Blind Flange — ASME B16.47 Series B Class 300

ANSI / ASME B16.47 Series B (API 605) Class 300 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 300 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 300 (300 lb / #300)
Size range	NPS 26" – 60" (DN 650 – DN 1500)
Facing	Raised face (RF) 2 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 300 (NPS 26 – 60); weights approximate; P–T ratings per ASME B16.5 Table 2 — verify for material group and service.

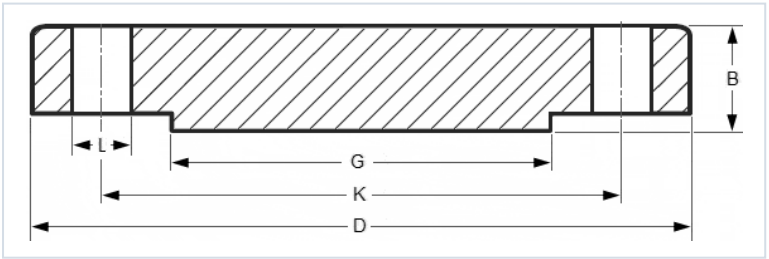
ASME B16.47 SERIES B CLASS 300 BLIND FLANGE DIMENSIONS (MM)

ASME B16.47 SERIES B · CLASS **300** 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"	865	89.0	737	803.3	32	34.9	1 1/4"	411
28"	920	89.0	787	857.2	36	34.9	1 1/4"	464
30"	990	93.8	845	920.8	36	38.1	1 3/8"	567
32"	1055	103.2	902	977.9	32	41.3	1 1/2"	706
34"	1110	103.2	953	1031.9	36	41.3	1 1/2"	780
36"	1170	103.2	1010	1089.0	32	44.5	1 5/8"	871
38"	1220	111.1	1060	1139.8	36	44.5	1 5/8"	1024
40"	1275	115.9	1114	1190.6	40	44.5	1 5/8"	1156
42"	1335	119.2	1168	1244.6	36	47.6	1 3/4"	1305
44"	1385	127.1	1219	1295.4	40	47.6	1 3/4"	1499
46"	1460	130.1	1270	1365.2	36	50.8	1 7/8"	1708
48"	1510	134.9	1327	1416.0	40	50.8	1 7/8"	1897
50"	1560	139.8	1378	1466.8	44	50.8	1 7/8"	2100
52"	1615	144.1	1429	1517.6	48	50.8	1 7/8"	2312
54"	1675	149.2	1480	1578.0	48	50.8	1 7/8"	2576
56"	1765	157.0	1537	1651.0	36	60.3	2 1/4"	3013
58"	1825	161.9	1594	1712.9	40	60.3	2 1/4"	3333
60"	1880	166.7	1651	1763.7	40	60.3	2 1/4"	3620

- All dimensions in millimetres per ASME B16.47-2020 Series B Class 300 (metric). Thickness B includes the 2 mm raised face. NPS 38 – 60 Series B Class 300 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 (incl. 2 mm RF)

G Raised face diameter

K Bolt circle diameter (PCD)

L Bolt hole diameter

RF Raised face, 2 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 300 lb blind flange · API 605 Class 300 blind · compact large diameter 300# blank flange · 26" – 60" BLRF (≈ PN 50).

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 300** — 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	51.1	49.6	49.6
100	46.6	42.2	43.2
150	45.1	38.5	39.5
200	43.8	35.7	36.8
250	41.9	33.4	34.4
300	39.8	31.6	32.6
350	37.6	30.3	31.3
400	34.7	29.4	30.4
450	28.8	28.8	29.4

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 300 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).