

Bar Program

Items shown are produced regularly for quick delivery from stock or within competitive industry lead-times. Please call an Outokumpu representative for availability.

Round Bar (in inches)

	303	303 HST [®]	304L	304H	316L	316H	317L	309	310	321	347	254 SMO [®]	253 MA	904L
$\frac{3}{16}$ -1 CDA	P	P	P	P	P	P	P			X	X			
$\frac{1}{2}$ -1 CFA	P		P	P	P	P	P	X	X	X	X		X	X
>1-3 $\frac{3}{4}$ CFA	P		P	P	P	P	P	X	X	X	X	X	X	X
2-3 $\frac{1}{2}$ HRART	P		P	P	P	P	P	X	X	X	X	X	X	X
>3 $\frac{1}{2}$ -7 HRART	P		P	P	P	P	P	X	X	X	X	X		X
>7-10 HRART	P		P		P		P		X	X	X			X
>10-15 HRART	P		P		P									

	410	416	420	440C	430	430F	17-4	15-5ESR	LDX 2101 [®]	2304	2205 +2	2507	304 HN	N60	XM-19	XM-25
$\frac{3}{16}$ -1 CDA																
$\frac{1}{2}$ -1 CFA	X	X	X ^A	X ^A	X	X	X	X	X					X ^A		X ^A
>1-3 $\frac{3}{4}$ CFA	X	X	X	X	X	X	X	X	X	X	X	X	X ^B	X ^B	X ^B	X
2-3 $\frac{1}{2}$ HRART	X	X	X	X	X	X	X	X	X	X	X	X	X ^B	X	X ^B	X
>3 $\frac{1}{2}$ -7 HRART	X	X	X		X	X	X	X			X	X		X	X	X
>7-10 HRART							X									

P=PRODEC Improved Machinability
A: Alloy only available down to $\frac{1}{4}$ "

CDA=Cold Drawn Annealed
B: HS available from $1\frac{3}{8}$ " to $3\frac{1}{2}$ "

CFA=Cold Finished Annealed

HRART=Hot Rolled Annealed Rough Turned

Hex

	303	303 HST	304L	316L	321	347	LDX 2101 [®]
$\frac{1}{4}$ "-1"	X	X	X	X	X	X	X
1"-1 $\frac{1}{2}$ "	X		X	X	X	X	X

Square

	303	304L	316L	321	347
$\frac{3}{8}$ "-7 $\frac{7}{8}$ "	X	X	X	X	X

Additional Products

Forging Billet, Extrusion Billet, Stainless Steel Rebar, Stainless Steel Wire Rod

Length Capabilities	
$\frac{3}{16}$ " - $\frac{5}{8}$ "	CDA 12' STD, 16' Max
> $\frac{5}{8}$ " - 1"	CDA 12' STD, 14' Max
$\frac{1}{2}$ " - 3 $\frac{3}{4}$ "	CFA 12' STD, 24' Max
2" - 3 $\frac{1}{2}$ "	HRART 12' STD, 24' Max
>3 $\frac{1}{2}$ " - 7"	HRART 12' STD, 30' Max
>7" - 15"	HRART Inquire

Other value features of our Bar program:

PRODEC— For improved machinability 303, 304L, 316L and 317L come standard as Prodec Quality Material.

Complete program — Standard and special grades, in sizes from $\frac{3}{16}$ " to 15" round, $\frac{3}{8}$ " to $\frac{7}{8}$ " CD squares, and $\frac{1}{4}$ " to 1 $\frac{1}{2}$ " hex.

Quality — Outokumpu Bar is ISO 9001 approved. Each bundle is "XRF" grade assured.

Conditions — 17-4 & 15-5 aged conditions, strain hardened austenitics, and Q&T martensitics available upon inquiry

DFARS Compliant — All material produced is 225.7002-3B1 & 252.225.7014 compliant

Polished surface — CD and CF products $\frac{9}{16}$ " to 3" (including hex and squares to 1")

Centerless Grinding — $\frac{1}{4}$ " - to $\frac{1}{2}$ "-standard tolerance available in $\frac{3}{16}$ " to 4" diameters

Eddy Current testing — Standard for 303 and 416 grades. Available upon request in other grades.

Chamfering — Both ends in drawn products and one end for CF products through $1\frac{1}{8}$ "

Specifications

Grade	UNS	ASTM	ASME	Federal	AMS
303	S30300	A 582	NA	NA	5640
304 / 304L	S30400 / S30403	A 276, A 479	SA-479, SA-276	QQS 763F	5639, 5647, QQS 763
316 / 316L	S31600 / S31603	A 276, A 479	SA-479, SA-276	QQS 763F	5648, 5653, QQS 763
317 / 317L	S31700 / S31703	A 276, A 479	SA-479, SA-276	QQS 763F	QQS 763
309, 309H, 309S	S30900 / S30909 / S30908	A 276, A 479	SA-479, SA-276		5650
310, 310H, 310S	S31000 / S31009 / S31008	A 276, A 479	SA-479, SA-276		5651
321 / 321H	S32100 / S32109	A 276, A 479	SA-479, SA-276		5645
347 / 347H	S34700 / S34709	A 276, A 479	SA-479, SA-276		5646
254 SMO®	S31254	A 276, A 479	SA-479, SA-276		
253 MA	S30815	A 276, A 479	SA-479, SA-276		
410	S41000	A 276, A 479	SA-479, SA-276	QQS 763F	5612, 5613, QQS 763
416	S41600	A 582			5610
420	S42000	A276	SA-276		5621
440C	S44004	A276		QQS 763F	QQS 5763, 5630, 5880
430	S43000	A 276, A 479	SA-479, SA-276		5627
430F	S43020	A 582			
17-4	S17400	A 564	SA-564		5643
15-5 ESR	S15500	A 564	SA-564		5659
LDX 2101®	S32101	A 276, A 479	SA-479, SA-276		
2205 Code Plus Two®	S31803 / S32205	A 276, A 479	SA-479, SA-276		
2507	S32750	A 276, A 479	SA-479, SA-276		
304HN	S30452				
N60	S21800	A 276, A 479			5848
XM-19	S20910	A 276, A 479	SA-479, SA-276		

Tolerances — Stainless Steel Bar

Conforms to ASTM A 484						
Round Bar/Cold Finished		Round Bar/Hot Rolled and Rough Turned			Square Bar and Hexagons/Cold Finished	
Size	Tolerances	Size	Tolerances	Out of Round	Size	Tolerances
Under $\frac{5}{16}$ "	+/-0.001	Over 2" to 2½"	+ $\frac{1}{32}$ -0	0.023	Under $\frac{5}{16}$ "	+0.000 -0.002
$\frac{5}{16}$ " up to but excluding ½"	+/-0.0015	Over 2½" to 3½"	+ $\frac{3}{64}$ -0	0.035	Over $\frac{5}{16}$ " to under ½"	+0.000 -0.003
½" up to but excluding 1"	+/-0.002	Over 3½" to 4½"	+ $\frac{1}{16}$ -0	0.046	½" up to and including 1"	+0.000 -0.004
1" up to but excluding 1½"	+/-0.0025	Over 4½" to 5½"	+ $\frac{5}{64}$ -0	0.058	Over 1" up to and including 2"	+0.000 -0.006
1½" up to and including 3¼"	+/-0.003	Over 5½" to 6½"	+ $\frac{1}{8}$ -0	0.070	Over 2" up to and including 3"	+0.000 -0.008
Over 3¼" up to and including 4½"	+/-0.005	Over 6½" to 8"	+ $\frac{5}{32}$ -0	0.085	Over 3"	+0.000 -0.010
Over 4½" up to and including 6"	+/-0.008	Over 8" to 12"	+ $\frac{3}{16}$ -0	0.094		

Straightness Tolerances for Machine-Straightened Bar

Rough Turned	Cold Finished
$\frac{1}{8}$ " in any 5'	$\frac{1}{16}$ " in any 5'
but may not exceed $\frac{1}{8}$ " x $\frac{\text{length in feet}}{5}$	but may not exceed $\frac{1}{16}$ " x $\frac{\text{length in feet}}{5}$

Weight Formulas for Steel

Weight estimates per linear foot
Rounds= D2 x 2.6729
Hex=D2 x 2.9473
Sq=D2 x 3.4032

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