steel for not containing precious metals, such as nickel.
- 5. Flame-resistant first-class material**  
Passed CNS 14705-1 flame-resistant first-class material.
- 6. Green materials with low carbon emissions**  
Produced by electric arc furnace process, so the carbon emission is lower than that of carbon steel/aluminum ingot produced by blast furnace.

## 應用 Applications

帷幕牆、熱水器儲水桶及各種水處理裝置。

Curtain wall, hot water storage tanks, and various types of water treatment equipment.



Curtain walls – ESKY LAND, Taiwan



Square stainless steel water tank

規範:符合 JIS SUS444及ASTM S44400之成份及機械性質要求。

Specifications: Conform with the JIS SUS 444 and ASTM S44400 in chemical composition and mechanical property.

成份 Chemical compositions

鋼種 Grade	化學成份 Chemical Composition (wt%)						
	Ni	Cr	Mo	Nb	Ti	C	N
ASTM S44400	≤1.00	17.50-19.50	1.75-2.50	[0.2+4(C+N)]-0.80		≤0.025	≤0.035
JIS SUS444	≤0.60	17.00-20.00	1.75-2.50	8(C+N)-0.80		≤0.025	≤0.025
YU 444	≤0.60	17.50-19.50	1.75-2.50	Nb+Ti=[0.2+4(C+N)]-0.80		≤0.025	≤0.025
ASTM 316L	10.00-14.00	16.00-18.00	2.00-2.30	----	---	≤0.030	≤0.100

機械性質 Mechanical properties

鋼種 Grade	降伏強度 Yield Strength (MPa)	抗拉強度 Tensile Strength (MPa)	伸長率 Elongation (%)	硬度 Hardness (HRB)
ASTM S44400	≥275	≥415	≥20	≤96
JIS SUS444	≥245	≥410	≥20	≤96
YU 444 (代表例Typical)	357	501	32	83
316L (代表例Typical)	307	602	55	80

物理性質 Physical Properties

鋼種 Grade	密度 Density (g/cm <sup>3</sup> )	熱膨脹係數 Thermal Expansion Coefficient (10 <sup>-6</sup> /°C)	熱導率 Heat Conductivity (W/m·°C)
		0-600°C	20°C
YU 444	7.7	11.5	26.0
316L	7.9	18.0	15.0

低熱膨脹係數於溫度變化環境下使用不易變形・高熱導率具有導熱散熱快速之優點・  
Low thermal expansion coefficient can prevent deformation in an environment with temperature changes; high thermal conductivity provides better efficiency of heat conduction and dissipation.

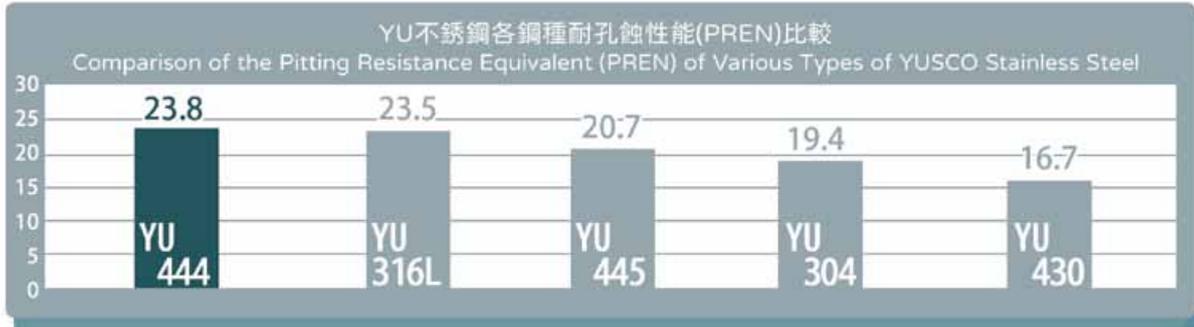
## 耐蝕性

### Corrosion Resistance

耐孔蝕當量(Pitting Resistance Equivalent, PREN) · 該計算值越高其耐孔蝕性越佳 ·

Pitting Resistance Equivalent (PREN); higher PREN value represents better pitting resistance

$$PREN = Cr + 3.3Mo + 16N$$

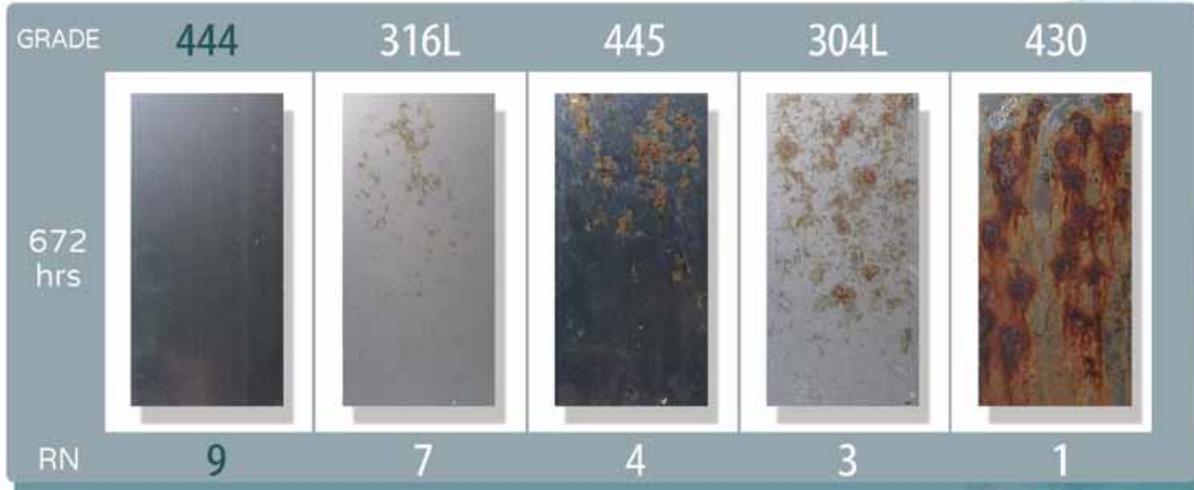


YU 444鋼種耐孔蝕性能力與 YU 316L鋼種相當 ·

YU 444 steel pitting resistance equivalent (PREN) is similar to the 316L steel.

循環鹽霧腐蝕試驗(Cyclic Corrosion Test, CCT) · 參考ISO 9227之評價數(RN)作為耐蝕性的參考指標 · RN值越高其耐腐蝕性越好 ·

Cyclic Corrosion Test(CCT), Refer to the evaluation number (RN) of ISO 9227 as a reference index of corrosion resistance, The higher the RN value, the better the corrosion resistance.



YU 444鋼種耐腐蝕性能力優於 YU 316L ·

YU 444 steel has better corrosion resistance than YU 316L.

## 可接單尺寸及表面品級

### Available dimensions and surface finish

請與焊聯業務人員接洽 ·

Please contact the sales representative of Yieh United Steel Corp.

# YU 445

## 產品特性

- 1. 耐蝕性與304相當。**  
具高鉻含量之肥粒鐵不銹鋼，耐蝕能力與304鋼種相當。
- 2. 兼具低熱膨脹、高熱傳導特性。**  
比一般300系不銹鋼更適用於高溫/溫度變化環境。
- 3. 焊接性良好。**  
添加鈮元素進行穩定化，可避免焊接後的晶界腐蝕。
- 4. 具成本優勢。**  
因不添加鎳等貴重合金，故相較於304具有較低成本之優勢。
- 5. 具優良衝壓成形性。**
- 6. 耐燃一級材料。**  
通過CNS 14705-1之耐燃一級材料。
- 7. 低碳排綠色材料**  
以電爐生產，碳排放量比高爐生產的破鋼/鋁錠為低。

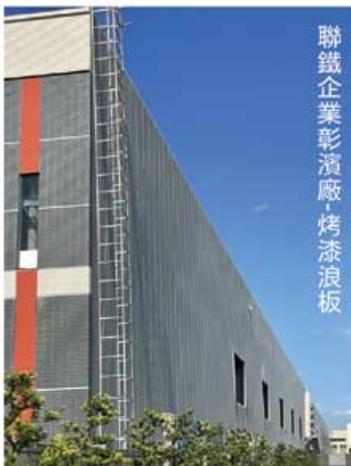
## Product Features

- 1. Corrosion resistance is equivalent to 304**  
The corrosion resistance of ferrite stainless steel with high chromium is equivalent to grade 304 stainless steel.
- 2. Low thermal expansion and high thermal conductivity**  
More capable than 300 series stainless steel in high temperature /temperature variation environment.
- 3. Excellent weldability**  
Niobium added for stabilization and preventing from intergranular corrosion after welding.
- 4. Cost advantage**  
Higher Cost-competitive than 304 stainless steel for not containing precious metals, such as nickel.
- 5. Excellent deep drawing formability**
- 6. Flame-resistant first-class material**  
Passed CNS 14705-1 flame-resistant first-class material.
- 7. Green materials with low carbon emissions**  
Produced by electric arc furnace process, so the carbon emission is lower than that of carbon steel/aluminum ingot produced by blast furnace.

## 應用 Applications

汽車飾條、電梯廂體、太陽能支架、配電箱、建築裝飾、餐廚鍋具、家電製品等。

Automotive trim, Elevator carriage, Solar energy stand, distribution box, architectural decorations, kitchenware, home appliances, etc..



Painted corrugated steel sheets-building of LIEN-TEI STEEL ENTERPRISE



Solar energy stand-building of YIEH UNITED STEEL CORP.

規範:符合ASTM S44500及JIS SUS443J1之成份及機械性質要求。  
 Specifications:Conform with the ASTM S44500 and JIS SUS443J1 in chemical composition and mechanical property.

成份 Chemical compositions

鋼種 Grade	化學成份 Chemical Composition (wt%)					
	Ni	Cr	Nb	Ti	C	N
ASTM S44500	≤0.60	19.00~21.00	10(C+N)-0.80	---	≤0.020	≤0.03
JIS SUS443J1	≤0.60	20.00~23.00	Nb+Ti=8(C+N)-0.80	---	≤0.025	≤0.025
YU 445	≤0.60	20.00~21.00	10(C+N)-0.80	---	≤0.025	≤0.025
JIS SUS 304	8.00~10.50	18.00~20.00	----	---	≤0.08	---

機械性質 Mechanical properties

鋼種 Grade	降伏強度 Yield Strength (MPa)	抗拉強度 Tensile Strength (MPa)	伸長率 Elongation (%)	硬度 Hardness (HRB)
ASTM S44500	≥205	≥427	≥22	≤83
JIS SUS443J1	≥205	≥390	≥22	≤90
YU 445 (代表例Typical)	340	485	32	81
304 (代表例Typical)	297	671	54	84

物理性質 Physical Properties

鋼種 Grade	密度 Density (g/cm <sup>3</sup> )	熱膨脹係數 Thermal Expansion Coefficient (10 <sup>-6</sup> /°C)	熱導率 Heat Conductivity (W/m <sup>2</sup> °C)
		0~600°C	20°C
YU 445	7.7	11.5	25.0
304	7.9	18.0	15.0

低熱膨脹係數於溫度變化環境下使用不易變形・高熱導率具有導熱散熱快速之優點・  
 Low thermal expansion coefficient can prevent deformation in an environment with temperature changes; high thermal conductivity provides better efficiency of heat conduction and dissipation.

應用 Applications



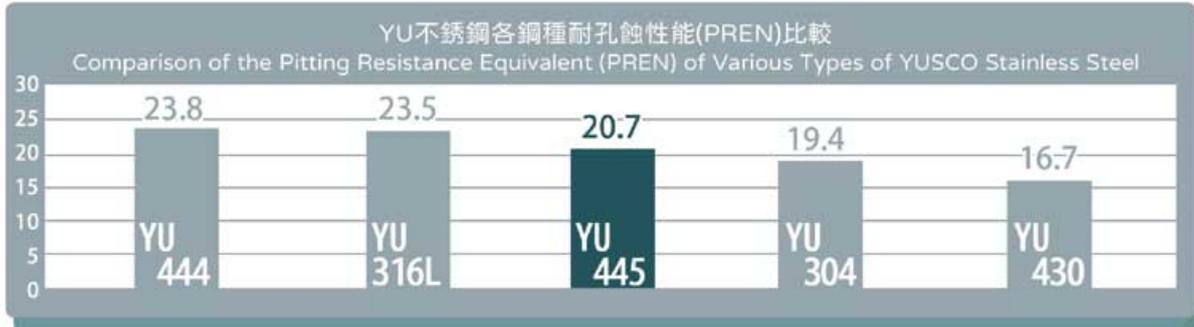
Elevator carriage

## 耐蝕性 Corrosion Resistance

耐孔蝕當量(Pitting Resistance Equivalent, PREN) · 該計算值越高其耐孔蝕性越佳 ·

Pitting Resistance Equivalent (PREN); higher PREN value represents better pitting resistance

$$PREN = Cr + 3.3Mo + 16N$$

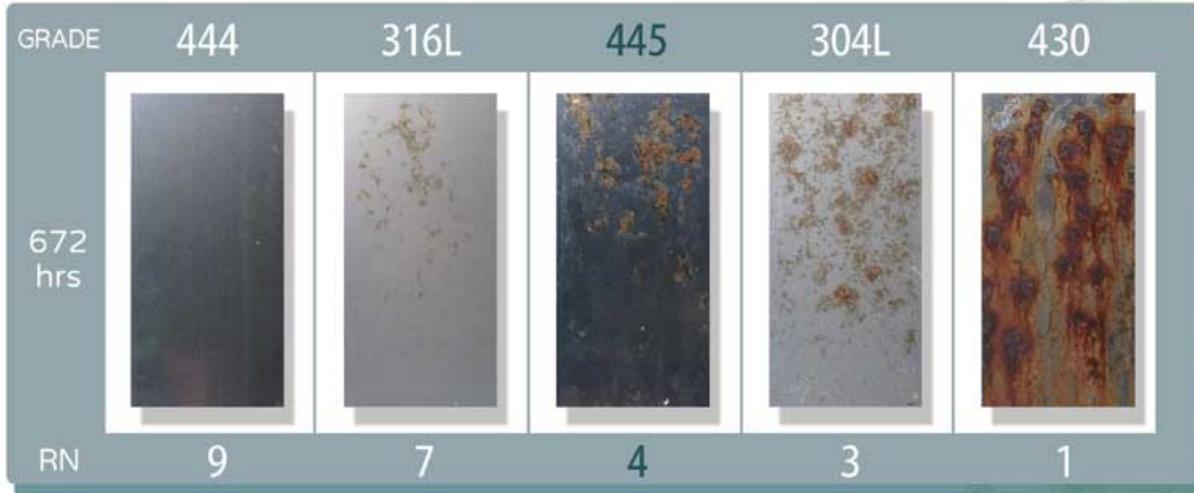


YU 445耐孔蝕性能力優於YU 304鋼種 ·

YU 445 steel has better pitting resistant capability than YU 304 steel.

循環鹽霧腐蝕試驗(Cyclic Corrosion Test, CCT) · 參考ISO 9227之評價數(RN)作為耐蝕性的參考指標 · RN值越高其耐腐蝕性越好 ·

Cyclic Corrosion Test(CCT), Refer to the evaluation number (RN) of ISO 9227 as a reference index of corrosion resistance, The higher the RN value, the better the corrosion resistance.



YU 445鋼種耐腐蝕性能力與YU 304L鋼種相當 ·

The corrosion resistance of YU 445 steel is equivalent to YU 304L steel.

## 可接單尺寸及表面品級 Available dimensions and surface finish

請與焊聯業務人員接洽 ·

Please contact the sales representative of Yieh United Steel Corp.



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2024.09