


AlMg 4.5Mn Tig

| CATEGORY | GMAW-GTAW Solid wires | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|---|-------------------------------------|----------------|--|-------------------------------------|--------------------|-------------------------|-------------------------|--------|------------|--------|-------|-------|------------|---------|---------|-----------|------------|--------|------|---------|------------|---------|-------|----|
| TYPE | Tig aluminium welding wire with high corrosion resistance | | | | | | | | | | | | | | | | | | | | | | | | |
| APPLICATIONS | Filler metal for Magnesium and Manganese alloyed Aluminium with a maximum Magnesium content of 5%. This alloy shows very good mechanical properties that make it ideal for applications in shipyards, in car and railway industry and constructions of reservoirs and tanks. | | | | | | | | | | | | | | | | | | | | | | | | |
| PROPERTIES | Excellent weldability and good mechanical strength combined with good corrosion resistance against seawater are typical for this alloy. The weld deposit is free from porosity due to the special shaving process and cleaning method during production. AlMg4,5Mn is one of the highest grades within the range of aluminum alloys and covers a huge range of alloys. Thicker sections should be preheated (150°C) prior to welding. | | | | | | | | | | | | | | | | | | | | | | | | |
| CLASSIFICATION | AWS | A 5.10: ER 5183 | | | | | | | | | | | | | | | | | | | | | | | |
| | EN ISO | 18273:S AL5183 (AlMg4,5Mn0,7(A)) | | | | | | | | | | | | | | | | | | | | | | | |
| | DIN: W.Nr. | 3.3548 | | | | | | | | | | | | | | | | | | | | | | | |
| | DIN | 1732: SG-AlMg4.5Mn | | | | | | | | | | | | | | | | | | | | | | | |
| SUITABLE FOR | Aluminium alloys: AlMg4,5Mn, AlMg5, AlMg2Mn0,8, AlZnMg1, AlZnMgCu0,5, AlMgSi0,5, AlMgSi1, G-AlMg10, G-AlMg5, G-AlMg3Si, G-AlMg5Si, 3.3545, 3.3547, 3.3535, 3.3555, 3.3206, 3.3210, 3.2315, 3.3211, 3.4335, EN AW 5086, EN AW 5083, EN AW 5019, EN AW 5019, EN AW 6060, EN AW 6005A, EN AW 6082, EN AW 6061, EN AW 7020, EN AC 51300, EN AC 51400, | | | | | | | | | | | | | | | | | | | | | | | | |
| APPROVALS | CE approved | | | | | | | | | | | | | | | | | | | | | | | | |
| WELDING POSITIONS: |  | | | | | | | | | | | | | | | | | | | | | | | | |
| CHEMICAL COMPOSITION [%] | <table border="1"> <thead> <tr> <th>Al</th> <th>Mn</th> <th>Si</th> <th>Cr</th> <th>Be</th> <th>Ti</th> <th>Fe</th> <th>Cu</th> <th>Mg</th> <th>Zn</th> <th>other</th> </tr> </thead> <tbody> <tr> <td>rest</td> <td>0.5-1.0</td> <td><0.4</td> <td>0.05-0.25</td> <td>0.0008</td> <td>0.15</td> <td><0.4</td> <td><0.1</td> <td>4.3-5.2</td> <td><0.25</td> <td><0.15</td> </tr> </tbody> </table> | | Al | Mn | Si | Cr | Be | Ti | Fe | Cu | Mg | Zn | other | rest | 0.5-1.0 | <0.4 | 0.05-0.25 | 0.0008 | 0.15 | <0.4 | <0.1 | 4.3-5.2 | <0.25 | <0.15 | |
| Al | Mn | Si | Cr | Be | Ti | Fe | Cu | Mg | Zn | other | | | | | | | | | | | | | | | |
| rest | 0.5-1.0 | <0.4 | 0.05-0.25 | 0.0008 | 0.15 | <0.4 | <0.1 | 4.3-5.2 | <0.25 | <0.15 | | | | | | | | | | | | | | | |
| MECHANICAL PROPERTIES | <table border="1"> <thead> <tr> <th rowspan="2">Heat Treatment</th> <th rowspan="2">R_{p0,2} (N/mm²)</th> <th rowspan="2">R_m (N/mm²)</th> <th rowspan="2">A₅ (%)</th> <th colspan="3">Impact Energy (J) ISO-V</th> <th rowspan="2">T (°C)</th> </tr> <tr> <th>+20°C</th> <th>-40°C</th> <th>-60°C</th> </tr> </thead> <tbody> <tr> <td>AW</td> <td>125-145</td> <td>275-325</td> <td>>16</td> <td>30</td> <td></td> <td></td> <td>565-638</td> </tr> </tbody> </table> | | Heat Treatment | R _{p0,2} (N/mm ²) | R _m (N/mm ²) | A ₅ (%) | Impact Energy (J) ISO-V | | | T (°C) | +20°C | -40°C | -60°C | AW | 125-145 | 275-325 | >16 | 30 | | | 565-638 | | | | |
| Heat Treatment | R _{p0,2} (N/mm ²) | R _m (N/mm ²) | | | | | A ₅ (%) | Impact Energy (J) ISO-V | | | T (°C) | | | | | | | | | | | | | | |
| | | | +20°C | -40°C | -60°C | | | | | | | | | | | | | | | | | | | | |
| AW | 125-145 | 275-325 | >16 | 30 | | | 565-638 | | | | | | | | | | | | | | | | | | |
| AW: as welded | | | | | | | | | | | | | | | | | | | | | | | | | |
| WELDING PARAMETERS / PACKING | <table border="1"> <thead> <tr> <th rowspan="2">D (mm)</th> <th>Welding Parameters</th> <th colspan="2">Packing (kg)</th> </tr> <tr> <th>Current (A) AC</th> <th>single</th> <th>master</th> </tr> </thead> <tbody> <tr> <td>1.6 x 1000</td> <td>25-50</td> <td>5</td> <td>20</td> </tr> <tr> <td>2.0 x 1000</td> <td>40-75</td> <td>5</td> <td>20</td> </tr> <tr> <td>2.4 x 1000</td> <td>90-130</td> <td>5</td> <td>20</td> </tr> <tr> <td>3.2 x 1000</td> <td>160-240</td> <td>5</td> <td>20</td> </tr> </tbody> </table> | | D (mm) | Welding Parameters | Packing (kg) | | Current (A) AC | single | master | 1.6 x 1000 | 25-50 | 5 | 20 | 2.0 x 1000 | 40-75 | 5 | 20 | 2.4 x 1000 | 90-130 | 5 | 20 | 3.2 x 1000 | 160-240 | 5 | 20 |
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| | Current (A) AC | single | master | | | | | | | | | | | | | | | | | | | | | | |
| 1.6 x 1000 | 25-50 | 5 | 20 | | | | | | | | | | | | | | | | | | | | | | |
| 2.0 x 1000 | 40-75 | 5 | 20 | | | | | | | | | | | | | | | | | | | | | | |
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| 3.2 x 1000 | 160-240 | 5 | 20 | | | | | | | | | | | | | | | | | | | | | | |
| REDRYING TEMPERATURE | Not required | | | | | | | | | | | | | | | | | | | | | | | | |
| GAS ACC. EN ISO 14175: | I1 | | | | | | | | | | | | | | | | | | | | | | | | |