



## DUROXITE® AP WIRE

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#### General Product Description

Duroxite® AP WIRE is a gas shielded flux cored all positions hardfacing wire for components experiencing metal-to-metal wear, metal-to-earth wear, impact and high abrasion applications. The deposit offers a good balance of impact and abrasion resistance. Deposits are forgeable but not readily machinable. The wire has been developed to operate in a smooth semi-spray transfer mode whilst welding in all positions. Duroxite® AP WIRE can be applied to carbon, low alloy, manganese and other steels substrates. The deposited overlay is magnetic on carbon and low alloy steels but not on manganese steels. Duroxite® AP WIRE is suitable for single and multiple-layer up to three layers deposit.

#### Key Benefits

- Duroxite® AP WIRE is a hardfacing wire for all positions welding.
- The Duroxite® AP WIRE deposited overlay consists of medium alloy martensite for good abrasion and impact resistance.

#### Typical Applications

Duroxite® AP WIRE has many applications where moderate/high impact and high abrasion wear conditions prevail.

Examples: Bucket teeth, tillage tools, bucket lips, bucket sides, cutting edges, sand dredge equipment, dragline buckets, conveyor chutes, grizzly bars, screw flights, metal shredders, sliding metal parts, tire shredder knives, extruder screws, tamper feet, churn drills, muller tires. Especially applicable for all-positional welding and re-instating of hardfacing sealing runs on clad wear plate fabrications.

#### Standard Dimensions

Standard Diameters	Metric	Imperial
	1.6 mm	1/16"

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## Mechanical Properties

### Typical all-weld metal analysis (Weight %)

Diameter Metric	Diameter Imperial	C	Mn	Si	Cr	Mo	Fe
1.6 mm	1/16"	0.5	1.3	0.6	7.0	0.6	Balance

### Typical all-weld metal surface hardness <sup>1)</sup>

Hardness: 2-layer deposit on mild steel: 55 to 59 HRC

Hardness: 3-layer deposit on mild steel: 56 to 60 HRC

<sup>2)</sup> Surface hardness is measured on machined flat surface just below overlay surface.

## Welding recommendations

### Welding conditions

Current type	Shielding gas	Welding positions
DCEP (Direct current electrode positive)	75% Ar + 25% CO <sub>2</sub> gas mixtures	All Positions including flat, horizontal, vertical, overhead

### Welding parameters recommendations

Diameter		Amperage (A)		Voltage (V)		Stick-out			
						Range		Optimum	
Metric	Imperial	Range	Optimum	Range	Optimum	Metric	Imperial	Metric	Imperial
1.6 mm	1/16"	170–275	220	24–30	28	12 mm–19 mm	1/2"–3/4"	20 mm	3/4"

Recovery: 95%

## Delivery Conditions

Standard package	Diameter		Weight	
Type	Metric	Imperial	Metric	Imperial
Spool	1.6 mm	1/16"	15 kg	33 lbs

## Fabrication and Other Recommendations

The welded overlay components can be processed by welding, cutting, forming and machining. Specific recommendations can be found in the Duroxite® Product brochure or by consulting your local technical support representative.

## Safety precautions

When welding or cutting Duroxite® products, smoke is produced containing harmful fumes and gases that are chemically highly complex and difficult to easily classify. The major toxic component in the fumes and gases produced in the process is hexavalent chromium. The proper exhaust ventilation equipment and fume-extraction torches are recommended, as well as suitable protective clothing and respiratory protection for operators.