

# Innershield® NR®-203 NiC

## Self-shielded cored wire

### Classification

AWS A5.29-98 : E61T8-K6

### General description

Self shielded: easiest equipment arrangement

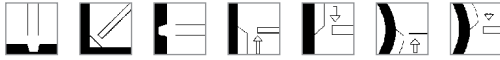
All position welding

Easy to weld in vertical up position

All passes

Good impact and CTOD toughness

### Welding positions



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

### Current type

DC -

### Approvals

|     |          |       |
|-----|----------|-------|
| ABS | DNV      | LR    |
| 3SA | IIIMSH15 | 3SH15 |

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

| C    | Mn   | Si   | P     | S     | Ni   | Cr   | Al   | V    | Mo   |
|------|------|------|-------|-------|------|------|------|------|------|
| 0.06 | 0.83 | 0.05 | 0.004 | 0.003 | 0.57 | 0.08 | 0.73 | <0.1 | <0.1 |

### Mechanical properties, all weld metal

|                | Condition    | Yield strength<br>(N/mm <sup>2</sup> ) | Tensile strength<br>(N/mm <sup>2</sup> ) | Elongation<br>% | Impact ISO-V(J)<br>-29°C |
|----------------|--------------|--|--|-----------------|--------------------------|
| Required:      | AWS A5.29-98 | min. 340                               | 410-550                                  | 22              | 27                       |
| Typical values | AW           | 400                                    | 490                                      | 29              | 95                       |

### Packaging and available sizes

| Unit type | Net weight/unit<br>(kg) | Diameter (mm) |
|-----------|-------------------------|---------------|
| Coils 14C | 6.35                    | X             |
| Coils 50C | 22.68                   | X             |

Innershield® NR®-203 NiC: rev. EN 15

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## Suggestions for use

For mild and higher strength steel not exceeding the yield strength range  
 Roundabout groove welds, especially for large diameter heavy tubular constructions  
 General plate fabrication, including bridge construction, hull plate and stiffener welding on ships and barges, offshore

## Materials to be welded

| Steel                          | Code                      | Type                                    |
|--------------------------------|---------------------------|---|
| General structural steel       | EN 10025                  | S185, S235, S275, S355                  |
| Ship plates                    | ASTM A131                 | Grade A, B, D, AH32 to DH36             |
| Cast steel                     | EN 10213-2                | GP240R                                  |
| Pipe material                  | EN 10208-1                | L210, L240, L290, L360                  |
|                                | EN 10208-2                | L240, L290, L360                        |
|                                | API 5LX                   | X42, X46, X52                           |
|                                | EN 10216-1/<br>EN 10217-1 | P235T1, P235T2, P275T1<br>P275T2, P355N |
|                                | EN 10028-2                | P235GH, P265GH, P295GH, P355GH          |
| Boiler & pressure vessel steel | EN 10113-2                | S275, S355                              |
| Fine grained steel             | EN 10113-2                | S275, S355                              |
|                                | EN 10113-3                | S275, S355                              |

## Calculation data at normal setting

| Diameter<br>(mm) | Electrical<br>Stick-out (mm) | Wire feed speed |        | Current<br>(approx. A) | Arc Voltage<br>(V) | Deposition<br>Rate (kg/h) | kg Wire/<br>kg Weldmetal |
|------------------|------------------------------|-----------------|--------|------------------------|--------------------|---------------------------|--------------------------|
|                  |                              | inch/min        | cm/min |                        |                    |                           |                          |
| 2.0              | 19                           | 50              | 125    | 145                    | 16                 | 1.10                      | 1.32                     |
|                  |                              | 90              | 230    | 235                    | 20                 | 1.95                      | 1.32                     |
|                  |                              | 110             | 280    | 275                    | 21                 | 2.40                      | 1.32                     |

## Welding parameters, optimum fill passes

| Diameter<br>(mm) | Wire feed speed/<br>Current/<br>Voltage | Welding position |       |                      |                          |       |
|------------------|---|------------------|-------|----------------------|--------------------------|-------|
|                  |   | PA/1G<br>PB/2F   | PC/2G | PF/3G up<br>PF/5G up | PG/5G down<br>PG/5G down | PE/4G |
| 2.0              | (cm/min.)                               | 280              | 230   | 200                  | 200                      | 200   |
|                  | (A)                                     | 275              | 235   | 215                  | 215                      | 215   |
|                  | (V)                                     | 21               | 20    | 19                   | 18                       | 19    |

FCAW