



## CAST IRON

## SPECTRUM

### Applications

High nickel alloy electrode for joining thin sections of grey cast iron. Applications include engine blocks, cracked motor end covers, filling of holes, water jackets, slide ways, cylinder heads etc.

### Technical data

Current:- AC/DC (-)  
Tensile strength:-> 415 N/mm<sup>2</sup>  
Elongation -: 30%  
Machinability -: Excellent

**SPECTRUM  
8**

### Features and benefits

- \* Outstanding tensile strength and elongation.
- \* Easily Machinable deposit, transition zone can be filed.
- \* Minimum base metal dilution.
- \* Stable intense arc, no spatter.
- \* Ideal for thin sections.

### Applications

All position pure nickel core wire electrode for joining grey alloyed & malleable cast iron, applications include alloy cast iron housings grey/malleable castings, frames, etc.

### Technical data

Current -: AC/DC (-)  
Tensile strength:-> 455 N/mm<sup>2</sup>  
Machinability:- Excellent

**SPECTRUM  
8 C**

### Features and benefits

- \* Excellent tensile strength.
- \* Stable and intense arc for edge build up.
- \* Easily machinable deposit.
- \* Exceptional weldability in all positions.

### Applications

All position electrode welds on grey and malleable cast iron and cast steels. Applications include Rectifying casting defects in new castings, joining dissimilar sections etc.

### Technical data

Current:- AC/DC (-)  
Tensile strength:-> 410 N/mm<sup>2</sup>  
Machinability:- Excellent

**SPECTRUM  
8 Ko**

### Features and benefits

- \* Weld metal Ni-Cu base
- \* Perfect, spatter free flow with easy slag removal.
- \* Close colour match to cast iron.
- \* Suitable for joining dissimilar thickness.
- \* Machinable welds.
- \* All position welding.

### Applications

All position electrode for joining, surfacing and buttering of grey and malleable castings. Applications include pump bodies, pulleys, large and thick sections of grey malleable castings etc.

### Technical data

Current -: AC/DC (-)  
Tensile strength:-> 415 N/mm<sup>2</sup>  
Elongation -: 30%  
Machinability:- Excellent

**SPECTRUM  
8 SPL**

### Features and benefits

- \* Pure nickel core wire.
- \* Outstanding tensile strength with high ductility.
- \* Weld metal-Ni with Si, Mn and Cu additions.
- \* Especially suited for thick sections.
- \* Excellent machinability.

### Applications

Cast iron electrode with addition of manganese. Suitable for filling pipe cavities and for building up on worn grey cast iron workpieces, also as first pass when joining badly oiled cast iron parts etc.

### Technical data

Current:- AC/DC (-)  
Tensile strength:-> 415 N/mm<sup>2</sup>

**SPECTRUM  
88 H**

### Features and benefits

- \* Outstanding tensile strength and elongation.
- \* Minimum base metal dilution.
- \* Stable intense arc without spatter.
- \* No undercutting.



## Applications

This electrode is recommended for welding of cast iron components and cast iron to steel. Applications include defect in foundaries, repairing of engine blocks, housings, gear boxes, pump bodies cast pieces, valve bodies etc.

## Technical data

Current:- AC/DC (+)  
Tensile strength:-> 435 N/mm<sup>2</sup>

**SPECTRUM  
CI**

## Features and benefits

- \* Versatile electrode.
- \* Good bonding and flow of the weld metal.
- \* Deposits are machinable.
- \* Low operating current avoids distortion.
- \* Welds in all positions.
- \* Suitable for thin and thick sections.

## Applications

All position electrode for repairing poorly weldable cast iron and for wear resistant build up on solid castings. Applications include dirty castings, ash slurry pumps, machine frames, gear boxes etc.

## Technical data

Current:- AC/DC (+)  
Tensile strength:-> 385 N/mm<sup>2</sup>  
Machinability -: By grinding

**SPECTRUM  
81**

## Features and benefits

- \* Spray type alloy for sealing oily, dirty greasy C.I. Surface.
- \* Non-machinable deposit.

## Applications

Low heat input electrode for all grades of cast iron and joining cast iron to steels. Applications include grey, malleable, nodular, S.G. Iron, castings, greasy castings, housings etc.

## Technical data

Current:- AC/DC (+)  
Tensile strength:- 440 N/mm<sup>2</sup>  
Machinability:- Very good

**SPECTRUM  
84 FN**

## Features and benefits

- \* High tensile strength.
- \* Good weldability on dirty cast iron.
- \* Heat affected zone remaining soft.
- \* Suitable for thin & thick sections.
- \* Fe-Ni type deposit.

## Applications

Universal electrode for high strength joining of all weldable cast iron specially ductile cast iron and cast iron to low alloy steels. Applications include gear box castings generator housings, Compressor bodies, Differential housings etc.

## Technical data

Current -: AC/DC (+)  
Tensile strength:-> 490 N/mm<sup>2</sup>  
Elongation -: 30%

**SPECTRUM  
85 FN**

## Features and benefits

- \* Excellent blend of tensile strength and ductility.
- \* Fe-Ni type deposit.
- \* Good deposition efficiency.
- \* Maximum resistance to cracking.
- \* Suitable for joining dissimilar thickness.
- \* Good machinability.

## Applications

Universal electrode for high strength joining of all weldable cast iron specially ductile cast iron and cast iron to low alloy steels. Applications include gear box castings generator housings, Compressor bodies, Differential housings etc.

## Technical data

Current -: AC/DC (+)  
Tensile strength:-> 490 N/mm<sup>2</sup>  
Elongation -: 30%

**SPECTRUM  
85 FNHR**

## Features and benefits

- \* Excellent tensile strength and ductility.
- \* Good resistance to cracking.
- \* Good deposition efficiency.
- \* Fe-Ni type deposit.
- \* Easily machinable.



## Applications

Versatile nickel base alloy for nuclear fabrication of nickel base materials, 9% nickel steel used for cryogenic service upto - 196°C. Dissimilar joining of austenitic steels to ferritic steels. Weld cladding on unalloyed & alloyed steels etc.

## Technical data

Current -: DC (+)  
Tensile strength-: > 620 N/mm<sup>2</sup>  
Elongation -: > 35%

### SPECTRUM 7015

## Features and benefits

- \* Reactor grade alloy with controlled Co content.
- \* Fully austenitic weld metal free from hot cracking & embrittlement either at high or low temperatures.
- \* Stable arc, easy slag removal.
- \* The bead is finely rippled and free from undercuts.

## Applications

Versatile, nickel base alloy for joining and surfacing of high temperature resistant nickel base alloys, cryogenic steels and joining austenitic steels to ferritic steels.

## Technical data

Current-: DC (+)  
Tensile strength-: > 620 N/mm<sup>2</sup>  
Elongation -: >35%

### SPECTRUM 7015 Mo

## Features and benefits

- \* Reactor grade alloy with controlled Co content.
- \* Fully austenitic weld metal resistant to hot cracking & embrittlement.
- \* Weld metal retains toughness even after exposure to temperatures upto 850°C for more than 10,000 hrs.
- \* Weldable in all positions except vertical down.
- \* Easy slag removal.
- \* The bead is finely rippled and free from under cutting.

## Applications

Special nickel electrode for welding components in plants for chemical processes with highly corrosive media but also for surfacing press tools, Punches etc. which operate at high temperatures.

## Technical data

Current -: AC/DC (+)  
Tensile strength-: > 690 N/mm<sup>2</sup>  
Elongation -: 30%

### SPECTRUM 704 Kb

## Features and benefits

- \* Steady easily controllable spatter free flow.
- \* High resistance to heat and corrosion.
- \* Easy slag removal.
- \* Weld metal is machinable.
- \* High deposition efficiency.
- \* Exceptional resistance to mineral acids and chlorine media.
- \* Suitable for building up edges.

## Applications

Basic coated pure nickel electrode uses primarily in the construction of pressure vessels and apparatus in the chemical industry, in the food stuffs industry and power generation where good behaviour under corrosion and temperature is demanded.

## Technical data

Current -: AC/DC (+)  
Tensile strength-: > 450 N/mm<sup>2</sup>  
Elongation -: 30%

### SPECTRUM 80 Ni

## Features and benefits

- \* Basic coated nickel electrodes.
- \* Outstanding tensile strength and elongation.
- \* Pressure tight weldments.
- \* No undercuts, no spatter on DC generator.
- \* Suitable for pressure vessels and apparatus in chemical industry.

## Applications

A medium heavy coated monel electrode of basic type suitable for joining and surfacing of nickel-copper alloys and of nickel-copper clad steels. Applications include high grade apparatus construction, primarily for the chemical and petro-chemical industries and Fabrication of seawater evaporation plants and marine equipments.

## Technical data

Current -: AC/DC (+)  
Tensile strength-: > 450 N/mm<sup>2</sup>  
Elongation -: 30%

### SPECTRUM 80 M

## Features and benefits

- \* Basic coated type electrode.
- \* Nickel copper type deposit.
- \* Good weldability in all positions except vertical down.
- \* Smooth stable arc.
- \* The weld metal withstands sea water corrosion.



## Applications

An oxygen less AC/DC cutting electrode for cutting and piercing all metals using standard arc welding equipment. Applications include removal of bolts, rivets, old weld metal, gates and risers etc.

## Technical data

Current -: AC/DC (-)

### SPECTRUM 82

## Features and benefits

- \* Versatile-cuts through any metal.
- \* Well directed, concentrated arc force.
- \* Low heat input into base metal.
- \* Slow burn-off rate.
- \* All position electrode.

## Applications

Special manual electrode for cutting and piercing of nickel and nickel alloy plates in all positions etc.

## Technical data

Current -: AC/DC (-)

### SPECTRUM 82 N

## Features and benefits

- \* Versatile cuts through any metal specially nickel and nickel alloy plates.
- \* Well directed, concentrated arc force.
- \* Low heat input into base metal.
- \* Slow burn-off rate.
- \* All position electrode.

## Applications

For chamfering and grooving with electric arc. No air or oxygen needed. A highly heat resistant electrode with exothermic coating and concentrated arc force right at the point of application, for chamfering, gouging and removal of old, worn or cracked metal plus correction of casting defects etc.

## Technical data

Current -: AC/DC (-)

### SPECTRUM 82 AS

## Features and benefits

- \* Specially formulated coating concentrates arc force.
- \* Fast metal removal.
- \* Minimum heat input into base metal.
- \* Burns up impurities, degreases metal leaving it metallurgically clean.
- \* All position electrode.
- \* No finishing operation required.

## Applications

Special manual electrode for rapid cutting and piercing of all metals in all positions. Applications include removal of bolts, rivets, old weld metal, gates and risers etc.

## Technical data

Current -: AC/DC (-)

### SPECTRUM 28

## Features and benefits

- \* Versatile-cuts through any metal.
- \* Well directed, concentrated arc force.
- \* Low heat input into base metal.
- \* Slow burn-off rate.
- \* All position electrode.

## Applications

Special manual electrode for chamfering, gouging and removal of old, worn or cracked metal plus correction of casting defects etc.

## Technical data

Current -: AC/DC (-)

### SPECTRUM 28 A

## Features and benefits

- \* Specially formulated coating concentrates arc force.
- \* Fast metal removal.
- \* Minimum heat input into base metal.
- \* Burns up impurities, degreases metal leaving it metallurgically clean.
- \* All position electrode.
- \* No finishing operation required.



## Applications

Special tin-bronze manual electrode for joining similar phosphor bronzes, bronze to steel or cast iron. Application include bronze impellers pump housing bushes.

## Technical data

Current -: DC (+)  
Tensile strength-: 300-345 N/mm<sup>2</sup>  
Elongation -: 34%

**SPECTRUM  
32**

## Features and benefits

- \* Excellent weldability in all positions.
- \* Versatile electrode for copper alloys and steels.
- \* Excellent machinability.
- \* Low co-efficient of friction.
- \* Porosity free dense deposit.

## Applications

Special tin-bronze based manual electrode for joining copper and copper alloys, phosphor and tin bronzes. Applications include magma pump rotor, bronze valves and overlaying on M.S.

## Technical data

Current-: AC/DC (+)  
Tensile strength-: 300-345 N/mm<sup>2</sup>  
Elongation -: 34%

**SPECTRUM  
32 W**

## Features and benefits

- \* All position weldability.
- \* Versatile electrode for copper alloys and steels.
- \* Easily machinable.
- \* Low coefficient of friction.
- \* Colour match to Bronze.

## Applications

Basic coated copper electrode for joining and surfacing of all commercial pure copper grades, and copper nickel alloys. Applications include joining of electrical copper electrodes used-in furnaces, for joining copper to steel bars in electrically treated drive ways.

## Technical data

Current -: DC (+)  
Tensile strength-: 200 N/mm<sup>2</sup>

**SPECTRUM  
39**

## Features and benefits

- \* Basic coated electrodes for welding pure copper grades.
- \* The deposit is free of porosity.
- \* Deposit gives a tensile strength similar to that of most commercial copper types.
- \* It can be used for joining copper to steel bars.

## Applications

Basic coated electrode for welding different pure copper grades & Copper-Nickel alloys in some cases too. Also used for dissimilar joining & surfacing. For joining of electrical copper electrodes used in Furnaces, for joining copper to Steel bars in Electrically heated drive ways.

## Technical data

Current -: AC/DC (+)  
Hardness: 60 HB

**SPECTRUM  
110**

## Features and benefits

- \* Deposit is free of porosity.
- \* Tensile strength similar to that of the most commercial Cu types.
- \* It can be used for joining copper to steel bars.
- \* Versatile electrode