

RIFERIMENTI NORMATIVI

UNI	AFNOR	DIN-W.Nr.	BS	AISI-SAE
20NiCrMo2	20NCD5	1.6552	805M20	A29

COMPOSIZIONE CHIMICA INDICATIVA [%]

Elemento	C	Mn	Si	Cr	Ni	Mo	S
Intervallo [%]	0.15 – 0.22	0.61 – 0.99	≤ 0.43	0.30 – 0.75	0.35 – 0.75	0.12 – 0.28	≤ 0.040

LAVORAZIONE A CALDO E TRATTAMENTO TERMICO

Punti critici: Ac1 720 °C, Ac3 860 °C, Ms(n) 390 °C, Ms(c) 200 °C .

Operazione	Fucinatura	Normalizzazione	Ricottura subcritica	Ricottura sferoidale	Tempra	Rinvenimento
Parametro	1100 ÷ 850	850 ÷ 880	650 ÷ 700	700	150 ÷ 200	780 ÷ 820

CARATTERISTICHE MECCANICHE

Stato	Saggio Ø [mm]	Re min. [N/mm²]	Rm [N/mm²]	A min. [%]	KCU min. [J]	Durezza HB allo stato
Temprato e disteso	≤11	930	1175 – 1570	9	28	Ricottura subcritica ≤ 215
	≤40	590	785 – 1080	10	30	Ricottura globulare ≤ 180
	≤25	640	885 – 1225	10	30	Ricottura isometrica 150 - 195

IMPIEGHI

È adatto per la costruzione di componenti di piccole o medie dimensioni anche di forma complicata come **ingranaggi, boccole, alberi** e altri elementi soggetti ad usura e a carichi elevati.

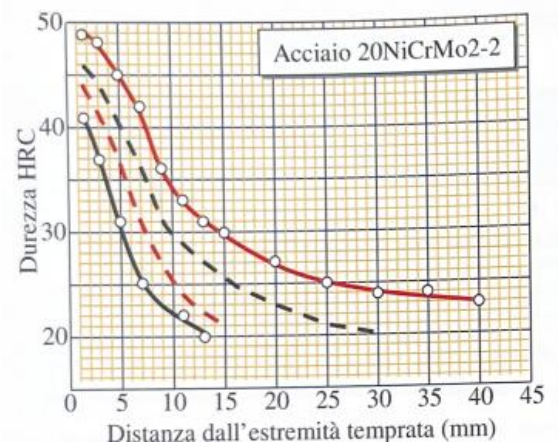
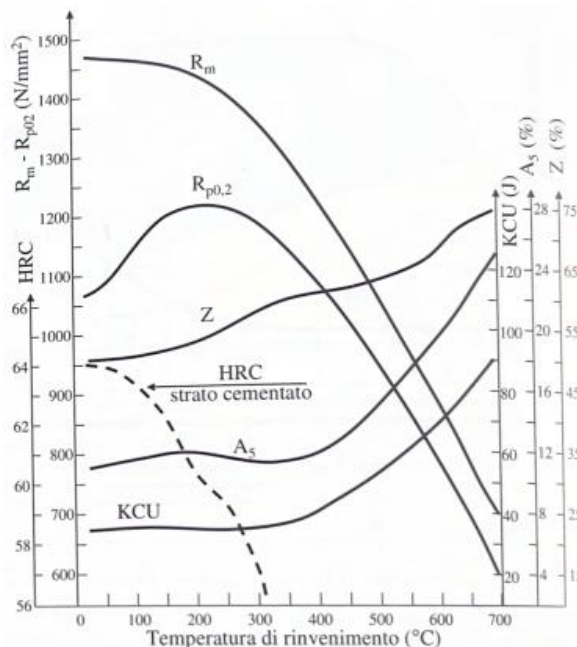
DIAGRAMMA DI RINVENIMENTO

Note operative:

Diametro: 10 mm;

Tempra: 870 °C ;

Rinvenimento per 2 ore;



CURVA CCT

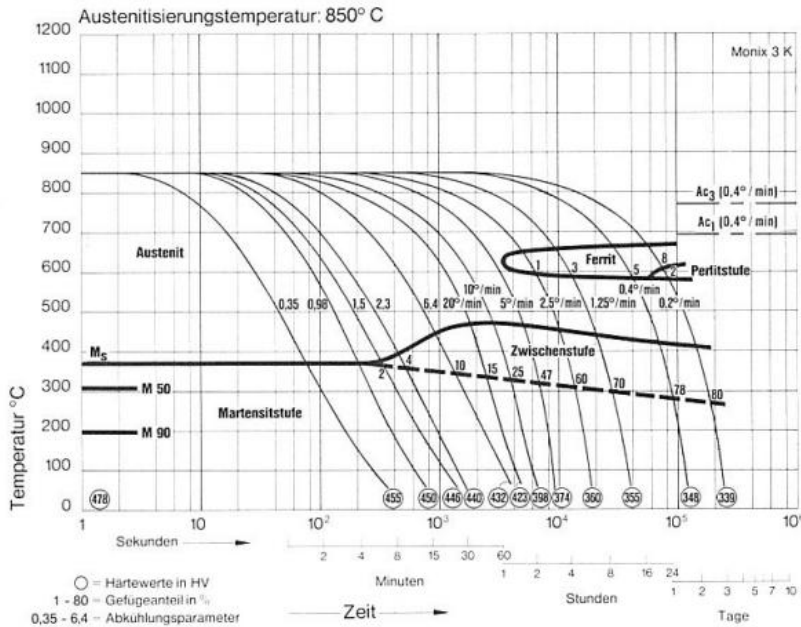


DIAGRAMMA DUREZZA

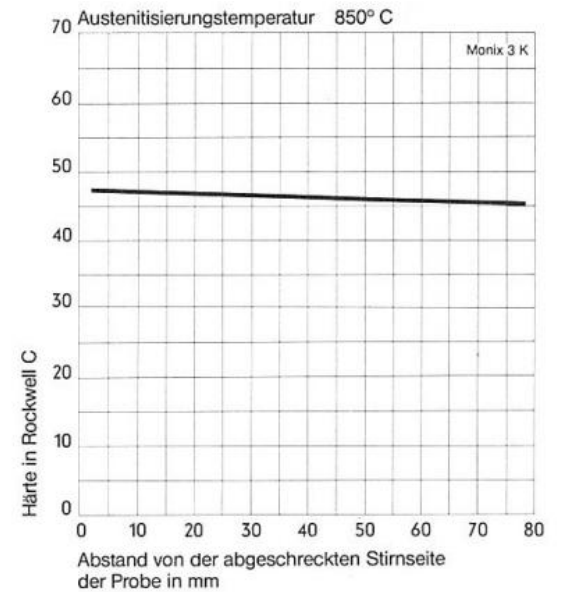
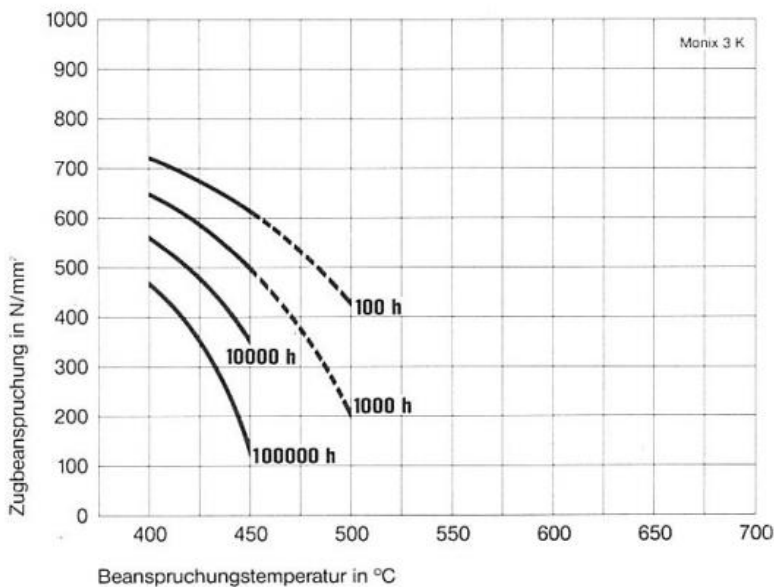


DIAGRAMMA RESISTENZA SCORRIMENTO VISCOSO



REFERENCES

UNI	AFNOR	DIN-W.Nr.	BS	AISI-SAE
20NiCrMo2	20NCD5	1.6552	805M20	A29

CHEMICAL COMPOSITION

Element	C	Mn	Si	Cr	Ni	Mo	S
Interval [%]	0.15 – 0.22	0.61 – 0.99	≤ 0.43	0.30 – 0.75	0.35 – 0.75	0.12 – 0.28	≤ 0.040

HOT WORKING AND HEAT TREATMENT

Critical points: Ac1 720 °C, Ac3 860 °C, Ms(n) 390 °C, Ms(c) 200 °C .

Operation	Forging	Normalizing	Subcritical annealing	Spheroidal annealing	Tempering	Quenching
Parameter	1100 ÷ 850	850 ÷ 880	650 ÷ 700	700	150÷200	780 ÷ 820

MECHANICAL PROPERTIES

Status	Size Ø [mm]	Re min. [N/mm²]	Rm [N/mm²]	E min. [%]	KCU min. [J]	HB hardness
Tempered and stretched	≤11	930	1175 – 1570	9	28	Subcritical annealing ≤ 215
	≤40	590	785 – 1080	10	30	Globular annealing ≤ 180
	≤25	640	885 – 1225	10	30	Isometric annealing 150-195

USES

It is suitable for the construction of small or medium-sized components, even those with complicated shapes, such as **gears**, **bushings**, **shafts**, and other elements subject to wear and high loads

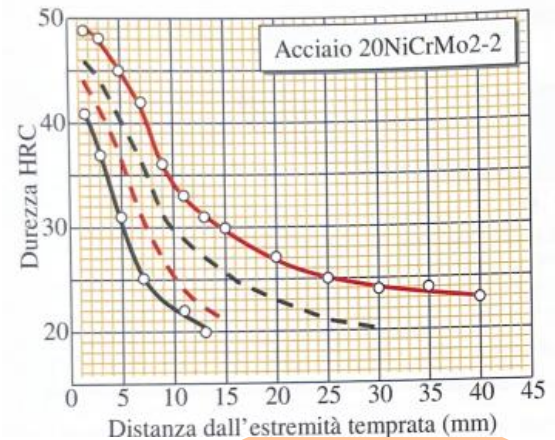
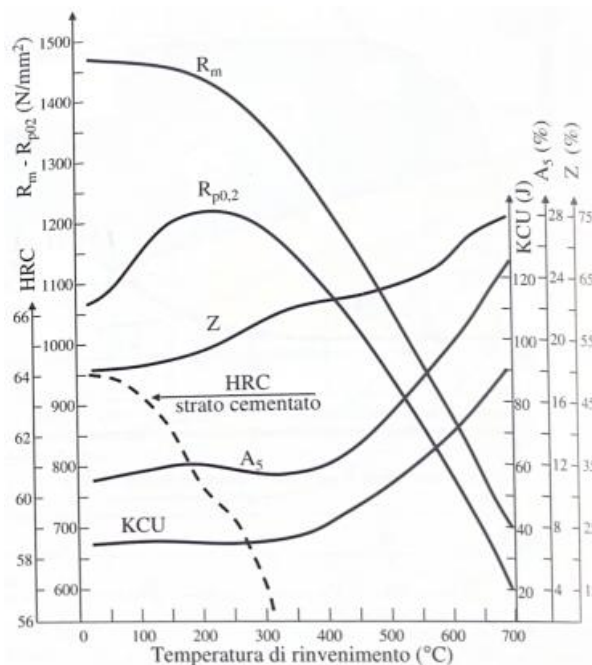
TEMPERING DIAGRAM

Operative notes:

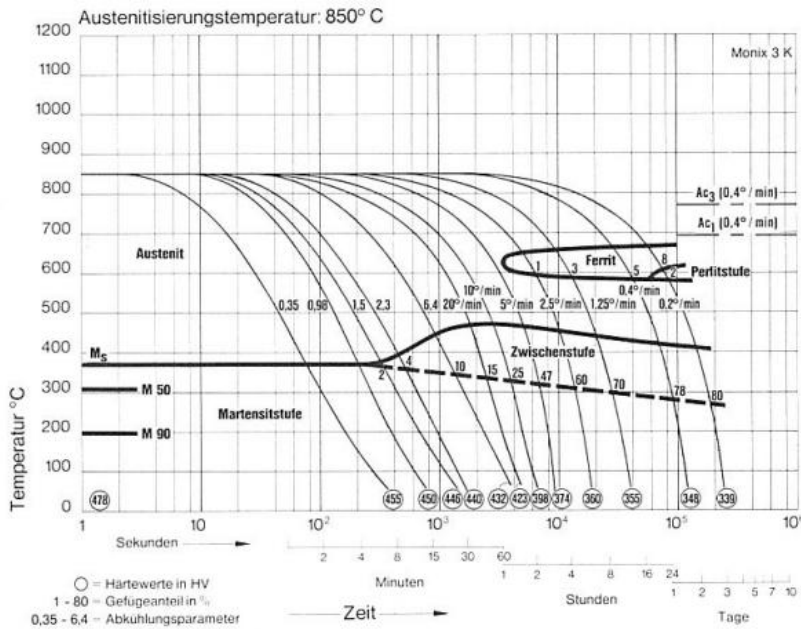
Diameter: 10 mm;

Tempering: 870 °C ;

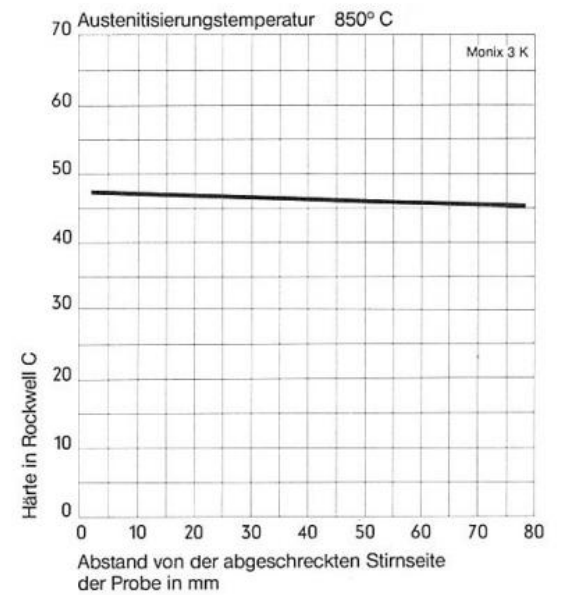
Quenching for 2 hours;



CCT TREND



HARDENABILITY DIAGRAM



CREEP RESISTANCE DIAGRAM

