

Body materials

Material	IA Code	Material designation	Material number	DIN/EN Standard	ASTM Standard*	Butterfly Valve	Typical use
Cast iron GG25	1A	EN-GJL-250	EN-JL 1040	1561	ASTM A48	Desponia®	For lower pressure and liquid applications
Ductile iron GGG40	2A	EN-GJS-400-15	EN-JS 1030	1563	ASTM A536 60-42-10	Desponia®/ Desponia® plus	For higher pressure applications. Mandatory for gaseous applications
Ductile iron GGG40.3	2B	EN-GJS-400-18-LT	EN-JS 1025	1563	ASTM A395 60-40-18	Bianca	Recommended where high elongation at brake is requested (e.g. low temperatures)
Carbon steel	3H	GP240GH	1.0619	10213	ASTM A216 WCB	Desponia® plus	For higher pressure applications. Typically for power generation applications
Stainless steel	4B	GX2CrNiMo19 -11-2	1.4409	10213	ASTM A351-CF-3M	Bianca	For corrosive ambiance and life science applications
Stainless steel	4C	GX5CrNiMo19 -11-2	1.4408	10213	ASTM A351-CF-8M	Desponia® plus	For corrosive ambiance and life science applications

*Similar casting regulations are shown but it does not mean they are directly equivalent.

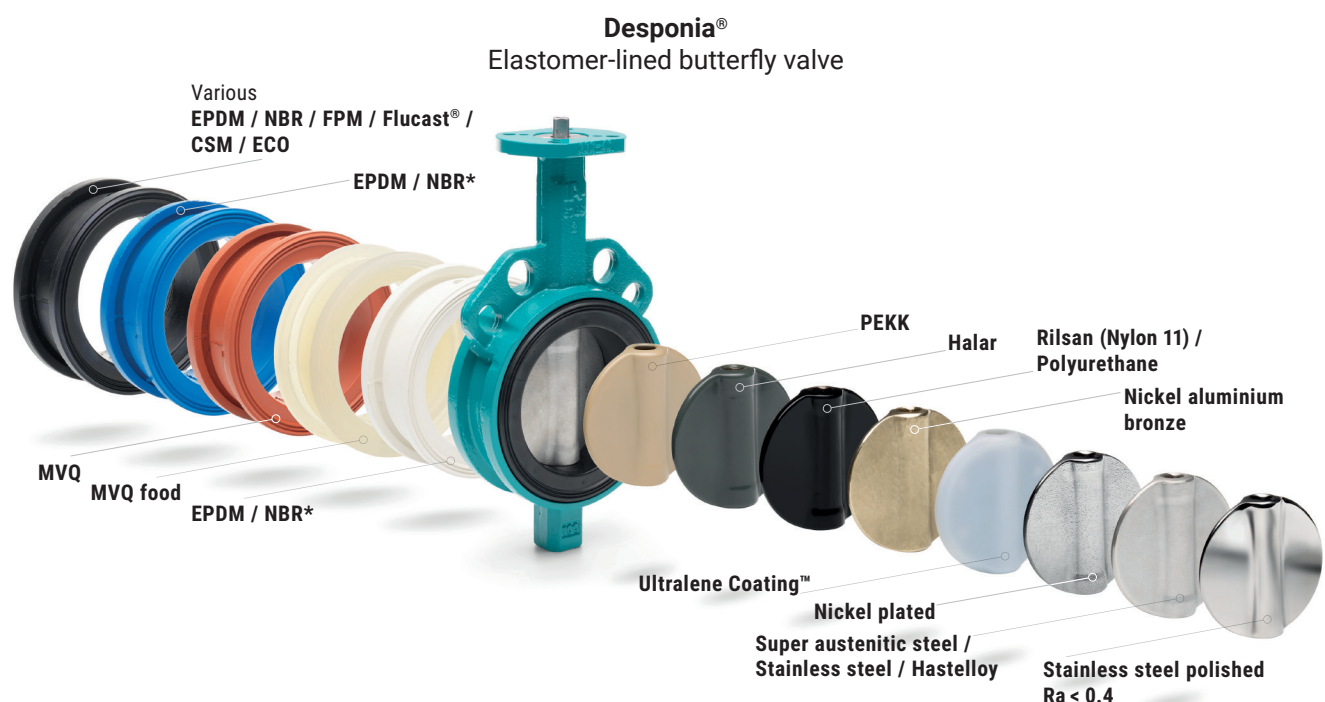
Body coatings

Material	IA Code	Material designation	DIN/EN Standard	Butterfly Valve	Typical use
blank, no coating	0	-	-	Desponia® plus and Bianca	Stainless steel bodies
Epoxy	R	Resicoat, min. 200 µm	DIN EN ISO 12944-4C5I-C5M	Desponia® up to DN400	Standard industrial coating, for high humidity and aggressive atmospheres, marine, estuaries, coastal areas with high salinity
Epoxy	E	Polyflex EP-20, min. 80 µm	DIN EN ISO 12944-4 C2	Bianca	Standard coating, for interior buildings with neutral atmosphere and buildings where condensation may occur. Rural areas with low pollution
Epoxy / Polyurethane	E	Hempadur 15570 and Hemplathane 55102, min. 80 µm	DIN EN ISO 12944-4 C2	Desponia® DN450 and Desponia® plus	Standard coating, for interior buildings with neutral atmosphere and buildings where condensation may occur. Rural areas with low pollution
Epoxy / Polyurethane	N	Hempadur 15570 and Hemplathane 55102, min. 250 µm	DIN EN ISO 12944-4 C4	Bianca, Desponia® DN450 and Desponia® plus	Special coating for industrial and coastal areas with medium salinity, industrial processing plants with medium aggressive atmospheres
Epoxy / Polyurethane	M	Hempadur 15570 and Hemplathane 55102, min. 330 µm	DIN EN ISO 12944-4C5I-C5M	Bianca, Desponia® DN450 and Desponia® plus	Special coating, for industrial areas with high humidity and aggressive atmospheres, marine, estuaries, coastal areas with high salinity
Epoxy	Y	EUROKOTE®468 Brun rouge, min. 200µm	DIN EN ISO 12944-4 C2	Desponia® DN450 and Desponia® plus	Coating used for potable water, approved by ACS

Shaft materials

Material	IA Code	Material designation	Material number	DIN/EN Standard	ASTM Standard*	Butterfly Valve	Typical use
Stainless steel	4G	GX5CrNiMo19 -11-2	1.4408	10213	ASTM A351-CF-8M	Bianca DN32 - 300	Standard shaft material
Stainless steel	4G	X2CrNiMo17 -12-2	1.4404	10088-2	AISI 316L	Bianca DN350+	Standard shaft material
Stainless steel	4GJ	X2CrNiMo18 -14-3	1.4435	10088-2	AISI 316L	Bianca DN50 - 250	Special disc/shaft for life science applications
Duplex stainless steel	4W	GX2CrNiMoN26 -7-4	1.4469	10213-4	ASTM A890-5A	Bianca DN32 - 300	For higher pressure rate, improved corrosion resistance
Stainless steel	41 / 4A	X20Cr13	1.4021 - QT800	10088-3	AISI 420A	Desponia®/ Desponia® plus	Standard shaft material
Stainless steel	42 / 4L	X5CrNiCuNb 16-4	1.4542-AT	10088-3	AISI 630-17-4PH	Desponia®/ Desponia® plus / Bianca	Special shaft material, improved corrosion resistance, mandatory for high pressure Desponia® plus
Hastelloy C276	7H	G-NiMo16Cr 15W	2.4819	-	-	Bianca DN50 - 300	Outstanding corrosion and heat resistance
Titanium Grade 2	7T	-	3.7035	17850	-	Bianca	Outstanding resistance to corrosion in a wide range of aggressive media
Titanium Grade 7	7T7	-	3.7235	17850	-	Bianca	Outstanding resistance to corrosion in a wide range of aggressive media. Best resistance to chlorine applications

*Similar casting standards are shown but it does not mean they are directly equivalent.



Disc materials

Material	IA Code	Material designation	Material number	DIN/EN Standard	ASTM Standard*	Butterfly Valve	Characteristics
Ductile iron GGG40	2A	EN-GJS-400-15	EN-JS 1030	1563	ASTM A536 60-42-10	Desponia®/ Desponia® plus	Standard disc used with different coatings
Carbon steel	3B	Disc core S355J2+N (St 52-3) + shafts X2CrNiMo17-12-2	1.0577 + 1.4404	10025-2	ASTM A572 Gr. 50	Bianca disc core DN350+	Standard disc for PFA overmoulding DN350 -DN900
Carbon steel	3L	Disc core S355J2+N (St 52-3) + shafts X5CrNiCuNb16-4	1.0577 + 1.4542	10025-2	ASTM A572 Gr. 50	Bianca disc core DN350+	Special disc for PFA overmoulding DN350 -DN600, for higher pressure
Carbon steel	3O	GS52	1.0552	10025-2	-	Desponia®/ Desponia® plus	Special disc for Ultralene Coating™ overmoulding
Carbon steel	3T	Disc core S355J2+N (St 52-3) + shafts X2CrNiMoN22-5-3	1.0577 + 1.4462	10025-2	ASTM A572 Gr. 50	Bianca disc core DN350+	Special disc for PFA overmoulding DN350 -DN600, for higher pressure
Stainless steel	4C 4G	GX5CrNiMo19-11-2	1.4408	10213	ASTM A351-CF-8M	Desponia®/ Desponia® plus / Bianca DN32 - 300	Standard stainless steel disc for various industrial applications
Stainless steel	4G	Disc core in X5CrNi18-10 + shafts X2CrNiMo17-12-2	1.4301 + 1.4404	10088-2	AISI 316L	Bianca disc core DN350+ (option)	Standard stainless steel disc for Bianca DN350+ and special disc for PFA overmoulding DN350 -DN900
Stainless steel	4GJ	X2CrNiMo18-14-3	1.4435	10088-2	AISI 316L	Bianca DN50 - 250	Special disc for life science applications, ferrite < 1 %, electropolished Ra 0,4
Stainless steel	4L	X5CrNiCuNb16-4	1.4542-AT	10088-3	AISI 630- 17-4PH	Bianca special version	Special disc for PFA overmoulding DN350 -DN600, for higher pressure
Super duplex stainless steel	4I	GX3CrNiMoCuN24-6-5	1.4573	SEW 410	UNS S31635	Desponia®/ Desponia® plus	Excellent chemical resistance, commonly used in desalination applications
Super austenitic stainless steel	4S	GX2NiCrMoCuN25-20-6	1.4588	10283	ASTM A743 CK-3MCuN	Desponia®/ Desponia® plus	Outstanding resistance to chloride pitting, crevice corrosion and stress-corrosion cracking, typically used for flue gas desulfurization and desalination applications
Duplex stainless steel	4T	GX2CrNiMoN26-7-4	1.4462	10213-4	ASTM A890-5A	Bianca DN350 - 600	Special disc for PFA overmoulding DN350 -DN600, for higher pressure
Duplex stainless steel	4W	GX2CrNiMoN26-7-4	1.4469	10213-4	ASTM A890-5A	Bianca DN32 - 300	Special full metal disc for higher corrosive applications and as disc core for PFA overmoulded discs, for higher pressure range
Nickel Aluminium bronze	5C	G-Cu Al 10 Ni	2.0975.04	1714	ASTM B148-C95800 **	Desponia®/ Desponia® plus	Very good corrosion resistance. High strength and ductility. Typically used for seawater

Disc materials

Material	IA Code	Material designation	Material number	DIN/EN Standard	ASTM Standard*	Butterfly Valve	Typical use
Hastelloy C276	7H	G-NiMo17Cr	2.4686	-	ASTM A494 CW-12MW**	Desponia®/ Desponia® plus	Outstanding corrosion and heat resistance
Hastelloy C276	7H	G-NiMo16Cr15W	2.4819	-	-	Bianca DN50 - 300	Outstanding corrosion and heat resistance
Titanium Grade 2	7T0	-	3.7035	17850	-	Bianca	Outstanding resistance to corrosion in a wide range of aggressive media
Titanium Grade 7	7T7	-	3.7235	17850	-	Bianca	Outstanding resistance to corrosion in a wide range of aggressive media. Best resistance to chlorine applications

*Similar casting standards are shown but it does not mean they are directly equivalent.

**Materials casted according ASTM standards.

Disc treatment, coating and overmoulding

Material	IA Code	Description	Temp °C *	Butterfly Valve	Typical use
blank, no coating	0	-	max. acc. disc	Desponia®/ Desponia® plus	Stainless steel discs
polished	P	Bianca Ra 0,8 Desponia® Ra 0,4	max. acc. disc	Desponia®/ Desponia® plus	Stainless steel discs
e-polished	J	Bianca Ra 0,4, ferrite < 1%	max. acc. disc	Bianca	Life Science
chromed	C	chromed	max. acc. disc	Desponia®/ Desponia® plus	Hot temperature application with ductile iron disc
Polyurethane	E	Polyurethane 80µm	< 120 °C	Desponia®/ Desponia® plus	Standard coating for discs DN 750+, for non corrosive media
Polyamide 11	R	Rilsan 250 µm	< 90 °C	Desponia®/ Desponia® plus	Standard coating for discs up to DN 700, good corrosion resistance
Polyamide 11	K	Rilsan 300 µm	< 90 °C	Desponia®/ Desponia® plus	Special disc coating for desalination, good corrosion resistance
Halar	H	E-CTFE 600 µm	< 90 °C	Desponia®/ Desponia® plus	Very good resistance to mineral acids, sulphuric acid, oxidants, bases and organic solvents, typically for desalination and chemical contaminated waste water
PEKK	Q	Polyether-ketonketon 400 µm	< 160 °C	Desponia®/ Desponia® plus	For abrasive and corrosive applications at higher temperatures, 2 to 3 times higher abrasion resistance than PTFE
Ultralene Coating™	D	UHMWPE min. 3 mm	< 80 °C	Desponia®/ Desponia® plus	For abrasive and corrosive applications up to 80°C
PFA virgin	T	Perfluoroalkoxy copolymer resin white, min. 3 mm	< 200 °C	Bianca	For the most corrosive and highly pure applications, acc. to FDA and (EU) No 10/2011
PFA antistatic	A	Perfluoroalkoxy copolymer resin black, min. 3 mm	< 200 °C	Bianca	For the most corrosive and explosion proof applications

Liner materials - Desponia® and Desponia® plus

Material	IA Code	Description	Temp °C *	Typical use
EPDM	E	Ethylene-Propylene Terpolymer	0 - 95	For general industrial applications. Good resistance to ozone, oxidation, ketones and alcohols, diluted acids and bases
EPDM white	EF			Life science, where white liner with (EC)1935/2004 and FDA approval is required
EPDM drinking water approval	EE			For drinking water applications where WRAS, ACS, W270, KTW, (EC)1935/2004 is required
EPDM blue	EM			Food applications, where blue liner and (EC)1935/2004 or FDA approval is required
EPDM high temperature	EC		0 - 130	For general industrial applications, heating, sugar industry
EPDM extreme temperature	ET		0 - 150	For general industrial applications, heating and low pressure steam applications up to 150°C
NBR	N	Acrylonitrile-Butadiene Copolymer	0 - 100	Good mechanical characteristics, good resistance to mineral oils and hydrocarbons with low or medium aromatic content, fats, oils, greases, hydraulic fluids. General services (compressed air, water, fuel), town gas, butane, biogas with < 1% H ₂ S, sea water
NBR white	NF			Similar to N liner, for life science, where white liner with (EC)1935/2004 and FDA approval is required
NBR blue	NM			Food applications, where blue liner and (EC)1935/2004 or FDA approval is required
NBR hydrogenated	NH			Biogas with < 2% H ₂ S
NBR gas	NG			Similar to N liner but with DVGW gas approval
CSM	H	Chlorosulfonated Polyethylene	0 - 110	Good mechanical characteristics, resistant to inorganic acids, bases, alcohols, ozone and hydrocarbonated solvents
ECO	EP	Epichlorhydrin ethylene oxide copolymer	-40 - 90	Typically used for glycerine and glycol at low temperatures, resistance to brine and moderate to oil, fuel
FPM	V	Hexafluoro-propylene vinylidene fluoride copolymer	0 - 210	Resistant to acids, alkalis, aliphatic, aromatic and chlorated hydrocarbons, oils, ozone
FPM-bio	VD	HFP-VDF-TFE		Acids, biodiesel, biogas with < 20% H ₂ S
FPM-GF	VA	Terpolymer		Oxygenated Gasoline
MVQ	S	Polymethyl vinyl siloxane	-55 - 200	Medium mechanical properties, highly resistant to heat and cold. Used for hot, cold and dry air or inert gas at low pressure
MVQ food, translucent	SA			Life science where white liner and (EC)1935/2004 or FDA approval is required
Flucast AB/N	FN	NBR based	0 - 100	Abrasive applications where a NBR would be used, being 30% more abrasion resistant
Flucast AB/P	FP	SBR based	0 - 70	Specially designed for the resistance to chemically inert powdered products, such as cements, plasters, concrete, etc.
Flucast AB/T	FT	EPDM based	0 - 130	Aqueous solutions with suspended solids at higher temperatures, at the same chemical resistance of EPDM. It has up to 65 % higher abrasion resistance compared to EPDM High temperature
Flucast extreme	FX	FPM based	0 - 200	Abrasive applications such as acids and concentrated bases at high temperatures, a good behavior with water steam (up to 160 °C) and an excellent resistance to abrasion at high temperatures (> 130 °C). It presents twice the abrasion resistance of standard FPM
Flucast white	FW	EPDM based	0 - 90	It is 1.6 times higher abrasion resistant than standard white EPDM and acc. to (EC) No 1395/2004, FDA 21 CFR 177.2600, BFR XXI Category 4). For handling abrasive powder food products such as sugar, flour, milk powder, coffee, rice, etc.

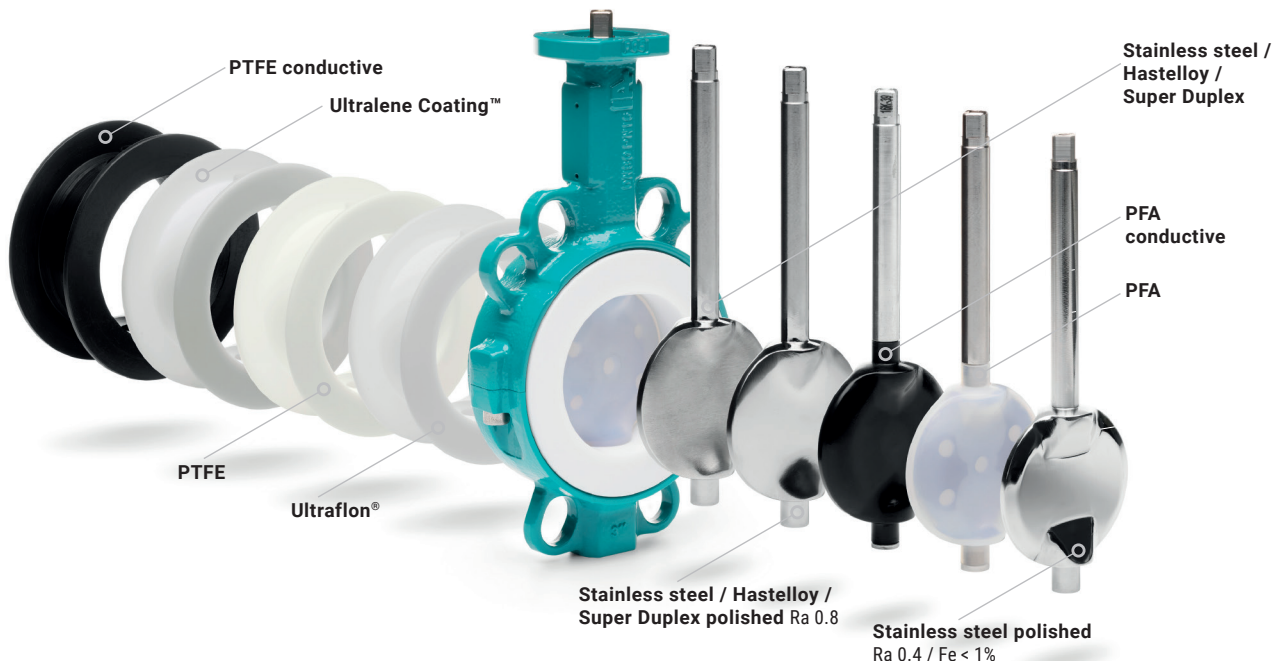
*Limitation of min. values due to torque increase at low temperature.

Liner materials - Bianca

Material	IA Code	Description	Temp °C *	Characteristics
PTFE + MVQ backliner	TS	Polytetrafluorethylene white	-40 - 140	Highest corrosion resistance, for chemical, mining, steel industry and life science applications, acc. to FDA and (EU) No 10/2011
PTFE + EPDM backliner	TE	Polytetrafluorethylene white	-10 - 130	As TS liner and for semiconductor industry
PTFE + FPM backliner	TV	Polytetrafluorethylene white	-10 - 140	As TS liner and for chlorine applications
Ultraflon™ + MVQ backliner	TSV	Modified Polytetrafluorethylene white	-40 - 200	As TS, but for higher temperature and vacuum applications
Ultraflon™ + EPDM backliner	TEV	Modified Polytetrafluorethylene white	-10 - 130	As TSV, when MVQ backliner is not accepted
Ultraflon™ + FPM backliner	TVV	Modified Polytetrafluorethylene white	-10 - 160	As TV, but for higher temperature and chlorine concentrations and vacuum applications
PTFE antistatic + MVQ backliner	TSA	Polytetrafluorethylene black	-40 + 140	For explosion proof chemical, mining, steel industry and life science applications, acc. to FDA and (EU) No 10/2011
PTFE antistatic + EPDM backliner	TEA	Polytetrafluorethylene black	-10 - 130	As TSA, when MVQ backliner is not accepted
PTFE antistatic + FPM backliner	TVA	Polytetrafluorethylene black	-10 - 140	As TSA liner and for explosive chlorine applications
Ultraflon™ antistatic + MVQ backliner	TSVA	Modified Polytetrafluorethylene black	-40 - 200	As TSA, but for higher temperature and vacuum applications
Ultraflon™ antistatic + EPDM backliner	TEVA	Modified Polytetrafluorethylene black	-10 - 130	As TSVA, when MVQ backliner is not accepted
Ultraflon™ antistatic + FPM backliner	TVVA	Modified Polytetrafluorethylene black	-10 - 160	As TVA, but for higher temperature and chlorine concentrations and vacuum applications

*Limitation of min. values due to torque increase at low temperature.

Bianca PTFE-lined butterfly valve



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