Blind Flange — ASME B16.47 Series B Class 600

ANSI / ASME B16.47 Series B (API 605) Class 600 large diameter compact blind raised face (BLRF) flanges · NPS 26" to 60" · Carbon steel ASTM A105 / A266 / A694, stainless steel ASTM A182 F304 / F316

ASME B16.47 SERIES B CLASS 600 BLIND FLANGE

A large diameter blind flange (BL / BLRF) is a solid forged disc with ASME B16.47 Series B drilling and facing and no bore, closing pipeline ends, vessel and tank nozzles and large valve connections. Because it carries full pressure on its unsupported centre, B16.47 makes most blinds thicker than the matching weld neck flange.

Series B (formerly API 605) is the compact B16.47 pattern — smaller OD and many smaller bolts — common in refineries, tank farms and offshore. TESCO Steel & Engineering manufactures these blinds in Mumbai, 26" to 60", RF or FF, plain or with tapped vent / drain connections.

KEY FEATURES

- **Full ASME B16.47 compliance** — Series B dimensions, tolerances, facing and marking to ASME B16.47-2020.
- **No welding** — bolts to any Series B / API 605 flange of the same class and size; removable.
- **Options** — tapped vent / drain (NPT / SW), RTJ facing, jack-screw holes, lifting lugs for heavy blinds.
- **Materials and certification** — A105, A266 Cl.2, A350 LF2, A182 F304/F316; EN 10204 3.1 / 3.2.

SPECIFICATION SUMMARY

Product	Large diameter blind flange (BL / BLRF), disc forging
Standard	ASME B16.47 Series B (formerly API 605)
Pressure class	Class 600 (600 lb / #600)
Size range	NPS 26" – 60" (DN 650 – DN 1500)
Facing	Raised face (RF) 7 mm standard; FF or RTJ on request
Face finish	Serrated, 125 – 250 µin Ra (3.2 – 6.3 µm)
Bore	None (solid); tapped NPT / SW connection on request
Back face	Machined flat; chamfered edge; marking on periphery
Materials	ASTM A105 / A105N; A266 Cl.2; A350 LF2; A694 F42 – F65; A182 F304/L, F316/L; duplex

INSTALLATION — BLINDING A LINE

- Match series, class, size and facing to the mating flange — Series B and Series A drilling differ at NPS 26 – 36; use a new gasket of the same type.
- Large blinds weigh hundreds of kilograms — specify lifting lugs; tighten studs in a cross pattern in at least three steps; jack-screw holes ease 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

Refinery and petrochemical process header ends · API 650 / 620 tank nozzles and manways · offshore topsides and FPSO large-bore piping · cooling-water and fire-water mains · large valve and pump nozzles · hydrotest and isolation blinds.

BLIND FLANGE VS OTHER CLOSURES

Blind flange	Bolted, removable, full class rating; reusable
Spade / spacer	Between flanges for positive isolation (B16.48 to NPS 24; larger to drawing)
Pipe cap	Welded, permanent closure (ASME B16.9)

TESCO Steel & Engineering — large diameter blind flange manufacturer & exporter · 9-A, 52-A, Sindhi Lane, Mumbai – 400004, India · +91 22 6659 5662 · sales@tescosteel.com · www.tescosteel.com
Dimensions per ASME B16.47-2020 Series B Class 600 (NPS 26 – 60); weights approximate; P–T ratings per ASME B16.5 Table 2 — verify for material group and service.

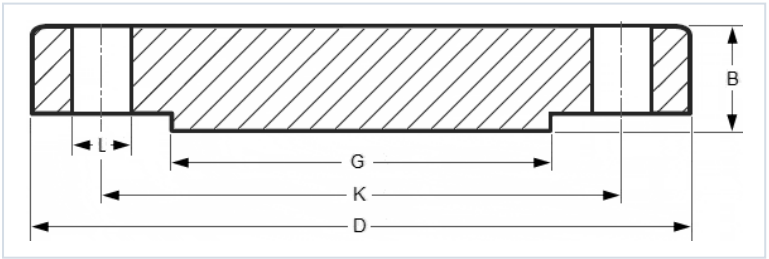
ASME B16.47 SERIES B CLASS 600 BLIND FLANGE DIMENSIONS (MM)

ASME B16.47 SERIES B · CLASS 600 BLIND FLANGE · RAISED FACE · DIMENSIONS IN MM — 18 sizes

NPS inch	D	B	G	K	Bolting			Weight
	OD	Thick.	RF Ø	Bolt circle	No.	L · Hole Ø	Stud	kg approx.
26"	890	111.3	727	806.4	28	44.5	1 5/8"	542
28"	950	115.8	784	863.6	28	47.6	1 3/4"	647
30"	1020	127.0	841	927.1	28	50.8	1 7/8"	817
32"	1085	134.9	895	984.2	28	54.0	2"	979
34"	1160	144.3	953	1054.1	24	60.3	2 1/4"	1200
36"	1215	150.9	1010	1104.9	28	60.3	2 1/4"	1367
38"	1270	155.4	1054	1162.0	28	60.3	2 1/4"	1544
40"	1320	162.1	1111	1212.8	32	60.3	2 1/4"	1741
42"	1405	171.4	1168	1282.7	28	66.7	2 1/2"	2080
44"	1455	177.8	1226	1333.5	32	66.7	2 1/2"	2316
46"	1510	185.7	1276	1390.6	32	66.7	2 1/2"	2612
48"	1595	195.3	1334	1460.5	32	73.0	2 3/4"	3056
50"	1670	203.2	1384	1524.0	28	79.4	3"	3490
52"	1720	209.5	1435	1574.8	32	79.4	3"	3822
54"	1780	217.4	1492	1632.0	32	79.4	3"	4233
56"	1855	225.6	1543	1695.4	32	85.7	3 1/4"	4776
58"	1905	231.6	1600	1746.2	32	85.7	3 1/4"	5177
60"	1995	242.8	1657	1822.4	28	92.1	3 1/2"	5946

- All dimensions in millimetres per ASME B16.47-2020 Series B Class 600 (metric). Thickness B excludes the 7 mm raised face. NPS 38 – 60 Series B Class 600 dimensions are shared with Series A.
- Blind flange thickness B is as tabulated for blinds in B16.47 and is greater than the weld neck thickness in most sizes. Studs per ASME B16.47; hole Ø L is 3.2 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 match the mating flange in series (A or B), class, size and facing — Series A and B are not interchangeable at NPS 26 – 36. **Also known as:** ANSI B16.47 Series B 600 lb blind flange · API 605 Class 600 blind · compact large diameter 600# blank flange · 26" – 60" BLRF (≈ PN 100).

BLIND FLANGE MATERIALS

Carbon steel	ASTM A105 / A105N; A266 Cl.2 / Cl.4 for large disc forgings
High-yield / low-temp.	ASTM A694 F42 – F65 (pipeline); A350 LF2 Cl.1 / Cl.2
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 B16.47 / 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); ASME B16.47 adopts the ASME B16.5 Table 2 ratings (Table 2-1.1, 2-2.1 / 2-2.2). A694 grades rated per Group 1.1 unless otherwise agreed. Confirm for material group, bolting and gasket.

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 B16.47 and MSS SP-25 including "B16.47 SER. B".
- 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 B16.47 tolerances; face finish per MSS SP-6; UT of disc forgings per ASTM A388 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 B16.47 blind the same thickness as the weld neck flange?

Not always — B16.47 tabulates blind flange thickness separately, and in most Series B sizes the blind is thicker because it carries full pressure on its unsupported centre. Use the B column of this sheet, not the weld neck table.

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 ASME B31.3 / B16.47 reinforcement limits.

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

Series B drilling does not match B16.1 cast-iron flanges; where a flat face is needed (full-face gasket) 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 B16.47 Series B 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).