

Chrome plated bars

Chrome plated bars Ck45, 20MnV6, 42CrMo4V

Chrome plate bars Ck45, 42CrMo4V, induction hardened

Quality:	Ck45, 20MnV6, 42CrMo4V	
Tolerance OD:	up to Ø 17mm ISO f8	from Ø 18mm ISO f7
Chrome layer thickness:	up to Ø 17mm min. 10 µm	from Ø 18mm min. 20 µm
Chrome layer hardness:	63 – 68 HRC	
Roughness:	Ra max. 0,25 µm	
Corrosion resistance:	100-120 h NSS acc. ISO 9227, class 9 acc. ISO 4540 as standard	
Straightness:	0,3:1.000mm	
Roundness:	½ of the dimension tolerance	
Random lengths:	1,5 – 8 meters	

Quality:	Ck45 and 42CrMo4V	
	Marginalized layer – induction hardened to 56-60 HRC	
	Hardness depth:	
	Ø 12 – 25mm	0,75 – 1,25mm
	Ø 28 – 90mm	1,25 – 2,25mm
	Ø 95 – 160mm	1,80 – 3,00mm
Quality:	20MnV6, grinded, nickel plated and chrome plated min. 30 µm nickel-layer plus min. 20 µm chrome-layer min. 150 h CASS – ISO 9227, rating 9 acc, ISO 4540	

Mechanical properties:	Quality	Ck45 1.1191	20MnV6 1.5217	42CrMo4V 1.7225
	Yield point ReH N/mm ² min.	350	360	550
	Tensile strength Rm N/mm ² min.	600	500	800
	Elongation A5 % min.	14	17	10

Tolerances of pieces cut to length:

+2.00 / -Nil mm

Other tolerances on request

Certificates: EN10204/2.2 or 3.1 available at a surcharge

Machining or special production according to drawing on request



Chrome plated bars

Od mm	Od inch	Tol. OD	kg/m	KSV Ck45	KSV 20MnV6	KSV 42CrMo4V	KSH Ck45	KSH 42CrMo4V	KSNI 20MnV6
4.000		f8	0.10	*					
5.000		f8	0.15	*					
6.000		f8	0.22	*					
8.000		f8	0.39	*					
9.000		f8	0.50	*					
10.000		f8	0.62	*	*				
11.000		f8	0.75	*	*				
12.000		f8	0.89	*	*	*	*	**	
12.700	1/2"	f8	0.99	*					
14.000		f8	1.21	*	*	*		**	
15.000		f8	1.39	*	*				
15.875	5/8"	f8	1.55	*	*				
16.000		f8	1.58	*	*	*	*	**	
17.000		f8	1.78	*					
18.000		f7	2.00	*	*	*	*	**	
19.050	3/4"	f7	2.24	*					
20.000		f7	2.47	*	*	*	*	*	*
22.000		f7	2.98	*	*	*	*	*	*
22.225	7/8"	f7	3.05		*				
23.000		f7	3.26	*					
24.000		f7	3.55	*	*				
25.000		f7	3.85	*	*	*	*	*	*
25.150		f7	3.90		*				
25.400	1"	f7	3.98	*	*		*		
26.000		f7	4.17	*	*				
26.990	1 1/16"	f7	4.49	*	*				
28.000		f7	4.83	*	*	*	*	*	*
28.575	1 1/8"	f7	5.03	*	*				
30.000		f7	5.55	*	*	*	*	*	*
31.750	1 1/4"	f7	6.22	*	*		*		
32.000		f7	6.31	*	*	*	*	*	*
33.000		f7	6.71	*					
34.000		f7	7.13		*				
34.925	1 3/8"	f7	7.52		*			*	
35.000		f7	7.55	*	*	*	*	*	*
36.000		f7	7.99	*	*	*	*	*	*
37.000		f7	8.44	*	*				
38.000	1 1/2"	f7	8.90	*	*	*			
38.100		f7	8.95	*	*	*	*	*	
40.000		f7	9.86	*	*	*	*	*	*
42.000		f7	10.88	*	*	*			
43.000		f7	11.40	*					

Od mm	Od inch	Tol. OD	kg/m	KSV Ck45	KSV 20MnV6	KSV 42CrMo4V	KSH Ck45	KSH 42CrMo4V	KSNI 20MnV6
44.000		f7	11.94	*					**F7
44.450	1¾"	f7	12.18	*	*		*	*	
45.000		f7	12.48	*	*	*	*	*	*
46.000		f7	13.05	*	*				
47.000		f7	13.62	*	*				
48.000		f7	14.21	*	*				
50.000		f7	15.41	*	*	*	*	*	*
50.800	2"	f7	15.91	*	*	*	*	*	
52.000		f7	16.67	*	*				
53.975	2⅛"	f7	17.96	*	*				
54.000		f7	17.98	*					
55.000		f7	18.65	*	*	*	*	*	*
56.000		f7	19.33	*	*	*	*	*	*
57.150	2¼"	f7	20.14	*	*			*	
58.000		f7	20.74	*					
60.000		f7	22.20	*	*	*	*	*	*
60.325	2⅜"	f7	22.44	*	*				
63.000		f7	24.47	*	*	*	*	*	*
63.500	2½"	f7	24.86	*	*	*	*	*	*
65.000		f7	26.05	*	*	*	*	*	*
68.000		f7	28.51	*	*				
69.850	2¾"	f7	30.08	*	*				
70.000		f7	30.21	*	*	*	*	*	*
75.000		f7	34.68	*	*	*	*	*	*
76.200	3"	f7	35.80	*	*		*	*	
77.000		f7	36.55	*	*				
80.000		f7	39.46	*	*	*	*	*	*
82.550	3¼"	f7	42.01	*	*		*	*	
85.000		f7	44.54		*	*	*	*	*
88.900	3½"	f7	48.73	*	*	*	*	*	*
90.000		f7	49.94	*	*	*	*	*	*
95.000		f7	55.64	*	*	*	*	*	
95.250	3¾"	f7	55.94	*	*			*	
100.000		f7	61.65	*	*	*	*	*	*
101.600	4"	f7	63.64	*	*		*	*	
105.000		f7	67.97	*	*	*	*	*	
106.000		f7	69.27		*				
107.950	4¼"	f7	71.85	*	*				
110.000		f7	74.60	*	*	*	*	*	*
114.300	4½"	f7	80.55		*				
115.000		f7	81.54	*	*	*		*	
120.000		f7	88.78	*	*	*	*	*	*
120.650		f7	89.75					*	
125.000		f7	96.33	*	*	*	*	*	*
127.000	5"	f7	99.44	*	*		*		
130.000		f7	104.19	*	*	*	*	*	

Weight	Od	Tol.	kg/m	KSV	KSV	KSV	KSH	KSH	KSNI
	inch	OD		Ck45	20MnV6	42CrMo4V	Ck45	42CrMo4V	20MnV6
135.000		f7	112.36	*					
139.700	5½"	f7	120.32	*					
140.000		f7	120.84	*	*	*	*	*	*
145.000		f7	129.63				*		
146.050		f7	131.51	*					
150.000		f7	138.72	*	*	*		*	*
160.000		f7	157.83	*	*	*	*	*	*
165.000		f7	167.85	*					
170.000		f7	178.18	*	*				
177.800		f7	194.91				*		
180.000		f7	199.76	*	*	*	*	*	**
190.000		f7	222.57		*				
200.000		f7	246.62	*	*	*	*	*	**
203.200	8"	f7	254.57	*					
210.000		f7	271.89	*	*				
220.000		f7	298.40	*	*	*		*	**
225.000		f7	312.12				*		
240.000		f7	355.13	*	*				
250.000		f7	385.34	*				*	**
280.000		f7	483.37	*					**
300.000		f7	554.88	*					**
320.000		f7	631.33	*					**
350.000		f7	755.26	*					

**E355/St52



Seamless cylinder tubes

Quality: E355+SR (St 52 BK+S), E355 (St 52.0)
 Tolerance OD: acc. EN10305-1 (DIN 2391) for cold drawn tubes
 acc. EN10297-1/EN10220 (DIN 1629/DIN 2448) for hot rolled tubes
 Tolerance ID: acc. ISO H8 – H11 (depending on size)
 Interior surface: Honed or roller burnished
 Roughness: Ra max. 0,5 µm or 0,4 µm
 Straightness: Straightened to 1:1.000mm measured on outer surface
 Eccentricity: acc. EN10305-1 (DIN 2391) for cold drawn tubes
 acc. EN10297-1/EN10220 (DIN1629/DIN 2448) for hot rolled tubes

Mechanical properties:	Quality	E355+SR (St 52 BK+S)	E355 (St 52.0)	S355J2H (St 52-3N)	S460NH (StE 460)
Yield point ReH N/mm ² min.		1.0580	1.0580	1.0570	1.8953
		450	335	335	440
Tensile strength Rm N/mm ² min.		580	490	490	570
Elongation A5 % min.		10	21	22	17

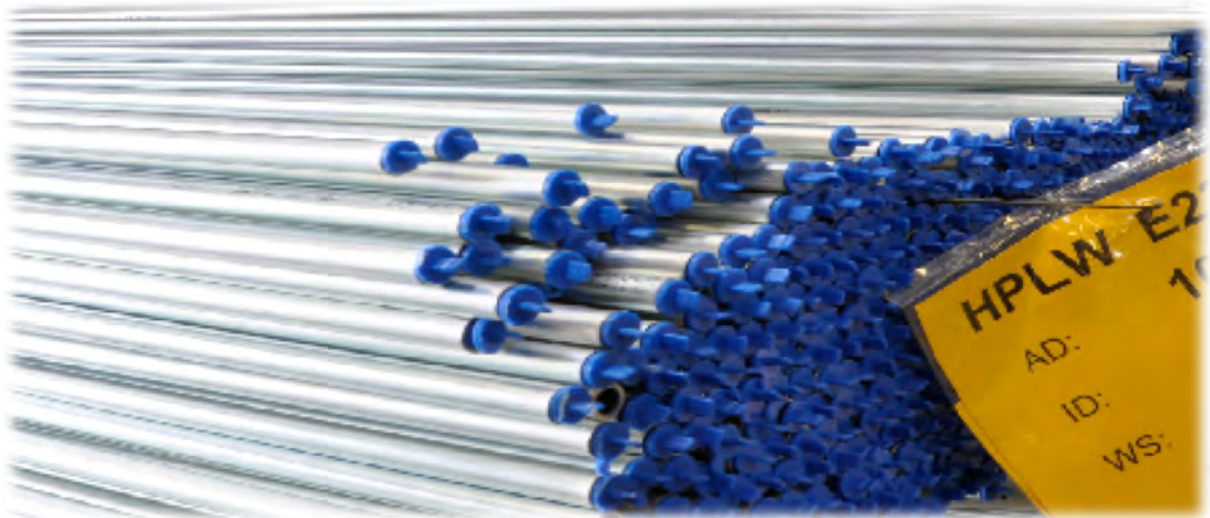
Tolerances of pieces cut to length:

+2.00 / -Nil mm

Other tolerances on request

Certificates: EN10204/2.2 or 3.1 available at a surcharge

Machining or special production according to drawing on request



ID mm	ID inch	OD	WT	Tol. ID	kg/m	ID mm	ID inch	OD	WT	Tol ID	kg/m
20.00		30.00	5.00	H9	3.08	38.00		45.00	3.50	H9	3.58
20.00		35.00	7.50	H8	5.09	38.00		50.00	6.00	H8	6.51
20.00		40.00	10.00	H8	7.40	38.00		55.00	8.50	H8	9.75
22.00		30.00	4.00	H9	2.57	38.10	1½"	44.00	2.95	H9	2.99
						38.10	1½"	47.60	4.75	H8	5.02
24.00		32.00	4.00	H9	2.76						
						40.00		45.00	2.50	H9	2.62
25.00		30.00	2.50	H9	1.70	40.00		48.00	4.00	H9	4.34
25.00		32.00	3.50	H9	2.46	40.00		50.00	5.00	H8	5.55
25.00		35.00	5.00	H9	3.70	40.00		52.00	6.00	H8	6.81
25.00		40.00	7.50	H8	6.01	40.00		55.00	7.50	H8	8.79
25.00		45.00	10.00	H8	8.63	40.00		60.00	10.00	H8	12.33
						40.00		70.00	15.00	H8	20.35
26.00		40.00	7.00	H8	5.70						
						42.00		60.00	9.00	H8	11.32
28.00		35.00	3.50	H9	2.72						
28.00		36.00	4.00	H9	3.16	44.00		50.00	3.00	H9	3.48
28.00		42.00	7.00	H8	6.04						
						45.00		50.00	2.50	H9	2.93
30.00		35.00	2.50	H9	2.00	45.00		55.00	5.00	H8	6.17
30.00		38.00	4.00	H9	3.35	45.00		60.00	7.50	H8	9.71
30.00		40.00	5.00	H9	4.32	45.00		65.00	10.00	H8	13.56
30.00		42.00	6.00	H8	5.33						
30.00		45.00	7.50	H8	6.94	48.00		60.00	6.00	H8	7.99
30.00		50.00	10.00	H8	9.87						
						50.00		55.00	2.50	H9	3.24
32.00		38.00	3.00	H9	2.59	50.00		60.00	5.00	H8	6.78
32.00		40.00	4.00	H9	3.55	50.00		42.00	6.00	H8	8.29
32.00		42.00	5.00	H8	4.56	50.00		65.00	7.50	H8	10.64
32.00		45.00	6.50	H8	6.17	50.00		70.00	10.00	H8	14.80
32.00		50.00	9.00	H8	9.10	50.00		75.00	12.50	H8	19.27
32.00		52.00	10.00	H8	10.36	50.00		80.00	15.00	H8	24.05
34.00		42.00	4.00	H9	3.75	50.80	2"	56.90	3.05	H9	4.05
						50.80	2"	60.30	4.75	H8	6.51
35.00		42.00	3.50	H9	3.32	50.80	2"	63.50	6.35	H8	8.95
35.00		45.00	5.00	H8	4.93						
35.00		50.00	7.50	H8	7.86	52.00		60.00	4.00	H9	5.52
35.00		55.00	10.00	H8	11.10						
						54.00		68.00	7.00	H8	10.53
36.00		45.00	4.50	H9	4.50						
36.00		50.00	7.00	H8	7.42	55.00		60.00	2.50	H9	3.55
36.00		55.00	9.50	H8	10.66	55.00		65.00	5.00	H8	7.40
						55.00		70.00	7.50	H8	11.56
37.00		50.00	6.50	H8	6.97	55.00		75.00	10.00	H8	16.03
						55.00		80.00	12.50	H8	20.81

ID mm	ID inch	OD	WT	Tol. ID	kg/m	ID mm	ID inch	OD	WT	Tol ID	kg/m
58.00		70.00	6.00	H8	9.47	76.00		90.00	7.00	H8	14.33
60.00		65.00	2.50	H9	3.85	76.20	3"	86.20	5.00	H8	10.01
60.00		70.00	5.00	H8	8.02	76.20	3"	88.90	6.35	H8	12.93
60.00		72.00	6.00	H8	9.77	76.20	3"	95.25	9.525	H8	20.14
60.00		75.00	7.50	H8	12.49						
60.00		80.00	10.00	H8	17.26	80.00		90.00	5.00	H8	10.48
60.00		85.00	12.50	H8	22.35	80.00		92.00	6.00	H8	12.73
60.00		90.00	15.00	H8	27.74	80.00		95.00	7.50	H8	16.18
						80.00		100.00	1.00	H8	22.20
62.00		70.00	4.00	H8	6.51	80.00		105.00	12.50	H8	28.52
						80.00		110.00	15.00	H8	35.14
63.00		68.00	2.50	H9	4.04	80.00	*	127.00	23.50	H8	59.98
63.00		70.00	3.50	H9	5.74						
63.00		73.00	5.00	H8	8.39	82.55	3¼"	95.00	6.225	H8	13.63
63.00		75.00	6.00	H8	10.21	82.55	3¼"	101.60	9.525	H8	21.63
63.00		77.00	7.00	H8	12.08						
63.00		78.00	7.50	H8	13.04	85.00		95.00	5.00	H8	11.10
63.00		80.00	8.50	H8	14.99	85.00		100.00	7.50	H8	17.11
63.00		83.00	10.00	H8	18.00	85.00		105.00	10.00	H8	23.43
63.00		88.00	12.50	H8	23.27	85.00		110.00	12.50	H8	30.06
						85.00		115.00	15.00	H8	36.99
63.50		76.20	6.35	H8	10.94						
						88.90	3½"	101.60	6.35	H8	14.92
65.00		75.00	5.00	H8	8.63	88.90	3½"	114.30	12.70	H8	31.82
65.00		80.00	7.50	H8	13.41						
65.00		85.00	10.00	H8	18.50	90.00		100.00	5.00	H8	11.71
65.00		95.00	15.00	H8	29.59	90.00		102.00	6.00	H8	14.21
						90.00		105.00	7.50	H8	18.03
70.00		76.00	3.00	H8	5.40	90.00		110.00	10.00	H8	24.66
70.00		80.00	5.00	H8	9.25	90.00		115.00	12.50	H8	31.60
70.00		82.00	6.00	H8	11.25	90.00		120.00	15.00	H8	38.84
70.00		85.00	7.50	H8	14.33						
70.00		90.00	10.00	H8	19.73	95.00		105.00	5.00	H8	12.33
70.00		95.00	12.50	H8	25.43	95.00		110.00	7.50	H8	18.96
70.00		100.00	15.00	H8	31.44	95.00		115.00	10.00	H8	25.90
70.00	*	114.30	22.15	H8	50.34	95.00		120.00	12.50	H8	33.14
75.00		85.00	5.00	H8	9.87	100.00		110.00	5.00	H8	12.95
75.00		87.00	6.00	H8	11.99	100.00		112.00	6.00	H8	15.69
75.00		90.00	7.50	H8	15.26	100.00		115.00	7.50	H8	19.88
75.00		95.00	10.00	H8	20.96	100.00		120.00	10.00	H8	27.13
75.00		100.00	12.50	H8	26.97	100.00		125.00	12.50	H8	34.68
75.00		105.00	15.00	H8	33.29	100.00		130.00	15.00	H8	42.54
75.00		114.30	19.65	H8	45.87	100.00		140.00	20.00	H8	59.19
						100.00		146.00	23.00	H8	69.77
						100.00	*	152.40	26.20	H8	81.54

ID mm	ID inch	OD	WT	Tol. ID	kg/m	ID mm	ID inch	OD	WT	Tol ID	kg/m
101.60	4"	114.30	6.35	H8	16.91	125.00	* 4"	177.80	26.40	H8	98.57
101.60	4"	120.65	9.525	H8	26.10	125.00	* 4"	203.00	39.00	H8	157.74
101.60	4"	127.00	12.70	H8	35.80	127.00	5"	135.00	4.00	H11	12.92
105.00		115.00	5.00	H9	13.56	127.00	5"	139.70	6.35	H8	20.88
105.00		120.00	7.50	H8	20.81	127.00	5"	146.00	9.50	H8	31.98
105.00		125.00	10.00	H8	28.36	127.00	5"	146.05	9.53	H8	32.09
105.00		130.00	12.50	H8	36.22	127.00	* 5"	152.40	12.70	H9	43.75
105.00		135.00	15.00	H8	44.39	127.00	* 5"	159.00	16.00	H8	56.43
107.95	4 1/4"	127.00	9.53	H8	27.61	130.00		140.00	5.00	H11	16.65
107.95	4 1/4"	133.35	12.70	H8	37.79	130.00		145.00	7.50	H9	25.43
107.95	* 4 1/4"	139.70	15.88	H8	48.49	130.00		150.00	10.00	H8	34.53
						130.00		155.00	12.50	H8	43.93
110.00		120.00	5.00	H9	14.18	130.00		160.00	15.00	H8	53.64
110.00		125.00	7.50	H8	21.73	130.00		165.00	17.50	H8	63.66
110.00		130.00	10.00	H8	29.59						
110.00		135.00	12.50	H8	37.76	133.35	* 5 1/4"	159.57	13.11	H8	47.35
110.00		140.00	15.00	H8	46.24						
110.00	* 4 1/2"	159.00	24.50	H8	81.27	135.00		150.00	7.50	H9	26.36
						135.00		155.00	10.00	H8	35.76
114.30	4 1/2"	127.00	6.35	H8	18.89	135.00		160.00	12.50	H8	45.47
114.30	4 1/2"	133.35	9.525	H8	29.09						
						140.00		150.00	5.00	H11	17.88
115.00		125.00	5.00	H8	14.80	140.00		155.00	7.50	H9	27.28
115.00		130.00	7.50	H8	22.66	140.00		160.00	10.00	H8	36.99
115.00		135.00	10.00	H8	30.83	140.00		165.00	12.50	H8	47.01
115.00		140.00	12.50	H8	39.30	140.00		170.00	15.00	H8	57.34
115.00		145.00	15.00	H8	48.09	140.00		175.00	17.50	H8	67.97
115.00	* 4 1/2"	146.00	15.50	H8	49.88	140.00		180.00	20.00	H8	78.92
						140.00	* 5 1/4"	193.70	26.85	H8	110.48
120.00		130.00	5.00	H9	15.41	140.00	* 5 1/4"	219.10	39.55	H8	175.13
120.00		135.00	7.50	H8	23.58						
120.00		140.00	10.00	H8	32.06	145.00		160.00	7.50	H8	28.21
120.00		145.00	12.50	H8	40.85	145.00		170.00	12.50	H8	48.55
120.00		150.00	15.00	H8	49.94						
120.00	* 5"	152.40	16.20	H8	54.41	150.00		160.00	5.00	H11	19.11
120.00	* 5"	159.00	19.50	H8	67.09	150.00		165.00	7.50	H9	29.13
120.00		160.00	20.00	H8	69.05	150.00		170.00	10.00	H8	39.46
120.00	* 5 1/2"	177.80	28.90	H8	106.12	150.00		175.00	12.50	H8	50.09
						150.00		180.00	15.00	H8	61.04
125.00		135.00	5.00	H9	16.03	150.00	* 6"	219.10	34.55	H8	157.25
125.00		140.00	7.50	H8	24.51						
125.00		145.00	10.00	H8	33.29	152.40	6"	160.00	3.80	H11	14.64
125.00		150.00	12.50	H8	42.39	152.40	6"	177.80	12.70	H8	51.71
125.00		155.00	15.00	H8	51.79						
125.00		160.00	17.50	H8	61.50	155.00		170.00	7.50	H9	30.06

ID mm	ID inch	OD	WT	Tol. ID	kg/m	ID mm	ID inch	OD	WT	Tol ID	kg/m
160.00		170.00	5.00	H11	20.35	200.00	*	273.00	36.50	H8	212.88
160.00		175.00	7.50	H9	30.98	200.00	*	298.50	49.25	H8	302.73
160.00		180.00	10.00	H8	41.93						
160.00		185.00	12.50	H8	53.18	203.20	8"	215.00	5.90	H11	30.43
160.00		190.00	15.00	H8	64.74	203.20	8"	219.10	7.95	H11	41.40
160.00		195.00	17.50	H8	76.61	203.20	8"	235.00	15.90	H8	85.91
160.00	*	200.00	20.00	H8	88.78						
160.00	*	203.00	21.50	H8	96.24	210.00		244.50	17.25	H8	96.88
160.00	*	219.10	29.55	H8	138.13						
160.00		229.00	34.50	H8	165.49	220.00		245.00	12.50	H8	71.67
						220.00		250.00	15.00	H8	86.93
165.00		185.00	10.00	H8	43.16	220.00		254.00	17.00	H8	99.36
165.00		190.00	12.50	H8	54.72	220.00		255.00	17.50	H8	102.50
165.00		200.00	17.50	H8	78.76	220.00		270.00	25.00	H8	151.05
165.00	*	219.10	27.05	H8	128.12	220.00		273.00	26.50	H8	161.10
						220.00		298.50	39.25	H8	250.95
170.00		190.00	10.00	H8	44.39						
170.00		195.00	12.50	H8	56.26	225.00		254.00	14.50	H8	85.64
170.00		200.00	15.00	H8	68.44	225.00		267.00	21.00	H8	127.40
						225.00		273.00	24.00	H8	147.38
175.00		200.00	12.50	H8	57.80						
						230.00		267.00	18.50	H8	113.38
177.80	7"	203.20	12.70	H8	59.67	230.00		273.00	21.50	H8	133.35
						230.00		279.00	24.50	H8	153.77
180.00		200.00	10.00	H8	46.86	230.00		298.50	34.25	H8	223.20
180.00		205.00	12.50	H8	59.34						
180.00		210.00	15.00	H8	72.14	240.00		273.00	16.50	H8	104.37
180.00		215.00	17.50	H8	85.24	240.00		298.50	29.25	H8	194.22
180.00	*	219.10	19.55	H8	96.21						
180.00		220.00	20.00	H8	98.65	250.00		267.00	8.50	H11	54.19
180.00		229.00	24.50	H8	123.56	250.00		280.00	15.00	H8	98.03
180.00	*	244.50	32.25	H8	168.81	250.00		298.50	24.25	H8	164.01
						250.00		300.00	25.00	H8	169.55
190.00		210.00	10.00	H8	49.32	250.00		323.90	36.95	H8	261.48
190.00		220.00	15.00	H8	75.83						
190.00		230.00	20.00	H8	103.58	254.00	10"	267.00	6.50	H11	41.76
						254.00	10"	273.00	9.50	H11	61.73
200.00		210.00	5.00	H11	25.28	254.00	10"	298.50	22.25	H8	151.58
200.00		215.00	7.50	H9	38.38						
200.00		220.00	10.00	H8	51.79	260.00		298.50	19.25	H8	132.57
200.00		225.00	12.50	H8	65.51	260.00		305.00	22.50	H8	156.76
200.00		230.00	15.00	H8	79.53	260.00		323.90	31.95	H8	230.04
200.00		235.00	17.50	H8	93.87						
200.00		240.00	20.00	H8	108.51	280.00		323.90	21.95	H8	163.45
200.00	*	244.50	22.25	H8	121.95	280.00		343.00	31.50	H8	241.99
200.00		245.00	22.50	H8	123.46	280.00		355.60	37.80	H8	296.26
200.00	*	254.00	27.00	H8	151.15						



ID mm	ID inch	OD	WT	Tol. ID	kg/m	ID mm	ID inch	OD	WT	Tol ID	kg/m
290.00		355.60	32.80	H8	261.11						
300.00		323.90	11.95	H11	91.93						
300.00		343.00	21.50	H8	170.47						
300.00		355.60	27.80	H8	224.74						
300.00		368.00	34.00	H8	280.06						
300.00		381.00	40.50	H8	340.09						
300.00		394.00	47.00	H8	402.20						
304.80	12"	323.90	9.55	H11	74.04						
304.80	12"	355.60	25.40	H8	206.784						
320.00		343.00	11.50	H11	94.02						
320.00		368.00	24.00	H8	203.61						
320.00		381.00	30.50	H8	263.64						
320.00		394.00	37.00	H8	325.75						
320.00		406.40	43.20	H8	386.95						
350.00		368.00	9.00	H11	79.68						
350.00		381.00	15.50	H11	139.71						
350.00		406.40	28.20	H8	263.02						
350.00		419.00	34.50	H8	327.14						
355.60	14"	368.00	6.20	H11	55.32						
355.60	14"	406.40	25.40	H8	238.66						
400.00		419.00	9.50	H11	95.94						
400.00		470.00	35.00	H8	375.47						
400.00		508.00	54.00	H8	604.60						
450.00		470.00	10.00	H11	113.44						
450.00		530.00	40.00	H11	483.37						
500.00		521.00	10.50	H11	132.19						