

- A. As defined by NACE Standard MR0175 / ISO 15156.
- B. In compliance with NACE Standard MR0175 / ISO 15156.
- C. CRA required on retained fluid wetted surfaces only; CRA cladding of low alloy or stainless steel permitted.
- D. CRA as defined in API 6A latest edition.  
NACE MR0175 / ISO 15156 definition of CRA does not apply.



## Material Class API-6A Minimum Material Requirements Body & Flange

AA-General Service	Carbon or low alloy steel
BB-General Service	Carbon or low alloy steel
CC-General Service	Stainless steel
DD-Sour Service <sup>a</sup>	Carbon or low alloy steel <sup>b</sup>
EE-Sour Service <sup>a</sup>	Carbon or low alloy steel <sup>b</sup>
FF-Sour Service <sup>a</sup>	Stainless steel <sup>b</sup>
HH-Sour Service <sup>a</sup>	CRA <sup>bcd</sup>



## API-6A Temperature Classification

Temperature Classification*	Operating Range Degrees Fahrenheit °F		
	Min.		Max.
K	-75	to	180
L	-50	to	180
N	-50	to	140
P	-20	to	180
R	Room Temperature		
S	0	to	140
T	0	to	180
U	0	to	250
V	35	to	250
X**	0	to	350
Y**	0	to	650

## API-16A Temperature

Classification	Operating Range (°F)
T-75	-75 to 250
T-20	-20 to 250
T-0	- 0 to 250

Material Designation	0.2% Yield Strength min. (psi)	Tensile Strength min. (psi)	Elongation in 50 mm (2 in) min. %	Reduction in Area min. %
36K	36,000	70,000	21	Not Require
45K	45,000	70,000	19	32
60K	60,000	85,000	18	35
75K	75,000	90,000	17	35

## Hardness API-6A

Connectors	Material Designation	API Minimum HBW	NACE Maximum
HBW6B Weld Flanges Integral Flanges and Hubs, and 6BX Weld Neck Flanges.	45K	140	237
	60K*	174*	237
	75K*	197*	237

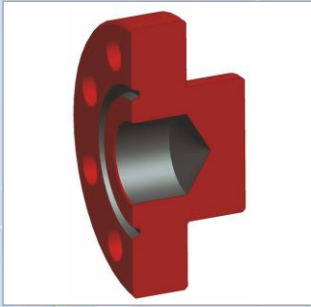
\*75K material can substitute for 60K material

**Designated material property requirements for bodies, bonnets and end and outlet connections**

## API Spec 6A specifics ring gaskets.

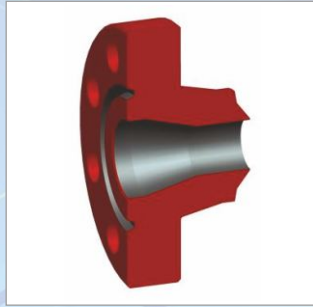
MATERIAL	MARKED	MAX. HBW
Soft Iron **	D-4	103
Low Carbon Steel	S-4	121
304 Stainless Steel	S-304-4	158
316 Stainless Steel	S-316-4	158

### Blind Flange



Used to close off completely a flanged end or outlet connection. Can be use to stop the Flow in any directions.

### API Specified 6B Weld Neck Flange

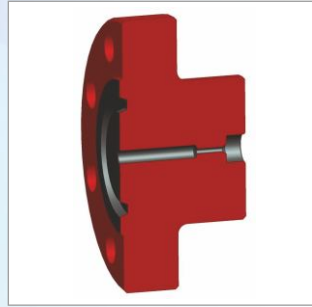


Have restricted bores to match standard pipe sizes and schedules.

API Spec 6A Specified, 6 BX Weld Neck Flanges, have material and dimensions that conform to the requirements for full bore integral flanges.

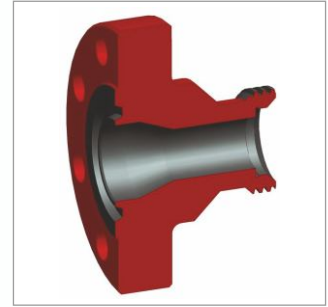
Customers can specify weld neck length as per their requirements.

### Test Flang



A hole drilled and tapped into a Blind or Target flange which may allow application or pressure or attachment of a gauge.

### Adapter Flange



Double studed adapter flanges, companion flanges, flange with union adapters.

It can be use for transition in nominal size and/or pressure rating.

- NMT Engineering & Services Pvt. Ltd. can provide a wide range of Flanged or Studded connections, which includes, Double Sided Adapters (DSA's), Blinds Tests, Targets, Adapter Flanges, Unions and Welding Necks.
- All equipment conforming to API, ANSI, in line with specific Customer Requirements.
- Ring Grooves can be inlayed with a variety of stainless steels and high Nickel Alloys.
- Manufactured As per API-6A PSL-1 thru PSL-3. Sour Service is available and all H2S service parts conform to the Latest NACE specifications.

The difference between ASME/ANSI and API flanges is the fabrication material and the higher rated API operating pressure.

ASME/ANSI flanges are common in industrial process systems handling water, steam, air and gas.

API flanges are manufactured for high strength operating refinery systems with products such as oil and explosive gases.

The flange standards API 6A and ASME/ANSI B16.5 are similar dimensionally - but the API 6A flanges are rated for higher pressures.

NMT Engineering & Services manufactures Drilling Spools and Spacer Spools in every size and pressure rating.

Drilling Spools usually have the same nominal end connections and the same nominal Outlet connections.

While Spacer Spools may have different connections. The connections can be studded or flanged.

Customers may specify any combination of end connections and outlet connections, as well as overall height or length and outlet extension.

All Drilling Spools & Spacer Spools are designed to have adequate clearance to accommodate wrenches, studs and nuts.

### Flange for Different Use

- ANSI/ASME Forged Flanges
- MSS-SP-44 Flanges/ANSI B 16.47 Series A
- API type 6A - RTJ Face Flanges
- API-605 Flanges/ANSI B 16.47 Series B
- ASME Boiler Code Flanges
- CL. 125 Lightweight Flanges - For low pressure applications.
- Plate Flanges - From 1/4" thru 8" Thick, Including AWWA C-207, and all other special designs.
- ANSI Long Weldnecks & Special Body Connectors
- Studding Outlets (pad flanges) – flat bottom or reduced to fit
- Special Ring Flanges

### Flange Material

- CARBON STEEL - ASTM/ASME SA-105, A-350 LF-2, LF-3, A694, SA-516-70, A36
- CHROME ALLOYS - A-182-F-1, F-5, F-6, F-9, F-91, F-11, F-12, F-22
- STAINLESS STEEL - A-182 - F-304, Dual Grade 304L, Dual Grade 316L, 316, 309, 310, 317L, 321, 347, 904L, Alloy 20, H grades
- ALUMINUM - 3003, 6061
- HASTALLOY - B-2, C-276, G, X, C-22
- INCONEL - 600, 601, 625, 718
- INCOLLOY - 800, 825, 800H, 800HT
- MONEL - 400
- COPPER - 90/10 (C70600), 70/30 (C71500)
- Duplex – F51/2205, F53/2507
- TITANIUM - Gr2, Gr12

**Manufactured as per API-6A PSL-1 thru PSL-3. Sour Service is available and conforms to the latest NACE specifications.**

**Ring Grooves can be inlayed with a variety of stainless steels and high Nickel Alloys.**