

# 20MnV6 / E470 Seamless Tubes for the machining industry



ODS

klöckner & co multi metal distribution

It's no wonder with our wealth of experience, product and market knowledge we play a leading role in the Netherlands as stockholder of engineering steel. What's more, we are taking on this role outside the Netherlands to an ever greater extent. Wherever you are based in the world, our experienced export team ensures that we deliver your goods as scheduled. We are also happy to take care of all the transport and associated export documentation on your behalf.

### ODS makes the difference

ODS is synonymous with more than 200 years knowledge of and expertise in non-ferrous products, steel products, and materials for the construction sector and industry. ODS – one of the largest multimetal distributors in the Netherlands – offers an extremely comprehensive product range, streamlined logistics, and a wide range of machining processes.

ODS is a subsidiary of the German Klöckner & Co concern. Although ODS might initially appear to pivot on metal, in practice our core business is comprised of a cast-iron combination of quality, engineering, and service.

### Quality

Our many years experience with all the leading manufacturers and suppliers enables us to maintain the high quality of our product range. In addition, our quality is assured by a permanently-monitored quality system based on NEN-ISO 9001: 2000.

This system is issued by Lloyd's Register Quality Assurance. Moreover, our products are supplied in accordance with the prevailing international standards and, if so required, accompanied by a 2.2, 3.1 or 3.2 material certificate.

### Why opt for ODS?

We offer you a comprehensive range of materials, streamlined logistics, a wide range of machining processes, and expert advice.



### Applications

The hot rolled seamless hollow bars are usually processed on CNC controlled lathes, drilling machines, etc. for the manufacturing of a wide variety of cylindrical formed hollow rotary parts like crane construction parts, hollow shafts, cylinders, rolls, etc.

Dimensions up to an external diameter of 60 mm are usually cold rolled. They are then put through an annealing process to achieve the same condition as hot rolled hollow bar.

The application of tight tolerances with a guaranteed clean turning dimension offers reliability and reduction in turn time. The excellent material quality E470/20MnV6, the smooth internal and external surface, the

standard straightness of 1 : 1000 mm and the high weldability offer an excellent alternative for conventional thick walled steel tubes and round full bars.

### Delivery programme and technical terms of delivery

All OD 30-250 dimensions are subject to the EN 10294-1 norm. Larger dimensions can be delivered on request.

### Certificate

An EN 10204/3.1 material certificate can be supplied against payment on request.

### Remarks

Similar factory trade names such as 20MnVS6 - TI 6V - SKF 280 - MW 450 - 147 M - TB 47 HL were applicable in the past. However, all of these are comparable to seamless hollow bars E 470 (20MnV6).

20MnV6 hollow bar steel tubes are easy to harden and have a high tensile strength of 500 - 700 N/MM<sup>2</sup>.



### Lengths



Available in standard trade lengths of 4 – 7 metres.



We can also saw to fix lengths of OD 60 mm and above diameters.



Tubes longer than 7000 mm are available on request.







Article number	Guaranteed Dimensions after machining OD Chucking	Manufacturing Dimensions	EN 10294-1 Weight Kg/m
	 OD ID WT in mm	 OD ID WT in mm	
907102490	30,0/20,0 x 5,0	31,8/17,6 x 7,1	4,3
907102491	30,0/15,0 x 7,5	31,8/12,2 x 9,8	5,3
907102492	35,0/25,0 x 5,0	36,5/22,5 x 7,0	5,1
907102493	35,0/20,0 x 7,5	36,5/17,1 x 9,7	6,4
907102495	40,0/30,0 x 5,0	41,3/27,5 x 6,9	5,9
907102496	40,0/25,0 x 7,5	41,3/22,1 x 9,6	7,5
907102497	40,0/20,0 x 10,0	41,3/16,7 x 16,7	8,8
907102498	45,0/35,0 x 5,0	46,3/32,5 x 6,9	6,9
907102499	45,0/30,0 x 7,5	46,3/27,1 x 9,6	9,6
907102717	50,0/40,0 x 5,0	51,3/37,5 x 6,9	7,6
907102001	50,0/35,0 x 7,5	51,3/32,1 x 9,6	9,9
907102502	50,0/30,0 x 10,0	51,3/26,7 x 12,3	11,8
907102503	55,0/45,0 x 5,0	57,1/42,5 x 7,3	9,0
907102504	55,0/40,0 x 7,5	57,1/37,1 x 10,0	11,6
907102720	55,0/35,0 x 10,0	57,1/31,7 x 12,7	13,9
907102505	55,0/30,0 x 12,5	57,1/26,1 x 15,5	15,9
907102506	60,0/50,0 x 5,0	61,3/47,5 x 6,9	6,9
907102507	60,0/45,0 x 7,5	61,3/42,1 x 9,6	12,2
907102508	60,0/40,0 x 10,0	61,3/36,7 x 12,3	14,9
907102510	60,0/35,0 x 12,5	61,3/31,1 x 15,1	17,2
907115068	65,0/55,0 x 5,0	66,5/52,5 x 7,0	10,3
907115067	65,0/50,0 x 7,5	66,5/47,1 x 9,7	13,6
907115066	65,0/45,0 x 10,0	66,5/41,7 x 12,4	16,5
907115065	65,0/40,0 x 12,5	66,5/36,3 x 15,1	19,1
907115064	65,0/35,0 x 15,0	66,5/30,9 x 17,8	21,4
907102511	70,0/60,0 x 5,0	71,3/60,0 x 5,0	11,0
907102512	70,0/55,0 x 7,5	71,3/52,1 x 9,6	14,6
907102513	70,0/50,0 x 10,0	71,3/46,7 x 12,3	17,9
907102514	70,0/45,0 x 12,5	71,3/41,1 x 15,1	20,9
907102515	70,0/40,0 x 15,0	71,3/35,7 x 17,8	23,5
907102516	75,0/65,0 x 5,0	76,3/62,5 x 6,9	11,8
907102517	75,0/60,0 x 7,5	76,3/57,1 x 9,6	15,8
907102518	75,0/55,0 x 10,0	76,3/51,7 x 12,3	19,4
907102519	75,0/50,0 x 12,5	76,3/46,1 x 15,1	22,8
907102520	75,0/45,0 x 15,0	76,3/40,7 x 17,8	25,7
907102522	80,0/60,0 x 10,0	81,5/57,7 x 11,9	20,4
907102523	80,0/55,0 x 12,5	81,5/52,5 x 14,5	24,0
907102524	80,0/50,0 x 15,0	81,5/47,1 x 17,2	27,3
907102525	80,0/45,0 x 17,5	81,5/42,3 x 19,6	29,9
907102727	80,0/40,0 x 20,0	81,5/36,9 x 22,3	32,6
907102526	85,0/70,0 x 7,5	86,5/67,7 x 9,4	17,9
907102527	85,0/65,0 x 10,0	86,5/62,7 x 11,9	21,9
907102528	85,0/60,0 x 12,5	86,5/57,5 x 14,5	25,7
907102529	85,0/55,0 x 15,0	86,5/52,1 x 17,2	29,4
907102530	85,0/50,0 x 17,5	86,5/47,3 x 19,6	32,4
907102728	85,0/45,0 x 20,0	86,5/41,9 x 22,3	35,3

Article number	Guaranteed Dimensions after machining OD Chucking	Manufacturing Dimensions	EN 10294-1 Weight Kg/m
	 OD ID WT in mm	 OD ID WT in mm	
907102532	90,0/75,0 x 7,5	91,5/72,7 x 9,4	19,0
907102533	90,0/70,0 x 10,0	91,5/67,7 x 11,9	23,4
907102534	90,0/65,0 x 12,5	91,5/62,5 x 14,5	27,5
907102535	90,0/60,0 x 15,0	91,5/57,1 x 17,2	31,5
907102536	90,0/55,0 x 17,5	91,5/51,9 x 19,8	35,0
907102730	90,0/50,0 x 20,0	91,5/46,9 x 22,3	38,1
907102731	90,0/45,0 x 22,5	91,5/41,7 x 24,9	40,9
907116069	90,0/40,0 x 25,0	91,5/36,5 x 27,5	43,4
907102537	95,0/80,0 x 7,5	96,5/77,7 x 9,4	20,2
907102538	95,0/75,0 x 10,0	96,5/72,7 x 11,9	24,8
907102539	95,0/70,0 x 12,5	96,5/67,5 x 14,5	29,3
907102540	95,0/65,0 x 15,0	96,5/62,1 x 17,2	33,6
907102541	95,0/60,0 x 17,5	96,5/57,3 x 19,6	37,2
907102542	95,0/55,0 x 20,0	96,5/51,9 x 22,3	40,8
907115070	95,0/50,0 x 22,5	96,5/46,7 x 24,9	44,0
907115071	95,0/45,0 x 25,0	96,5/41,5 x 27,5	46,8
907115072	100,0/85,0 x 7,5	101,6/82,8 x 9,4	20,2
907102543	100,0/80,0 x 10,0	101,6/77,8 x 11,9	26,3
907102544	100,0/75,0 x 12,5	101,6/72,6 x 14,5	31,1
907102545	100,0/70,0 x 15,0	101,6/67,2 x 17,2	35,8
907102546	100,0/65,0 x 17,5	101,6/62,2 x 19,7	39,8
907102547	100,0/60,0 x 20,0	101,6/57,0 x 22,3	43,6
907115073	100,0/55,0 x 22,5	101,6/51,8 x 24,9	47,1
907115074	100,0/50,0 x 25,0	101,6/46,4 x 27,6	50,4
907115075	100,0/45,0 x 27,5	101,6/41,2 x 30,2	53,2
907115076	105,0/90,0 x 7,5	106,6/87,8 x 9,4	22,5
907115077	105,0/85,0 x 10,0	106,6/82,8 x 11,9	27,8
907102549	105,0/80,0 x 12,5	106,6/77,6 x 14,5	32,9
907102741	105,0/75,0 x 15,0	106,6/72,2 x 17,2	37,9
907102550	105,0/70,0 x 17,5	106,6/67,2 x 19,7	42,2
907102551	105,0/65,0 x 20,0	106,6/62,0 x 22,3	46,4
907102552	105,0/60,0 x 22,5	106,6/56,8 x 24,9	50,2
907102742	105,0/55,0 x 25,0	106,6/51,4 x 27,6	53,8
907115078	105,0/50,0 x 27,5	106,6/46,2 x 30,2	56,9
907102745	110,0/95,0 x 7,5	111,6/92,4 x 9,4	23,7
907102553	110,0/90,0 x 10,0	111,6/87,8 x 11,9	29,3
907102554	110,0/85,0 x 12,5	111,6/82,4 x 14,6	34,9
907102555	110,0/80,0 x 15,0	111,6/77,2 x 17,2	40,0
907102746	110,0/75,0 x 17,5	111,6/72,2 x 19,7	44,6
907102556	110,0/70,0 x 20,0	111,6/67,0 x 22,3	49,1
907102557	110,0/65,0 x 22,5	111,6/61,8 x 24,9	53,2
907115079	110,0/60,0 x 25,0	111,6/56,4 x 27,6	57,2
907115080	115,0/100,0 x 7,5	116,6/97,8 x 9,4	24,9
907115081	115,0/95,0 x 10,0	116,6/92,8 x 11,9	30,7
907115082	115,0/90,0 x 12,5	116,6/87,4 x 14,6	36,7
907115083	115,0/85,0 x 15,0	116,6/82,2 x 17,2	42,2
907115084	115,0/80,0 x 17,5	116,6/76,8 x 19,9	47,5
907115085	115,0/75,0 x 20,0	116,6/72,0 x 22,3	51,9
907115086	115,0/70,0 x 22,5	116,6/66,8 x 24,9	56,3
907115087	115,0/65,0 x 25,0	116,6/61,4 x 27,6	60,6

Article number	Guaranteed Dimensions after machining OD Chucking	Manufacturing Dimensions	EN 10294-1 Weight Kg/m
	 OD ID WT in mm	 OD ID WT in mm	
907102558	120,0/100,0 x 10,0	121,7/97,9 x 11,9	32,3
907102559	120,0/95,0 x 12,5	121,7/92,5 x 14,6	38,6
907102752	120,0/90,0 x 15,0	121,7/87,1 x 17,3	44,5
907102560	120,0/85,0 x 17,5	121,7/82,3 x 19,7	49,6
907115088	120,0/80,0 x 20,0	121,7/77,1 x 22,3	54,7
907102561	120,0/75,0 x 22,5	121,7/71,7 x 25,0	59,6
907102562	120,0/70,0 x 25,0	121,7/66,5 x 27,6	64,1
907102756	125,0/105,0 x 10,0	126,7/102,9 x 11,9	33,7
907102563	125,0/100,0 x 12,5	126,7/97,5 x 14,6	40,4
907102564	125,0/95,0 x 15,0	126,7/92,1 x 17,3	46,7
907102565	125,0/90,0 x 17,5	126,7/87,3 x 19,7	52,0
907102757	125,0/85,0 x 20,0	126,7/82,1 x 22,3	57,4
907102566	125,0/80,0 x 22,5	126,7/76,7 x 25,0	62,7
907102567	125,0/75,0 x 25,0	126,7/71,5 x 27,6	67,5
907102759	125,0/70,0 x 27,5	126,7/66,3 x 30,2	71,9
907102762	130,0/110,0 x 10,0	131,7/107,7 x 12,0	35,4
907102568	130,0/105,0 x 12,5	131,7/102,5 x 14,6	42,2
907102569	130,0/100,0 x 15,0	131,7/97,1 x 17,3	48,8
907102570	130,0/95,0 x 17,5	131,7/91,9 x 19,9	54,9
907115089	130,0/90,0 x 20,0	131,7/86,9 x 22,4	60,4
907102571	130,0/85,0 x 22,5	131,7/81,7 x 25,0	65,8
907102572	130,0/80,0 x 25,0	131,7/76,5 x 27,6	70,9
907102763	130,0/75,0 x 27,5	131,7/60,6 x 30,3	75,8
907102609	140,0/120,0 x 10,0	141,8/117,8 x 12,0	38,4
907102573	140,0/115,0 x 12,5	141,8/112,4 x 14,7	46,1
907102574	140,0/110,0 x 15,0	141,8/107,2 x 17,3	53,1
907102575	140,0/105,0 x 17,5	141,8/102,2 x 19,8	59,6
907102576	140,0/100,0 x 20,0	141,8/97,0 x 22,4	66,0
907102577	140,0/95,0 x 22,5	141,8/91,8 x 25,0	72,0
907102767	140,0/90,0 x 25,0	141,8/86,4 x 27,4	77,9
907115090	140,0/85,0 x 27,5	141,8/81,2 x 30,3	83,3
907115091	140,0/80,0 x 30,0	141,8/76,0 x 32,9	88,4
907115092	140,0/75,0 x 32,5	141,8/70,6 x 35,6	93,3
907102772	150,0/130,0 x 10,0	151,8/127,8 x 12,0	41,4
907102578	150,0/125,0 x 12,5	151,8/122,4 x 14,7	49,7
907102579	150,0/120,0 x 15,0	151,8/117,2 x 17,3	57,4
907102580	150,0/115,0 x 17,5	151,8/112,2 x 19,8	64,5
907102581	150,0/110,0 x 20,0	151,8/107,0 x 22,4	71,5
907102582	150,0/105,0 x 22,5	151,8/101,6 x 25,1	78,4
907102775	150,0/100,0 x 25,0	151,8/96,4 x 27,7	84,8
907115093	150,0/95,0 x 27,5	151,8/91,2 x 30,3	90,8
907115094	150,0/90,0 x 30,0	151,8/86,0 x 32,9	96,5
907115095	150,0/85,0 x 32,5	151,8/80,6 x 35,6	102,0

Article number	Guaranteed Dimensions after machining OD Chucking	Manufacturing Dimensions	EN 10294-1 Weight Kg/m
	 OD ID WT in mm	 OD ID WT in mm	
907115096	160,0/135,0 x 12,5	161,9/132,5 x 14,7	53,4
907102583	160,0/130,0 x 15,0	161,9/127,1 x 17,4	62,0
907102584	160,0/125,0 x 17,5	161,9/122,3 x 19,8	69,4
907102585	160,0/120,0 x 20,0	161,9/117,1 x 22,4	77,1
907102586	160,0/115,0 x 22,5	161,9/111,7 x 25,1	84,7
907102587	160,0/110,0 x 25,0	161,9/106,5 x 27,7	91,7
907115097	160,0/105,0 x 27,5	161,9/101,3 x 30,3	98,3
907115098	160,0/100,0 x 30,0	161,9/95,9 x 33,0	104,9
907115099	160,0/95,0 x 32,5	161,9/90,7 x 35,6	110,9
907115100	160,0/90,0 x 35,0	161,9/85,5 x 38,2	116,5
907115101	160,0/85,0 x 37,5	161,9/80,1 x 40,9	122,0
907102787	170,0/145,0 x 12,5	171,9/142,5 x 14,7	57,0
907102588	170,0/140,0 x 15,0	171,9/137,1 x 17,4	66,3
907102589	170,0/135,0 x 17,5	171,9/132,3 x 19,8	74,3
907102590	170,0/130,0 x 20,0	171,9/126,9 x 22,5	82,9
907102591	170,0/125,0 x 22,5	171,9/121,7 x 25,1	90,9
907102592	170,0/120,0 x 25,0	171,9/116,5 x 27,7	98,5
907115102	170,0/115,0 x 27,5	171,9/111,1 x 30,4	106,0
907115103	170,0/110,0 x 30,0	171,9/105,9 x 33,0	113,0
907115104	170,0/105,0 x 32,5	171,9/100,7 x 35,6	119,7
907115103	170,0/100,0 x 35,0	171,9/95,3 x 38,3	126,2
907115106	170,0/95,0 x 37,5	171,9/90,1 x 40,9	132,1
907115107	170,0/90,0 x 40,0	171,9/84,9 x 43,5	137,7
907115108	170,0/85,0 x 42,5	171,9/79,5 x 46,2	143,2
907115109	170,0/80,0 x 45,0	171,9/74,3 x 48,8	148,1
907102611	180,0/155,0 x 12,5	181,9/152,5 x 14,7	60,6
907102593	180,0/150,0 x 15,0	181,9/147,1 x 17,4	70,6
907102594	180,0/145,0 x 17,5	181,9/142,3 x 19,8	79,1
907102595	180,0/140,0 x 20,0	181,9/136,9 x 22,5	88,4
907102612	180,0/135,0 x 22,5	181,9/131,7 x 25,1	97,1
907102596	180,0/130,0 x 25,0	181,9/126,5 x 27,7	105,3
907115110	180,0/125,0 x 27,5	181,9/121,1 x 30,4	113,6
907115111	180,0/120,0 x 30,0	181,9/115,9 x 33,0	121,2
907115112	180,0/115,0 x 32,5	181,9/110,7 x 35,6	128,4
907115113	180,0/110,0 x 35,0	181,9/105,3 x 38,3	135,6
907115114	180,0/105,0 x 37,5	181,9/100,1 x 40,9	142,2
907115115	180,0/100,0 x 40,0	181,9/94,9 x 43,5	148,5
907115116	180,0/95,0 x 42,5	181,9/89,5 x 46,2	154,6
907115117	180,0/90,0 x 45,0	181,9/84,3 x 48,8	160,2
907115118	180,0/85,0 x 47,5	181,9/79,1 x 51,4	165,4
907115119	190,0/165,0 x 12,5	192,4/162,4 x 15,0	65,6
907102597	190,0/160,0 x 15,0	192,4/157,0 x 17,7	76,3
907115120	190,0/155,0 x 17,5	192,4/152,2 x 20,1	85,4
907115121	190,0/150,0 x 20,0	192,4/146,8 x 22,8	95,4
907115122	190,0/145,0 x 22,5	192,4/141,6 x 25,4	104,6
907115123	190,0/140,0 x 25,0	192,4/136,4 x 28,0	113,5
907102598	190,0/135,0 x 27,5	192,4/131,2 x 30,6	122,1
907115124	190,0/130,0 x 30,0	192,4/125,8 x 33,3	130,6
907115125	190,0/125,0 x 32,5	192,4/120,6 x 35,9	138,5
907102613	190,0/120,0 x 35,0	192,4/115,4 x 38,5	146,1
907115126	190,0/115,0 x 37,5	192,4/110,0 x 41,2	153,6
907102801	190,0/110,0 x 40,0	192,4/104,8 x 43,8	160,5
907115127	190,0/105,0 x 42,5	192,4/100,2 x 46,1	167,1
907115128	190,0/100,0 x 45,0	192,4/94,2 x 49,1	173,5

Article number	Guaranteed Dimensions after machining OD Chucking	Manufacturing Dimensions	EN 10294-1 Weight Kg/m	Article number	Guaranteed Dimensions after machining OD Chucking	Manufacturing Dimensions	EN 10294-1 Weight Kg/m
	 OD ID WT in mm	 OD ID WT in mm			 OD ID WT in mm	 OD ID WT in mm	
907115139	200,0/175,0 x 12,5	202,5/172,3 x 15,1	69,8	907102603	220,0/180,0 x 20,0	222,7/172,3 x 25,2	122,7
907115130	200,0/170,0 x 15,0	202,5/167,1 x 17,7	80,7	907115151	220,0/170,0 x 25,0	222,7/192,0 x 30,7	145,4
907115131	200,0/165,0 x 17,5	202,5/162,1 x 20,2	90,8	907102604	220,0/160,0 x 30,0	222,7/150,1 x 36,3	166,9
907102599	200,0/160,0 x 20,0	202,5/156,9 x 22,8	101,0	907115152	220,0/155,0 x 32,5	222,7/144,5 x 39,1	177,0
907115132	200,0/155,0 x 22,5	202,5/151,7 x 25,4	110,9	907115153	220,0/150,0 x 35,0	222,7/139,1 x 41,8	186,5
907115133	200,0/150,0 x 25,0	202,5/146,3 x 28,1	120,9	907115154	220,0/145,0 x 37,5	222,7/133,5 x 44,6	195,9
907102600	200,0/145,0 x 27,5	202,5/141,1 x 30,7	130,1	907115155	220,0/140,0 x 40,0	222,7/127,9 x 47,4	204,9
907115134	200,0/140,0 x 30,0	202,5/135,9 x 33,3	138,9	907115156	220,0/135,0 x 42,5	222,7/122,3 x 50,2	213,5
907115135	200,0/135,0 x 32,5	202,5/130,7 x 35,9	147,5	907102614	220,0/130,0 x 45,0	222,7/116,7 x 53,0	221,8
907115136	200,0/130,0 x 35,0	202,5/125,3 x 38,6	156,0	907115157	220,0/125,0 x 47,5	222,7/111,1 x 55,8	229,7
907115137	200,0/125,0 x 37,5	202,5/120,1 x 41,2	163,9				
907115138	200,0/120,0 x 40,0	202,5/114,9 x 43,8	171,4	907115158	230,0/190,0 x 20,0	234,9/182,1 x 26,4	135,7
907102618	200,0/115,0 x 42,5	202,5/109,5 x 46,5	178,9	907115159	230,0/180,0 x 25,0	234,9/170,9 x 32,0	160,1
907115139	200,0/110,0 x 45,0	202,5/104,3 x 49,1	185,7	907115160	230,0/170,0 x 30,0	234,9/159,9 x 37,5	182,5
907115140	200,0/105,0 x 47,5	202,5/99,1 x 51,7	192,3	907115161	230,0/160,0 x 35,0	234,9/148,7 x 43,1	203,9
907115141	200,0/100,0 x 50,0	202,5/90,3 x 56,1	202,5	907115162	230,0/155,0 x 37,5	234,9/143,1 x 45,9	213,9
				907115163	230,0/150,0 x 40,0	234,9/137,5 x 48,7	223,6
907115142	210,0/185,0 x 12,5	214,1/178,9 x 17,6	85,3	907115164	230,0/145,0 x 42,5	234,9/132,1 x 51,4	232,6
907115143	210,0/180,0 x 15,0	214,1/173,6 x 20,4	97,4	907115165	230,0/140,0 x 45,0	234,9/126,5 x 54,2	241,5
907102601	210,0/175,0 x 17,5	214,1/167,7 x 23,2	109,2	907115166	230,0/135,0 x 47,5	234,9/120,9 x 57,0	250,0
907115144	210,0/170,0 x 20,0	214,1/162,3 x 25,9	120,2	907115167	230,0/130,0 x 50,0	234,9/115,3 x 59,8	258,2
907115145	210,0/165,0 x 22,5	214,1/156,7 x 28,7	131,2	907115168	230,0/125,0 x 52,5	234,9/109,9 x 62,5	265,7
907115146	210,0/160,0 x 25,0	214,1/151,1 x 31,5	141,8				
907102602	210,0/155,0 x 27,5	214,1/145,5 x 34,3	152,1	907102828	250,0/200,0 x 25,0	252,9/190,9 x 31,0	169,6
907115147	210,0/150,0 x 30,0	214,1/140,1 x 37,0	161,6	907102829	250,0/190,0 x 30,0	252,9/179,9 x 36,5	194,8
907115148	210,0/145,0 x 32,5	214,1/134,5 x 39,8	171,1	907102616	250,0/180,0 x 35,0	252,9/168,7 x 42,1	218,9
907115149	210,0/140,0 x 35,0	214,1/128,9 x 42,6	180,2	907115169	250,0/170,0 x 40,0	252,9/157,7 x 47,6	241,0
907115150	210,0/135,0 x 37,5	214,1/123,3 x 45,4	188,9	907115170	250,0/160,0 x 45,0	252,9/146,5 x 53,2	262,0
907102617	210,0/130,0 x 40,0	214,1/117,7 x 48,2	197,2	907115171	250,0/155,0 x 47,5	252,9/140,9 x 56,0	271,9
907102814	210,0/125,0 x 42,5	214,1/112,3 x 50,9	204,8	907102610	250,0/150,0 x 50,0	252,9/135,3 x 58,8	281,4
				907115172	250,0/145,0 x 52,5	252,9/129,9 x 61,5	290,3
				907102833	250,0/140,0 x 55,0	252,9/124,3 x 64,3	299,0

Delivery from stock

## Tolerances

		On WT of delivered product			
On the OD of delivered product		OD <_ 180		OD > 180	
Delivered OD (mm)	Tolerance	Delivered WT (mm)	Tolerance	Delivered WT (mm)	Tolerance
OD <_ 75	+/- 0,5 mm	<_ 15	+/- 12,5% of +/- 0,4 mm	<_ 30	+/- 12,5%
75 < OD <_ 180	+/- 0,75%	> 15	+/- 10%	> 30	+/- 10%
OD > 180	+/- 1%				

## Chemical analysis

EN 10294-1	C	Si	Mn	P	S	Al	V
E470	0,16-0,22	0,10-0,50	1,30-1,70	<_ 0,030	0,015-0,050	>_ 0,010-0,035	0,08-0,15

## Mechanical properties for nominal wall thickness – Tensile test

EN 10294-1	Rp02 min. (MPa)				Rm min. (MPa)				Rek A% L = 5,65√S)
	T≤16	≤ 25	≤ 50	≤ 65	T≤16	≤ 25	≤ 50	≤ 65	
E470	470	460	430	400	650	620	600	550	17(15) <sup>2</sup> 15(13) <sup>2</sup>

## Range for the machining industry

### Unalloyed steel

- Hot rolled C45+N, C60+N, S355J2+AR, random lengths 6 mtr dia 16-290 mm
- Forged C45N, C60N, S355J+N, random lengths 6 mtr dia 300-1000 mm

### Unalloyed Lloyds classified steel

- Hot rolled C22.8+N, C45+N and S355J2+N, random lengths 6-12 mtr round 25-290 mm
- Forged C22.8+N, C45+N and S355J2+N, premachined random lengths 4-6 mtr round 300-800 mm

### Alloy steel

- Hot rolled 42CrMo4QT, 34CrNiMo6QT, 30CrNiMo8QT, random lengths 6 mtr round 20-290 mm
- Forged 42CrMo4QT, 34CrNiMo6QT, premachined random lengths 3-6 mtr round 300-1000 mm

### Casehardening steel

- Hot rolled 16MnCr5A and 15CrNi6+A, random lengths 6 mtr round 20-290 mm
- Forged 16MnCr5S premachined, random lengths 4-6 mtr round 300-440 mm

### Bright steel

- (Lead alloy) free-cutting steel
- Bars: round, square, hexagonal and flat
- Ground bar material

### Stainless steel

- 1.4301, 1.4305, 1.4404, 1.4104, 1.4057, 1.4462, 1.4122 and 1.4542 (174 PH)
- Bars: round square, hexagonal and flat
- Bright, rolled and forged

### Aluminium bars

- 2007 (AlCuMgPb) free-cutting quality
- 2011 (AlCuBiPb) free-cutting quality
- 6082 (AlMgSi1) long-chipping, corrosion-resistant
- 6262 (AlMgSiPb) semi-free-cutting quality, anodisable
- 7075 (AlZnMgCu1,5) strongest and hardest aluminium alloy
- Thick-walled pipes

### Aluminium sheet

- 5083 (AlMgSi1) up to 200 mm thick, brushed on both sides, with protective film
- 6082 (AlMgSi1) up to 200 mm thick, brushed on both sides, with protective film
- 7075 (AlZnMgCu1,5) up to 150 mm thick, high quality
- MIC 6 cast and flat-milled precision sheet

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