

AN ENDURING IMPACT ON ENERGY

Metallus is entrusted with powering some of the world's most formidable energy endeavors, from the deepest offshore wells to the largest drilling fields, using engineering materials built to endure higher pressures, temperatures and H₂S environments.

From the refinement of raw materials to the creation of intricate processes, our journey is a relentless pursuit of excellence. However, we also envision steelmaking as a symbol of progress.

That's why our commitment extends beyond production to a team of experts actively shaping industry standards. Through involvement in the American Petroleum Institute (API), we drive crucial advancements in the energy sector, ensuring Metallus remains at the forefront of technological innovation.

Our steel is used in drill collars, mud motors, heavyweight drill pipe, drill bits, wellheads, swivel joints, couplings, casing and much more. Through collaboration, research and a shared dedication to pushing boundaries, we continue to redefine the possibilities of steel and its impact on our world.

A century of steelmaking with a new name.
TIMKENSTEEL IS NOW METALLUS.

SEE METAL DIFFERENTLY

SELECTION	500+ common grades	Metallus-exclusive steels	Cleanest air-melt steel
SIZE	SBQ bar 1" to 16" (25mm-406mm)	SBQ r-c squares 3.1" to 12.5" (79mm-318mm)	Seamless mechanical tube 3" to 13"
STRENGTH	Centralized operation (Canton, Ohio)	1.2 M tons annual melt capacity across three plants	Premier heat treat capabilities; largest vertical bloom caster in NA
SERVICE	End-to-end program and supply chain management	Technical support and testing	Application and conversion services
STEWARDSHIP	100% of products include recycled material	EAF process with fewer emissions than a blast furnace	44% drop in combined Scope 1 and 2 GHG emissions since 2018

STRENGTH IN EXTREME ENVIRONMENTS

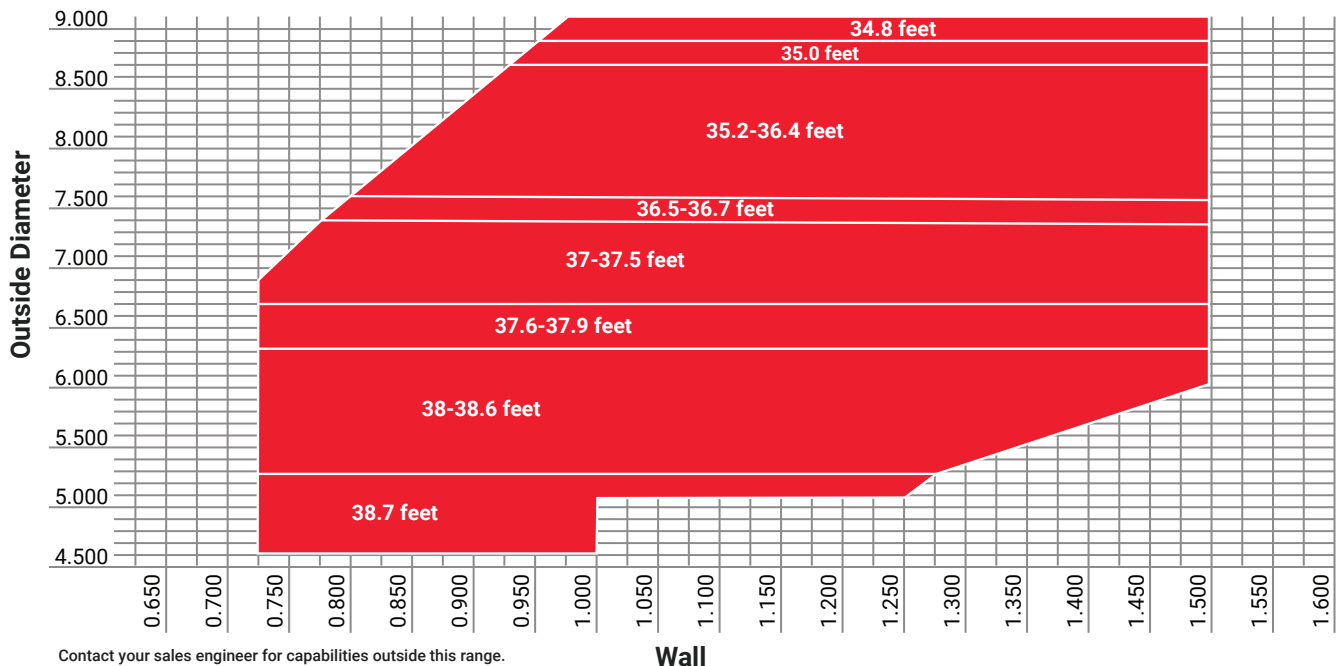
Amid the surge in global energy demand, oil and gas enterprises are delving into ever more remote and unforgiving territories. Our materials stand as critical assets in these challenging settings, offering the requisite strength and corrosion resistance crucial for downhole drilling tools, subsea control lines and maintenance apparatus.

In today's competitive landscape, minimizing per-well expenditures while optimizing efficiencies is paramount.

Special material selection and precisely engineered solutions are imperative for delivering long-lasting products that surpass exacting performance benchmarks.

With Metallus, our team members help create a knowledge ecosystem, help set the pace for regulatory compliance and tirelessly pursue design enhancements, ensuring our continued leadership in delivering robust metal solutions crafted to precise needs.

Metallus Tube Length Capability





SOUR SERVICE CASING

We fortify some of the planet’s most prolific wells with tubulars featuring remarkable thickness, and we offer exclusive 4130ModSS steel that is crafted to shield against hydrogen sulfide’s assault on high-strength metals.

Common Grades:

4130ModSS	Impact 7	4130
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CHOKE AND KILL LINES

Our imprint is etched in industry standards, notably shaping API 16C that pertains to the design and operation of choke and kill lines. Moreover, Metallus pioneered the provision of next-generation choke and kill lines for 20ksi systems—the first of their kind.

Common Grade:

4130HW

STATORS

Our standard stator tubes, infused with Impact 7 chemistry, set the benchmark for performance. Meanwhile, our HS220-27 chemistry propels the creation of ERT stators, catering to the demands of higher-torque motors with finesse and precision.

Common Grades:

Impact 7	HS220-27
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SUBSEA FASTENERS

We influence benchmarks such as API 20E and spearhead the crafting of bolting documents that serve as industry touchstones. Metallus stands among a select few global raw material providers meeting the stringent BSL-3 rating for bolting materials. Metallus is also the sole domestic source able to certify to the BSL-3 requirements using bottom-pour ingots crucial to the fabrication of subsea bolts.

Common Grades:

4140	4340
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UNEARTHING POTENTIAL WITH DOE FUNDING

As the quest for clean energy through geothermal exploration gains momentum, our expertise and Impact 7 steel, renowned in the oil and gas sector, emerge as pivotal players in shaping the future of geothermal drill bit development. At Metallus, innovation is ingrained in our DNA, driving us to continually enhance our materials and prolong their durability.

Teaming up with illustrious partners such as Argonne National Laboratory, Ames National Laboratory, Baker Hughes Company and Bluewater Thermal Solutions, the team has been awarded funding

from the Department of Energy (DoE) to spearhead advancements in surface materials technology.

Central to this endeavor is the quest for a novel chemistry tailored for the ultra-fast boriding process, promising unprecedented durability gains. Our goal? To elevate the wear life of rock-engaging BHA components by a staggering 25%, surpassing current cladding methodologies. This collaboration epitomizes our dedication to revolutionizing energy exploration while pushing the boundaries of material science.





UNMATCHED DURABILITY IN DRILLING

Decades-long alliances in the onshore oil and gas realm underscore the trust that is placed in our material performance. Because we're not just bystanders; we actively engage with the American Petroleum Institute, ensuring our methods stay at the forefront as market dynamics evolve.

Understanding that the strength of the production chain hinges on its weakest link, we offer metals that drive down the cost-per-foot drilled. From nonmagnetic stainless grades to alloy steels, we aim to empower drilling operations by enhancing penetration rates and component longevity.

When the call for innovation beckons, customers turn to us for solutions that thrive in extreme conditions without the fear of tool loss or downtime.

ACCESSORY PARTS

Our accessory parts meet API 5CT standards, verified by our rigorous quality-testing facilities. Leveraging our extensive distribution network, we commercialize all API 5CT grades: K55, L80, T95, P110, C110 and Q125.

Common Grades:

4130	4140	API grades
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COUPLING

We offer mechanical tubing seamlessly tailored for the semipremium and premium connection markets, providing coupling stock for critical casing string connections, in a range of chemistries to match required wall sizes and grades.

Common Grades:

4130	4130ModSS	API grades
4140	Impact 7	

ROTOR BARS

We applied our trademark microalloy technology to MicroTec® 4M95 for rotor bars to eliminate concerns of shattering or breakage. This cost-effective solution for progressive cavity pumps offers improved machinability, necessitating fewer heat treat operations.

Common Grade:

MicroTec® 4M95

DRILL COLLARS

Metallus leads as the top domestic supplier of drill collar material, ensuring you a resilient supply chain and streamlined market access. Our pioneering 4145HSX chemistry meets the industry's heightened mechanical property demands amid rising drilling depths and torque forces.

Common Grade:

4145HSX

SWIVEL JOINTS

We provide grade 4715, specifically designed for the production of swivel joints and offering exceptional fatigue resistance to excel in applications susceptible to erosion.

Common Grade:

4715

OUR SUBSTANTIAL INVESTMENT IN HEAT TREAT ASSETS INCLUDES THE ADVANCED QUENCH-AND-TEMPER FACILITY (AQTF), WHICH ENHANCES OUR CAPACITY BY AN ADDITIONAL 40,000 TONS PER YEAR. WITH SPECIALLY DESIGNED OUTER AND INNER DIAMETER WATER QUENCHING, WE ENSURE PROMPT AND EFFICIENT SERVICE TAILORED TO MEET STRINGENT OIL AND GAS MARKET MECHANICAL REQUIREMENTS.



RENEWABLES

Our vision is to harness the enduring potential of high-performance metals to catalyze positive change in the world, ushering in the era of clean energy.

The creation of every new megawatt of solar power necessitates up to 45 tons of steel, while wind power demands as much as 180 tons. Projections now suggest an astonishing 1.7 billion tons of steel will be indispensable for erecting the wind turbines necessary to achieve net-zero emissions by 2050.*

Yet, the true essence of responsible solutions lies not just in their end function, but also in their own impact. Authentic sustainability encompasses every aspect, including the materials used in manufacturing. Enter Metallus steel—incorporating recycled material and offering a plethora of advantages.

We engineer hundreds of carbon steel and alloy grades that ensure the best performance where longer life is advantageous and the cost of failure is high. Recognizing the paramount importance of renewable energy infrastructure, we optimize procurement processes in tandem with our partners and model our services to fit their designs.

*Source: Renewable Energy World; "Building tomorrow's clean energy systems on green steel"



WIND GEAR BOX

Drawing from our extensive bearing industry experience, we engineer high-strength steel with superior surface hardness, a critical attribute for turbine gear boxes, alongside enduring fatigue life cycles.

Common Grade:

52100

GEOHERMAL DRILL BITS

Our steel used in manufactured drill bits features proprietary impact materials suitable for the harsh environments of drilling wells and high-temperature environments.

Common Grade:

Impact 7



METALLUS STANDS AMONG A COALITION OF VISIONARY COMPANIES AWARDED A DOE GRANT TO REVOLUTIONIZE SURFACE TREATMENT TECHNOLOGY AND PIONEER A GROUNDBREAKING CHEMISTRY FOR GEOHERMAL WELL DRILL BITS.





RAISE YOUR GRADE

Rely on our extensive resources, network and know-how to deliver a Metallus solution or to refine the product you seek, even for steels not produced internally.

No matter the grade you specify, we consistently deliver by ensuring it's perfectly suited for your application. Once we've pinpointed the formula for your success, we strive to ensure each shipment meets your expectations.



WHY METALLUS?

Our steelmaking journey began over a century ago, primarily catering to the bearing industry. Today, our high-performance steel plays an integral role in driving innovation within renewable energy markets globally.

Cultivating a culture that fosters expertise, an impressive 80% of our sales, account and technical teams boast backgrounds in engineering. This reservoir of knowledge not only flows but surges into every facet of product design and manufacturing, amplifying our prowess.

Together, we stand poised to embrace the future of clean energy.

METALLUS

Visit [METALLUS.COM](https://www.metallus.com) or call us at 866.284.6536 (USA), +44 (0) 116 2325186 (Europe), +52 (55) 5876 9888 (Latin America) and +86 (21) 60231080 (China).