

Repair electrode

Classification

AWS A5.15 : ENI-CI
ISO 1071 : EC Ni-CI 1

General description

Ni-electrode for repair welding of lamellar cast iron, malleable cast iron and cast iron to steel
Produces a soft malleable weld deposit
Hardness weld deposit ~ 175 HB
Preferable welding on DC-, gives pulsed arc welding, deep penetration, smooth surface, no lack of fusion
Welding on AC, lowest heat input, important at filling
Best choice for multilayer welding

Welding positions



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

Current type

AC / DC + / -

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

C	Fe	Ni
0.7	2.0	97

Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Hardness HB10
Required: AWS A5.15		262-414	276-448	03-6	135-218
ISO 1071		200	250	3	
Typical values	AW	270	445	8	175

Packaging and available sizes

	Diameter (mm)	2.5	3.2	4.0
	Length (mm)	300	350	400
Unit: PE tube	Pieces / unit	146	76	44
	Net weight/unit (kg)	2.5	2.5	2.5
Unit: Linc Pack	Pieces / unit	58	30	18
	Net weight/unit (kg)	1.0	1.0	1.0

Identification

Imprint: REPTec CAST 1

Tip Color: black

RepTec Cast 1: rev. EN 21

Materials to be welded

Steel grades	DIN1691	DIN 1692	DIN 1693
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For welding and repair

GG 10	GTS-35-10	G GG-40
GG 15	GTS-45-06	G GG-50
GG 20	GTS-55-4	G GG-60
GG 25	GTW-35-04	
GG 30	GTW-40-05	
GG 35	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	50 - 100	DC-	176	268	0.24	19.1	84	1.61
3.2 x 350	70 - 130	DC-	145	303	0.48	32.6	52	1.52
4.0 x 400	90 - 150	DC-	262	647	0.55	56.7	25	1.41

* stub end 35 mm

Welding parameters, optimum fill passes

Welding positions Diameter (mm)	PA/1G	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up
2.5	70A	70A	70A	70A	70A	
3.2	100A	100A	100A	80A	80A	
4.0	120A	120A	120A	110A	110A	

Remarks/ Application advice

Residual stresses are decreased by peening after each layer

Cold welding, interpass temperature (Ti<100°C)

Heavy parts preheat (to max. 300°C)