



**燁聯鋼鐵股份有限公司**  
YIEH UNITED STEEL CORP.



YU 436  
YU 439

- YU 436 (高耐蝕性之肥粒鐵鋼種)
- YU 439 (抗高溫氧化之肥粒鐵鋼種)

# YU 436 <高耐蝕性肥粒鐵系鋼種>

## YU 436 <A High Corrosion Resistant Ferritic Stainless Steel >

### 一、產品特性

1. 高耐蝕性。  
低碳/氮、含鉬之高耐蝕肥粒鐵不銹鋼。
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。  
因採用鈮或鈦進行穩定化，可避免焊後晶界腐蝕。
4. 具成本優勢。  
因不添加鎳等貴重合金，故相較於300系具有較低成本之優勢。

### 二、應用

1. 高端耐蝕需求之汽車排氣系統。
2. 汽車內/外部裝飾件。

### I. Product Features

1. High corrosion resistance  
A high corrosion resistant ferritic stainless steel that contains molybdenum and with low carbon /nitrogen.
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 304 stainless steel for not containing precious metals, such as nickel.

### II. Applications

1. High-end corrosion-resistant Automobile exhaust pipe system.
2. Vehicle interior/exterior decorations.

### 三、規範:同時符合 JIS SUS436L 及 ASTM S43600 之成份及機械性質要求

## III. Specifications: Conform with the JIS SUS436L and ASTM S43600 in chemical composition and mechanical property.

### 1.成份 Chemical compositions

鋼種 Grade	化學成份 Chemical Composition (wt%)					
	Ni	Cr	Mo	C	N	其他 Other
ASTM S43600	-	16.00~18.00	0.75~1.25	≤0.12	-	Nb : 5xC~0.80
JIS SUS436L	≤0.60	16.00~19.00	0.75~1.50	≤0.025	≤0.025	Nb+Ti: 8(C+N)~0.80
YU 436 (代表例 Typical)	-	17.20	0.85	0.011	0.010	Nb+Ti=0.25

### 2.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 S43600	≥240	≥450	≥22	≤89
JIS SUS436L	≥245	≥410	≥20	≤96
YU 436 (代表例 Typical)	319	464	33	79
YU 304 (代表例 Typical)	297	671	54	84

### 四、物理性質

## IV. 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
436	7.7	11.5	23.0
304	7.9	18.7	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.

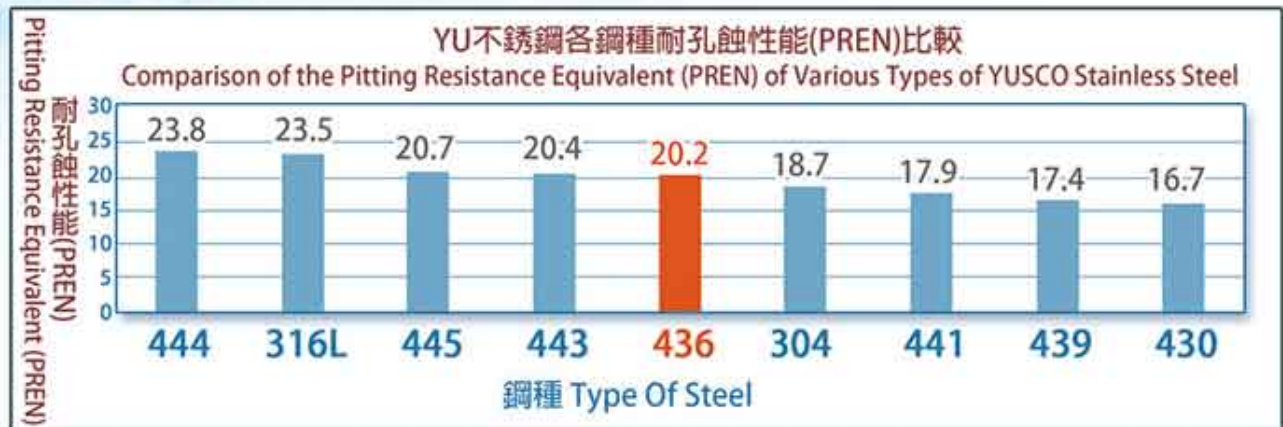
## 五、耐蝕性

### V. 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 436耐孔蝕性能力優於YU 304鋼種。

YU 436 steel has better pitting resistant capability than YU 304 steel.

## 六、可接單尺寸及表面品級

請與燁聯業務人員接洽。

## VI. Available dimensions and surface finish

Please contact the sales representative of Yieh United Steel Corp.

# YU 439〈抗高溫氧化肥粒鐵系鋼種〉

YU 439 〈A High-temperature Oxidation Resistant Ferritic Stainless Steel〉

## 一、產品特性

1. 具抗高溫氧化性質。  
比430鋼種具較高之抗高溫氧化能力。
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。  
因採用鈮或鈦進行穩定化，可避免焊後晶界腐蝕。
4. 具成本優勢。  
因不添加鎳等貴重合金，故相較於300系具有較低成本之優勢。
5. 具優良深沖成型性。

## 二、應用

1. 汽車排氣系統。
2. 汽車內/外部裝飾件。
3. 烤肉爐燃燒管、餐廚鍋具、家電製品、建築裝飾等用途。

## I. Product Features

1. High-temperature oxidation resistance  
With better high-temperature oxidation resistance than grade 430 stainless steel.
2. Has both low thermal expansion and high heat conductivity  
More suitable in high temperature/ temperature variation environments than the regular 300 series stainless steel.
3. Excellent weldability  
With Niobium or Titanium added for stabilisation; able to prevent from intergranular corrosion after welding.
4. Cost advantage  
Higher Cost-competitive than 300 series stainless steel for not containing precious metals, such as nickel.
5. Excellent deep drawing formability

## II. Applications

1. Automobile exhaust pipe system.
2. Vehicle interior/external decorations.
3. BBQ grill burner tubes, kitchenware, home appliances, architectural decorations, etc.

### 三、規範:符合 ASTM S43932 之成份及機械性質要求。

### III. Specifications: Conform with the ASTM S43932 in chemical composition and mechanical property.

#### 1.成份 Chemical compositions

鋼種 Grade	化學成份 Chemical Composition (wt%)				
	Cr	Nb	Ti	C	N
ASTM S43932	17.00~19.00	[0.20+4(C+N)]~0.75		≤0.030	≤0.030
YU 439 (代表例 Typical)	17.20	0.15	0.20	0.015	0.012

#### 2.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 S43932	≥ 205	≥ 415	≥ 22	≤ 89
YU 439 (2B代表例 2B Typical)	310	470	33	77
YU 304 (2B代表例 2B Typical)	297	671	54	84

### 四、物理性質

### IV. 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
439	7.7	11.5	25.0
304	7.9	18.7	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。

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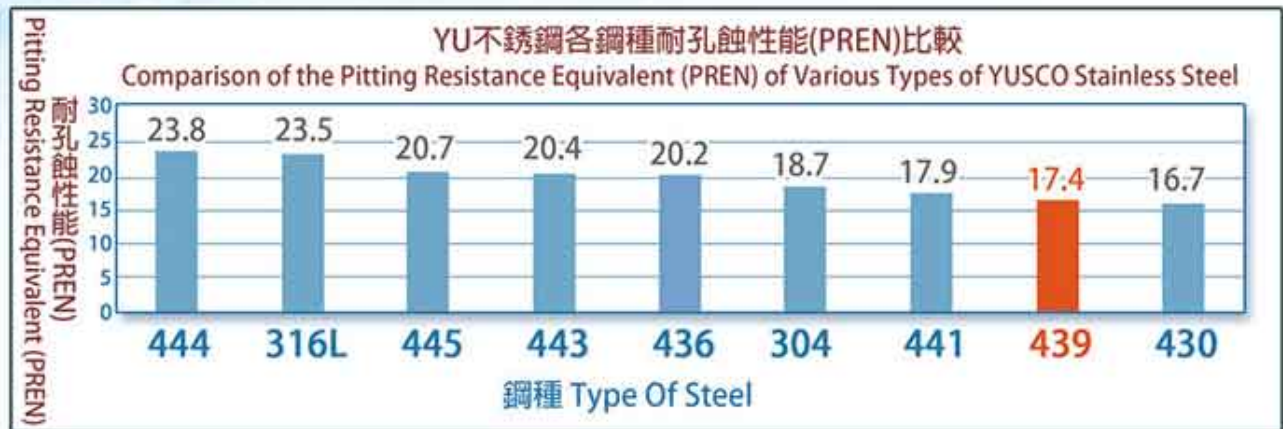
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YIEH UNITED STEEL CORP.

高雄市岡山區嘉興里興隆街600號  
No.600,Xinglong St., JiaXing Village, Gangshan Dist.,  
Kaohsiung City 82057, Taiwan (R.O.C.)  
TEL:+866-7-623-2255 FAX:+886-7-623-3148  
<http://www.yusco.com.tw>

營業部門  
TEL:+866-7-623-2061 FAX:+886-7-622-8675

SALES & MARKETING DIVISION  
TEL:+866-7-623-2062 FAX:+886-7-622-6455  
E-mail: [s12@mail.yusco.com.tw](mailto:s12@mail.yusco.com.tw)