



# Bar Stock

Cold Heading Wire

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Central Wire Industries is one of the world's fastest growing wire manufacturers, producing a broad array of stainless steel, nickel alloy, copper, brass, bronze, and zinc wires for an equally broad array of applications. Since the late 1960's, CWI has quickly become one of the globe's largest and most respected sources for cold heading wire.

Central Wire Industries is 9001:2015 certified by BSI for the manufacturing of stainless steel wire and nickel-based alloy wire to national and international standards, customer specifications and requirements.



Our product range includes stainless steel, nickel, copper, brass, bronze and zinc wires, in diameters ranging from 0.003 inches to 1.000 inches.

### Bar Stock and Cold Heading Wire

CWI manufactures bars up to 0.750 inches (19.05 mm) to your specifications for parameters such as tensile strength, Rockwell hardness, diameter tolerance, and length. Material is usually supplied to 12 foot (3.65 m) random lengths. When required, bars are supplied centerless ground to meet high custom tolerances.

We draw material for cold heading applications from 0.040 inches to 1.000 inches (1.02 mm to 25.4 mm). The broad range of coatings and lubricants, coupled with superior metallurgical consistency, ensure peak performance under demanding conditions of heat and pressure.

Through prompt delivery, high quality materials and expert service, we can ensure a finished product that meets your specifications. Regardless of your industry or application, our bar stock and cold heading wire is the right choice for your fasteners.

### Precision Manufacturing

Meeting exact customer product dimensional, ductility, coating, and temper specifications requires specialized manufacturing and a broad array of precise production and processing equipment capabilities.

#### Product Options

CWI maintains a complete array of production equipment for:

- Drawing to size
- Strand bright annealing
- Batch annealing
- Acid pickling for oxide removal
- Inline or batch copper coating
- Rotary shaving or reverse scalping available



Batch annealing furnace



Acid pickling for oxide removal

### Assurance of Product Consistency

- Mechanical testing measures tensile strength, yield strength, and elongation
- High energy impact testing for cold forging simulation
- Analysis verifies coating consistency and performance under pressure
- Metallographic microscopy used for grain structure and surface evaluation
- Onsite positive material identification
- DFARS (Defense Federal Acquisition Regulation Supplement) compliance
- Special high quality protective paper and plastic shrink wrap available
- Heavy duty bar stock packaging
- Fast, reliable shipping, customized inventory, and delivery programs
- Customer service: in person, online or over the phone

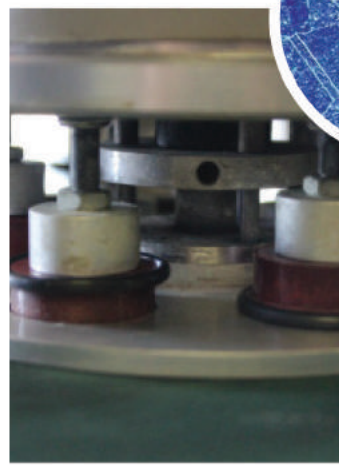
302 HQ Grain Structure Detail



**UNMATCHED CAPABILITIES**



Grade verification via an X-ray fluorescence (XRF) analyzer. (PMI)



Material Sampling and polishing: product sample preparation for grain structure analysis and surface quality verification.



### Markets Served



Aerospace



Automotive



Oil & Gas



Industrial

### Fastener Applications

Our cold heading material is used extensively in the manufacturing of fastening systems such as but not limited to rivets, fasteners, pins, screws, bolts and washers. Our cold heading wire can be used for: cold Heading / forging, hot heading, machining, security fasteners, blind rivets, bolts, screws, aerospace fastening systems.

### Production Capabilities

Central Wire Industries manufactures bars up to 0.750 inches (19.05 mm) to your specifications for parameters such as tensile strength, Rockwell hardness, diameter tolerance, and length. Material is usually supplied to 12 foot (3.65 m) custom lengths. When required, bars are supplied centerless ground to meet high custom tolerances.

The through-feed centerless grinding process ensures high productivity. Material is bundled by individual lot to ensure full traceability back to the mill source.

### Alloys

15-7 Mo; 17-4/17-4PH; 302 HQ; 303; 304/304L; 305; 307; 316HQ; 321; 347; 410; 430L; 431; 440A; 440C; A286/660; 13-8 Mo; 302 HQ; 304/304L; 316/316L/316LVM; Inconel® 600 and 718; Invar 36; Monel® 400 and K500; X750; copper base alloys available

### Packaging

CWI offers various types of bar stock shipping packages to meet individual customer requirements. Heat-treated wooden boxes are available upon request.

### Shipping

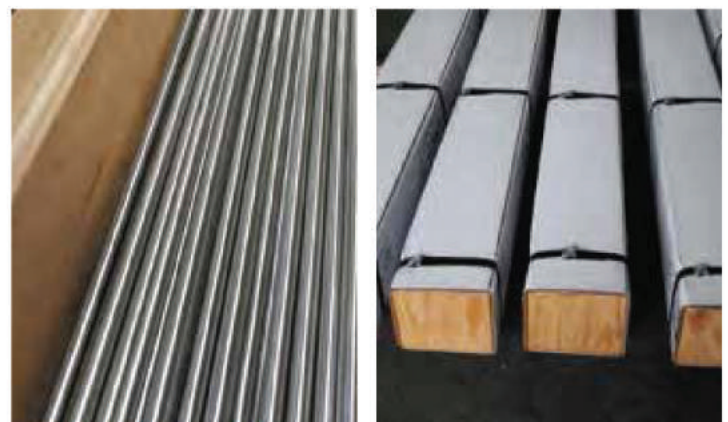
We have multiple production and distribution facilities throughout North America. Customer specific programs are available to fit your inventory needs and delivery requirements.



Vendor custom inventory management programs for both bar stock and cold heading wire



Through-feed centerless grinding for bar stock



Various types of heavy duty packaging options for bar stock

### Production Capabilities

CWI's cold heading wire is used extensively in the manufacturing of security fasteners, blind rivets, bolts, screws, and aerospace fastening systems. CWI cold heading wire provides excellent formability and consistency during part forming. Your critical fastener applications require that our wire material meets exact dimensional, temper, and ductility specifications. Central Wire draws material for cold heading applications from 0.040 inches to 1.000 inches (1.02 mm to 25.4 mm). We can offer 100% DFARS as required.

### Alloys

Invar 36; 13-8 Mo; A 286; Monel® 400 and K500; Inconel® 600 and 718; 316/316L; 302 HQ; X750; 304/304L; 305; 316HQ; 321; 347; 430L; 410; 431; A286/660; 17-4; 15-7; copper base alloys available.

### Coatings

Metallic and non-metallic coatings are available to meet varying conditions of heat and pressure use.

### Packaging

Sturdy double wrap packaging ensures that your wire arrives in excellent condition, ready for inline drawing or cold forming. Heat-treated wooden boxes are available upon request. Coil, carrier, and custom packaging options are available.

### Shipping

CWI's seven United States locations ensure we can meet your inventory needs and delivery requirements. CWI also offers customized stocking programs to meet specific production schedules.



Cold heading wire



Fast and reliable shipping

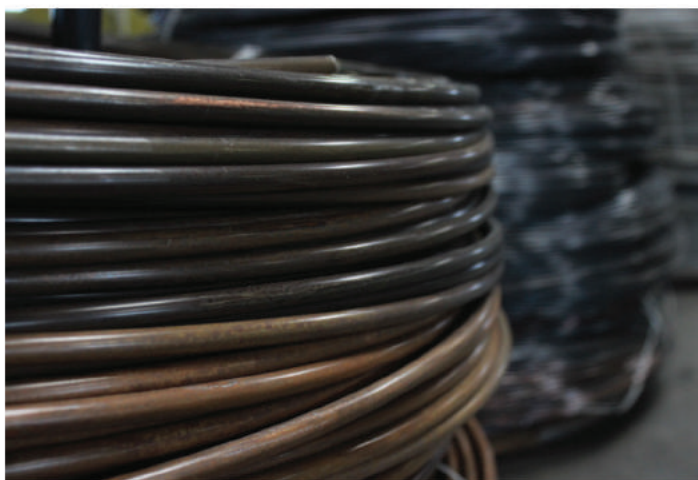
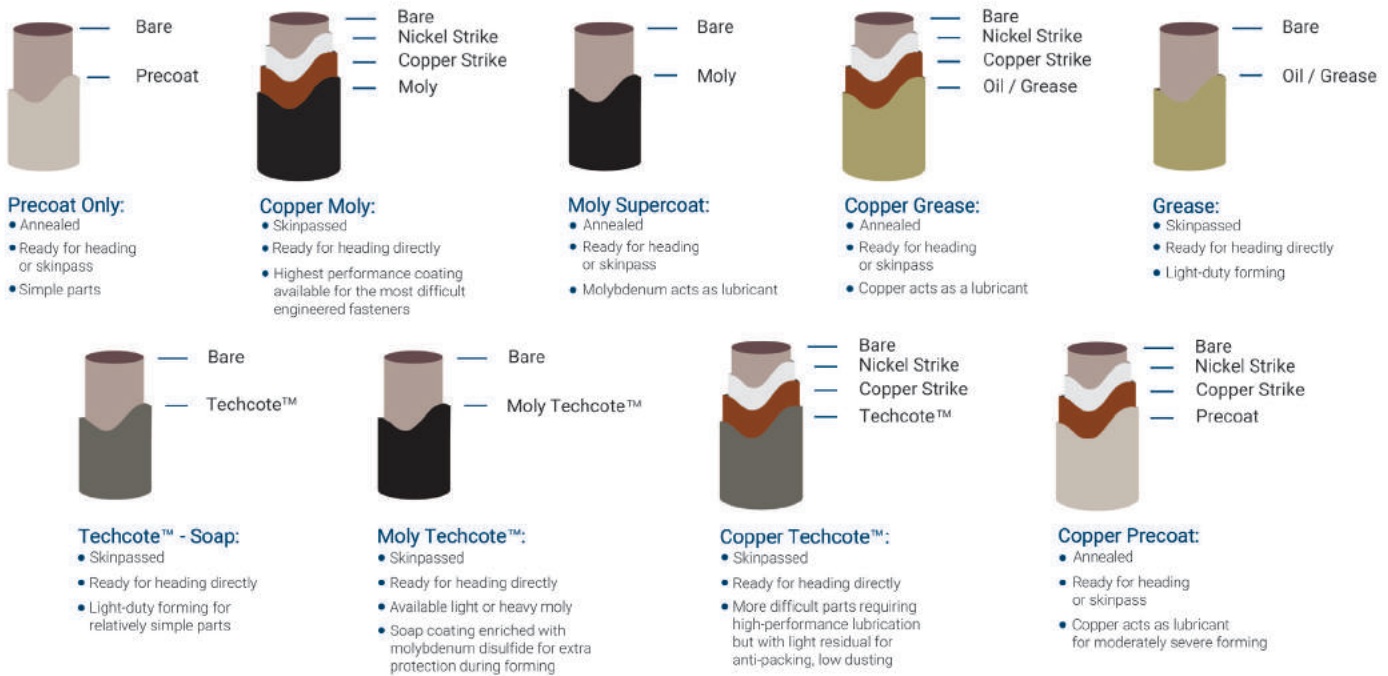
## Nominal Chemical Composition (%)\*

		Carbon	Chromium	Nickel	Iron	Copper	Other	UNS
Austenitics	302HQ	.01	17	9	Bal.	3.5		S30430
	302	.10	18	9	Bal.			S30200
	304	.04	18	9	Bal.			S30400
	304L	.02	18	10	Bal.			S30403
	305	.02	18	12	Bal.			S30500
	316	.04	17	11	Bal.		2 Mo	S31600
	316L	.02	17	12	Bal.		2 Mo	S31603
	316HQ	.01	17	10	Bal.	3.0	2 Mo	S31603-D
	321	.04	18	10	Bal.		Ti-(5xC) min	S32100
	347	.04	18	11	Bal.		.6 Nb	S34700
Ferritics	409Cb	.02	11		Bal.		.3 Nb	S40940
	430L	.02	16		Bal.			S43000
Martensitics	410	.12	12		Bal.			S41000
	420	.30	13		Bal.			S42000
	431	.15	16	2	Bal.			S43100
	440C	1.0	17		Bal.	.5Mo		S44004
Super Stainless	A-286	.04	14	25	Bal.		1.5Mo-2 Ti	S66286
	13-8	.03	13	8	Bal.		2 Mo-1 Al	S13800
	17-4	.04	17	4	Bal.	4		S17400
	15-7	.07	15	7	Bal.		2 Mo, 1Al	S15700
Nickel Alloys	400	.03		66	1	32		N04400
	K-500	.15		65	1	30	3 Al, .5 Ti	N05500
	600	.01	16	72	9			N06600
	718	.03	18	52	18		3 Mo, 1 Ti, 5 Nb	N07718
	X750	.07	15	71	8		1 NB 2.5 Ti - .7Al	N07750
	625	.07	21	64			9 Mo, 3.5 Nb	N06625

\*Not for specification purposes. The grades shown above are manufactured to the latest AMS, ASTM, and U.S. Government specifications. Values listed reflect approximate nominal alloy content. The processing of the wire allows complete compliance with the RoHS directive.

CWI's team of specialists sets industry standards for the production of high-performance cold heading wire and bar stock. The broad range of coatings and lubricants, coupled with superior metallurgical consistency, ensure peak performance under demanding conditions of heat and pressure.

Our molybdenum disulfide coating decreases the coefficient of friction as heading and extrusion forces increase. In effect, the harder you work, the harder it works for you. The copper-moly coating has a shiny black appearance, is securely bonded to the wire surface, and is formulated specifically for the most difficult cold and warm-formed parts. For less complex applications, CWI's Techcote™ wire is unsurpassed for consistency.



**Copper coat and moly coat coils**



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**CWI** GROUP OF COMPANIES

**CWIGD™ - SUPA® SLICKLINES**

**CWIGEN® WELDING**

**CWITECH-MESH™**

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