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| Technical data sheet 011121MBA | Stainless steel filler metal – Solid wire WA TSS/MSS 307 |  Welding Alloys |
|--|---|---|

CLASSIFICATION

| | |
|-------------------------------|-----------------------|
| ASME IIC SFA 5.9 / AWS A 5.9: | (ER307) modified* |
| EN ISO 14343-A: | W 18 8 Mn / G 18 8 Mn |
| EN ISO 14343-B: | SSZ307 |
| Equivalent material number: | 1.4370 |

*AWS ranges 3.3-4.75% Mn, 19.5 -22.0% Cr and 0.5-1.5% Mo

DESCRIPTION

- GTAW rod / GMAW stainless steel solid wire
- Chromium - nickel - manganese stainless steel deposit
- Resistant to scaling up to 800°C
- Resistant to sigma phase embrittlement
- Work-hardening, crack and thermal shock resistant deposit

APPLICATIONS

- Repair jobs where high strength and toughness combined with work hardening are required.
- Joining austenitic manganese steels to themselves or to other steels.
- Buffer layer on manganese steels, or on hardenable and unknown steels, before hardfacing.
- Maintenance on air hardenable and “hard-to-weld” steels.
- Armour plate.
- Wear and corrosion resistant surfacing on rail and track switch components, valve seats and anti-cavitation build-ups on hydraulic turbines

Examples:

| Alloy | EN Symbol | Material number |
|--------|-----------|-----------------|
| 14% Mn | X120Mn12 | 1.3401 |

TYPICAL WIRE ANALYSIS (weight %)

| C | Mn | Si | Cr | Ni |
|-----|-----|-----|------|-----|
| 0.1 | 6.5 | 0.8 | 19.0 | 9.0 |

Structure: fully austenitic, some delta ferrite is possible (Feritscope)

MINIMUM ALL-WELD METAL MECHANICAL PROPERTIES (GMAW)

| Rm [MPa] | Rp0.2% [MPa] | A5 [%] | CVN [J] |
|----------|--------------|--------|-----------|
| 500 | 350 | 25 | -20°C: 47 |

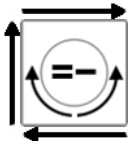
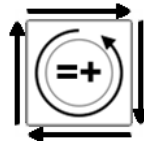
TYPICAL ALL-WELD METAL MECHANICAL PROPERTIES (GMAW)

| Rm [MPa] | Rp0.2% [MPa] | A5 [%] | CVN [J] |
|----------|--------------|--------|------------|
| 630 | 420 | 40 | -20°C: 110 |

Hardness – as welded: 170 HB

Hardness – after cold working: 500 HB

SHIELDING GAS – OPERATING CONDITIONS – WELDING POSITIONS

| GTAW | | GMAW | |
|---|---|---|---|
| Shielding gas according to EN ISO 14175 | Welding positions Current type | Shielding gas according to EN ISO 14175 | Welding positions Current type |
| I1 (100 % argon) |  | M12 mixed gas (Ar + 0.5-5% CO ₂) M13 mixed gas (Ar + 0.5-3% O ₂) |  |

PACKAGING

| Spools | Ø mm | 0.8 | 1.0 | 1.2 | 1.6 |
|--------|------------|-----|-----|-----|-----|
| Rods | Ø x1000 mm | 1.6 | 2.0 | 2.4 | 3.2 |

Other diameters are available on request

Welding products and techniques evolve constantly. All descriptions, illustrations and properties given in this data sheet are subject to change without notice and can only be considered as suitable for general guidance. This document is intended to help the user make the correct choice of product. It is his responsibility to assess its suitability for his intended application.