



CARBON COLD FINISH STEEL BARS - ASTM A108

| Chemistry | | | | | | | |
|-------------------------|--------------|-----------|-----------|------------|--------------------|-----------------|-----------------|
| Grade: | Carbon: | Iron, Fe: | Lead, PB: | Manganese: | Phosphorus (max.): | Sulphur (max.): | Silicon (max.): |
| 1018 | 0.15/0.20 | | | 0.60/0.90 | 0.040 | 0.050 | |
| 1045 | 0.43/0.50 | | | 0.60/0.90 | 0.040 | 0.050 | |
| 1117 | 0.14/0.20 | | | 1.00/1.30 | 0.040 | 0.08/0.13 | |
| 11L17 | 0.14/0.20 | Remainder | 0.15/0.36 | 1.00/1.30 | 0.040 | 0.08/0.13 | |
| 1141 | 0.37/0.45 | | | 1.35/1.65 | 0.040 | 0.08/0.13 | |
| 11L41 | 0.37/0.45 | | 0.15/0.35 | 1.35/1.65 | 0.040 | 0.08/0.13 | |
| 1144 | 0.40/0.48 | | | 1.35/1.65 | 0.040 | 0.24/0.33 | |
| 12L14 | 0.150 (max.) | | 0.15/0.35 | 0.85/1.15 | 0.04/0.09 | 0.26/0.35 | |
| 1215 | 0.090 (max.) | | | 0.75/1.05 | 0.04/0.09 | 0.26/0.35 | |
| 1144 A311/Stressproof ® | 0.40/0.48 | | | 1.35/1.65 | 0.040 | 0.24/0.33 | 0.15/0.35 |
| *Fatigueproof ® | 0.40/0.48 | | | 1.35/1.65 | 0.040 | 0.24/0.33 | 0.15/0.35 |

*Open hearth or basic oxygen products AISI 1144 heats to be used for Fatigueproof ® are usually nitrogen treated, and contain nitrogen in quantities.

| Mechanical Properties (typical) | | | | | | | |
|--|-----------------------|-------------------------|-------------------|-------------------------------|------------------------------------|-----------------------------|----------------------------|
| Grade: | Yield Strength (psi): | Tensile Strength (psi): | Elongation in 2": | Reduction of Area: | Brinell Hardness: | Rockwell C Hardness (min.): | Machining Characteristics: |
| 1018 | 54,000 | 64,000 | 15% | 40% | 126 | | |
| 1045 | 77,000 | 91,000 | 12% | 35% | 179 | | |
| 1045 TG&P | 45,000 | 82,000 | 12% | 35% | 163 | | |
| 1117 | 58,000 | 69,000 | 15% | 40% | 137 | | |
| 11L17 | 58,000 | 69,000 | 15% | 40% | 137 | | |
| 1141 | 88,000 | 100,000 | 10% | 30% | 212 | | |
| 11L41 | 90,000 | 100,000 | 10% | 30% | 197 | | |
| 1144 | 90,000 | 108,000 | 10% | 30% | 217 | | |
| 12L14 | 60,000 | 78,000 | 15% | 35% | 163 | | |
| 1215 | 60,000 | 78,000 | 10% | 35% | 167 | | |
| 1144 A311/Stressproof ® | 100,000 | 115,000 | 83% of 1212 | 8% min. (7% min. above 3 in.) | 25% of min. (20% min. above 2 in.) | | |
| *Fatigueproof ® | 125,000 (.2% offset) | *140,000 | 5% | 15% | *280 (min.) | *30 | 80% of 1212 |

*In the event of disagreement between hardness and tensile strength, the tensile strength will govern.

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