

## Vector SPO Compact Flange : Common Materials

Material Type	MATERIAL		
	SPO Compact Flange	IX Sealing	Bolting for all flange and seal ring material combinations
Carbon steel and low alloy examples	A105	AISI 4140	A193 B7, B7M A320 L7, L43, L7M
	A350 LF2		
	A694 F52, F60, F65		
	A182 F22 AISI 4130, 4140		
Stainless steel examples	A182 F316, F44 (6Mo), F49 (austenitic)	A182 F51, F53, F55	A193 B7, B7M A320 L7, L43, L7M
	A182 F51, F60 (duplex)		A193 B7, B7M A320 L7, L43, L7M
	A182 F53, F55, F61 (s.duplex)		A182 F55
Nickel alloy examples	B564 N06625	B564 N06625 B564 N07718	B637 N07080
	B564 N08010 / N08011		A453 Gr660

Vector SPO Compact Flanges are available from standard forging or casting with seal rings in compatible high strength forged materials.

The seal rings are normally coated with PTFE or alternatively with MoS<sub>2</sub> or graphite based coating. Non-coated seal rings can be used, but requires use of suitable lubrication of seal groove.

Standard bolting materials are ASTM A193 B7 and ASTM A320 L7 /L43. Inch stud bolts threaded at both ends or full length may be used. Heavy hex nuts (ASME B18.2.2) shall be used. Threads shall be coarse series, Class 2A (ASME B1.1), and nuts shall be coarse series, Class 2B. Nominal diameters 1 in and smaller shall coarse thread series (UNC), nominal diameters 1<sup>1</sup>/<sub>8</sub> in and larger shall be of the 8 thread series (8UN).

Metric threaded bolts and nuts can also be used and especially for large bolt dimensions, metric bolts are preferred due to greater thread pitch, avoiding clamping problems during tensioning.

The above table lists some common material combinations in flange seal ring and bolting. Standard practice is to combine carbon steel seal ring with carbon steel flange and stainless seal ring with stainless steel flange. Seal rings in titanium are also available.