

ASSAB – E110

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	
	AS1444-1996 X4317/X4317		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

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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SIZE RANGE	Round	25-520 mm
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LOCATIONS

Bohler Uddeholm Australia Pty Ltd ABN 15000013052

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Marayong	1/21 Binney Rd Marayong	2148	Ph (02) 9831 4431	Fax (02) 9671 1682
Melbourne	282-290 Greens Rd Dandenong	3175	Ph (03) 9767 5554	Fax (03) 9767 5555
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Adelaide	1 Williams Cir Pooraka	5095	Ph (08) 8368 4554	Fax (08) 8368 4555
Brisbane	12-18 Limestone St Darra	4076	Ph (07) 3712 9554	Fax (07) 3712 9555
Townsville	9-11 Caldwell St Garbutt	4814	Ph (07) 4479 4800	Fax (07) 4725 1316
Perth	29-33 Gauge Cir Canningvale	6155	Ph (08) 9455 8672	Fax (08) 9455 8673
Kewdale	5 Beete St Welshpool	6106	Ph (08) 9350 9582	Fax (08) 9350 9683
Launceston	20 Murphy St Invermay	7248	Ph (03) 6334 3542	Fax (03) 6331 4001

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