

# Comparison of international standards for materials

Material description	Germany			France AFNOR	GB BS	Sweden SS	USA ASTM	Japan JIS	G - Module	max. Temp.	Use
	EN	Material no.	Code								
Patented drawn spring steel wire	10270-1	---	SH (type C)	NFA 47-301-76	5216-91 ND	1774	A227	G3521 SWC	81500	80°C	High static and medium dynamic conditions
Patented drawn spring steel wire	10270-1	---	DH (type D)	NFA 47-301-76	5216-91 HD + M	1774	A228	G3522 SWPB	81500	80°C	High static and medium dynamic conditions
Oil tempered valve spring steel wire	10270-2	1.1250	VDC	---	---	---	---	---	79500	250°C	Springs for high dynamic conditions
Oil tempered valve spring steel wire	10270-2	1.1250	VDCrV	---	---	---	---	---	79500	250°C	Springs for high dynamic conditions
Oil tempered valve spring steel wire	10270-2	1.1250	VDSiCr	---	2803-80 685A55HD	2090	A 877	G3561 SWOSC-V	79500	300°C	Springs for high dynamic conditions
Rust-proof spring steel	10270-3	1.4301	X5 CrNi 18 10	Z7CN18.09	304S15	2333	304	SUS 304	70000	250°C	Corrosion-resistant springs
Rust-proof spring steel	10270-3	1.4310	X12 CrNi 18 8	Z12CN17.07	302S26	2331	302	SUS 302	70000	250°C	Corrosion-resistant springs
Rust-proof spring steel	10270-3	1.4401	X5 CrNi Mo 17-12-2	Z6CND17.11.02	316S31	2321	316	SUS 316	70000	300°C	Corrosion-resistant springs, non-magnetic
Rust-proof spring steel	10088-3	1.4436	X3 CrNi Mo 17-13-3	Z7CND18.12.03	316S13	2343	---	---	71000	300°C	Corrosion-resistant springs, slightly magnetic
Rust-proof spring steel	10088-3	1.4539	X2 NiCrMoCu25-20-5	Z2NCNDU25.20	---	2562	904L	---	71000	300°C	Extremely corrosion-resistant springs, use in sea water
Rust-proof spring steel	10270-3	1.4568	X7 CrNiAl 177	Z7CNA17.07	301S81	2388	631	SUS 631	73000	350°C	Corrosion-resistant springs, with high fatigue limit
Rust-proof spring steel	10088-3	1.4571	X6 CrNiMoTi 17-12-2	Z6CNDT17.12	320S31	2350	316Ti	SUS 316 Ti	68000	350°C	Corrosion-resistant springs, acid-resistant
Brass wire	12166	2.0321	CuZn37	---	CZ108	5150	274	C2740	35000	100°C	Non-magnetic springs
Phosphorous bronze	12166	2.1020	CuSn6	CuSn 6P	PB103	5428	519	C5190	39000	100°C	Non-magnetic springs, contact springs
Copper beryllium	12166	2.1247	CuBe2	---	CB101	---	172	C1720	49000	200°C	Non-magnetic springs, contact springs
Hastelloy C4	---	2.4610	NiMo16Cr16Ti	---	---	---	---	---	76400	450°C	Springs in extremely corrosive atmospheres
Inconel X750	---	2.4669	NiCr15Fe7TiAl	---	---	---	5698	---	74000	600°C	Springs for high-temperature areas
Nimonic 90	---	2.4969	NiCr20Co18Ti	---	GR NA19	---	---	---	85000	650°C	Springs in contact with gases
Duratherm	---	---	CoNiCrFe	---	---	---	---	---	85000	600°C	Springs for high-temperature areas