Blind Flange — ASME B16.5 Class 600

ANSI / ASME B16.5 Class 600 blind raised face (BLRF) flanges · NPS ½" to 24" · Carbon steel ASTM A105, stainless steel ASTM A182 F304 / F316, alloy steel

ASME B16.5 CLASS 600 BLIND FLANGE

A blind flange (BL / BLRF, also called a blank flange) is a solid disc with the standard flange drilling and facing but no bore. It closes the end of a pipe, valve or vessel nozzle and is the simplest way to blank off a line that may need to be opened later for inspection, cleaning, extension or hydrotest. Because it carries full pressure on its unsupported centre, it is the most highly stressed of the B16.5 flange types.

TESCO Steel & Engineering manufactures ASME B16.5 Class 600 blind flanges in Mumbai, India, ½" to 24", with RF, FF or RTJ facing, plain or with threaded / socket-weld tapping on request.

KEY FEATURES

- **Full ASME B16.5 compliance** — dimensions, tolerances, facing and marking to B16.5-2020.
- **No welding** — bolts straight to any B16.5 flange of the same class and size; removable for inspection and extension.
- **Options** — tapped blind (NPT / SW connection for vent, drain, gauge), RTJ facing, jack-screw holes, lifting-lug drilling.
- **Materials and certification** — A105, A350 LF2, A182 F304/F316, F11/F22, duplex; EN 10204 3.1.

SPECIFICATION SUMMARY

Product	Blind flange (BL / BLRF), forged
Standard	ASME B16.5 (formerly ANSI B16.5)
Pressure class	Class 600 (600 lb / #600)
Size range	NPS ½" – 24" (DN 15 – DN 600)
Facing	Raised face (RF) 7 mm standard; FF or RTJ on request
Face finish	Serrated, 125 – 250 µin Ra (3.2 – 6.3 µm) per ASME B16.5
Bore	None (solid); tapped NPT / SW connection on request
Back face	Machined flat; chamfered edge; marking on periphery
Materials	ASTM A105 / A105N; A350 LF2; A182 F304/L, F316/L, F321; F11, F22, F91; duplex

INSTALLATION — BLINDING A LINE

- Match class, size and facing to the mating flange; use a new gasket of the same type (spiral wound, non-metallic or ring joint).
- Tighten studs in a cross pattern in at least three steps; large blinds benefit from jack-screw holes for break-out.
- For hydrotest or temporary isolation, confirm the blind's rating covers the test pressure; fit a tapped vent / drain where the line must be depressurised safely.

APPLICATIONS

Line ends and future tie-ins · vessel, exchanger and manway nozzles · pump and compressor spare nozzles · hydrotest and isolation blinds · pig launcher / receiver closures (small bore) · instrument and sample connections (tapped blinds) · refinery, petrochemical, power, water and offshore piping.

BLIND FLANGE VS OTHER CLOSURES

Blind flange	Bolted, removable, full class rating; reusable
Spectacle / spade blind	Inserted between flanges for positive isolation (ASME B16.48)
Pipe cap	Welded, permanent closure (ASME B16.9)

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Dimensions per ASME B16.5-2020 Tables 14 and 15 (NPS ½ – 24); weights approximate; P–T ratings per ASME B16.5 Table 2 — verify for material group and service.

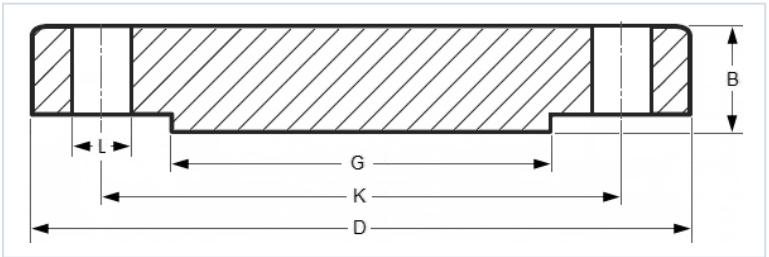
ASME B16.5 CLASS 600 BLIND FLANGE DIMENSIONS (MM)

ASME B16.5 · CLASS **600** BLIND FLANGE · RAISED FACE · DIMENSIONS IN MM — 20 sizes

NPS inch	D	B	G	K	Bolting			Weight
	OD	Thick.	RF Ø	Bolt circle	No.	L · Hole Ø	Stud	kg approx.
1/2"	95	14.3	35	66.7	4	15.9	1/2"	1.4
3/4"	115	15.9	43	82.6	4	19.0	5/8"	1.4
1"	125	17.5	51	88.9	4	19.0	5/8"	1.8
1 1/4"	135	20.7	64	98.4	4	19.0	5/8"	2.3
1 1/2"	155	22.3	73	114.3	4	22.2	3/4"	3.7
2"	165	25.4	92	127.0	8	19.0	5/8"	4.6
2 1/2"	190	28.6	105	149.2	8	22.2	3/4"	6.8
3"	210	31.8	127	168.3	8	22.2	3/4"	9.1
3 1/2"	230	35.0	140	184.2	8	25.4	7/8"	13.2
4"	275	38.1	157	215.9	8	25.4	7/8"	18.7
5"	330	44.5	186	266.7	8	28.6	1"	31
6"	355	47.7	216	292.1	12	28.6	1"	39
8"	420	55.6	270	349.2	12	31.8	1 1/8"	64
10"	510	63.5	324	431.8	16	34.9	1 1/4"	105
12"	560	66.7	381	489.0	20	34.9	1 1/4"	134
14"	605	69.9	413	527.0	20	38.1	1 3/8"	161
16"	685	76.2	470	603.2	20	41.3	1 1/2"	225
18"	745	82.6	533	654.0	20	44.4	1 5/8"	286
20"	815	88.9	584	723.9	24	44.4	1 5/8"	368
24"	940	101.6	692	838.2	24	50.8	1 7/8"	568

- All dimensions in millimetres per ASME B16.5-2020 Tables 14 and 15 (metric). Thickness B excludes the 7 mm raised face.
- Blind flange thickness is the same as for other flange types of the same class and size. Studs per ASME B16.5 Table B1; hole Ø L is 3 mm larger than the stud. Weights approximate, carbon steel, solid (untapped).

BLIND FLANGE DIMENSIONAL DRAWING



D Flange outside diameter

B Flange thickness (excl. 7 mm RF)

G Raised face diameter

K Bolt circle diameter (PCD)

L Bolt hole diameter

RF Raised face, 7 mm high

Selection: the blind must be the same class, size and facing as the mating flange; for temporary isolation of a live line a spade or spectacle blind (ASME B16.48) between flanges gives positive isolation. **Also known as:** ANSI B16.5 600 lb blind flange · 600# blank flange · BLRF Class 600 · blind raised face flange (≈ PN 100).

BLIND FLANGE MATERIALS

Carbon steel	ASTM A105 / A105N (most common)
Low-temperature CS	ASTM A350 LF2 Cl.1 / Cl.2, LF3
Stainless steel	ASTM A182 F304 / F304L, F316 / F316L, F321, F347
Alloy steel	ASTM A182 F5, F9, F11, F12, F22, F91
Duplex / super duplex	ASTM A182 F51 (UNS S31803 / S32205), F53 (S32750), F55 (S32760)
Nickel & copper alloys	Monel 400, Inconel 600 / 625, Hastelloy C276, Cu-Ni 90/10 — on request
Equivalent EN / DIN grades	P250GH (1.0460), 1.4301, 1.4401, 1.4404, 1.4571 on request

PRESSURE–TEMPERATURE RATINGS

PRESSURE–TEMPERATURE RATING **Class 600** BAR, ASME B16.5 TABLE 2

Temperature °C	Group 1.1 A105 / A350 LF2	Group 2.1 A182 F304	Group 2.2 A182 F316
–29 to 38	102.1	99.3	99.3
100	93.2	84.4	86.3
150	90.2	77.0	79.0
200	87.6	71.3	73.3
250	83.9	66.8	68.9
300	79.6	63.2	65.2
350	75.1	60.7	62.6
400	69.4	58.9	60.9
450	57.5	57.5	58.8

Working pressure in bar (gauge) from ASME B16.5-2020 Table 2-1.1, 2-2.1 / 2-2.2. Ratings apply to the flange; confirm for the specific material group, bolting, gasket and welds.

QUALITY & DOCUMENTATION

- Forged from certified bars / billets; normalised, quenched-and-tempered or solution-annealed per material specification.
- Manufactured under an ISO 9001:2015 quality management system; marking per ASME B16.5 and MSS SP-25.
- EN 10204 3.1 material test certificates with chemical analysis, mechanical properties and heat-number traceability; 3.2 with third-party endorsement on request.
- Dimensional inspection to ASME B16.5 tolerances; face finish per MSS SP-6; UT of forgings for NPS 12 and above on request.
- NDT (MPI / DPT), PMI for stainless and alloy grades, IBR, NACE MR0175 / ISO 15156 and PED compliance on request.

FREQUENTLY ASKED QUESTIONS

Is a blind flange the same thickness as a weld neck flange?

Yes — ASME B16.5 gives one thickness per class and size for all flange types; the blind is rated for full class pressure on its solid centre.

Can a blind flange be drilled and tapped?

Yes — tapped blinds with an NPT or socket-weld connection (vent, drain, gauge, injection) are common; specify size and type. The tapping reduces the rating only if it exceeds B16.5 / B31.3 reinforcement limits.

Can a blind flange be used with a raised face against cast iron?

Use a flat face with a full-face gasket against Class 125 cast iron (ASME B16.5 §5.3.4) — FF blinds are available on request.

Which gasket and bolts are used?

Spiral wound (ASME B16.20) or non-metallic (ASME B16.21) gaskets with A193 B7 / A194 2H studs and nuts; B8M Cl.2 for stainless flanges.

ORDERING INFORMATION

Specify: quantity · size (NPS) · ASME B16.5 Class 600 blind · facing (RF / FF / RTJ) · tapping if required (size, NPT / SW) · material grade · certification (3.1 / 3.2, NACE, IBR, PED) · surface protection (anti-rust oil, paint, galvanising).