

Product

Dissolvable Magnesium Alloy Rod — Grade EM-111

Solid extruded round bar for downhole dissolvable frac plugs — Medium, 2.5–5.0 in (63.5–127 mm)

Product Form & Dimensions

Product form	Solid extruded round bar (rod)
Available diameter	63.5–127 mm (2.5–5.0 in)
Length	Up to 1.0 m (39.4 in)
Density	1.8 g/cm ³ (0.065 lb/in ³)
Indicative weight (1 m bar)	ø90 mm ≈ 11.7 kg (25.8 lb) · ø120 mm ≈ 20.7 kg (45.6 lb)

Mechanical Properties (room temperature, guaranteed minimums)

Property	Metric	Imperial
Tensile strength (long. / transv.)	≥ 305 / ≥ 240 MPa	≥ 44.2 / ≥ 34.8 ksi
Yield strength (long. / transv.)	≥ 225 / ≥ 140 MPa	≥ 32.6 / ≥ 20.3 ksi
Elongation (long. / transv.)	≥ 15% / ≥ 12%	≥ 15% / ≥ 12%
Compressive strength	Part-dependent	Part-dependent

Dissolution

Test method	Static immersion
Test condition	3% KCl @ 38 °C (100 °F)
Dissolution rate	1.06 mg/cm ² ·hr (25.4 MCD)

Quality & Documentation

Certifications	ISO 9001 / ISO 14001 / ISO 45001
Lot documentation	Per-lot mechanical test report + dissolution data, lot-traceable
Test methods	Tensile / yield / elongation per ASTM E8 / ASTM B557M-10
Chemical composition	Proprietary (not disclosed)

Notes

- Mechanical values are guaranteed minimums on the stated orientation; final acceptance values at the specified diameter are confirmed on the certified production lot.
- Compressive strength is governed by finished-part geometry and is not specified on raw bar.
- Dissolution figures are laboratory reference values under the stated condition; performance under the actual service condition (temperature / fluid chemistry) should be validated.