MAXLOCK ERD™ – Low Friction Composite Centralizer designed for ERD wells

The MAXLOCK ERD™ is a low friction, highly abrasion resistant, non-metallic centralizer designed specifically for challenging ERD applications.

The Centralizer comprises 2 half shells which are bonded directly to the tubular, by injecting a modified structural epoxy system into a profiled cavity between part and tubular body, thereby eliminating the need for collars or screw mechanisms.

The installed tool with its staggered upsets, reduce annular restriction and optimize annular fluid bypass. Together with the low friction, low wear Kevlar ceramic surface, the MAXLOCK ERD™ provides significant benefits for ERD and horizontal completions.

The system is field proven and shows excellent results even under very aggressive well conditions.

Main Advantages

Tool bonded directly to the tubular with staggered pads:
- ✓ optimizes fluid bypass
- ✓ reduces peak dynamic pressure by up to 50%
- ✓ avoids build-up of any debris or cuttings present in deviated well bores in front of standard solid body centralizers

Very low friction coefficient, with drag reduction greater than 40%

Best in Class wear resistance 20x improvement over high end thermoplastics

Flexibility of design allows the optimal solution for each situation

Low impact geometry for restrictions / obstructions

Non-metallic, chemically resistant and non-corrosive

Millable and Drillable

Principal Applications

ERD and highly deviated wells

Low friction / low drag properties for long horizontal sections

Utilized for chrome and alloy base tubulars where galvanic corrosion is an issue

System Properties

Technical Properties	Metric Units	U.S. Units
Shear Strength	> 118000 Kgs Ref. 1 Unit 5 1/2" MAXLOCK ERD™	> 261000 Lbs Ref. 1 Unit 5 1/2" MAXLOCK ERD™
Direct Tensile Strength	> 113 Mpa	> 16500 Psi
Compressive Strength	> 214 Mpa	> 31886 Psi
Flexural Strength	> 350 Mpa	> 50000 Psi
Impact Energy	> 390 J	> 287 ft lb
Adhesion Strength	> 40 Mpa	> 5900 Psi
Temperature Resistance	- 40°C to 150°C (Higher Temperature Resistance available if requested)	- 40° F to 302°F (Higher Temperature Resistance available if requested)
Abrasion Resistance Tabor CS 17	< 1 Mg Loss	
Abrasion Resistance 100Kg 2Hr	MAXLOCK ERD™ volume loss 0.15 ml (Steel volume loss under same parameter 4.51 ml)	
Dynamic Friction Coefficient WBM	< 0.078 (Reference Material Steel)	
100° C Water Resistance	Weight Gain after 1 Hour < 0.02%	
Hardness (Shore D)	≥ 90	

Installation & Handling

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<td>Pad made of Multiple Structural Carbon Fiber and Kevlar® Layers with a Wear Resistant Zirconia Composite outer Surface</td>
<td>Step 1 – Prepare Pipe Surface
• Mechanical or Blast
• Minimum Anchor Profile 40 µm</td>
<td>Step 2 – Install parts over pipe
• Apply spacer & vacuum sealing tape
• Insert tubes into entry & exit ports</td>
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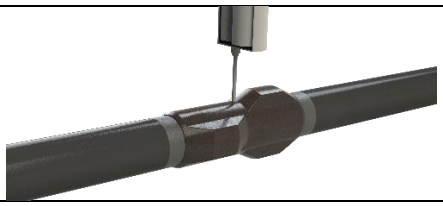
<td>  </td>
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<td>Step 3 – Vaccum inject bonding agent</td>
<td>Cure & QC – Load out within 24 hours</td>
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Site or Customer based Installation - Carried out by Maxwell qualified personnel.

Material Information & Storage

MAXLOCK ERD™: Proprietary carbon fiber composite with low friction, low wear Kevlar® ceramic surface layer.

Pipebond: Structural highly modified two-component epoxy system bonding agent, supplied in easy-to-use cartridges with static mixer nozzle.

Storage: Bonding Agent should be kept sealed in their original cartridges when not in use, and stored in a cool, dry place (0°C - 40°C).