A217 WC6

CHEMICAL COMPOSITION

Carbon	0.05 – 0.20%
Manganese	0.50 – 0.80%
Silicon	0.60% Max
Phosphorus	0.035% Max
Sulfur	0.035% Max
Nickel	0.50% Max
Chromium	1.00 – 1.50%
Molybdenum	0.45 – 0.65%
Copper	0.50% Max
Tungsten	0.10% Max
Total of residual elements	1.00% Max

PHYSICAL PROPERTIES

Tensile Strength	70,000 – 95,000 PSI
Yield Strength	40,000 PSI Min
Elongation at 2in.	20% Min
Reduction of area	35% Min

A217 WC9

CHEMICAL COMPOSITION

Carbon	0.05 – 0.18%
Manganese	0.40 – 0.70%
Silicon	0.60% Max
Phosphorus	0.035% Max
Sulfur	0.035% Max
Nickel	0.50% Max
Chromium	2.00 – 2.75%
Molybdenum	0.90 – 1.20%
Copper	0.50% Max
Tungsten	0.10% Max
Total of residual elements	1.00% Max

PHYSICAL PROPERTIES

Tensile Strength	70,000 – 95,000 PSI
Yield Strength	40,000 PSI Min
Elongation at 2in.	20.0% Min
Reduction of area	35.0% Min

A217 C5

CHEMICAL COMPOSITION

Carbon	0.20% Max
Manganese	0.40 – 0.70%
Silicon	0.75% Max
Phosphorus	0.04% Max
Sulfur	0.045% Max
Nickel	0.50% Max
Chromium	4.00 – 6.50%
Molybdenum	0.45 – 0.65%
Copper	0.50% Max
Tungsten	0.10% Max
Total of residual elements	1.00% Max

PHYSICAL PROPERTIES

Tensile Strength	90,000 – 115,000 PSI
Yield Strength	60,000 PSI Min
Elongation at 2in.	18.0% Min
Reduction of area	35.0% Min

A217 C12

CHEMICAL COMPOSITION

Carbon	0.20% Max
Manganese	0.35 – 0.65%
Silicon	1.00% Max
Phosphorus	0.035% Max
Sulfur	0.035% Max
Nickel	0.50% Max
Chromium	8.00 – 10.00%
Molybdenum	0.90 – 1.20%
Copper	0.50% Max
Tungsten	0.10% Max
Columbium	0.03% Max
Total of residual elements	1.00% Max

PHYSICAL PROPERTIES

Tensile Strength	90,000 – 115,000 PSI
Yield Strength	60,000 PSI Min
Elongation at 2in.	18.0% Min
Reduction of area	35.0% Min

A217 C12A

CHEMICAL COMPOSITION

Carbon	0.08 – 0.12%
Manganese	0.30 -0.60%
Silicon	0.20 – 0.50%
Phosphorus	0.025% Max
Sulfur	0.010% Max
Nickel	0.40% Max
Chromium	8.0 – 9.5%
Molybdenum	0.85 – 1.05%
Vanadium	0.18 – 0.25%
Nitrogen	0.030 – 0.070%
Aluminum	0.02% Max
Columbium	0.060 – 0.10%
Titanium	0.01% Max
Zirconium	0.01% Max

PHYSICAL PROPERTIES

Tensile Strength	85,000 – 110,000 PSI
Yield Strength	60,000 PSI Min
Elongation at 2in.	18% Min
Reduction of area	45% Min

A732 7Q

CHEMICAL COMPOSITION

Carbon	0.25 – 0.35%
Manganese	0.40 – 0.70%
Silicon	0.20 – 0.80%
Phosphorus	0.04% Max
Sulfur	0.045% Max
Chromium	0.80 – 1.10%
Molybdenum	0.15 – 0.25%
Copper	0.50% Max
Tungsten	0.10% Max
Total of residual elements	0.60% Max

PHYSICAL PROPERTIES

Tensile Strength	150,000 PSI Min
Yield Strength	115,000 PSI Min
Elongation at 2in.	7.0% Min

A732 8Q

CHEMICAL COMPOSITION

Carbon	0.35 – 0.45%
Manganese	0.70 -1.00%
Silicon	0.20 -0.80%
Phosphorus	0.04% Max
Sulfur	0.045% Max
Nickel	0.50% Max
Chromium	0.80 – 1.10%
Molybdenum	0.15 – 0.25%
Copper	0.50% Max
Tungsten	0.10% Max
Total of residual elements	1.00% Max

PHYSICAL PROPERTIES

Tensile Strength	180,000 PSI Min
Yield Strength	145,000 PSI Min
Elongation at 2in.	5.0% Min

A732 9Q

CHEMICAL COMPOSITION

Carbon	0.25 – 0.35%
Manganese	0.40 – 0.70%
Silicon	0.20 – 0.80%
Phosphorus	0.04% Max
Sulfur	0.045% Max
Nickel	1.65 – 2.00%
Chromium	0.70 – 0.90%
Molybdenum	0.20 – 0.30%
Copper	0.50% Max
Tungsten	0.10% Max
Total of residual elements	0.60% Max

PHYSICAL PROPERTIES

Tensile Strength	150,000 PSI Min
Yield Strength	115,000 PSI Min
Elongation at 2in.	7.0% Min

A732 10Q

CHEMICAL COMPOSITION

Carbon	0.35 – 0.45%
Manganese	0.70 – 1.00%
Silicon	0.20 – 0.80%
Phosphorus	0.04% Max
Sulfur	0.045% Max
Nickel	1.65 – 2.00%
Chromium	0.70 – 0.90%
Molybdenum	0.20 – 0.30%
Copper	0.50% Max
Tungsten	0.10% Max
Total of residual elements	1.00% Max

PHYSICAL PROPERTIES

Tensile Strength	180,000 PSI Min
Yield Strength	145,000 PSI Min
Elongation at 2in.	5.0% Min

A732 13Q

CHEMICAL COMPOSITION

Carbon	0.15 – 0.25%
Manganese	0.65 – 0.95%
Silicon	0.20 – 0.80%
Phosphorus	0.04% Max
Sulfur	0.045% Max
Nickel	0.40 – 0.70%
Chromium	0.40 – 0.70%
Molybdenum	0.15 – 0.25%
Copper	0.50% Max
Tungsten	0.10% Max
Total of residual elements	1.00% Max

PHYSICAL PROPERTIES

Tensile Strength	103,000 PSI Min
Yield Strength	85,000 PSI Min
Elongation at 2in.	10.0% Min

A732 14Q

CHEMICAL COMPOSITION

Carbon	0.25 – 0.35%
Manganese	0.65 – 0.95%
Silicon	0.20 – 0.80%
Phosphorus	0.04% Max
Sulfur	0.045% Max
Nickel	0.40 – 0.70%
Chromium	0.40 0.70%
Molybdenum	0.15 – 0.25%
Copper	0.50% Max
Tungsten	0.10% Max
Total of residual elements	1.00% Max

PHYSICAL PROPERTIES

Tensile Strength	150,000 PSI Min
Yield Strength	115,000 PSI Min
Elongation at 2in.	7.0% Min

A732 15A

CHEMICAL COMPOSITION

Carbon	0.95 – 1.10%
Manganese	0.25 – 0.55%
Silicon	0.20 – 0.80%
Phosphorus	0.04% Max
Sulfur	0.045% Max
Nickel	0.50% Max
Chromium	1.30 – 1.60%
Copper	0.50% Max
Tungsten	0.10% Max
Total of residual elements	0.60% Max

PHYSICAL PROPERTIES