

Gas Shielded, Peripheral Continuous Electrode for Semi-Automatic  
and Automatic Robotic Welding

# EnDotec® DO\*04



## WIRE

- Hardness obtained with first pass and maintained to maximum service temperature of 1020°F (550°C)
- Excellent corrosion and oxidization resistance at temperatures up to 1200°F (650°C)
- Excellent metal-to-metal friction resistance
- Ideal for use as cladding with no risk of cracking
- Excellent creep resistance
- Good scaling resistance



## DESCRIPTION:

Exclusive, gas shielded, metal cored alloy wire ideal for maintenance and repair applications or batch manufacturing where the highest integrity welding, efficiency and productivity are required. The slag-free deposit is of the martensitic stainless steel type with hardness increased through precipitation (structural hardening). On stainless steels and alloys with high nickel content, structure and hardness depend on dilution. Highly alloyed with controlled additive amounts, this alloy composition offers the following advantages...

- Hardness obtained with first pass and maintained to max working temperature 1020°F (550°C)
- Excellent corrosion and oxidation resistance at temperatures up to 1200°F (650°C)
- Excellent metal-to-metal friction resistance
- Ideal for use as cladding with no risk of cracking
- Exceptional positional weldability
- Low heat input for low dilution
- Good corrosion resistance in high temperature gaseous media: Combustion chambers, diesel engines, valves.
- Good corrosion resistance in saline environment, with cavitation resistance
- No buttering layer necessary when coating heat-resistant steels of CrMo/CrMoV type
- Unique peripheral arc characteristics
- Maximized weld metal recovery
- Regular bead profile, virtually spatter free
- Wide parameter range
- Faster deposition rates for reduced labor costs

## TECHNICAL DATA:

### MECHANICAL PROPERTIES

Typical hardness after welding: 48 HRC  
Typical hardness after quenching: 51 HRC  
Typical hardness after annealing: -38- HRC

### HEAT TREATMENT

Quenching temperature: 1900°F (1040°C)  
Stress relief annealing 2x2 hours at 1380°F (750°C)

### SHIELDING GAS

Recommended: 100% Argon  
Alternative: 95% Ar + 5% CO<sub>2</sub>  
Flow rate: 35 scfh (16 L/min)

## PROCEDURE FOR USE:

### EQUIPMENT

EnDotec continuous electrodes are compatible with most conventional, constant voltage power sources. Models with programmable, pulsed arc, metal transfer modes offer optimal performance. Eutectic Corporation recommends using wire drive systems using 4 feed rollers - smooth rollers for 0.045" (1.2mm) diameter and knurled rollers for 1/16" (1.6mm) diameter - as well as polyamide liners.

### PREPARATION

Remove old welding deposits and worn metal completely with ChamferTrode.

### PREHEATING

Preheating depends on the steel's carbon equivalent and the workpiece size, thickness and geometry. Eutectic recommends...

CE<0.2: Preheat not necessary

CE 0.2-0.4: Preheat 210° - 390°F (100-200°C)

CE 0.4-0.8: Preheat 390° - 660°F (200-350°C)

*NOTE that 12-14% Mn steels should never be preheated and the workpiece temperature during welding should be kept below 480°F (250°C).*

### WELDING PARAMETERS

Current: DCEP (+)

	Diameter	Voltage	Amperage
Short Arc	0.045" (1.2mm)	15-20	80-200
Transfer Mode	1/16" (1.6mm)	19-27	150-300
Spray Arc	0.045" (1.2mm)	26-28	230-300
Transfer Mode	1/16" (1.6mm)	27.5-33	250-400

### WELDING TECHNIQUE

For multi-pass, downhand coating push the electrode down the workpiece at an angle of 70/80° to ensure optimum fusion.

## TYPICAL APPLICATIONS

- Rods for hot extrusion profiles
- Feed rolls
- Sizing mandrels
- Hot working dies
- Clipping beds
- Furnace components
- Valve seats and heads
- Curving tram lines
- Blow out preventers (BOP)
- Dies
- Continuous casting guide tables

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EUTECTIC CORPORATION  
N94 W14355 Garwin Mace Drive  
Menomonee Falls, WI 53051 USA  
Tel.: +1 (800) 558-8524  
eutectic.com

EUTECTIC CANADA  
428, rue Aimé-Vincent  
Vaudreuil-Dorion, Québec  
J7V 5V5 Canada  
Tel.: +1 (800) 361-9439  
eutectic.ca

