American Society for Testing and Materials Means ASTM Is an American Standard. ASTM A105 is a Standard Specification for Carbon Steel Forgings for piping.

This specification basically uses in ambient and higher-temperature service in pressure systems.

Astm A105 has Chemical Composition, Mechanical/physical properties. In the chemical composition, there are 10 main chemical elements. They are Carbon, Manganese, Sulfur, Phosphorus, Silicon, Copper, Nickel, Chromium, Molybdenum, Vanadium.

Copper, Nickel, Chromium, Molybdenum and Vanadium. Their quantity Carbon 0.35% Maximum, Manganese 0.60–1.05%, Phosphorus 0.035% Maximum, Sulfur 0.040 Maximum, Silicon 0.10–0.35%, Copper 0.40 Maximum, Nickel 0.40 Maximum, Chromium 0.30 Maximum, Molybdenum 0.12 Maximum, Vanadium 0.08 Maximum.

ASTM A 105 Mechanical/physical properties are Tensile strength 485 Mpa Minimum, Yield strength 250Mpa Minimum And Elongation for flat materials 30% Minimum or Elongation for round materials 22% Minimum.

Chemical Composition for ASTM A 105

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| **Chemical Elements** | **SPECIFIED VALUE AS PER ASTM A 105** |
| Carbon ( C ) % | 0.35% (Max.) |
| Manganese ( Mn ) % | 0.60-1.05 % |
| Silicon ( Si ) % | 0.10 -0.35 % |
| Sulfur ( S ) % | 0.040% (Max.) |
| Phosphorus ( P ) % | 0.035% (Max.) |
| Chromium ( Cr ) % | 0.30% (Max.) |
| Molybdenum ( Mo ) % | 0.12% (Max.) |
| Nickel ( Ni ) % | 0.40% (Max.) |
| Copper ( Cu ) % | 0.40% (Max.) |
| Vanadium ( V )% | 0.05% (Max.) |

Mechanical/Physical Properties for ASTM A 105

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| **Mechanical/Physical Properties** | **SPECIFIED VALUE AS PER ASTM A105** |
| Tensile strength | 485 Mpa ( Minimum ) |
| Yield strength | 250 Mpa ( Minimum ) |
| Elongation in 2 inches. or 50 mm, min, %: Basic minimum elongation for walls 5⁄16 inch. [7.9 mm] and over in thickness, strip tests. | 30% ( Minimum ) |
| When standard round 2-in. or 50-mm gage length or smaller proportionally sized specimen with the gage length equal to 4D is used | 22% ( Minimum ) |

Any question in your mind, visit Galpokar and ask any question.