EQUIVALENCIAS MATERIALES VALVULAS

Material Group	Common Name	ASTM Casting Specification for Body/ Bonnet/ Disc/ Hinge.	Application Notes	Equivalent Forged Material
Stainless Steel	Austenitic S.Steel 300 series S.Steel	A351-CF8	0.04% min.C, temps.>538ºC	A182-F304
		A351-CF3	Up to 427ºC	A182-F304L
		A351-CF8M	0.04% min.C, temps.>538ºC	A182-F316
		A351-CF3M	Up to 454ºC	A182-F316L
		A351-CG3M	Up to 454ºC	A182-F317L
		A351-CF8C A351-CF10C	Service to 816ºC.0.04% min.C, temps.>538ºC	A182-F347 A182-F347H
		A351-CF10MC	service to 816ºC	UNS S31640
		A351-CK20	service to 816ºC	A182 F310H
	Alloy 20	A351-CN7M	service to 316ºC	A182 F20
	Duplex	A890-grade 4A =CD3MN (UNS J92205)	service to 316ºC	A182-F51/F60
	Super Duplex	A890-grade 5A = CE3MN (UNS J93404)	service to 316ºC	A182-F53
	Super Duplex	A890-grade 6A =CD3MWCuN (UNS J93380)	service to 316ºC	A182-F55
	Super Austenitic 6Mo	A351-CK3MCuN	service to 400ºC	A182-F44
	Super Austenitic 904L	AFNOR Z6NCDU25204M	service to 316ºC	UNS N08904
Nickel	Nickel	A494-CZ-100	service to 316ºC	B160- N02200
Nickel-Copper	Monel	A494-M35-1	service to 482ºC	B564-N04400
Nickel-Molybdenum	Hastelloy B-2	A494-N-7M	Up to 427ºC	B335-N10665
	Hastelloy B-3	----------		B564-N10675
Nickel-Chromium-Iron	Inconel 600	A494-CY40	Up to 649ºC	B564-N06600
	Incoloy 800H	A351-CT15C	service to 816ºC	B564-N08810
	Incoloy 825	A494-CU5MCuC	service to 538ºC	B425-N08825
Nickel-Chromium-Molybdenum	Inconel 625	A494-CW-6MC	Up to 649ºC	B564-N06625* B446-N06625(BAR)
	Hastelloy C-4	A494-CW2M		B574-N06455
	Hastelloy C-22	A494-CX2MW		B564-N06022
	Hastelloy C-276	A494-CW6M (older spec CW12MC)		B564-N10276
Titanium	Titanium	B367-C2		B381-F2
Zirconium	Zirconium	R60702 -C		B493-R60702
		R60705 -C		B493-R60705

Stem/Stem Nut /Hinge Pin Materials

Stem materials are at least equal to the valve body material for corrosion resistance, and are produced from barstock to an appropriate specification including ASTM A479 for Stainless Steels and ASTM B574 for Nickel Chromium Molybdenum alloys.

Wedge/Discs and Seats

Seats are normally integral design in stainless steel and nickel alloy valves the faces being renewable through lapping or grinding when necessary to restore sealing performance. Integral or welded in seats are always recommended for steam and gaseous service.

The base material for disc and seat material is at least equal to the valve body material. When required seating surfaces are normally hardfaced with Stellite 6 to prevent erosion and galling, recommended for all non-lubricating services including low temperature liquified gases, dry gases at all temperatures, water and

Bonnet/Cover Gasket Types and Materials

Spiral wound gaskets are available for all pressure classes. The winding and inner ring material have at least the corrosion resistance of the body material. The filler material is Graphite as standard, having nearly universal fluid compatibility, the best sealing performance and fire resistance.

Non-circular gaskets for class 150 gate valves in sizes 3" and above are made from metal mesh reinforced Graphite material. The mesh is produced from material of at least equal corrosion resistance to the body.

Ring Joint bonnet gaskets are available for class 600 valves and above. The ring is produced from material of at least equal corrosion resistance to the body.

Other gasket materials and designs are available on request for specific applications.

Gland Packing - Stem Seal

For class 150-600 the standard gland packing is a 5 ring system comprising 3 central flexible graphite sealing rings with 2 anti-extrusion braided carbon fibre end rings fitted top and bottom.

For class 900 and above, the standard gland packing is a 6 ring system comprising 4 central flexible graphite sealing rings with 2 anti-extrusion braided carbon fibre end rings fitted top and bottom.

Gland Packing - qualified against specific leak tightness classes according to ISO 15484 by production testing as required.

Other gland packing materials and designs are available on request for specific applications.

Bolting

Bonnet bolting as standard is ASTM A193 - B8M class 2 studs fitted with ASTM A194 - grade 8M nuts.

Other bolting materials are available to order. High strength bolting is recommended on class 600 and above.

Sour Oil & Gas Application

The wetted parts of Langley valves conform to NACE MR-01-75, NACE MR-01-03 and ISO 15161 for resistance to sulphide stress cracking in oil and gas environments containing hydrogen sulphide (H_2S). Where requested stress cracking resistant exterior bolting can be provided when it is exposed to wet H_2S.