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**KUANG TAI**

The Green Power of Welding & Wire  
**Duplex Stainless Steel**

# Duplex Stainless Steel

Greener and Lighter

## KT Duplex series electrode

An excellent welding consumable solution

What we provide →

30-year experience of wire drawing

Strong technical support on welding procedures

Comprehensive knowledge of flux design



HIGH STRENGTH



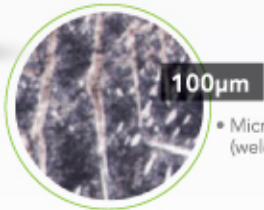
GOOD CORROSION RESISTANCE



COST EFFECTIVENESS



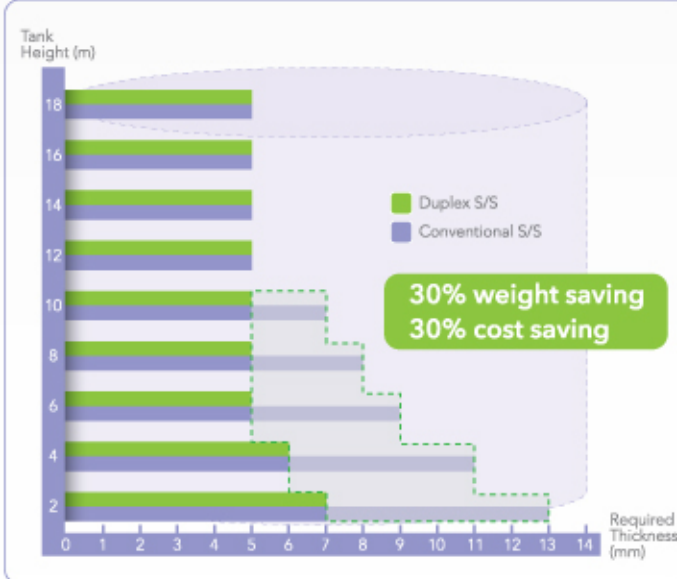
ENVIRONMENT FRIENDLY



100µm  
• Microstructure of duplex stainless steel (weld metal)

### The advantages over traditional austenite stainless steel

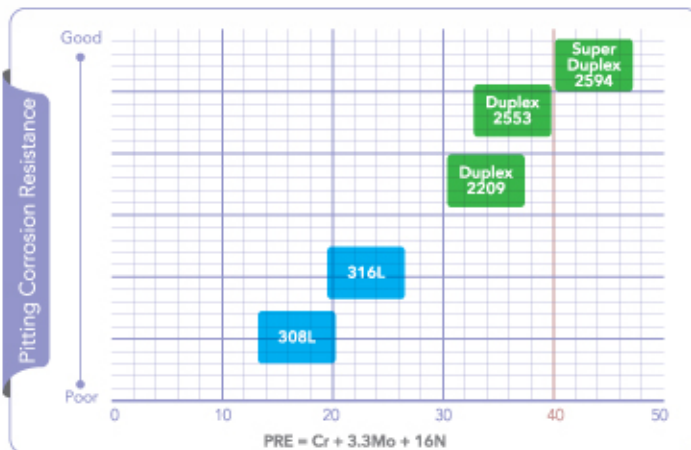
- Higher mechanical strength & toughness (double that of austenitic or ferritic grades of S/S.)
- Better ductility and easy to form (EL % = 25-35)
- Better resistance to pitting and crevice corrosion
- Better resistance to stress corrosion cracking (SCC)
- Better fatigue resistance
- Lower thermal expansion
- Better weldability



Duplex stainless steel as a substitute for austenitic material in storage tank

### Key Benefits

- Reinforcement for longer lifetime
- Meeting more demanding applications (hot, humid & maritime climate)
- Aesthetics improvement
- Considerable weight reduction
- Cost saving in manufacturing phase (material cost)
- Cost saving in maintenance phase (labor cost)



Superior pitting corrosion resistance

Complete grades, variable product forms - Fulfill any kind of applications

Welding Process	Product Name	Classification (AWS)	Mechanical Property of Weld Metal			Chemical Composition (mass %)							PRE*	FN (WRC 1992)
			YS (Mpa)	TS (Mpa)	EL (%)	C	Si	Mn	Cr	Ni	Mo	N		
SMAW	KS - 2209	A5.4 E2209-16	650	820	32	0.030	0.61	0.80	22.7	9.0	3.02	0.13	34.8	45
	KS - 2594	A5.4 E2594-16	700	872	29	0.028	0.65	0.63	25.6	9.4	3.92	0.24	42.4	50
GMAW	KMS - 2209	A5.9 ER2209	611	799	38	0.014	0.36	1.74	22.9	8.8	3.08	0.15	35.5	55
	KMS - 2594	A5.9 ER2594	681	851	28	0.008	0.46	0.58	25.0	9.2	3.91	0.25	42.0	55
GTAW	KTS - 2209	A5.9 ER2209	611	799	38	0.014	0.36	1.74	22.9	8.8	3.08	0.15	35.5	55
	KTS - 2594	A5.9 ER2594	681	851	28	0.008	0.46	0.58	25.0	9.2	3.91	0.25	42.0	55
FCAW	KFW - 2209	A5.22 E2209 T1-1 / 4	652	823	29	0.030	0.68	0.91	23.0	9.1	3.20	0.13	35.6	50
	KFW - 2594	A5.22 E2594 T1-1 / 4	729	910	26	0.025	0.62	1.19	25.6	9.5	3.80	0.23	41.8	55
SAW	KSW - 2209	A5.9 ER2209	611	799	38	0.014	0.36	1.74	22.9	8.8	3.08	0.15	35.5	55
	KSW - 2594	A5.9 ER2594	681	851	28	0.008	0.46	0.58	25.0	9.2	3.91	0.25	42.0	55

\* PRE (Pitting Resistance Equivalent) = Cr + 3.3 X Mo + 16 X N

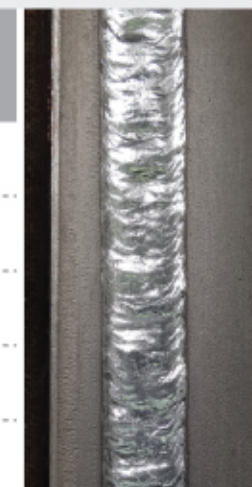


Full Product Line

### Weld Bead Appearance

Position	3F
Shielding gas	100% CO <sub>2</sub>
Current	150-160A
Voltage	25V

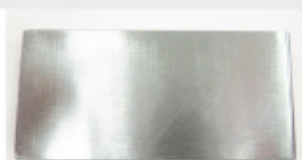
Sample : KFW-2209



### Pitting Corrosion Test (acc. to ASTM G48 standard)

Test Condition	25°C / 72hr
Solution	68.72g FeCl <sub>3</sub> · 6H <sub>2</sub> O + 600ml H <sub>2</sub> O + 16 ml HCl
Corrosion Weight Loss	0.0162 (g/ cm <sup>2</sup> )
Observation of Pitting	No Pitting

Sample : KFW-2209 (all weld metal)



Before Pitting Test



After Pitting Test