

# **Supershield AP-0**

HIGH- Mn TYPE OPEN ARC WIRE

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**HYUNDAI WELDING CO., LTD.**



## Supershield AP-O

### ❖ Specification

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### ❖ Description & Applications

Supershield AP-O is an open arc type wire and suitable for the build up on the part which has high impact and weight or joining build up. It produces an Austenitic weld deposit which has excellent work hardening properties.

(Crusher Rolls & Components, Hammers, Bucket Teeth and Lips.)

### ❖ Welding Process

Open Arc Type

### ❖ Current Type

DC+

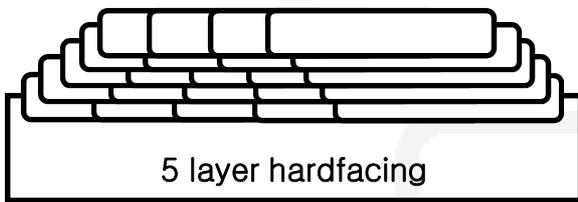
### ❖ Packing

<b>Supershield AP-O</b>	<b>Dia.</b>	1.6mm(1/16in)	2.4mm(3/32in) 2.8mm(7/64in)
	<b>Spool</b>	15kg(33lbs) 20kg(44lbs)	–
	<b>Coil</b>	–	25kg(55lbs)
	<b>Pailpack</b>	–	150kg(330lbs), 250kg(551lbs)



## Mechanical Properties & Chemical Composition of All Weld Metal

### ❖ Welding Conditions



<b>Diameter</b>	: 1.6mm(1/16in)
<b>Welding Type</b>	: Open Arc
<b>Amp./ Volt.</b>	: 270 / 29
<b>Stick-Out</b>	: 25~30mm(0.98~1.18in)
<b>Pre-Heat</b>	: 150~250℃ (302~482°F)
<b>Interpass Temp.</b>	: 200~300℃ (392~572°F)
<b>Total layers</b>	: ≥4 layer

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

Consumable	C	Si	Mn	Cr
Supershield AP-O	0.45	0.30	17.5	14.0

### ❖ Hardness test of the weld metal(HRc)

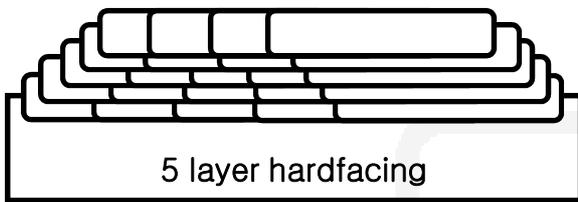
Consumable	Hardness(HRc)					Avg.
Supershield AP-O (As Welded)	22	22	23	23	24	23
Supershield AP-O (Work Hardening)	42	44	45	47	47	45

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 & Chemical Composition of All Weld Metal

### ❖ Welding Conditions



5 layer hardfacing

<b>Diameter</b>	: 2.4mm(3/32in)
<b>Welding Type</b>	: Open Arc
<b>Amp./ Volt.</b>	: 380 / 28
<b>Stick-Out</b>	: 25~30mm(0.98~1.18in)
<b>Pre-Heat</b>	: 150~250℃ (302~482°F)
<b>Interpass Temp.</b>	: 200~300℃ (392~572°F)
<b>Total layers</b>	: ≥4 layer

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

Consumable	C	Si	Mn	Cr
Supershield AP-O	0.48	0.48	18.5	14.3

### ❖ Hardness test of All weld metal(HRc)

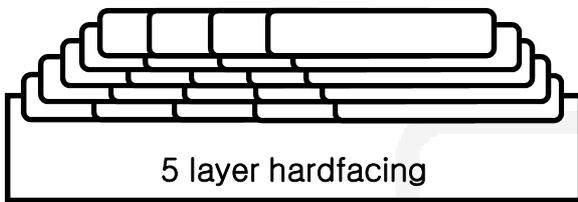
Consumable	Hardness(HRc)					Avg.
Supershield AP-O (As Welded)	22	22	23	24	24	23
Supershield AP-O (Work Hardening)	43	43	44	47	48	45

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## Mechanical Properties & Chemical Composition of All Weld Metal

### ❖ Welding Conditions



5 layer hardfacing

<b>Diameter</b>	: 2.8mm(7/64in)
<b>Welding Type</b>	: Open Arc
<b>Amp./ Volt.</b>	: 380 / 29
<b>Stick-Out</b>	: 25~30mm(0.98~1.18in)
<b>Pre-Heat</b>	: 150~250℃ (302~482°F)
<b>Interpass Temp.</b>	: 200~300℃ (392~572°F)
<b>Total layers</b>	: ≥4 layer

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

Consumable	C	Si	Mn	Cr
Supershield AP-O	0.50	0.45	18.2	14.0

### ❖ Hardness test of All weld metal(HRc)

Consumable	Hardness(HRc)					Avg.
Supershield AP-O (As Welded)	22	23	23	23	25	23
Supershield AP-O (Work Hardening)	45	45	47	46	48	46

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## Test Results

### ❖ BEAD APPEARANCE

<b>Consumable</b>	Supershield AP-O (1.6mm, 1/16in)
<b>Amp.(A)</b>	260~280
<b>Volt.(V)</b>	28~30
<b>Carrige Speed</b>	40~60cm/min(15.7~23.6in/min)
<b>Welding Position</b>	Flat(1G)



<b>Consumable</b>	Supershield AP-O (2.8mm, 7/64in)
<b>Amp.(A)</b>	370~390
<b>Volt.(V)</b>	27~29
<b>Carrige Speed</b>	40~60cm/min(15.7~23.6in/min)
<b>Welding Position</b>	Flat(1G)



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