

# RepTec Cast 31

## Repair electrode

### Classification

AWS A5.15-90 : ENiFe-CI  
ISO 1071-01 : E C NiFe-CI 1

### General description

Electrode for repair welding of cast iron, malleable cast iron and cast iron to steel

The nickel-iron weld deposit is easily machineable

Particularly applicable for nodular cast iron

Hardness weld deposit ~ 180 HB

Excellent current carrying capacity cause bi-metal core wire

Welding on AC and DC- polarity

Best choice welding DC electrode -

### Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3G up PG/3G down PE/4G PG/5G down

### Current type

AC / DC electr. -

### Chemical composition (w%), typical, all weld metal

C	Fe	Ni
0.7	45	balance

### Mechanical properties, all weld metal

Condition	0.2% Proof strength (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Hardness HB10
Required: AWS A5.15-90	296-434	400-579	6-18	165-218
ISO 1071-01	250	350	6	
Typical values AW	300	460	12	180

### Packaging, available sizes and identification

Diameter (mm)	2.5	3.2	4.0	
Length (mm)	300	350	400	
Unit: PE tube	Pieces / unit (nominal)	154	82	47
	Net weight unit (kg)	2.5	2.5	2.5

### Identification

Imprint: RepTec Cast 31

Tip colour: black

RepTec Cast 31: rev. EN 15

**LINCOLN**  
**ELECTRIC**

**Liability:** All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

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## Materials to be welded

Material grades	DIN 1691	DIN 1692	DIN 1693
For welding and repair	GG10	GTS-35-10	G GG-40
	GG15	GTS-45-06	G GG-50
	GG20	GTS-55-4	G GG-60
	GG25	GTW-35-04	
	GG30	GTW-40-05	
	GG35	GTW-45-07	
		GTW-S-38-12	

## Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. current - (s)*	Energy E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
2.5 x 300	70 - 100	DC-	124	211	0.32	19.1	91	1.72
3.2 x 350	90 - 150	DC-	123	328	0.62	29.4	47	1.37
4.0 x 400	100 - 180	DC-	168	714	0.74	55.7	30	1.45

\* stub end 35mm

## Welding parameters, optimum fill passes

Welding positions Diameter (mm)	PA/1G Current (A)	PB/2F	PC/2G	PF/3G up	PE/4G
2.5	80	80	80	80	80
3.2	110	110	110	110	110
4.0	150	160	160	150	150

## Application advice

Residual stresses are decreased by peening after each layer

Cold welding, interpass temperature ( $T_i < 100^\circ\text{C}$ )

Heavy parts preheat (to max.  $300^\circ\text{C}$ )