INTERNATIONAL STANDARD

ISO 6208

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Nickel and nickel alloy plate, sheet and strip

Plaques, tôles et bandes en nickel et alliages de nickel

Reference number
ISO 6208:1992(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 6208 was prepared by Technical Committee ISO/TC 155, *Nickel and nickel alloys*, Sub-Committee SC 2, *Wrought and cast nickel and nickel alloys*.

Annex A of this International Standard is for information only.

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Nickel and nickel alloy plate, sheet and strip

1 Scope

This International Standard specifies requirements for hot-rolled or cold-rolled nickel and nickel alloy plate, sheet and strip, for general applications in the following size ranges:

— plate over 4 mm up to and including 100 mm;

— sheet up to and including 4 mm;

— strip up to and including 4 mm.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/R 204:1961, *Non-interrupted creep testing of steel at elevated temperatures.*

ISO/R 206:1961, *Creep stress rupture testing of steel at elevated temperatures.*

ISO 6372-1:1989, *Nickel and nickel alloys — Terms and definitions — Part 1: Materials.*

ISO 6372-3:1989, *Nickel and nickel alloys — Terms and definitions — Part 3: Wrought products and castings.*

ISO 6507-1:1982, *Metallic materials — Hardness test — Vickers test — Part 1: HV 5 to HV 100.*

ISO 6508:1986, *Metallic materials — Hardness test — Rockwell test (scales A - B - C - D - E - F - G - H - K).*

ISO 6892:1984, *Metallic materials — Tensile testing.*

ISO/TR 7003:1990, *Unified format for the designation of metals.*

ISO/TR 9721:—[1], *Nickel and nickel alloys — Code of designation based on chemical symbols (To be published as an ISO/TR type 2).*

ISO 9722:1992, *Nickel and nickel alloys — Composition and forms of wrought products.*

ASTM E 112:1988, *Standard methods for determining the average grain size.*

3 Definitions

For the purposes of this International Standard, the definitions for nickel and nickel alloys in ISO 6372-1 and for plate, sheet and strip in ISO 6372-3 apply.

3.1 heat: The product of a furnace melt or a number of melts that are mixed prior to casting.

3.2 lot: Plate, sheet or strip of the same thickness, from the same heat, heat treated together or sequentially heat treated in a continuous furnace, but in no case for longer than 16 h of production.

4 Alloy identification

For the purposes of this International Standard, the principles for alloy identification in ISO/TR 7003 and in ISO/TR 9721 apply.

1) To be published.

5 Ordering information

Orders for plate, sheet or strip according to this International Standard shall include the following information:

5.1 The number of this International Standard.

5.2 Quantity (mass or number of pieces).

5.3 Alloy identification (see table 1).

NOTE 1 For alloy identification either the number or the description may be used.

5.4 Alloy temper (see tables 2 and 3).

NOTE 2 Precipitation-hardenable alloys are normally ordered in the non-precipitation-hardened condition.

5.5 Dimensions: thickness, width, and length (or coil dimensions in the case of strip).

5.6 Edges (see 6.7.6).

5.7 Optional requirements:

a) tensile properties of strain-hardened conditions (see table 2, footnote 4);

b) samples for product analysis (see 7.1.2);

c) determination of 1 % proof stress ($R_{p1,0}$) (see 9.2.4);

d) purchaser or third-party inspection (see clause 11);

e) declaration of conformity (see clause 12).

6 Requirements

Plate, sheet, and strip shall meet the following requirements.

6.1 Composition

Heat analysis shall meet the composition limits specified in table 1.

The composition limits do not preclude the possible presence of other elements that are not specified. If the purchaser's requirements necessitate limits for any other element that is not specified, these shall be agreed upon between the purchaser and the supplier. The percentage content of elements shown as "remainder" shall be calculated by difference from 100 %.

6.2 Tensile properties

Plate, sheet and strip shall have the tensile properties specified in table 2.

6.3 Hardness

Plate, sheet and strip shall meet the hardness requirements specified in table 2.

The type of hardness test shall be at the option of the supplier.

6.4 Grain size

Plate, sheet and strip shall meet the grain size requirements specified in table 2.

6.5 Creep or stress rupture

Plate, sheet and strip shall meet the creep or stress rupture requirements specified in table 4.

6.6 Surface quality

Plate, sheet and strip shall be clean and free from detrimental surface imperfections.

NOTE 3 Where appropriate, the acceptance criteria should be agreed upon by the purchaser and the supplier.

6.7 Dimensional tolerances

6.7.1 Thickness

The tolerance on thickness shall be as specified in tables 5 to 8. For use with table 5, hot-rolled plate shall be assumed to possess the density shown in table 1.

6.7.2 Width and length

6.7.2.1 The tolerance on width and length of hot-rolled plate shall be as specified in table 9.

6.7.2.2 For hot-rolled sheet, cold-rolled plate and cold-rolled sheet ordered in specific cut lengths, a tolerance of $^{+4}_{0}$ mm over the specified length is permitted.

6.7.2.3 For cold-rolled strip ordered in specific cut lengths, a tolerance of $^{+4}_{0}$ mm over the specified length is permitted.

For the width of cold-rolled strip, the tolerances specified in table 10 apply.

6.7.3 Straightness (edgewise curvature)

The edgewise curvature (depth of chord) of plate and sheet shall not exceed 5 mm multiplied by the length in metres.

NOTE 4 The edgewise curvature for strip should be agreed upon by the purchaser and the supplier.

6.7.4 Flatness

The flatness tolerance for hot-rolled plate shall be as specified in table 11.

6.7.5 Squareness

The adjacent sides of hot-rolled and cold-rolled sheet and cold-rolled plate shall be square within 3 mm in 1 000 mm.

6.7.6 Edges

Material shall have edges as specified in the order. When no description of any required form of edge is given, the practice of the supplier shall apply.

7 Sampling

7.1 Chemical analysis

7.1.1 Representative heat analysis samples shall be taken during pouring or subsequent processing.

7.1.2 Product analysis samples shall be taken from the finished product.

7.2 Tensile and creep or stress rupture tests

Tensile and creep or stress rupture test samples shall be taken from material in the final heat-treated condition, and tested transverse to the direction of rolling where the width permits this.

8 Number of tests

8.1 Chemical analysis, one test per heat.

8.2 Tensile test, one test per lot.

8.3 Creep or stress rupture test, one test per lot.

8.4 Hardness test, one test per lot.

8.5 Grain size determination, one test per lot.

9 Test procedures

9.1 Chemical analysis

9.1.1 The method of chemical analysis shall be at the option of the supplier, however in cases of dispute the method specified in the relevant International Standard shall be used.

If no International Standard exists, an analytical method that can be calibrated to a reference standard agreed upon by the purchaser and the supplier shall be used.

9.1.2 For a list of ISO analytical standards, see annex A.

9.2 Tensile testing

9.2.1 Testing shall be carried out in accordance with ISO 6892.

9.2.2 Test pieces to be used for sheet and strip between 0,1 mm and 3 mm thick shall be in accordance with annex B of ISO 6892:1984.

9.2.3 Test pieces to be used for plate, sheet and strip which is 3 mm or greater thick shall be in accordance with annex D of ISO 6892:1984.

9.2.4 The offset method shall be used for the determination of proof stress. An offset of 0,2 % ($R_{p0,2}$) shall be standard. However, a 1 % proof stress ($R_{p1,0}$) shall be determined and reported for information when requested by the purchaser.

9.3 Creep and stress rupture testing

9.3.1 Creep testing shall be carried out in accordance with ISO/R 204, except that only the final total plastic strain need be reported.

9.3.2 Stress rupture testing shall be carried out in accordance with ISO/R 206.

9.4 Hardness testing

9.4.1 Vickers hardness

Testing shall be carried out in accordance with ISO 6507-1.

9.4.2 Rockwell hardness

Testing shall be carried out in accordance with ISO 6508.

9.5 Grain size determination

A transverse sample representative of the full thickness shall be examined in accordance with ASTM E 112.

9.6 Rounding-off

For the purpose of determining compliance with the specified limits of the properties listed below, an observed or calculated value shall be rounded as follows

When the figure immediately after the last figure to be retained is lower than 5, the last figure to be retained remains unchanged.

When the figure immediately after the last figure to be retained is 5 or greater, the last figure to be retained is increased by one.

Composition, creep, grain size, hardness, and dimensions	Nearest unit to the last right-hand place of figures of the specified limit
Tensile strength R_m)	Nearest 10 N/mm ^{2}
0,2 % -Proof stress ($R_{p0,2}$)	Nearest 5 N/mm ^{2}
Elongation (A)	Nearest 1 %

9.7 Retests

If any one of the test pieces first selected fails to pass the specified tests, two further samples from the same lot shall be selected for testing, one of which shall be from the original product tested, unless that product has been withdrawn by the supplier. If the test pieces from both these additional samples pass the tests, the lot represented by the test samples shall be deemed to comply with the requirements of this International Standard. If the test pieces from either of these additional samples fail, the lot represented by these samples shall be deemed not to comply with the requirements of this International Standard.

10 Marking

Each piece of plate and sheet and each coil of strip shall be marked in at least one place with the number of this International Standard, the alloy identification (either the number or the description), the heat number and the manufacturer's name.

11 Purchaser and third party inspection

On-site inspection of plate, sheet and strip shall be in accordance with the agreement made between the purchaser and the supplier as part of the purchase contract.

12 Declaration of conformity

When requested by the purchaser in the contract or order, the supplier shall certify that the plate, sheet and strip were manufactured and tested in accordance with this International Standard. The declaration of conformitiy shall detail the results of all tests required by this International Standard and the order.

Table 1 — Composition and density of wrought nickel and nickel alloys (taken from ISO 9722)

Alloy identification[1]		Composition, % (*m*/*m*)[2]																Density[3]
Number	Description	Al	B	C	Co[4]	Cr	Cu	Fe	Mn	Mo	Ni	P	S	Si	Ti	W	Others[5]	g/cm³
NW2200	Ni99,0			0,15			0,2	0,4	0,3		99,0		0,010	0,3				8,9
NW2201	Ni99,0-LC			0,02			0,2	0,4	0,3		99,0		0,010	0,3				8,9
NW7263	NiCo20Cr20Mo5Ti2Al	0,3 0,6	0,005	0,04 0,08	19,0 21,0	19,0 21,0	0,2	0,7	0,6	5,6 6,1	Remainder		0,007	0,4	1,9 2,4		Ag: 0,0005(5) Bi: 0,0001(1) Pb: 0,0020(20) Ti + Al: 2,4 to 2,8	8,4
NW7090	NiCr20Co18Ti3	1,0 2,0	0,020	0,13	15,0 21,0	18,0 21,0	0,2	1,5	1,0		Remainder		0,015	1,0	2,0 3,0		Zr: 0,15	8,2
NW6617	NiCr22Co12Mo9	0,8 1,5	0,006	0,05 0,15	10,0 15,0	20,0 24,0	0,5	3,0	1,0	8,0 10,0	Remainder		0,015	1,0	0,6			8,4
NW7750	NiCr15Fe7Ti2Al	0,4 1,0		0,08		14,0 17,0	0,5	5,0 9,0	1,0		70,0		0,015	0,5	2,2 2,8		Nb + Ta: 0,7 to 1,2	8,3
NW6600	NiCr15Fe8			0,15		14,0 17,0	0,5	6,0 10,0	1,0		72,0		0,015	0,5				8,4
NW6602	NiCr15Fe8-LC			0,02		14,0 17,0	0,5	6,0 10,0	1,0		72,0		0,015	0,5				8,4
NW7718	NiCr19Fe19Nb5Mo3	0,2 0,8	0,006	0,08		17,0 21,0	0,3	Remainder	0,4	2,8 3,3	50,0 55,0	0,015	0,015	0,4	0,6 1,2		Nb + Ta: 4,7 to 5,5	8,0
NW6002	NiCr21Fe18Mo9		0,010	0,05 0,15	0,5 2,5	20,5 23,0		17,0 20,0	1,0	8,0 10,0	Remainder	0,040	0,030	1,0		0,2 1,0		8,2
NW6007	NiCr22Fe20Mo6Cu2Nb			0,05	2,5	21,0 23,5	1,5 2,5	18,0 21,0	1,0 2,0	5,5 7,5	Remainder	0,040	0,030	1,0			Nb + Ta: 1,7 to 2,5	8,3
NW6985	NiCr22Fe20Mo7Cu2			0,015	5,0	21,0 23,5	1,5 2,5	18,0 21,0	1,0	6,0 8,0	Remainder	0,040	0,030	1,0		1,5	Nb + Ta: 0,5	8,3
NW6601	NiCr23Fe15Al	1,0 1,7		0,10		21,0 25,0	1,0	Remainder	1,0		58,0 63,0		0,015	0,5				8,0
NW6633	NiCr26Fe20Co3Mo3W3			0,10	2,5 4,0	24,0 27,0		Remainder	2,0	2,5 4,0	44,0 48,0	0,030	0,030	1,5		2,5 4,0		
NW6690	NiCr29Fe9			0,05		27,0 31,0	0,5	7,0 11,0	0,5		Remainder		0,015	0,5				8,2
NW6455	NiCr16Mo16Ti			0,015	2,0	14,0 18,0		3,0	1,0	14,0 17,0	Remainder	0,040	0,030	0,08	0,7			8,6
NW6022	NiCr21Mo13Fe4W3			0,015	2,5	20,0 22,5		2,0 6,0	0,5	12,5 14,5	Remainder	0,025	0,020	0,08		2,5 3,5	V: 0,35	8,7
NW6625	NiCr22Mo9Nb	0,40		0,10	1,0	20,0 23,0		5,0	0,50	8,0 10,0	58,0	0,015	0,015	0,50	0,40		Nb + Ta: 3,15 to 4,15	8,5

Alloy identification[1]		Composition, % (*m/m*)[2]																Density[3]
Number	Description	Al	B	C	Co[4]	Cr	Cu	Fe	Mn	Mo	Ni	P	S	Si	Ti	W	Others[5]	g/cm³
NW6621	NiCr20Ti			0,08 0,15	5,0	18,0 21,0	0,5	5,0	1,0		Remainder		0,020	1,0	0,20 0,60		Pb: 0,0050(50)	8,4
NW7080	NiCr20Ti2Al	1,0 1,8	0,008	0,04 0,10	2,0	18,0 21,0	0,2	1,5	1,0		Remainder		0,015	1,0	1,8 2,7		Ag: 0,0005(5) Bi: 0,0001(1) Pb: 0,0020(20)	8,2
NW4400	NiCu30			0,30		28,0 34,0		2,5	2,0		63,0		0,025	0,5				8,8
NW4402	NiCu30-LC			0,04		28,0 34,0		2,5	2,0		63,0		0,025	0,5				8,8
MW5500	NiCu30Al3Ti	2,2 3,2		0,25		27,0 34,0		2,0	1,5		Remainder	0,020	0,015	0,5	0,35 0,85			8,5
NW8825	NiFe30Cr21Mo3	0,2		0,05		19,5 23,5	1,5 3,0	Remainder	1,0	2,5 3,5	38,0 46,0		0,015	0,5	0,6 1,2			8,1
NW0276	NiMo16Cr15Fe6W4			0,010	2,5	14,5 16,5		4,0 7,0	1,0	15,0 17,0	Remainder	0,040	0,030	0,08		3,0 4,5		8,9
NW0665	NiMo28			0,02	1,0	1,0		2,0	1,0	26,0 30,0	Remainder	0,040	0,030	0,1				9,2
NW0001	NiMo30Fe5			0,05	2,5	1,0		4,0 6,0	1,0	26,0 30,0	Remainder	0,040	0,030	1,0			V: 0,2 to 0,4	9,2
NW8028	FeNi31Cr27Mo4Cu1			0,030		26,0 28,0	0,6 1,4	Remainder	2,5	3,0 4,0	30,0 34,0	0,030	0,030	1,0				8,0
NW8800	FeNi32Cr21AlTi	0,15 0,60		0,10		19,0 23,0	0,7	Remainder	1,5		30,0 35,0		0,015	1,0	0,15 0,60			8,0
NW8810	FeNi32Cr21AlTi-HC	0,15 0,60		0,05 0,10		19,0 23,0	0,7	Remainder	1,5		30,0 35,0		0,015	1,0	0,15 0,60			8,0
NW8811	FeNi32Cr21AlTi-HT	0,15 0,60		0,06 0,10		19,0 23,0	0,7	Remainder	1,5		30,0 35,0		0,015	1,0	0,15 0,60		Al + Ti: 0,85 to 1,2	8,0
NW8801	FeNi32Cr20Ti			0,10		19,0 22,0	0,5	Remainder	1,5		30,0 34,0		0,015	1,0	0,7 1,5			8,0
NW8020	FeNi35Cr20Cu4Mo2			0,07		19,0 21,0	3,0 4,0	Remainder	2,0	2,0 3,0	32,0 38,0	0,040	0,030	1,0			Nb + Ta: 8 x C to 1,0	8,1

1) For alloy identification either the number or the description may be used.

2) Single values are maximum limits, except for nickel where single values are minimum.

3) Density values are average values and are given for information only.

4) Where no limits are specified, cobalt up to a maximum of 1,5 % is allowed and counted as nickel. In this case, an indication of cobalt content is not required.

5) Values for Ag, Bi and Pb may be expressed in mass percentage [% (*m/m*)] or in parts per million (ppm).

Table 2 — Tensile properties, hardness and grain size

Alloy identification[1]		Temper	Thickness mm		Tensile strength $R_{m,\ min.}$	0,2 %-Proof stress[2] $R_{p0,2,\ min.}$	Elongation[3] $A_{5,\ min.}/A_{50,\ min.}$	Hardness		Grain size	
Number	Description		over	up to and including	N/mm²	N/mm²	%	Vickers	Rockwell	Corresponding ASTM No.	Average grain diameter mm
NW2200	Ni99,0	Annealed	—	1,5	380	105	35	—	—	—	—
			1,5	—	380	105	40	—	—	—	—
		Hot-rolled as rolled[4]	1,5	—	380	130	30	—	—	—	—
		Cold-rolled, hard[5]	1,5	—	620	480	2	188 to 215	90 to 95	—	—
		Cold-rolled, half-hard[5]	1,5	—	490	290	20	147 to 170	79 to 85	—	—
		Cold-rolled, deep drawing quality strip	—	0,25	—	—	—	max. 125	max. 70	7,5	max. 0,027
			0,25	0,5	—	—	—	max. 122	max. 68	6	max. 0,045
			0,5	3,0	—	—	—	max. 115	max. 64	4	max. 0,09
		Cold-rolled, deep drawing quality sheet	0,25	0,5	—	—	—	max. 122	max. 68	6	max. 0,045
			0,5	—	—	—	—	max. 115	max. 64	4	max. 0,09
NW2201	Ni99,0-LC	Annealed	—	1,5	350	85	35	—	—	—	—
			1,5	—	350	85	40	—	—	—	—
		Hot-rolled, as rolled[4]	1,5	—	350	85	30	—	—	—	—
		Cold-rolled, deep drawing quality strip	—	0,25	—	—	—	max. 117	max. 66	7,5	max. 0,027
			0,25	0,5	—	—	—	max. 115	max. 64	6	max. 0,045
			0,5	3,0	—	—	—	max. 113	max. 63	4	max. 0,09
		Cold-rolled, deep drawing quality sheet	0,25	0,5	—	—	—	max. 115	max. 64	6	max. 0,045
			0,5	—	—	—	—	max. 113	max. 63	4	max. 0,09
NW7263	NiCo20Cr20Mo5Ti2Al	Solution treated	—	6	6)	6)	6)	max. 250	—	—	—
			6	—				max. 250	—	—	—
		Solution and precipitation treated	—	—	5407)	4007)	97)		—	—	—
NW7090	NiCr20Co18Ti3	Solution treated	—	—	6)	6)	6)	max. 250	—	—	—
		Solution and precipitation treated	0,3	0,5	1 080	—	15	—	—	—	—
			0,5	—	1 080	695	25	—	—	—	—

Alloy identification[1]		Temper	Thickness mm		Tensile strength $R_{m,\ min.}$	0,2 %-Proof stress[2] $R_{p0,2,\ min.}$	Elongation[3] $A_{5,\ min.}/A_{50,\ min.}$	Hardness		Grain size	
Number	Description		over	up to and including	N/mm²	N/mm²	%	Vickers	Rockwell	Corresponding ASTM No.	Average grain diameter mm
NW6617	NiCr22Co12Mo9	Annealed	All		650	240	35	—	—	—	—
NW7750	NiCr15Fe7Ti2Al	Hot-rolled, solution treated	All		[6]	[6]	[6]	—	—	—	—
		Hot-rolled, solution and precipitation treated	4	25	1 100	720	18	—	—	—	—
		Cold-rolled, solution treated	All		[6]	[6]	[6]	—	—	—	—
		Cold-rolled solution and precipitation treated	0,1 0,4	0,4	1 100 1 170	790	18	—	—	—	—
NW6600	NiCr15Fe8	Annealed	All		550	240	30	—	—	—	—
		Hot-rolled, as rolled[4]	All		580	240	30	—	—	—	—
		Cold-rolled, hard[5] Cold-rolled, half-hard[5]	All All		860 —	620 —	2 —	min. 248 200 to 228	min. 23 HRC 93 to 98	— —	— —
		Cold-rolled, deep drawing quality strip	— 0,25 0,5	0,25 0,5 3,0	— — —	— — —	— — —	max. 179 max. 170 max. 170	max. 88 max. 85 max. 85	7,5 6 4	max. 0,027 max. 0,045 max. 0,09
		Cold-rolled, deep drawing quality sheet	0,25 0,5	0,5 —	— —	— —	— —	max. 170 max. 170	max. 85 max. 85	6 4	max. 0,045 max. 0,09
NW6602	NiCr15Fe8-LC	Annealed	All		550	180	30	—	—	—	—
NW7718	NiCr19Fe19Nb5Mo3	Solution treated	All		[6]	[6]	[6]	—	—	—	—
		Solution and precipitation treated	— 25	25 57	1 240 1 240	1 035 1 035	12 10	— —	— —	— —	— —
NW6002	NiCr21Fe18Mo9	Annealed	— 4	4 —	690 660	275 240	35 35	—	— —	— —	— —
NW6007	NiCr22Fe20Mo6Cu2Nb	Annealed	— 4 19	4 19 —	620 620 580	240 240 205	40 35 30	— — —	— — —	— — —	— — —

Alloy identification[1]		Temper	Thickness mm		Tensile strength $R_{m,\ min.}$	0,2 %-Proof stress[2] $R_{p0,2,\ min.}$	Elongation[3] $A_{5,\ min.}/A_{50,\ min.}$	Hardness		Grain size	
Number	Description		over	up to and including	N/mm²	N/mm²	%	Vickers	Rockwell	Corresponding ASTM No.	Average grain diameter mm
NW6985	NiCr22Fe20Mo7Cu2	Annealed[5]	0,5 19	19 —	620 585	240 205	45 35	— —	max. 100 max. 100	— —	— —
NW6601	NiCr23Fe15Al	Annealed	All		550	205	30	—	—	—	—
NW6333	NiCr26Fe20Co3Mo3W3	Annealed	All		550	240	30	—	75 to 95	—	—
NW6690	NiCr29Fe	Annealed	All		590	240	30	—	—	—	—
NW6455	NiCr16MO16Ti	Annealed	All		690	275	40	—	—	—	—
NW6022	NiCr21Mo14W3	Annealed	All		690	310	45	—	—	—	—
NW6625	NiCr22Mo9Nb	Hot-rolled, annealed	All		760	380	30	—	—	—	—
		Cold-rolled, annealed	All		830	415	30	—	—	—	—
		Solution treated	All		690	275	30	—	—	—	—
NW6621	NiCr20Ti	Annealed	0,3 0,5	0,5 —	640 640	230 230	25 30	— —	— —	— —	— —
NW7080	NiCr20Ti2Al	Cold-worked, solution treated			[6]	[6]	[6]				
		Cold-worked, solution and precipitation treated	0,3 0,5	0,5 —	1 030 1 030	— 640	15 25	— —	— —	— —	— —
		Hot-worked, solution treated	—	—	[6]	[6]	—	max. 250	—	—	—
		Hot-worked, solution and precipitation treated	— —	— —	1 000	620	20	—	—	— —	—