

Innershield® NR®-233

Self-shielded cored wire

Classification

AWS A5.20/A5.20M E71T-8

General description

Self shielded: easiest equipment arrangement

Due to new production technology and formulation: welder friendly wire with wide range of parameter settings

Forgiving arc, with increased penetration gives better quality welds with great bead appearance

High deposition rate, even in out of position welding

Good impact values

NR-233 has been developed to minimize gas marking, even after the electrode has been exposed to the atmosphere

Welding positions



PA/1G



PB/2F



PC/2G



PF/3Gup



PE/4G



PF/5Gup

ISO/ASME

Current type

DC -

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

| C | Mn | Si | P | S | Al |
|------|------|------|-------|-------|------|
| 0.16 | 0.65 | 0.21 | 0.010 | 0.003 | 0.60 |

Mechanical properties, typical, all weld metal

| | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation % | Impact ISO-V(J) -29°C |
|----------------|-----------|--|--|-----------------|--------------------------|
| Required: | AWS A5.20 | min. 400 | 480 | 22 | 27 |
| Typical values | AW | 440 | 570 | 26 | 40 |

Packaging and available sizes

| Unit type | Diameter (mm) | |
|--------------------------------|---------------|-----|
| | 1.6 | 1.8 |
| 5,7kg plastic spool | X | |
| 11,3 kg plastic spool Foil Bag | X | X |

Innershield® NR®-233: rev. EN 21

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

| Steel grades/Standard | Type |
|-----------------------|------|
|-----------------------|------|

General structural steel

| | |
|-----------------|------------------------|
| EN 10025 part 2 | 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 |
|---------|---------------|

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|-------------|------------------------|
| EN 10216-1/ | P235T1, P235T2, P275T1 |
|-------------|------------------------|

| | |
|------------|---------------|
| EN 10217-1 | P275T2, P355N |
|------------|---------------|

Boiler & pressure vessel steel

| | |
|------------|--------------------------------|
| EN 10028-2 | P235GH, P265GH, P295GH, P355GH |
|------------|--------------------------------|

Fine grained steel

| | |
|-----------------|------------|
| EN 10025 part 3 | S275, S355 |
|-----------------|------------|

| | |
|-----------------|------------|
| EN 10025 part 4 | S275, S355 |
|-----------------|------------|

Calculation data at normal setting

| Diameter (mm) | Electrical Stick-out (mm) | Wire feed speed cm/min | Current (approx. A) | Arc Voltage (V) | Deposition Rate (kg/h) | kg Wire/ kg Weldmetal |
|------------------|------------------------------|---------------------------|------------------------|--------------------|---------------------------|--------------------------|
| 1.6 | 13-32 | 380 | 220 | 17-19 | 1.9 | 1.26 |
| | | 510 | 245 | 19-21 | 2.5 | 1.31 |
| | | 640 | 270 | 21-23 | 3.0 | 1.35 |
| | | 760 | 295 | 23-25 | 3.5 | 1.35 |
| | | 890 | 315 | 25-27 | 4.3 | 1.31 |
| 1.8 | 19-25 | 250 | 185 | 17-18 | 1.6 | 1.25 |
| | | 380 | 250 | 18-19 | 2.5 | 1.24 |
| | | 510 | 295 | 20-21 | 3.2 | 1.25 |
| | | 640 | 330 | 22-23 | 4.0 | 1.26 |
| | | 760 | 355 | 23-24 | 4.8 | 1.26 |

Remarks/ Application advice

Vertical up fillet and groove welds
 Overhead fillet and groove welds
 Seismic structural steel erection
 General structural steel erection
 Ship and barge fabrication