

A Premium Metal Cored, Gas-Shielded Wire for Exceptional  
Resistance to Severe Abrasion

# EnDotec® DO\*611



## WIRE

- Specialized cast carbides provide exceptional resistance to extreme abrasive wear
- Retain properties in hot and high corrosion environments
- High deposition rates decrease labor costs



## DESCRIPTION:

Endotec DO\*611 is an exceptional alloy against abrasive wear and low impact in hot and/or corrosive environment. The high density of Macrocrystalline Tungsten Carbides (MTC) in a low-alloy solution reinforced nickel matrix makes DO\*611 last approximately 3 times longer than other fused coatings with high carbide content.

The specialized production method of the MTC reduces the tendency of carbides to dissolve at high temperatures making DO\*611 ideal in applications where contact with warm abrasive media over long periods is necessary.

## TECHNICAL DATA:

Typical Hardness as-deposited (1 pass): HRC 55  
Typical MTC Hardness: HV 2100  
Power Source Type: Constant voltage & Integrated Wire Drive  
Current & Polarity: DC (+) electrode positive

## TYPICAL APPLICATIONS & INDUSTRIES:

### APPLICATIONS

- Dozer end-bit
- Asphalt mixers
- Pug mill augers
- Bag packer screws
- Pipe bends
- Bucket lips
- Drill collars
- Ash handling units
- Slag breakers
- Anvil knives

### INDUSTRY

Earthmoving  
Road Construction  
Brick & Clay  
Cement  
Mining  
Dredging  
Petroleum  
Coal Fired Utilities  
Steel  
Logging & Lumber

## TYPICAL WELDING PARAMETERS

1/16" (1.6MM)	VOLTAGE	AMPERAGE	STICK-OUT	SHIELDING GAS	FLOW RATE
Short Arc	19-24	120-180	1/2" ± 3/4" (Long nozzle)	1st: 98% Ar+2% O <sub>2</sub>	35-40 SCFH
				2nd: 99% Ar+1% O <sub>2</sub>	

## PROCEDURE FOR USE:

**Caution:** Although a 2-roll wire drive assembly will work the optimum for maintaining arc voltage stability and consistent & smooth wire feeding is a serrated 4-roll drive assembly. Smooth drive rolls are not recommended!

**Step 1:** Remove all "old" cracked or spalled weld metal down to a sound base.

**Step 2:** Endotec DO\*611 should only be used for a maximum of 2 passes. Depending on the severity of any build-up necessary a 'base coat' or 'buffer layer' of 2 to 3 passes of a dilution tolerant filler metal such as Endotec DO\*68S or for manganese steels, Endotec DO\*05, is common and recommended

**Step 3:** Preheat the part to be hardfaced depending on its air hardenability potential and/or carbon level. For most constructional steels a nominal preheat of 150°F is suggested, and for medium alloy steels, ~250°F.

**Note 3:** Do not heat high manganese steels such as Hadfield Castings!

**Step 4:** After checking that the welding conditions are optimal by testing on scrap metal, position the gun head at a 70-80° angle and use a "push" technique for downhand welding. For fully automated welding such as hardfacing cement crusher rolls, the wire should exit at about a 10° lagging angle from top dead center. Using this technique will assure a smooth and regular weld deposit profile with the optimum level of fusion and deposit integrity.

**Note 4:** If welding is interrupted and the part being welded cools to room temperature, make sure to reheat to the original preheat temperature. For hardenable steels slow cooling is advised using silicone blankets, vermiculite, or other environmentally suitable heat-retardant material.

**Step 5:** For most applications, other than a superficial grind, finishing is not required. If some level of profiling is needed, grinding can be used for more precise shaping. In other cases the use of either arc- or plasma cutting would be suitable.

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