



CARPENTER®

WWW.CARTECH.COM

Advanced Materials for Drilling, Exploration, and Completions

For more than 125 years, Carpenter Technology Corporation has been engineering materials for the world's most demanding and critical environments, making us a materials supplier of choice for oil and gas applications. Today, our high-strength, corrosion-resistant stainless steels and nickel-based alloys are used in both onshore and offshore oil and gas fields throughout the world.

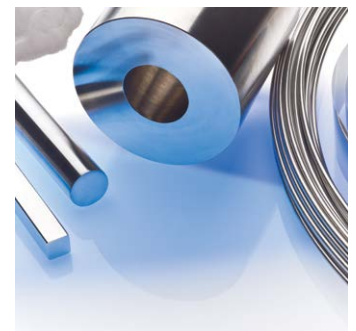
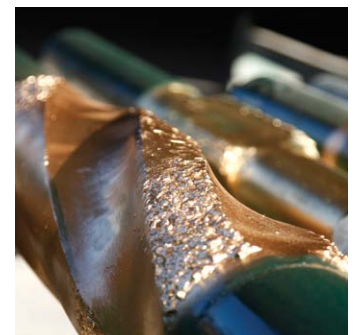
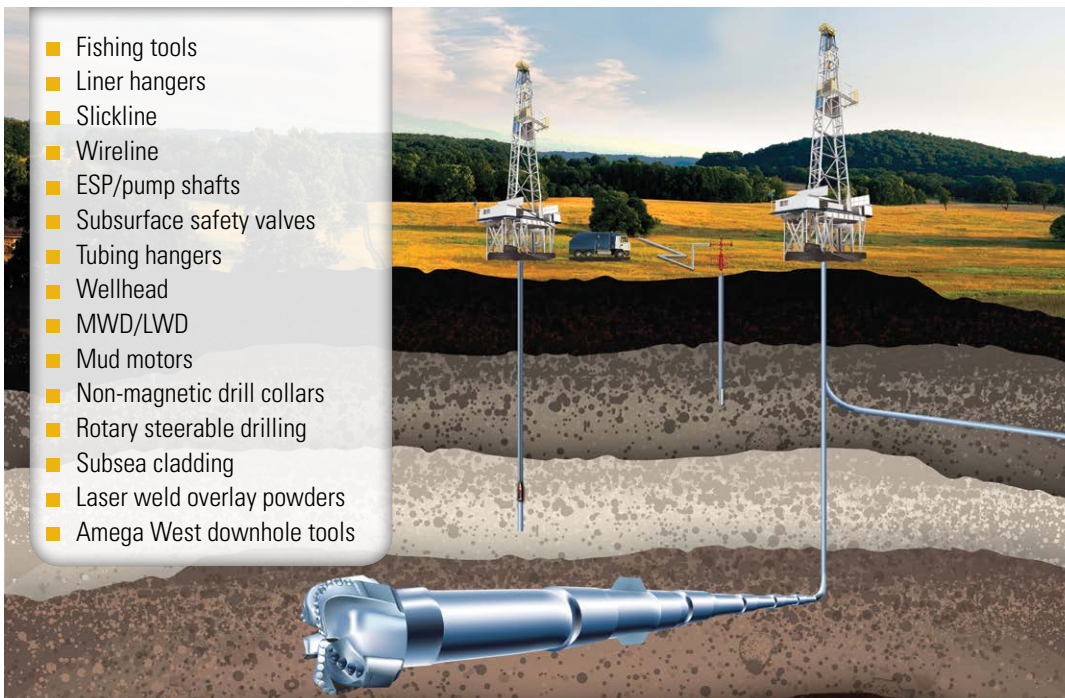
Demanding Environments Require Superior Materials

Today's drilling environments require superior alloys with improved properties to better withstand the effects of corrosion, pressure, stress, and temperature. Carpenter's CarTech® alloys can provide improved corrosion resistance, strength, and/or toughness for drilling, exploration, and completion challenges.

Quality Matters

Carpenter provides the superior quality, technical expertise, and global capacity needed for today's critical drilling applications. Our materials are manufactured to the highest standards, tested, and certified to customer specifications.

- Fishing tools
- Liner hangers
- Slickline
- Wireline
- ESP/pump shafts
- Subsurface safety valves
- Tubing hangers
- Wellhead
- MWD/LWD
- Mud motors
- Non-magnetic drill collars
- Rotary steerable drilling
- Subsea cladding
- Laser weld overlay powders
- Omega West downhole tools



Non-magnetic Alloys for Drill Collars

To meet the challenges of directional drilling, Carpenter's family of lower-cost alloys provides improved strength, as well as fatigue and corrosion resistance.

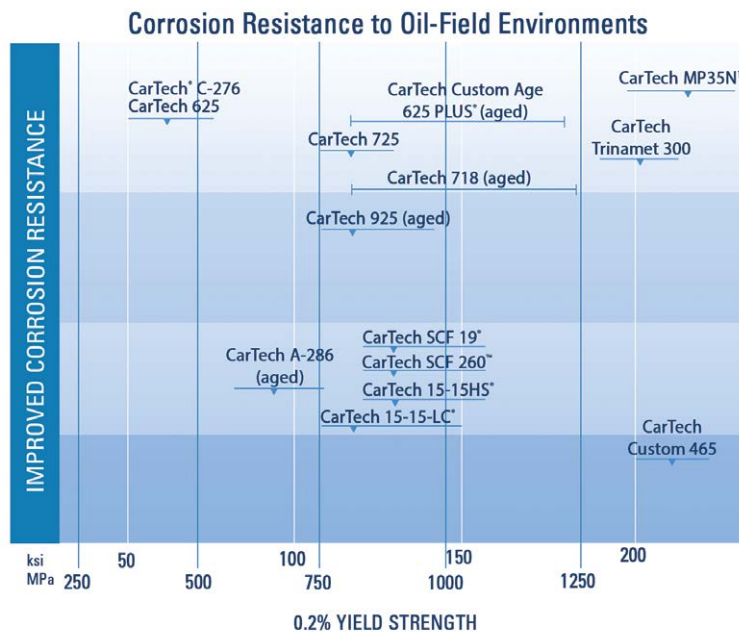
Strength Class	Alloy	Size (in.)	YS (ksi)	TS (ksi)	EI (%)	RA (%)
Standard	CarTech® 15-15LC® Mod alloy	4 to 6.875	110	120	18	50
		7 to 12	100	110	20	50
High-strength	CarTech 15-15HS® Max alloy CarTech SCF 260™ alloy CarTech SCF19® Max alloy	3.5 to 10	140	150	18	50

Carpenter's Proprietary ID Treatment

To improve resistance to Stress Corrosion Cracking (SCC), Carpenter offers a proprietary compressive I.D. treatment in CarTech 15-15LC® Mod alloy drill collar blanks. The treatment imparts a compressive stress layer of 60,000 psi minimum to a nominal depth of 4.75mm. This consistent depth of compressive layer, both circumferentially and axially, is applied consistently through the entire length of the collar.

Alloys for Drilling, Exploration, and Completions

- CarTech® 718 alloy
- CarTech 625® alloy
- CarTech Custom Age 625 Plus® alloy
- CarTech C-276 alloy
- CarTech 725 alloy
- CarTech 925 alloy
- CarTech Micro-Melt® CCW alloy
- Titanium Alloys by Dynamet
- CarTech Custom 465® alloy
- CarTech A-286 alloy
- CarTech MP35N¹ alloy
- CarTech Trinamet® 300 alloy



Your Partner in Oil and Gas Solutions Development

We are fully invested in the success of the oil and gas industry and stand committed to supporting the market into the future. As we deliver some of the world's advanced materials today, we are continuously working with our customers to develop oil and gas materials solutions for the demands of tomorrow.

Our metallurgists, research scientists, and engineers work closely with the industry's best to anticipate challenges and build solutions. **Let us assist you with material selection, specifications, properties, and fabrication characteristics.**



Amega West Services – Downhole Drilling Tool Solutions

Beyond the manufacture of specialty alloys for drilling applications, Amega West, A Carpenter Company, will supply, rent, and repair downhole tools for land and offshore directional drilling. Based in Houston, TX, with locations worldwide, Amega West combines exceptional service with superior tools made with high-quality materials.



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Wyomissing, PA 19610 USA

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