

Bohler E110 Case hardening steel

Typical Analysis (Ave. values %)	C	Si	Mn	Ni	Cr	Mo	S	P
	0.18	0.30	0.50	1.50	1.70	0.30	0.025	0.025
NEAREST STANDARD	AS		DIN		BS		AISI	
	-		1.6587 17CrNiMo6		-		-	

DESCRIPTION	E110 is a 1.8% Nickel Chromium Molybdenum case hardening steel combining core toughness and high case hardness after carburising and quenching.
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APPLICATIONS	Components with large cross sections requiring high toughness and core strength, such as gears, crankshafts and heavy-duty gear shafts in aircraft and truck construction and mechanical engineering.
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HEAT TREATMENT	Forge	850-1150°C. Cool in furnace.
	Normalize	850-880°C. Air cool.
	Anneal	650-700°C. Cool slowly in controlled furnace.
	Carburize	900-950°C. Furnace or Air cool
	Core Refine	830-870°C. Oil quench or Air cool.
	Harden	780-820°C Oil quench.
	Temper	150-200°C air cool
	Annealed hardness	229 HB max

MECHANICAL PROPERTIES Heat Treated Condition	Tensile Strength MPa	Yield Strength MPa	Elong. %	Brinell Hardness
	980-1270	785	8	290-375

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PHYSICAL PROPERTIES	Density (kg/dm ³)	7.85
	Modulus of elasticity 10 ³ N/mm ²	210
	Thermal conductivity W/(m.K)	38
	Electric resistivity Ohm.mm ² /m	0.18
	Specific heat capacity J/(kg.K)	460
	Thermal expansion 10 ⁶ m/(m.K) (Room temp.)	11.1

WELDING	Parts should be welded before Carburizing and Hardening. Preheat to 250-350°C. Filler metals:-Bohler FOX DCMS-KB or FOX 2.5 Ni electrodes. DCMS-IG wire.
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Round Peeled k12										
SIZE RANGE	25	51.5	82	120	170	230	330	420	570	
	28	55.5	87	127	175	250	350	425	630	
	33	58	92	136	182	260	360	430	670	
	36	60	97	146	195	280	370	470	720	
	39	65	102	152	200	300	380	500		
	42	70	106	162	210	315	390	530		
	45	75	116	165	220	320	410	540		

Sizes normally stocked in Australia. Some branches may not hold the entire range.
Other sizes available on request.



N.B.

This information is only a guide. Sizes and treatment can change the outcome of the material being Heat treated.

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Zugfestigkeit und Streckgrenze im blindgehärteten Zustand

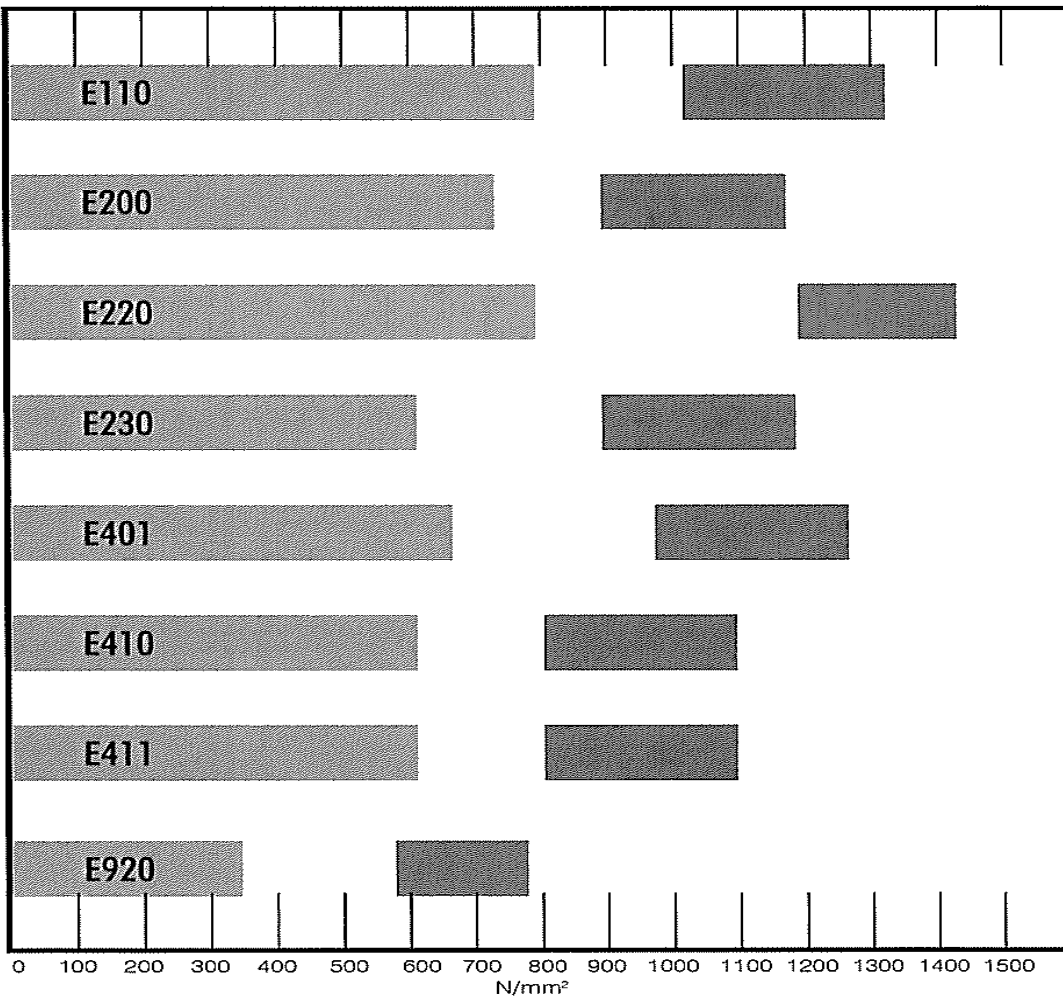
Für Durchmesser 30 mm
(Anhaltsangaben)

Streckgrenze min. 
Zugfestigkeit (von/bis) 

Tensile strength and yield strength in the blank hardened condition

For diameter 30 mm
(average values)

Yield strength min. 
Tensile strength (from/to) 



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ONE STEP AHEAD.