

11SMn30

W.Nr. 1.0715

General size range Ø 5,5 – 140 mm

Chemical composition	C=max.0,14	Si=max.0,05	Mn=0,90-1,30	P=max.0,110	S=0,270-0,330
	Cu=max.0,30				

Grade equivalents Similar grades	230M07	-	S 250	SUM 22	11109
	BS	GB	AFNOR	JIS	CSN
	1213	CF 9SMn28	1912	-	
	SAE	UNI	SS	GOST	

Hot rolled wire rod	Ø 5,5–32 mm	Tolerances	DIN 59110 or specific tol.		
		Coils	min. 1,5 tons or specific weights		
		Heat treatment	+AR		
		Surface defects	for cold drawing		

Hot rolled bars	Ø 16–140 mm	Tolerances	EN 10060 or specific tol.		
		Lengths	6 m +200/-0 mm or 3 – 6 m or specific lengths		
		Heat treatment	+AR EN 10087		
		Surface defects	EN 10221/B or max. 1,5% or specific value		
		US test	SEP 1921 3C/c		

Peeled	Ø 16–100 mm	Tolerances	EN 10278 h9 or EN 10278 h11 or specific tol.		
		Lengths	6 m +200/-0 mm or specific lengths		
		Heat treatment	+AR h9/ h11		
		Surface defects	max. 0,2 mm or specific depth		
		US test	SEP 1921 3C/c		

Other available products	squares- flats-hexagons rolled, squares-flats-hexagons cold drawn, square billets rolled, square billets CC cast
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Mill's test certificate	EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing
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- supply range file - issued: 20.02.2009 rev. 1

11SMnPb30

W.Nr. 1.0718

General size range Ø 5,5 – 64 mm

Chemical composition	C=max.0,14	Si=max.0,05	Mn=0,90-1,30	P=max.0,110	S=0,270-0,330
	Cu=max.0,30	Pb=0,20-0,35			

Grade equivalents Similar grades	-	-	S 250 Pb	SUM 22 L	11109+Pb
	BS	GB	AFNOR	JIS	CSN
	12L13	CF 9SMnPb28	1914	-	
	SAE	UNI	SS	GOST	

Hot rolled wire rod	Ø 5,5–32 mm	Tolerances	DIN 59110	or	specific tol.	
		Coils	min. 1,5 tons	or	specific weights	
		Heat treatment	+AR			
		Surface defects	for cold drawing			

Hot rolled bars	Ø 16–64 mm	Tolerances	EN 10060	or	specific tol.		
		Lengths	6 m +200/-0 mm	or	3 – 6 m	or	specific lengths
		Heat treatment	+AR EN 10087				
		Surface defects	EN 10221/B	or	max. 1,5%	or	specific value
		US test	SEP 1921 3C/c				

Other available products rounds-squares-flats-hexagons cold drawn

Mill's test certificate EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

S355J2G3

W.Nr. 1.0570

General size range Ø 5,5 – 1000 mm

Chemical composition	C =max.0,20*	Si =max.0,55	Mn =max.1,60	P =max.0,035	S =max.0,035
	Cr =max.0,30	Al =min.0,020	Cu =max.0,30	Ceq =max.0,45**	Ni =max.0,30

*C=max.0,22% for sizes over 40 mm

**Ceq=max.0,47% for sizes 40-150 mm, Ceq=max.0,49% sizes over 150 mm

Grade equivalents
Similar grades

50D BS	15Mn GB	E36-3 AFNOR	SM 490 JIS	11523 CSN
1024 SAE	Fe 510 UNI	2132 SS	17GS GOST	

Hot rolled wire rod Ø 5,5–32 mm

Tolerances	DIN 59110	or	specific tol.
Coils	min. 1,5 tons	or	specific weights
Heat treatment	+AR		
Surface defects	for cold drawing		

Hot rolled bars Ø 16–310 mm

Tolerances	EN 10060	or +/- 1,3% of dN	or	specific tol.	
Lengths	6 m +200/-0 mm	or	3 – 6 m	or	specific lengths
Heat treatment	+AR EN 10025 or +N EN 10025				
Surface defects	EN 10221/B	or	max. 1,5%	or	specific value
US test	SEP 1921 3C/c	or	EN 10308	or	specific FBH eq.

Forged black Ø 250–1000 mm

Tolerances	DIN 7527/6	or	specific tol.
Lengths	3 – 6 m	or	specific lengths
Heat treatment	+N EN 10250-2		
Surface defects	max. ½ the tol.	or	specific depth
US test	SEP 1921 3C/c	or	specific FBH eq.

Peeled Ø 16–100 mm

Tolerances	EN 10278 h9	or	EN 10278 h11	or	specific tol.
Lengths	6 m +200/-0 mm	or	specific lengths		
Heat treatment	+AR h9/ h11 or +N h9/ h11				
Surface defects	max. 0,2 mm	or	specific depth		
US test	SEP 1921 3C/c	or	specific FBH eq.		

Forged turned Ø 250–850 mm

Tolerances	+3/-0 mm	or	+4/-0 mm	or	+5/-0 mm	or	
Lengths	3 – 6 m	or	specific lengths				
Heat treatment	+N EN 10250-2						
Surface defects	technically free	or	specific depth				
US test	SEP 1921 3C/c	or	specific FBH eq.				

Other available products

squares- flats-hexagons rolled, rounds-squares-flats-hexagons cold drawn, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast

Mill's test certificate

EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

C35R

W.Nr. 1.1180

General size range Ø 5,5 – 1000 mm

Chemical composition	C=0,32-0,39	Si=max.0,40	Mn=0,50-0,80	P=max.0,030	S=0,020-0,040
	Cr=max.0,40	Al=min.0,020	Cu=max.0,30	Ni=max.0,40	Mo=max.0,10

Cr+Mo+Ni=max.0,63%

Also available: C35E (S=max.0,035%), C35 (S=max.0,045%)

Grade equivalents
Similar grades

080A35	35	3C35	S35C	12040
BS	GB	AFNOR	JIS	CSN
1035	C35	1572	35	
SAE	UNI	SS	GOST	

Hot rolled wire rod Ø 5,5–32 mm

Tolerances	DIN 59110	or	specific tol.
Coils	min. 1,5 tons	or	specific weights
Heat treatment	+AR		
Surface defects	for cold drawing		

Hot rolled bars Ø 16–310 mm

Tolerances	EN 10060	or +/- 1,3% of dN	or	specific tol.	
Lengths	6 m +200/-0 mm	or	3 – 6 m	or	specific lengths
Heat treatment	+AR EN 10083-2 or +N EN 10083-2				
Surface defects	EN 10221/B	or	max. 1,5%	or	specific value
US test	SEP 1921 3C/c	or	EN 10308	or	specific FBH eq.

Forged black Ø 250–1000 mm

Tolerances	DIN 7527/6	or	specific tol.
Lengths	3 – 6 m	or	specific lengths
Heat treatment	+N EN 10250-2		
Surface defects	max. ½ the tol.	or	specific depth
US test	SEP 1921 3C/c	or	specific FBH eq.

Peeled Ø 16–100 mm

Tolerances	EN 10278 h9	or	EN 10278 h11	or	specific tol.
Lengths	6 m +200/-0 mm	or	specific lengths		
Heat treatment	+AR h9/ h11 or +N h9/ h11				
Surface defects	max. 0,2 mm	or	specific depth		
US test	SEP 1921 3C/c	or	specific FBH eq.		

Forged turned Ø 250–850 mm

Tolerances	+3/-0 mm	or	+4/-0 mm	or	+5/-0 mm	or	specific tol.
Lengths	3 – 6 m	or	specific lengths				
Heat treatment	+N EN 10250-2						
Surface defects	technically free	or	specific depth				
US test	SEP 1921 3C/c	or	specific FBH eq.				

Other available products

squares- flats-hexagons rolled, squares-flats-hexagons cold drawn, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast

Mill's test certificate

EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

C45R

W.Nr. 1.1201

General size range Ø 5,5 – 1000 mm

Chemical composition	C=0,42-0,50	Si=max.0,40	Mn=0,50-0,80	P=max.0,030	S=0,020-0,040
	Cr=max.0,40	Al=min.0,020	Cu=max.0,30	Ni=max.0,40	Mo=max.0,10

Cr+Mo+Ni=max.0,63%

Also available: C45E (S=max.0,035%), C45 (S=max.0,045%)

Grade equivalents
Similar grades

080M46	45	3C45	S50C	12050
BS	GB	AFNOR	JIS	CSN
1045	C45	1660	45	
SAE	UNI	SS	GOST	

Hot rolled wire rod Ø 5,5–32 mm

Tolerances	DIN 59110	or	specific tol.
Coils	min. 1,5 tons	or	specific weights
Heat treatment	+AR		
Surface defects	for cold drawing		

Hot rolled bars Ø 16–310 mm

Tolerances	EN 10060	or +/- 1,3% of dN	or	specific tol.	
Lengths	6 m +200/-0 mm	or	3 – 6 m	or	specific lengths
Heat treatment	+AR EN 10083-2	or	+N EN 10083-2	or	+A EN 10083-2
Surface defects	EN 10221/B	or	max. 1,5%	or	specific value
US test	SEP 1921 3C/c	or	EN 10308	or	specific FBH eq.

Forged black Ø 250–1000 mm

Tolerances	DIN 7527/6	or	specific tol.
Lengths	3 – 6 m	or	specific lengths
Heat treatment	+N EN 10250-2		
Surface defects	max. ½ the tol.	or	specific depth
US test	SEP 1921 3C/c	or	specific FBH eq.

Peeled Ø 16–100 mm

Tolerances	EN 10278 h9	or	EN 10278 h11	or	specific tol.
Lengths	6 m +200/-0 mm	or	specific lengths		
Heat treatment	+AR h9/ h11	or	+N h9/ h11	or	+A h9/h11
Surface defects	max. 0,2 mm	or	specific depth		
US test	SEP 1921 3C/c	or	specific FBH eq.		

Forged turned Ø 250–850 mm

Tolerances	+3/-0 mm	or	+4/-0 mm	or	+5/-0 mm	or	specific tol.
Lengths	3 – 6 m	or	specific lengths				
Heat treatment	+N EN 10250-2						
Surface defects	technically free	or	specific depth				
US test	SEP 1921 3C/c	or	specific FBH eq.				

Other available products

squares- flats-hexagons rolled, squares-flats-hexagons cold drawn, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast

Mill's test certificate

EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

100Cr6

W.Nr. 1.3505

General size range Ø 16 – 140 mm

Chemical composition	C=0,95-1,05	Si=0,15-0,35	Mn=0,25-0,45	P=max.0,030	S=0,020-0,035
	Cr=1,35-1,65	Mo=max.0,08	Al=0,010-0,050	Cu=max.0,30	Ni=max.0,25

acc. to Bosch Norm N28 5 178/ 08-01

Grade equivalents
Similar grades

353A99 BS	GCr15 GB	100Cr6 AFNOR	SUJ2 JIS	14109 CSN
52100 SAE	100Cr6 UNI	2258 SS	SchCh15 GOST	

Hot rolled Ø 16–140 mm

Tolerances	EN 10060			
Lengths	6 m +200/-0 mm or 3 – 6 m or specific lengths			
Heat treatment	+A BN N28 or +AC BN N28 or +A DIN 27230 or +AC DIN 17230			
Surface defects	EN 10221/B or max. 1,5% or specific value			
US test	SEP 1921 3C/c			

Peeled Ø 16–100 mm

Tolerances	EN 10278 h9 or EN 10278 h11 or specific tol.			
Lengths	6 m +200/-0 mm or specific lengths			
Heat treatment	+A h9/ h11 or +AC h9/ h11			
Surface defects	max. 0,2 mm or specific depth			
US test	SEP 1921 3C/c			

Mill's test certificate

EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

42CrMo4

W.Nr. 1.7225

General size range Ø 16 – 1000 mm

Chemical composition	C=0,38-0,45	Si=max.0,40	Mn=0,60-0,90*	P=max.0,035	S=max.0,035
	Cr=0,90-1,20	Mo=0,15-0,30	Al=min.0,020	Cu=max.0,30	

*Mn=0,50-0,80 acc. to SEW 550

Grade equivalents

Similar grades

708/709M40	42CrMo	42CD4	SCM440	15142
BS	GB	AFNOR	JIS	CSN
4140	38CrMo4	2244	40ChFA	
SAE	UNI	SS	GOST	

Hot rolled	Ø 16–310 mm	Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.	
		Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths	
		Heat treatment	+A EN 10083-3	or +N EN 10083-3	or +QT EN 10083-3	or +AR
		Surface defects	EN 10221/B	or max. 1,5%	or specific value	
		US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.	

Forged black	Ø 250–1000 mm	Tolerances	DIN 7527/6	or specific tol.		
		Lengths	3 – 6 m	or specific lengths		
		Heat treatment	+A EN 10250-3	or +N EN 10250-3	or +QT EN 10250-3	or +QT SEW550
		Surface defects	max. ½ the tol.	or specific depth		
		US test	SEP 1921 3C/c	or specific FBH eq.		

Peeled	Ø 16–100 mm	Tolerances	EN 10278 h9	or EN 10278 h11	or specific tol.	
		Lengths	6 m +200/-0 mm	or specific lengths		
		Heat treatment	+A h9/ h11	or +N h9/ h11	or +QT h11	
		Surface defects	max. 0,2 mm	or specific depth		
		US test	SEP 1921 3C/c	or specific FBH eq.		

Forged turned	Ø 250–850 mm	Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.	
		Lengths	3 – 6 m	or specific lengths			
		Heat treatment	+A EN 10250-3	or +N EN 10250-3	or +QT EN 10250-3	or +QT SEW550	
		Surface defects	technically free	or specific depth			
		US test	SEP 1921 3C/c	or specific FBH eq.			

Other available products	squares-hexagons rolled, squares-hexagons cold drawn, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast
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Mill's test certificate	EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing
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- supply range file - issued: 20.02.2009 rev. 1

42CrMoS4

W.Nr. 1.7227

General size range Ø 16 – 1000 mm

Chemical composition	C=0,38-0,45	Si=max.0,40	Mn=0,60-0,90*	P=max.0,035	S=0,020-0,040
	Cr=0,90-1,20	Mo=0,15-0,30	Al=min.0,020	Cu=max.0,30	

*Mn=0,50-0,80 acc. to SEW 550

Grade equivalents
Similar grades

708/709M40 BS	42CrMo GB	42CD4 AFNOR	SCM440 JIS	15142 CSN
4140 SAE	38CrMo4 UNI	2244 SS	40ChFA GOST	

Hot rolled Ø 16–310 mm

Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.
Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths
Heat treatment	+A EN 10083-3	or +N EN 10083-3	or +QT EN 10083-3 or +AR
Surface defects	EN 10221/B	or max. 1,5%	or specific value
US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.

Forged black Ø 250–1000 mm

Tolerances	DIN 7527/6	or specific tol.
Lengths	3 – 6 m	or specific lengths
Heat treatment	+A EN 10250-3	or +N EN 10250-3 or +QT EN 10250-3 or +QT SEW550
Surface defects	max. ½ the tol.	or specific depth
US test	SEP 1921 3C/c	or specific FBH eq.

Peeled Ø 16–100 mm

Tolerances	EN 10278 h9	or EN 10278 h11	or specific tol.
Lengths	6 m +200/-0 mm	or specific lengths	
Heat treatment	+A h9/ h11	or +N h9/ h11	or +QT h11
Surface defects	max. 0,2 mm	or specific depth	
US test	SEP 1921 3C/c	or specific FBH eq.	

Forged turned Ø 250–850 mm

Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.
Lengths	3 – 6 m	or specific lengths		
Heat treatment	+A EN 10250-3	or +N EN 10250-3	or +QT EN 10250-3 or +QT SEW550	
Surface defects	technically free	or specific depth		
US test	SEP 1921 3C/c	or specific FBH eq.		

Other available products

squares-hexagons rolled, squares-hexagons cold drawn, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast

Mill's test certificate

EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

51CrV4

W.Nr. 1.8159

General size range Ø 16 – 1000 mm

Chemical composition	C=0,47-0,55	Si=max.0,40	Mn=0,70-1,10	P=max.0,035	S=max.0,035
	Cr=0,90-1,20	V=0,10-0,25	Al=min.0,020	Cu=max.0,30	

Grade equivalents Similar grades	735M50	50CrVA	51CV4	SUP 10	15260
	BS	GB	AFNOR	JIS	CSN
	6150	50CrV4	2230	50ChGFA	
	SAE	UNI	SS	GOST	

Hot rolled Ø 16–310 mm	Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.
	Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths
	Heat treatment	+A EN 10083-3	or +QT EN 10083-3	
	Surface defects	EN 10221/B	or max. 1,5%	or specific value
	US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.

Forged black Ø 250–1000 mm	Tolerances	DIN 7527/6	or specific tol.	
	Lengths	3 – 6 m	or specific lengths	
	Heat treatment	+A max. 248 HB	or +QT EN 10250-3	
	Surface defects	max. ½ the tol.	or specific depth	
	US test	SEP 1921 3C/c	or specific FBH eq.	

Peeled Ø 16–100 mm	Tolerances	EN 10278 h9	or EN 10278 h11	or specific tol.
	Lengths	6 m +200/-0 mm	or specific lengths	
	Heat treatment	+A h9/ h11	or +QT h11	
	Surface defects	max. 0,2 mm	or specific depth	
	US test	SEP 1921 3C/c	or specific FBH eq.	

Forged turned Ø 250–850 mm	Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.
	Lengths	3 – 6 m	or specific lengths		
	Heat treatment	+A max. 248 HB	or +QT EN 10250-3		
	Surface defects	technically free	or specific depth		
	US test	SEP 1921 3C/c	or specific FBH eq.		

Other available products	squares- flats-hexagons rolled, squares-hexagons cold drawn, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast
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Mill's test certificate	EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing
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- supply range file - issued: 20.02.2009 rev. 1

30CrNiMo8

W.Nr. 1.6580

General size range Ø 16 – 1000 mm

Chemical composition	C=0,26-0,34	Si=max.0,40	Mn=0,30-0,60	P=max.0,035	S=max.0,035
	Cr=1,80-2,20	Ni=1,80-2,20	Mo=0,30-0,50	Cu=max.0,30	Al=min.0,020

Grade equivalents Similar grades	823M30	-	30CND8	SNCM 431	-
	BS	GB	AFNOR	JIS	CSN
	-	30NiCrMo8	-	-	
	SAE	UNI	SS	GOST	

Hot rolled Ø 16–310 mm	Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.	
	Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths	
	Heat treatment	+QT EN 10083-3			
	Surface defects	EN 10221/B	or max. 1,5%	or specific value	
	US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.	

Forged black Ø 250–1000 mm	Tolerances	DIN 7527/6	or specific tol.	
	Lengths	3 – 6 m	or specific lengths	
	Heat treatment	+A EN 10250-3 or +N EN 10250-3 or +QT EN 10250-3		
	Surface defects	max. ½ the tol.	or specific depth	
	US test	SEP 1921 3C/c	or specific FBH eq.	

Peeled Ø 16–100 mm	Tolerances	EN 10278 h9	or EN 10278 h11	or specific tol.	
	Lengths	6 m +200/-0 mm	or specific lengths		
	Heat treatment	+A h9/ h11			
	Surface defects	max. 0,2 mm	or specific depth		
	US test	SEP 1921 3C/c	or specific FBH eq.		

Forged turned Ø 250–850 mm	Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.
	Lengths	3 – 6 m	or specific lengths		
	Heat treatment	+A EN 10250-3 or +N EN 10250-3 or +QT EN 10250-3 or +QT SEW550			
	Surface defects	technically free or specific depth			
	US test	SEP 1921 3C/c	or specific FBH eq.		

Other available products squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast

Mill's test certificate EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

34CrNiMo6

W.Nr. 1.6582

General size range Ø 16 – 1000 mm

Chemical composition	C=0,30-0,38	Si=max.0,40	Mn=0,50-0,80	P=max.0,025	S=max.0,035
	Cr=1,30-1,70	Ni=1,30-1,70	Mo=0,15-0,30	Cu=max.0,30	Al=min.0,020

Grade equivalents Similar grades	817M40	-	35NCD6	SNCM 447	16343
	BS	GB	AFNOR	JIS	CSN
	4340	35NiCrMo6	2541	38Ch2N2MA	
	SAE	UNI	SS	GOST	

Hot rolled Ø 16–310 mm	Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.
	Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths
	Heat treatment	+A EN 10083-3	or +QT EN 10083-3	
	Surface defects	EN 10221/B	or max. 1,5%	or specific value
	US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.

Forged black Ø 250–1000 mm	Tolerances	DIN 7527/6	or specific tol.
	Lengths	3 – 6 m	or specific lengths
	Heat treatment	+A EN 10250-3	or +QT EN 10250-3
	Surface defects	max. ½ the tol.	or specific depth
	US test	SEP 1921 3C/c	or specific FBH eq.

Forged turned Ø 250–850 mm	Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.
	Lengths	3 – 6 m	or specific lengths		
	Heat treatment	+A EN 10250-3	or +QT EN10250-3	or +QT SEW550	
	Surface defects	technically free	or specific depth		
	US test	SEP 1921 3C/c	or specific FBH eq.		

Other available products squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast

Mill's test certificate EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

18CrNiMo7-6

W.Nr. 1.6587

General size range Ø 16 – 1000 mm

Chemical composition	C=0,15-0,21	Si=max.0,40	Mn=0,50-0,90	P=max.0,035	S=max.0,035
	Cr=1,50-1,80	Ni=1,40-1,70	Mo=0,25-0,35	Cu=max.0,30	Al=min.0,020

also available in +HH

Grade equivalents
Similar grades

- BS	- GB	18NCD6 AFNOR	- JIS	- CSN
- SAE	18NiCrMo7 UNI	- SS	- GOST	

Hot rolled Ø 16–310 mm	Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.
	Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths
	Heat treatment	+S EN 10084	or +A EN 10084	or +TH EN 10084 or +FP EN 10084
	Surface defects	EN 10221/B	or max. 1,5%	or specific value
	US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.

Forged black Ø 250–1000 mm	Tolerances	DIN 7527/6	or specific tol.
	Lengths	3 – 6 m	or specific lengths
	Heat treatment	+A max. 229 HB	or +FP 159-207 HB
	Surface defects	max. ½ the tol.	or specific depth
	US test	SEP 1921 3C/c	or specific FBH eq.

Forged turned Ø 250–850 mm	Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.
	Lengths	3 – 6 m	or specific lengths		
	Heat treatment	+A max. 229 HB	or +FP 159-207 HB		
	Surface defects	technically free	or specific depth		
	US test	SEP 1921 3C/c	or specific FBH eq.		

Other available products squares- flats-hexagons rolled, squares-flats-hexagons cold drawn, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast

Mill's test certificate EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

16MnCrS5

W.Nr. 1.7139

General size range Ø 16 – 1000 mm

Chemical composition	C=0,15-0,19	Si=max.0,40	Mn=1,00-1,30	P=max.0,035	S=0,020-0,040
	Cr=0,80-1,10	Ni=max.0,25	Mo=max.0,10	Cu=max.0,30	Al=min.0,020

Cu+10Sn=max.0,50% also available as 16MnCr5 with S=max.0,035%

Grade equivalents
Similar grades

527M17 BS	- GB	16MC4 AFNOR	- JIS	14220 CSN
5115 SAE	16MnCrS5 UNI	2173 SS	18ChG GOST	

Hot rolled Ø 16–310 mm	Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.
	Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths
	Heat treatment	+A EN 10084	or +TH EN 10084	or +FP EN 10084
	Surface defects	EN 10221/B	or max. 1,5%	or specific value
	US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.

Forged black Ø 250–1000 mm	Tolerances	DIN 7527/6	or specific tol.
	Lengths	3 – 6 m	or specific lengths
	Heat treatment	+A max. 207 HB	
	Surface defects	max. ½ the tol.	or specific depth
	US test	SEP 1921 3C/c	or specific FBH eq.

Forged turned Ø 250–850 mm	Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.
	Lengths	3 – 6 m	or specific lengths		
	Heat treatment	+A max. 207 HB			
	Surface defects	technically free	or specific depth		
	US test	SEP 1921 3C/c	or specific FBH eq.		

Other available products squares- flats-hexagons rolled, squares-flats-hexagons cold drawn, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast

Mill's test certificate EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

20MnCrS5

W.Nr. 1.7149

General size range Ø 16 – 1000 mm

Chemical composition	C=0,17-0,22	Si=max.0,40	Mn=1,10-1,40	P=max.0,035	S=0,020-0,040
	Cr=1,00-1,30	Ni=max.0,25	Mo=max.0,10	Cu=max.0,30	Al=min.0,020

Cu+10Sn=max.0,50% also available as 20MnCr5 with S=max.0,035%

Grade equivalents
Similar grades

- BS	- GB	20MC5 AFNOR	SMnC 420 H JIS	14221 CSN
5120 SAE	20MnCrS5 UNI	- SS	18ChG GOST	

Hot rolled Ø 16–310 mm	Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.
	Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths
	Heat treatment	+A EN 10084	or +TH EN 10084	or +FP EN 10084
	Surface defects	EN 10221/B	or max. 1,5%	or specific value
	US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.

Forged black Ø 250–1000 mm	Tolerances	DIN 7527/6	or specific tol.
	Lengths	3 – 6 m	or specific lengths
	Heat treatment	+A max. 217 HB	
	Surface defects	max. ½ the tol.	or specific depth
	US test	SEP 1921 3C/c	or specific FBH eq.

Forged turned Ø 250–850 mm	Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.
	Lengths	3 – 6 m	or specific lengths		
	Heat treatment	+A max. 217 HB			
	Surface defects	technically free	or specific depth		
	US test	SEP 1921 3C/c	or specific FBH eq.		

Other available products squares- flats-hexagons rolled, squares-flats-hexagons cold drawn, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast

Mill's test certificate EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing

- supply range file - issued: 20.02.2009 rev. 1

31CrMoV9

W.Nr. 1.8519

General size range Ø 16 – 1000 mm

Chemical composition	C=0,27-0,34	Si=max.0,40	Mn=0,40-0,70	P=max.0,025	S=max.0,035
	Cr=2,30-2,70	Mo=0,15-0,30	V=0,10-0,20	Cu=max.0,30	Al=min.0,020

Grade equivalents Similar grades	-	-	-	-	-
	BS	GB	AFNOR	JIS	CSN
	-	31CrMoV10	-	-	
	SAE	UNI	SS	GOST	

Hot rolled Ø 16–310 mm	Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.
	Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths
	Heat treatment	+A EN 10085	or +QT+SR EN 10085	
	Surface defects	EN 10221/B	or max. 1,5%	or specific value
	US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.

Forged black Ø 250–1000 mm	Tolerances	DIN 7527/6	or specific tol.	
	Lengths	3 – 6 m	or specific lengths	
	Heat treatment	+A max. 248 HB	or +QT+SR EN 10250-3 (1.7707)	
	Surface defects	max. ½ the tol.	or specific depth	
	US test	SEP 1921 3C/c	or specific FBH eq.	

Peeled Ø 16–100 mm	Tolerances	EN 10278 h9	or EN 10278 h11	or specific tol.
	Lengths	6 m +200/-0 mm	or specific lengths	
	Heat treatment	+A h9/ h11	or +QT+SR h11	
	Surface defects	max. 0,2 mm	or specific depth	
	US test	SEP 1921 3C/c	or specific FBH eq.	

Forged turned Ø 250–850 mm	Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.
	Lengths	3 – 6 m	or specific lengths		
	Heat treatment	+A max. 248 HB	or +QT+SR EN 10250-3 (1.7707)		
	Surface defects	technically free	or specific depth		
	US test	SEP 1921 3C/c	or specific FBH eq.		

Other available products	squares- flats-hexagons rolled, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast
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Mill's test certificate	EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing
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- supply range file - issued: 20.02.2009 rev. 1

18NiCrMo5

UNI 7846

General size range Ø 16 – 1000 mm

Chemical composition	C=0,15-0,21	Si=0,15-0,40	Mn=0,60-0,90	P=max.0,035	S=max.0,035
	Cr=0,70-1,00	Mo=0,15-0,25	Ni=1,20-1,50	Cu=max.0,30	

Grade equivalents Similar grades	815M17	-	18NCD6	-	-
	BS	GB	AFNOR	JIS	CSN
	-	17NiCrMo6-4	-	-	
	SAE	DIN	SS	GOST	

Hot rolled Ø 16–310 mm	Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.
	Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths
	Heat treatment	+A max. 240 HB	or +FP 149-207HB	or +AC max. 207 HB
	Surface defects	EN 10221/B	or max. 1,5%	or specific value
	US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.

Forged black Ø 250–1000 mm	Tolerances	DIN 7527/6	or specific tol.
	Lengths	3 – 6 m	or specific lengths
	Heat treatment	+A max. 240 HB	or +FP 149-207 HB
	Surface defects	max. ½ the tol.	or specific depth
	US test	SEP 1921 3C/c	or specific FBH eq.

Peeled Ø 16–100 mm	Tolerances	EN 10278 h9	or EN 10278 h11	or specific tol.
	Lengths	6 m +200/-0 mm	or specific lengths	
	Heat treatment	+A h9/ h11	or +FP h9/ h11	
	Surface defects	max. 0,2 mm	or specific depth	
	US test	SEP 1921 3C/c	or specific FBH eq.	

Forged turned Ø 250–850 mm	Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.
	Lengths	3 – 6 m	or specific lengths		
	Heat treatment	+A max. 240 HB	or +FP 149-207HB		
	Surface defects	technically free	or specific depth		
	US test	SEP 1921 3C/c	or specific FBH eq.		

Other available products	squares- flats-hexagons rolled, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast
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Mill's test certificate	EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing
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- supply range file - issued: 24.04.2009 rev. 1

39NiCrMo3

UNI 7845

General size range Ø 16 – 1000 mm

Chemical composition	C=0,35-0,43	Si=0,15-0,40	Mn=0,50-0,80	P=max.0,035	S=max.0,035
	Cr=0,60-1,00	Mo=0,15-0,25	Ni=0,70-1,00	Cu=max.0,30	

Grade equivalents Similar grades	-	-	40NCD3	-	-
	BS	GB	AFNOR	JIS	CSN
	9840	36CrNiMo4	-	-	
	SAE	DIN	SS	GOST	

Hot rolled Ø 16–310 mm	Tolerances	EN 10060	or +/- 1,3% of dN	or specific tol.
	Lengths	6 m +200/-0 mm	or 3 – 6 m	or specific lengths
	Heat treatment	+A max. 240 HB	or +I 180-240HB	
	Surface defects	EN 10221/B	or max. 1,5%	or specific value
	US test	SEP 1921 3C/c	or EN 10308	or specific FBH eq.

Forged black Ø 250–1000 mm	Tolerances	DIN 7527/6	or specific tol.	
	Lengths	3 – 6 m	or specific lengths	
	Heat treatment	+A max. 240 HB	or +I 180-240 HB	
	Surface defects	max. ½ the tol.	or specific depth	
	US test	SEP 1921 3C/c	or specific FBH eq.	

Peeled Ø 16–100 mm	Tolerances	EN 10278 h9	or EN 10278 h11	or specific tol.
	Lengths	6 m +200/-0 mm	or specific lengths	
	Heat treatment	+A h9/ h11	or +I h9/ h11	
	Surface defects	max. 0,2 mm	or specific depth	
	US test	SEP 1921 3C/c	or specific FBH eq.	

Forged turned Ø 250–850 mm	Tolerances	+3/-0 mm	or +4/-0 mm	or +5/-0 mm	or specific tol.
	Lengths	3 – 6 m	or specific lengths		
	Heat treatment	+A max. 240 HB	or +I 180-240HB		
	Surface defects	technically free	or specific depth		
	US test	SEP 1921 3C/c	or specific FBH eq.		

Other available products	squares- flats-hexagons rolled, squares-flats forged, squares- flats forged and milled, square billets rolled, square billets CC cast
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Mill's test certificate	EN 10204/3.1 with all relevant data reg. chem. composition, mech. properties and results of testing
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- supply range file - issued: 24.04.2009 rev. 1