

# **S – 2594.16**

SHIELDED METAL ARC WELDING CONSUMABLE  
FOR WELDING OF SUPER DUPLEX STAINLESS STEEL

2020.12

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**HYUNDAI WELDING CO., LTD.**



## ❖ Specification

**AWS A5.4** E2594-16

**EN ISO 3851-A** E 25 9 4 N L

## ❖ Applications

Welding of UNS S32750, S32760  
(Independent water power plant)

## ❖ Characteristics on Usage

1. Weld metal has 30~60% ferrite contents
2. Due to the high chromium contents, corrosion resistance is excellent in most environments(chloride environment)
3. Superior pitting resistance(PREN ≥40)

## ❖ Type of Current

AC or DC+

## ❖ Packing

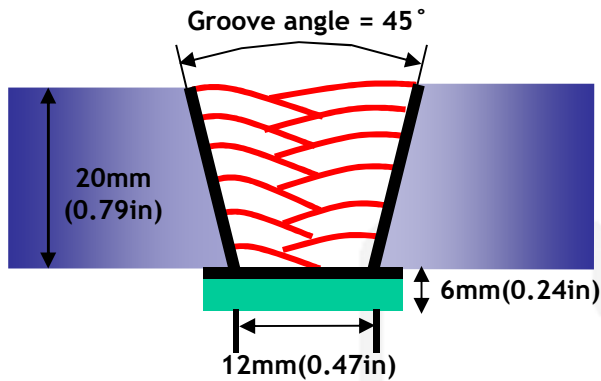
<b>Packet</b>	2.5kg(5.5lbs)
<b>Carton</b>	2.5kg(5.5lbs) X 4 : 10kg(22lbs)



## Mechanical Properties & Chemical Composition of All Weld Metal

### ❖ Welding Conditions

Method by AWS Spec.



Diameter	: 4.0mm(5/32in)
Amp./ Volt.	: 140/25
Travel speed	: 13~18(Cm/min)
Pre-Heat	: R.T .
Interpass Temp.	: 150±15°C(302±59°F)
Position	: Flat
Polarity	: AC or DC+

[ Joint Preparation & Layer Details ]

### ❖ Mechanical Properties of All weld metal

Consumable	Tensile Test		CVN Impact Test Joule(ft·lbs)	
	TS MPa (lbs/in <sup>2</sup> )	El(%)	-20°C(-4°F)	-50°C(-58°F)
S-2594.16	830(120,000)	28.0	35(26)	30(22)
AWS A5.4 E2594-XX	≥690(100,000)	≥ 15	Not Specified	

### ❖ Chemical Analysis of All weld metal(wt%)

Consumable	Chemical Composition (%)										PREN
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N2	
S-2594.16	0.019	0.58	0.53	0.020	0.012	8.9	25.17	3.9	0.025	0.22	41.6
AWS A5.4 E2594-XX	≤0.04	≤1.0	0.5 ~2.0	≤0.04	≤0.03	8.5 ~10.5	24.0~ 27.0	3.5~ 4.5	≤0.75	0.2~ 0.3	-

(PRE=Cr+3.3xMo+16xN)

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.

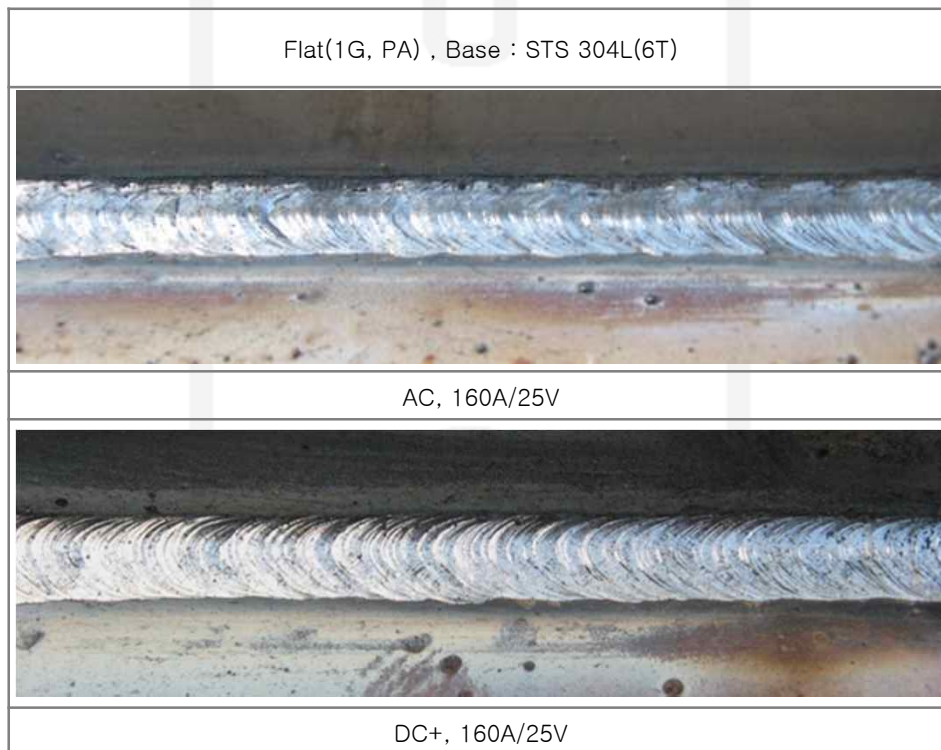


## Mechanical Properties & Bead appearance

### ❖ δ – Ferrite No.

Consumable	Diagram		
	Schaeffler	WRC(1992)	FERITSCOPE MP-30 (FISCHER)
S-2594.16	81	60	45~50

### ❖ Bead Appearance

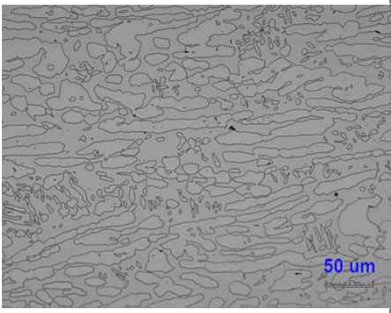

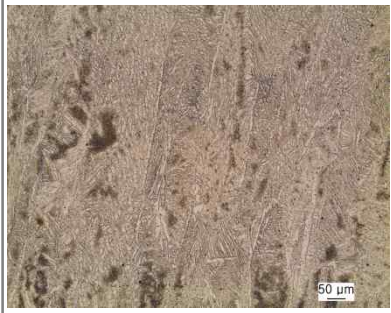


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## MICRO STRUCTURE

### ❖ Micro Structure

Consumable	Base Metal	HAZ	Weld Metal
S-2594.16			

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