

CAST IRON

2P – GREY IRON

Typical Analysis (Ave. values %)	C	Mn	Si	Ni	Cr	Mo	P	S	Al	Cu
	3.25	0.55	2.30	0.08	0.4	0.1	0.1	0.8	0.1	0.7
NEAREST STANDARD	AS		BS		DIN			JIS		
	1830-T260		1452-Grade 17		1691-GG35			FC-25		

DESCRIPTION	2P is normally called for when exceptionally good wearing qualities are required or when the component design demands mechanical and physical properties superior to those of a softer, essentially ferritic cast iron.
	2P is essentially pearlitic in structure with the fine graphite flake size and dense homogeneous structure. These properties ensure its suitability in applications demanding the ability to withstand high pressures without leaking and to resist wear in sliding friction applications
	.Typical hydraulic operating pressure in which 2P normally operates is around 23 MPa. Tests have shown it will withstand 68 MPa hydraulic pressure across a 3mm thickness in hydraulic cylinder end caps.

APPLICATIONS	Pistons, end caps, glands, support bearings, control valves, rotors. Slide rails, gear wheels, cams, bushes, helical gears, spiral gears. Pistons, piston rings, liquid and vacuum pump rotors, cylinder liners. Burners, blow moulds, burn off chucks, bottom plates, blanks, moulds, and textile machinery parts, ship repairs.
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MECHANICAL PROPERTIES	Tensile Strength MPa	Compressive Strength MPa	Transverse Strength Kg	Hardness range HB
	220-260	800-850	ca 1800	215-269

GENERAL PROPERTIES	Machinability	Very good
	Micro finish	Excellent
	Galvanising	Very good
	Resistance to rust & acids	Very good
	Damping capacity	Very good
	Sliding	Excellent
	Wear resistance	Excellent
	Enamelling	Good
	Heat treatment	Oil quench & temper 400 HB max
	Structure	Homogeneous fine grain. Oil & pressure tight.
Surface	Free of sand	

SIZE RANGE	Round, Square and Hollow
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3D – DUCTILE IRON

Typical Analysis (Ave. values %)	C	Mn	Si	Ni	Cr	Mo	P	S	Mg	Cu
	3.55	0.30	2.50	0.03	0.02	0.01	0.1	0.01	0.04	0.05
NEAREST STANDARD	AS		BS		DIN			JIS		
	1831-400-250-12		2789-SNG 27/12		1693-GGG 40			FC-D45		

DESCRIPTION	<p>3D is spheroidal graphite (nodular) ductile iron.</p> <p>Ductile irons differ from the grey irons in that the graphite occurs as spheroids or nodules instead of flakes. The resulting material has generally higher strength than grey iron, is ductile rather than brittle, tough and readily machined.</p> <p>3D is an essentially ferritic grade, having high elasticity and resistance to impact, suitable for applications involving thermal and mechanical shock. It can be welded but cannot be readily flame or induction hardened.</p>
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APPLICATIONS	<p>Typical applications demanding resistance to corrosion and thermal and mechanical shock in marine, automotive, hydraulic, agricultural, railroad, machine tool and general manufacture. Pump bodies, glands, glass moulds, spur gears, worm gears, sprockets, heavy duty gears, impellers and rotors.</p>
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MECHANICAL PROPERTIES	Tensile Strength MPa	Permanent set stress MPa	Elongation %	Hardness range HB
	415	277	12	187 max

GENERAL PROPERTIES	Machinability	Excellent
	Micro finish	Excellent
	Galvanising Enamelling	Good
	Resistance to rust & acids	Very good
	Damping capacity	Fair
	Fatigue	Excellent
	Wear resistance	Fair
	Shock resistance	Excellent
	Heat treatment	Not applicable
	Structure	Homogeneous fine grain. Oil & pressure tight.
Surface	Free of sand	

SIZE RANGE	Round, and Hollow
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4E – GREY IRON

Typical Analysis (Ave. values %)	C	Mn	Si	Ni	Cr	Mo	P	S	Al	Cu
	3.35	0.45	2.60	0.08	0.08	0.01	0.10	0.08	0.01	0.30
NEAREST STANDARD	AS		BS		DIN			JIS		
	1830-T250		1452-Grade 17		1691-GG35			FC-25		

DESCRIPTION	<p>4E continuous cast bars consist of a uniform partial pearlitic structure from the bar surface to the core. This material is ideally suited to high speed machining with significant improvements in cutting tool life and reductions in drill wander which occurs when the drill point gravitates to a softer surface.</p> <p>4E has a typical fine grain size of 7-8 in dense homogeneous matrix. These properties ensure its suitability in applications demanding the ability to withstand high pressures without leaking.</p>
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APPLICATIONS	<p>Pistons, support bearings, glands, slide bearings, distributor blocks, manifolds. Guide rails, scale bars, spindle sleeves spacers, bushings, gear wheels, spur gears, change gears, pulleys, gear racks. Oil pump gears, impellers, plate valves. Angle plates, marking plates, V-blocks, round-tables. Gears, V-pulleys, sprockets, clutch drums, taper-lock brakes, racks, pinions, plus countless components covering many industries. Moulds, blow moulds.</p>
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MECHANICAL PROPERTIES	Tensile Strength MPa	Compressive Strength MPa	Hardness range HB
	220-260	700-800	170-220

GENERAL PROPERTIES	<p>Machinability Micro finish Enamelling Resistance to rust & acids Damping capacity Sliding Structure</p> <p>Surface</p>	<p>Excellent. Excellent. Good. Very good. Very good. Excellent. Homogeneous, extremely fine grain. Oil pressure tight, free of blow holes. Free of sand.</p>
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SIZE RANGE	Round, Square and Flat
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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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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
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