

MATERIAL DATA SHEET · FORGED FLANGES & FITTINGS

ASTM A105

Chemical composition and mechanical properties

ASTM A105 is an ASTM specification for forged flanges & fittings (UNS K03504). This sheet summarises its chemical composition limits and minimum mechanical properties. Typical use: general carbon-steel piping, -29 to 425 °C.

Chemical composition (weight %)

C	Mn	P max	S max	Si	Cr	Ni	Mo
0.35 max	0.60–1.05	0.035	0.040	0.10–0.35	0.30 max	0.40 max	0.12 max

Other elements and limits: Cu 0.40 max; V 0.08 max; Cu+Ni+Cr+Mo+V 1.00 max; Cr+Mo 0.32 max

Mechanical properties

Tensile strength, min	485 MPa
Yield strength, min	250 MPa
Elongation, min	22 %
Hardness	197 HBW

Heat treatment

Not mandatory for standard flanges up to Class 300; anneal, normalize, N&T or Q&T required above Class 300, for special designs and similar cases (A105N = normalized)

Typical service

General carbon-steel piping, -29 to 425 °C

Supplied by Teshi Group in this grade

Industrial Flanges (OEM manufacturer); Socket Weld Fittings (OEM manufacturer); Threaded Fittings (OEM manufacturer); Industrial Valves (OEM manufacturer)

Composition limits are maxima unless a range is shown. Properties are specification minima for the standard product form and may vary with section size and edition of the specification.

Reference information compiled from the published standard for convenience. It does not replace the current edition of the governing standard, which takes precedence. Verify critical dimensions and properties before design, purchase or fabrication. Teshi Engineers & Sales Promoters (P) Ltd accepts no liability for errors or omissions.

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