# MEGAFIL® 731 B

**AWS A5.20: M21: E70T-5M-J H4** | **$CO_2$: E70T-5C-J H4**

**EN ISO 17632-A: M21: T 46 6 B M 3 H5** | **$CO_2$: T 42 4 B C 3 H5**

**WELDING POSITIONS:**

| FEATURES | BENEFITS | APPLICATIONS |
|---|---|---|
| • Basic slag system<br>• Low hydrogen weld deposit<br>• Ideal for use of short arc and spray arc<br>• Excellent low temperature impacts<br>• Low spatter loss<br>• Easy slag removal | • Minimized risk of hydrogen-induced cracking<br>• No re-drying<br>• Provides increased toughness<br>• For high carbon steels and dissimilar welds with critical weldability<br>• For buffer layers | • Automatic and mechanized welding<br>• Steel structures<br>• Heavy fabrication<br>• Severe service<br>• Non-alloy and fine grain steels<br>• Vessels<br>• General fabrication<br>• Single and multi-pass welding<br>• Railroad rails<br>• Earthmoving equipment |

| | |
|---|---|
| **WIRE TYPE** | Gas shielded basic flux-cored wire |
| **SHIELDING GAS** | 75-85% Argon (Ar) / Balance Carbon Dioxid ($CO_2$); 100% Carbon Dioxid ($CO_2$); Gas Flow 12-18 l/min (25-38 cfh) |
| **TYPE OF CURRENT** | Direct Current Electrode Positive (DCEP) |
| **STANDARD DIAMETERS** | Ø 1.0 - 1.6 mm (0.039 - 1/16“) |
| **TYPICAL DIFFUSIBLE HYDROGEN*** | < 3.0 ml / 100 g; Guaranteed for the total processing time < 4.0 ml / 100 g maximum (AWS Spec) |
| **RE-DRYING** | Not required due to seamless wire design. |
| **STORAGE** | The same conditions as for solid wire. Product should be stored in a dry, enclosed environment, in its original undameged packaging |

**Measurement technique is the carrier gas method according to AWS and ISO*

**MATERIALS TO BE WELDED***

| | | |
|---|---|---|
| Shipbuilding steels | | A, B, D, AH 32 - EH 36 |
| Unalloyed structural steels | Rel ≤ 355 MPa | S185 - S355, A 106 Gr.B, A 333 Gr. 6 |
| Boiler steels | Rel ≤ 355 MPa | P235GH - P355GH |
| Pipe steels | Rel ≤ 460 MPa | P235T1/T2 - P460NL2; L210 - L445MB |
| Fine grain structural steels | Rel ≤ 460 MPa | S235 - S460QL1 |
| Steels to API-standard | Rel ≤ 460 MPa | X42 - X60 |

*) The specified base materials are not complete and should only be seen as examples. The selection of the appropriate combination of steel and welding consumable should follow the specific mechanical strength and toughness requirements.

**ALL WELD METAL CHEMESTRY** (%) (typical values for mixed gas 82% Ar / 18% $CO_2$)

| | | | |
|---|---|---|---|
| Carbon ( C ) | 0.05 | Nickel (Ni) | - |
| Manganese (Mn) | 1.4 | Molybdenum (Mo) | - |
| Silicon (Si) | 0.6 | Chromium (Cr) | - |
| Sulphur (S) | 0.015 | | |
| Phosphorus (P) | 0.015 | | |

**ALL WELD METAL MECHANICAL PROPERTIES** (for mixed gas 82% Ar / 18% $CO_2$)

| Mechanical tests | Typical values MPa (ksi) | ISO Specification MPa (ksi) |
|---|---|---|
| Tensile Strength Rm | 600 (87) | 550 - 680 (80 - 99) |
| Yield strength Rp0.2 | 530 (77) | > 460 (67) |
| Expansion A5 | 27% | 22% |

**CHARPY V-NOTCH IMPACT VALUES** (for mixed gas 82% Ar / 18% $CO_2$ and 100% $CO_2$)

| Mechanical Tests | Typical values [J] (ft.lbf) | | ISO Specification [J] (ft.lbf) | |
|---|---|---|---|---|
| | 82% Ar / 18% $CO_2$ | 100% $CO_2$ | 82% Ar / 18% $CO_2$ | 100% $CO_2$ |
| -40 °C | 140 (103) | 100 (74) | > 47 (35) | > 47 (35) |
| -60 °C | 100 (74) | | > 47 (35) | |

**APPROVALS:** TÜV, DB, BV, ABS, DNV Please contact the manufacturer to learn the present scope of approvals