

1.6587 CASE HARDENING STEEL

1.6587 is a 1.8% Chromium – Nickel – Molybdenum high hardenability, case hardening steel, generally supplied in the annealed condition with hardness around 225 Bhn. As with EN36A, 1.6587 has high core strength and toughness with case hardening capability up to 62 HRC.

Typical uses include: Large gears, heavy duty bushing, bearings, cam followers, extractors, shafts, wear pins, pump shafts, sprockets etc.

Finishes Peele/Rough Machined Related Specifications	Stocked Sizes - Round	ds 33 mm – 610 mm Ø		
Related Specifications Australia AS1444-1996-X4317 Germany W. Nr 1.6587 DIN 17CrNiMo6/18CrNiMo7-6 United Kingdom BS970 Part 3 1991 – 820M17/822M17 BS 970 1955 – EN354/EN355 USA SAE 4317 Chemical Composition Min. % Max % Carbon 0.15 0.21 Silicon 0.40 0.40 Manganese 0.50 0.90 Nickel 1.40 1.70 Chromium 1.50 1.80 Molybdenum 0.25 0.35 Phosphorous 0.035 0.35 Sulphur 0.035 1.40 Tensile Strength Mpa Approx. 700 0.20% Proof Stress (Yield) Mpa Approx. 23 Hardness Brinell HB Approx. 23 Hardness Brinell HB Approx. 200 (Max. 230 BHN)	Finishes - Peeled/Rough Machined			
Australia AS1444-1996-X4317 Germany W. Nr 1.6587 DIN 17CrNiMo6/18CrNiMo7-6 United Kingdom BS970 Part 3 1991 – 820M17/822M17 BS 970 1955 – EN354/EN355 USA SAE 4317 Chemical Composition Min. % Carbon 0.15 Silicon 0.21 Silicon 0.40 Manganese 0.50 Nickel 1.40 Chromium 1.50 Nickel 1.40 Molybdenum 0.25 Sulphur 0.035 Sulphur 0.35 Tensile Strength Mpa Approx. Approx. 200 0.20% Proof Stress (Yield) Mpa Approx. Approx. 23 Hardness Brinell HB Approx. 200 (Max. 230 BHN)	Related Specifications			
Germany W. Nr 1.6587 DIN 17CrNiMo6/18CrNiMo7-6 DIN 17CrNiMo6/18CrNiMo7-6 United Kingdom 85970 Part 3 1991 – 820M17/822M17 BS 970 1955 – EN354/EN355 DIN USA SAE 4317 Chemical Composition Min. % Carbon 0.15 Carbon 0.15 0.21 Silicon 0.40 Manganese 0.50 0.90 Nickel 1.40 1.70 Chromium 1.50 1.80 Molybdenum 0.25 0.035 Sulphur 0.035 0.035 Sulphur 0.035 0.35 Tensile Strength Mpa Approx. 700 0.20% Proof Stress (Yield) Mpa Approx. 23 Hardness Brinell HB Approx. 23 Hardness Brinell HB Approx. 230 (Max. 230 BHN)	Australia	AS1444-1996-X4317		
DIN 17CrNiMo6/18CrNiMo7-6 United Kingdom BS970 Part 3 1991 – 820M17/822M17 BS 970 1955 – EN354/EN355 USA SAE 4317 Chemical Composition Chemical Composition Max % Carbon 0.15 0.21 Silicon 0.40 Manganese Manganese 0.50 0.90 Nickel 1.40 1.70 Chromium 1.50 1.80 Molybdenum 0.25 0.35 Phosphorous 0.035 0.35 Sulphur 0.035 0.35 Typical Mechanical Properties in the Annealed Condition 700 Mechanical Property Designatior 700 Tensile Strength Mpa Approx. 23 Approx. 23 23 Hardness Brinell HB Approx. 200 (Max. 230 BHN) Annealing Heat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Germany	W. Nr 1.6587		
United Kingdom BS970 Part 3 1991 – 820M17/822M17 BS 970 1955 – EN354/EN355 USA SAE 4317 Chemical Composition Min.% Max % Carbon 0.15 0.21 Silicon 0.40 Mar Maganese 0.50 0.90 Nickel 1.40 1.70 Chromium 1.50 1.80 Molybdenum 0.25 0.35 Phosphorous 0.035 0.035 Sulphur 0.035 0.35 Typical Mechanical Properties in the Annealed Condition Mechanical Property Designation 700 Tensile Strength Mpa Approx. 220 Approx. 23 23 Hardness Brinell HB Approx. 200 (Max. 230 BHN) Annealing Hardness escion and allow to cool in furnace.		DIN 17CrNiMo6/18CrNiMo7-6		
BS 970 1955 - EN354/EN355USASAE 4317Chemical CompositionMin. %Max %Carbon0.150.21Silicon0.400.40Manganese0.500.90Nickel1.401.70Chromium1.501.80Molybdenum0.250.35Phosphorous0.350.035Sulphur0.0350.035Typical Mechanical Properties in the Annealed ConditionTypical Mechanical Property DesignationTensile Strength MpaApprox.7000.20% Proof Stress (Yield) MpaApprox.520Elongation on %Approx.23Hardness Brinell HBApprox.200 (Max. 230 BHN)AnnealingHardness de sol on sol on furnace.	United Kingdom	gdom BS970 Part 3 1991 – 820M17/822M17		
USASAE 4317Chemical CompositionMin. %Max %Carbon0.150.21Silicon0.40Manganese0.500.90Nickel1.401.70Chromium1.501.80Molybdenum0.250.35Phosphorous0.035Sulphur0.035Typical Mechanical Properties in the Annealed ConditionTypical Mechanical Properties in the Annealed ConditionMechanical Property Designation700Colspan="2">Tensile Strength MpaApprox.520Elongation on %Approx.23Hardness Brinell HBApprox.23Hardness Brinell HBApprox.200 (Max. 230 BHN)AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	BS 970 1955 – EN354/EN355			
Chemical Composition Min. % Max % Carbon 0.15 0.21 Silicon 0.40 Manganese 0.50 0.90 Nickel 1.40 1.70 Chromium 1.50 1.80 Molybdenum 0.25 0.35 Phosphorous 0.035 0.035 Sulphur 0.035 0.035 Typical Mechanical Properties in the Annealed Condition Mechanical Property Designation 700 1.20% Proof Stress (Yield) Mpa Approx. 520 Elongation on % Approx. 23 Hardness Brinell HB Approx. 230 (Max. 230 BHN) Annealing Heat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	USA SAE 4317			
Min. % Max % Carbon 0.15 0.21 Silicon 0.40 Manganese 0.50 0.90 Nickel 1.40 1.70 Chromium 1.50 1.80 Molybdenum 0.25 0.35 Phosphorous 0.035 0.035 Sulphur 0.035 0.035 Typical Mechanical Properties in the Annealed Condition 0.035 Mechanical Property Designatio- 700 0.20% Proof Stress (Yield) Mpa Approx. 520 Elongation on % Approx. 23 Hardness Brinell HB Approx. 200 (Max. 230 BHN) Annealing Heat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Chemical Composition			
Carbon0.150.21Silicon0.40Manganese0.50Nickel1.401.70Chromium1.50Molybdenum0.250.35Phosphorous0.35Sulphur0.035SulphurMechanical Properties in the Annealed ConditionTopical Mechanical Properties in the Annealed ConditionMechanical Property DesignationColspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2">Colspan="2"Colspan="2		Min. %	Max %	
Silicon0.40Manganese0.500.90Nickel1.401.70Chromium1.501.80Molybdenum0.250.35Phosphorous0.035Sulphur0.035 Vipical Mechanical Properties in the Annealed Condition Tensile Strength MpaApprox.7000.20% Proof Stress (Yield) MpaApprox.Longation on %Approx.23Hardness Brinell HBApprox.200 (Max. 230 BHN)AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Carbon	0.15	0.21	
Manganese0.500.90Nickel1.401.70Chromium1.501.80Molybdenum0.250.35Phosphorous0.035Sulphur0.035 Mechanical Properties in the Annealed ConditionMechanical Property Designation Tensile Strength MpaApprox.7000.20% Proof Stress (Yield) MpaApprox.520Elongation on %Approx.23Hardness Brinell HBApprox.200 (Max. 230 BHN) Annealing Heat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Silicon		0.40	
Nickel1.401.70Chromium1.501.80Molybdenum0.250.35Phosphorous0.035Sulphur0.035 SulphurMechanical Properties in the Annealed ConditionMechanical Property Designation Tensile Strength MpaApprox.7000.20% Proof Stress (Yield) MpaApprox.520Elongation on %Approx.23Hardness Brinell HBApprox.200 (Max. 230 BHN) Annealing Heat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Manganese	0.50	0.90	
Chromium1.501.80Molybdenum0.250.35Phosphorous0.035Sulphur0.035Typical Mechanical Properties in the Annealed ConditionMechanical Property Designation0.035Tensile Strength MpaApprox.0.20% Proof Stress (Yield) MpaApprox.Elongation on %Approx.Hardness Brinell HBApprox.AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Nickel	1.40	1.70	
Molybdenum0.250.35Phosphorous0.035Sulphur0.035Typical Mechanical Properties in the Annealed ConditionMechanical Property DesignationMechanical Property DesignationTensile Strength MpaApprox.0.20% Proof Stress (Yield) MpaApprox.0.20% Proof Stress (Yield) MpaApprox.Elongation on %Approx.Hardness Brinell HBApprox.AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Chromium	1.50	1.80	
Phosphorous0.035Sulphur0.035Typical Mechanical Properties in the Annealed ConditionMechanical Property DesignationImage: ConditionMechanical Property DesignationApprox.Tensile Strength MpaApprox.0.20% Proof Stress (Yield) MpaApprox.Biongation on %Approx.Hardness Brinell HBApprox.AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Molybdenum	0.25	0.35	
Sulphur0.035Typical Mechanical Properties in the Annealed ConditionMechanical Property DesignationApprox.Tensile Strength MpaApprox.0.20% Proof Stress (Yield) MpaApprox.Elongation on %Approx.Hardness Brinell HBApprox.AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Phosphorous		0.035	
Typical Mechanical Properties in the Annealed ConditionMechanical Property DesignationApprox.Tensile Strength MpaApprox.0.20% Proof Stress (Yield) MpaApprox.Elongation on %Approx.Hardness Brinell HBApprox.AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Sulphur		0.035	
Mechanical Property DesignationApprox.Tensile Strength MpaApprox.7000.20% Proof Stress (Yield) MpaApprox.520Elongation on %Approx.23Hardness Brinell HBApprox.200 (Max. 230 BHN)AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Typical Mechanical Properties in the Annealed Condition			
Tensile Strength MpaApprox.7000.20% Proof Stress (Yield) MpaApprox.520Elongation on %Approx.23Hardness Brinell HBApprox.200 (Max. 230 BHN)AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Mechanical Property Designation	n		
0.20% Proof Stress (Yield) MpaApprox.520Elongation on %Approx.23Hardness Brinell HBApprox.200 (Max. 230 BHN)AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Tensile Strength Mpa	Approx.	700	
Elongation on %Approx.23Hardness Brinell HBApprox.200 (Max. 230 BHN)AnnealingHeat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	0.20% Proof Stress (Yield) Mpa	Approx.	520	
Hardness Brinell HB Approx. 200 (Max. 230 BHN) Annealing Provide the section and allow to cool in furnace.	Elongation on %	Approx.	23	
Annealing Heat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Hardness Brinell HB	Approx.	200 (Max. 230 BHN)	
Heat to 830-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.	Annealing			