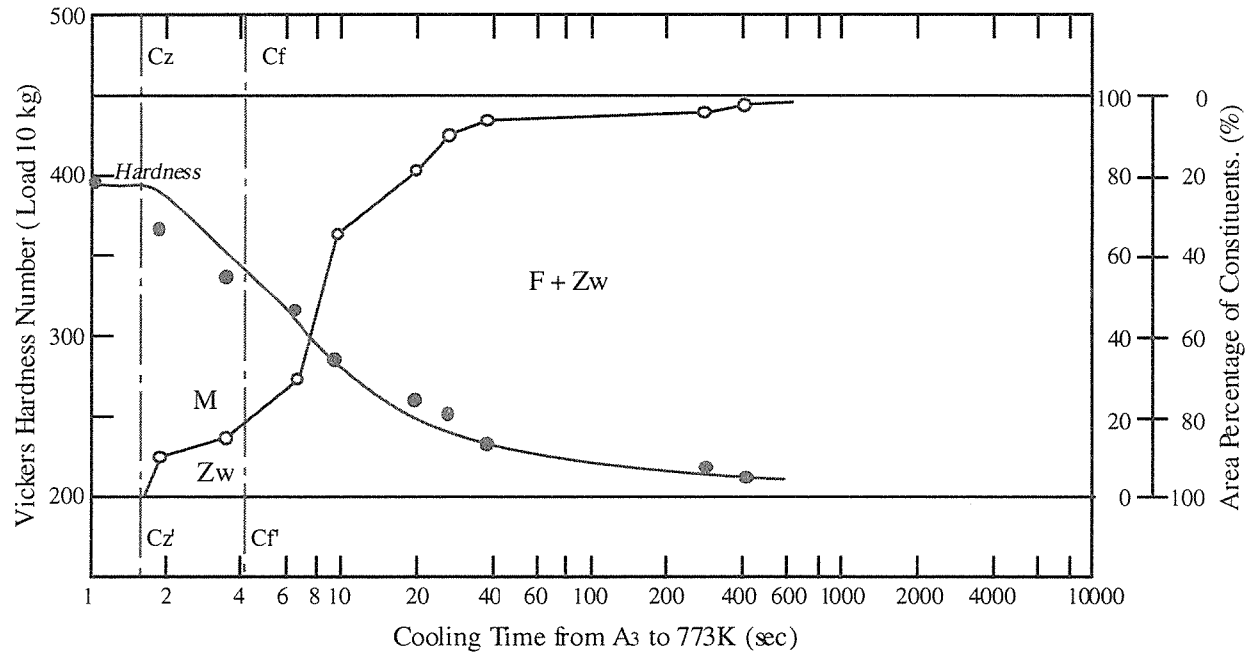
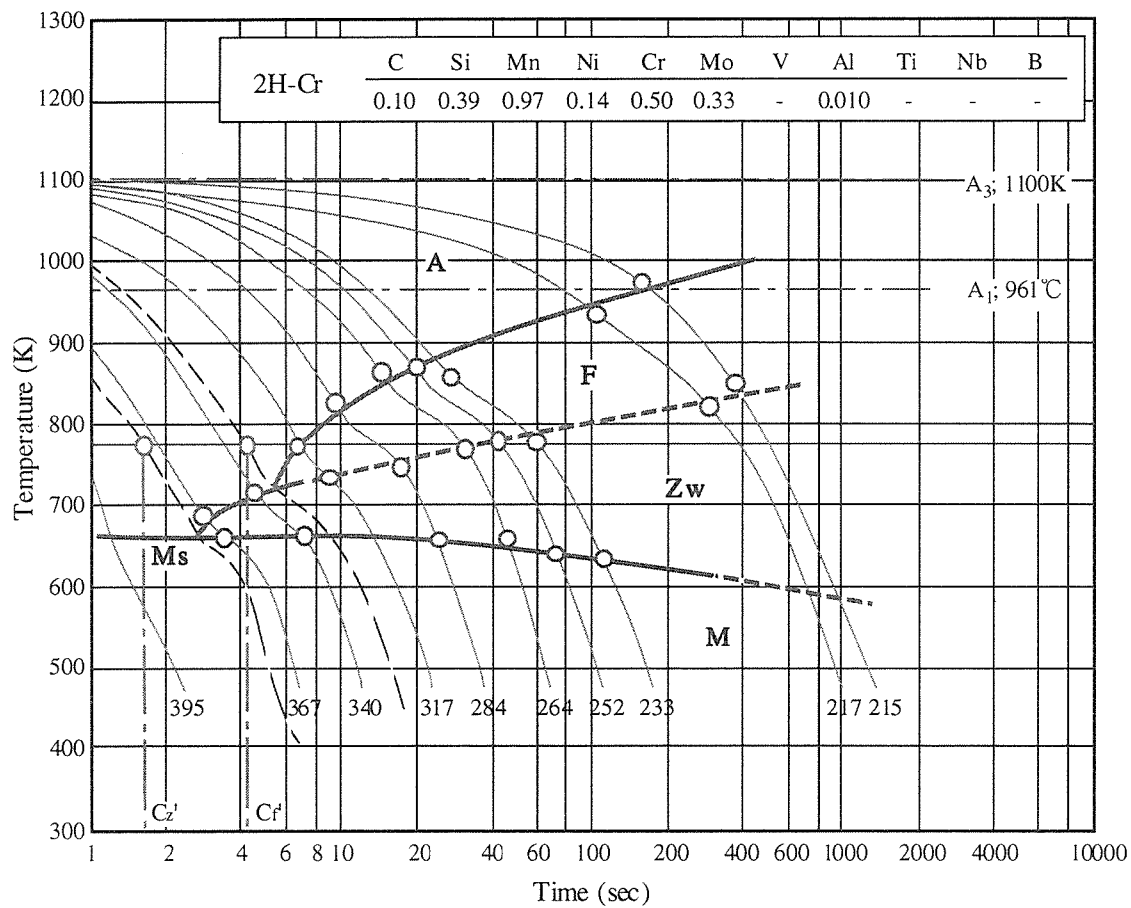
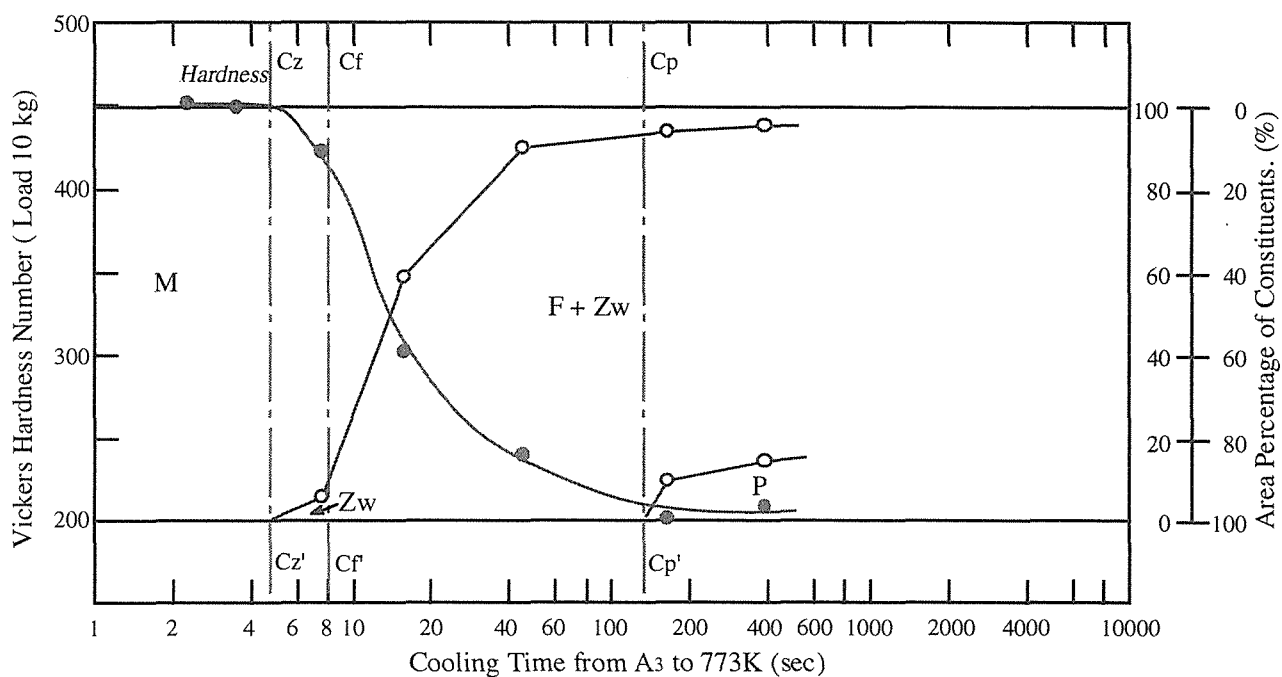
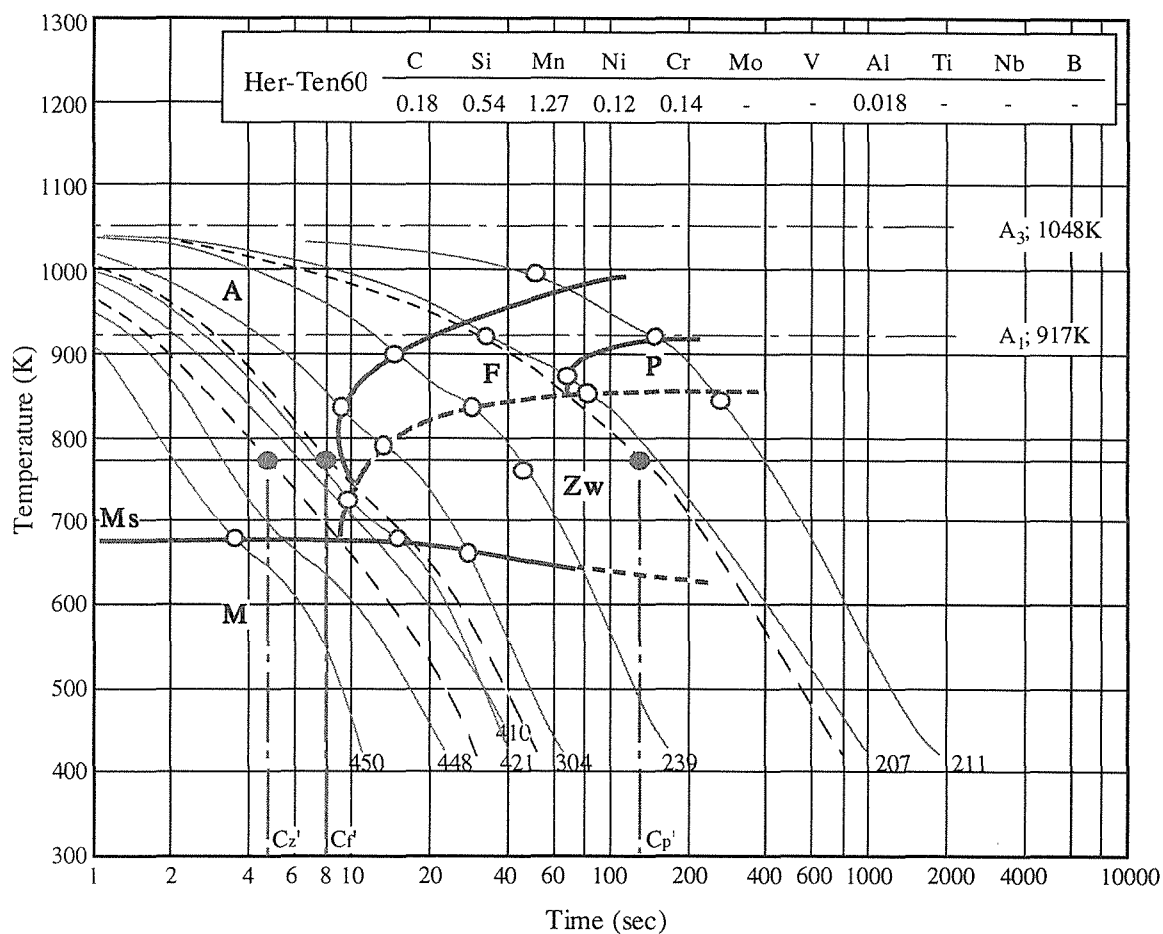
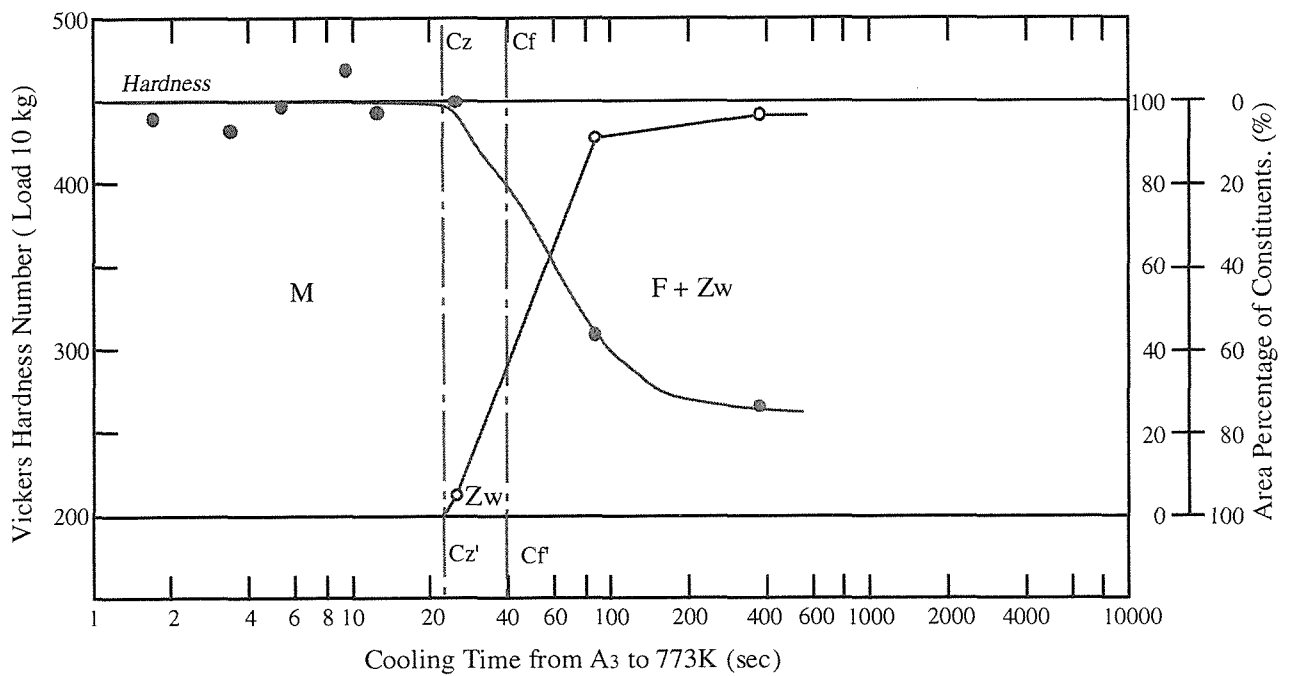
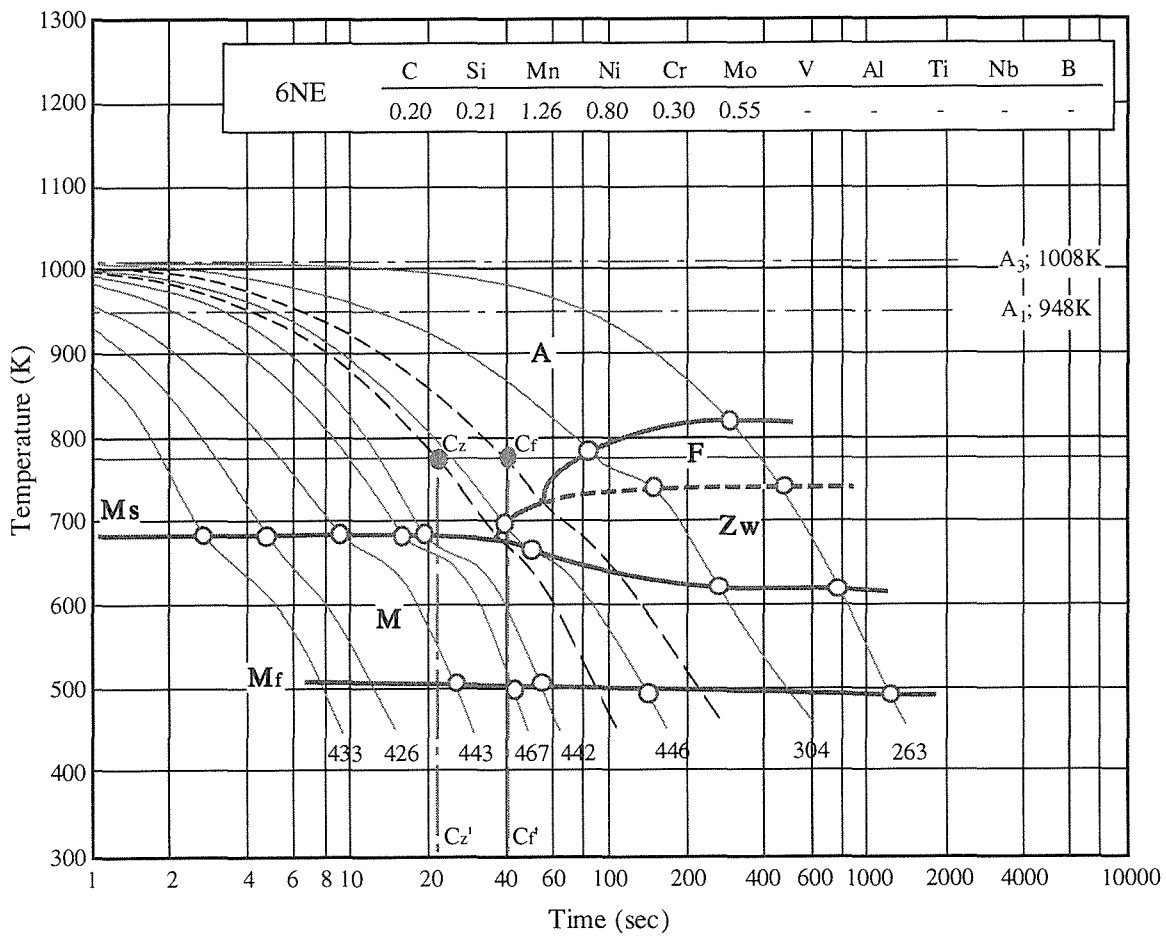


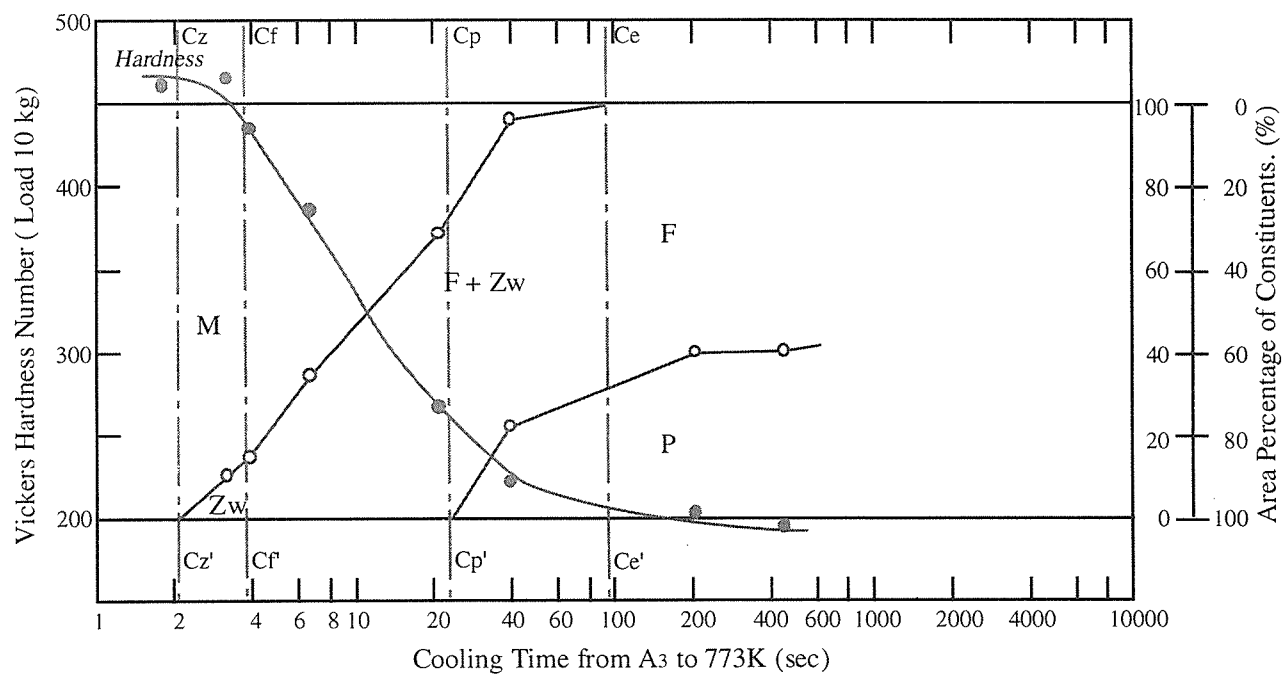
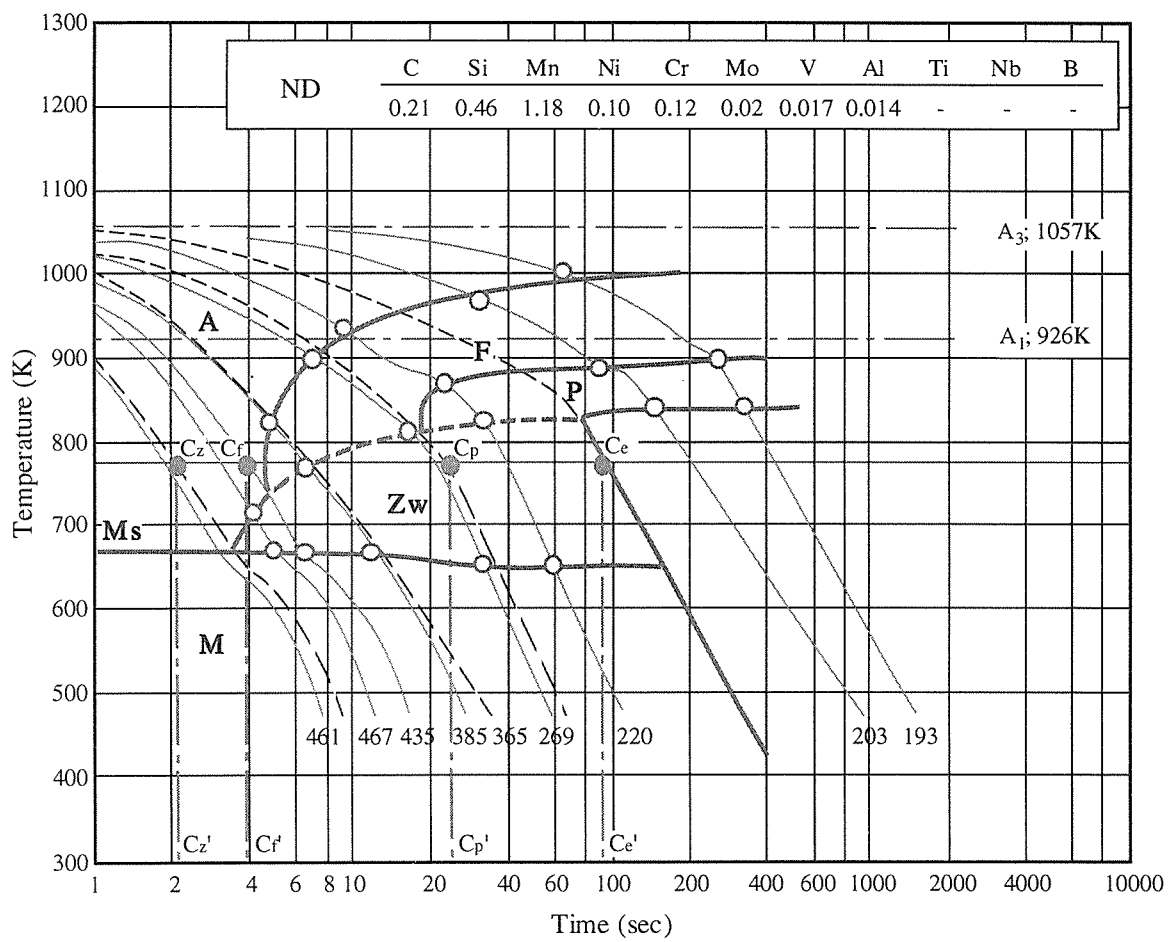
HT-70 kg/mm² Class

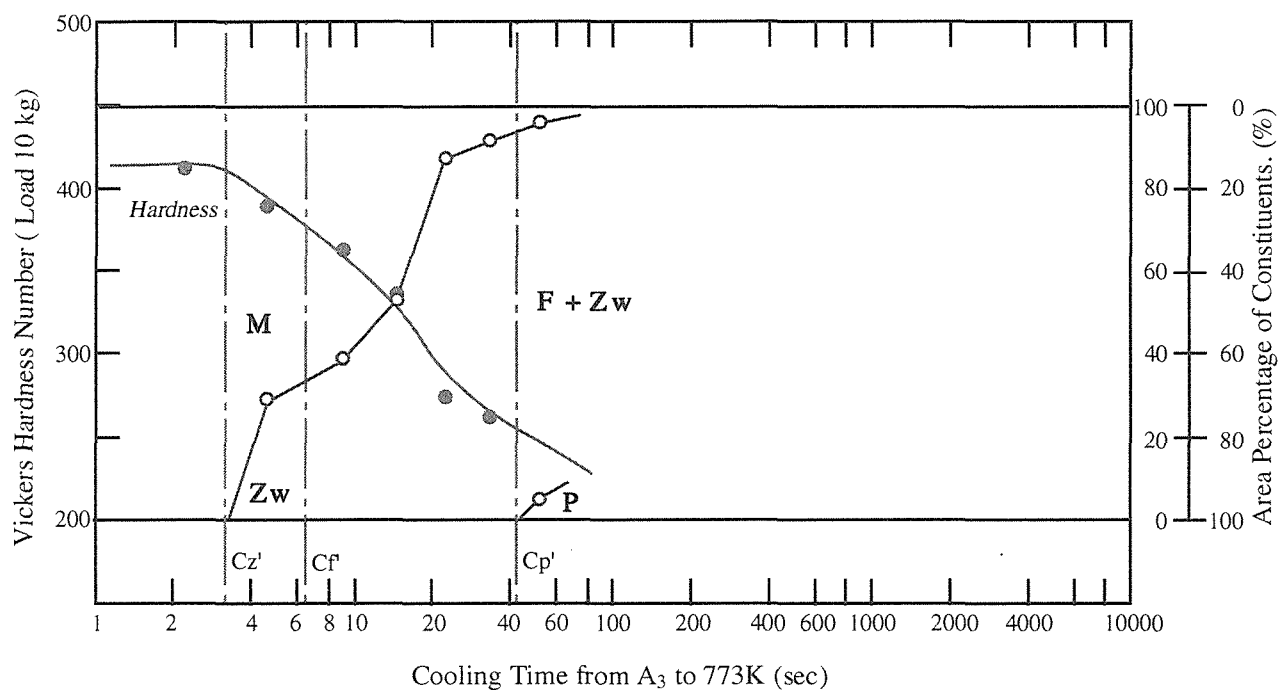
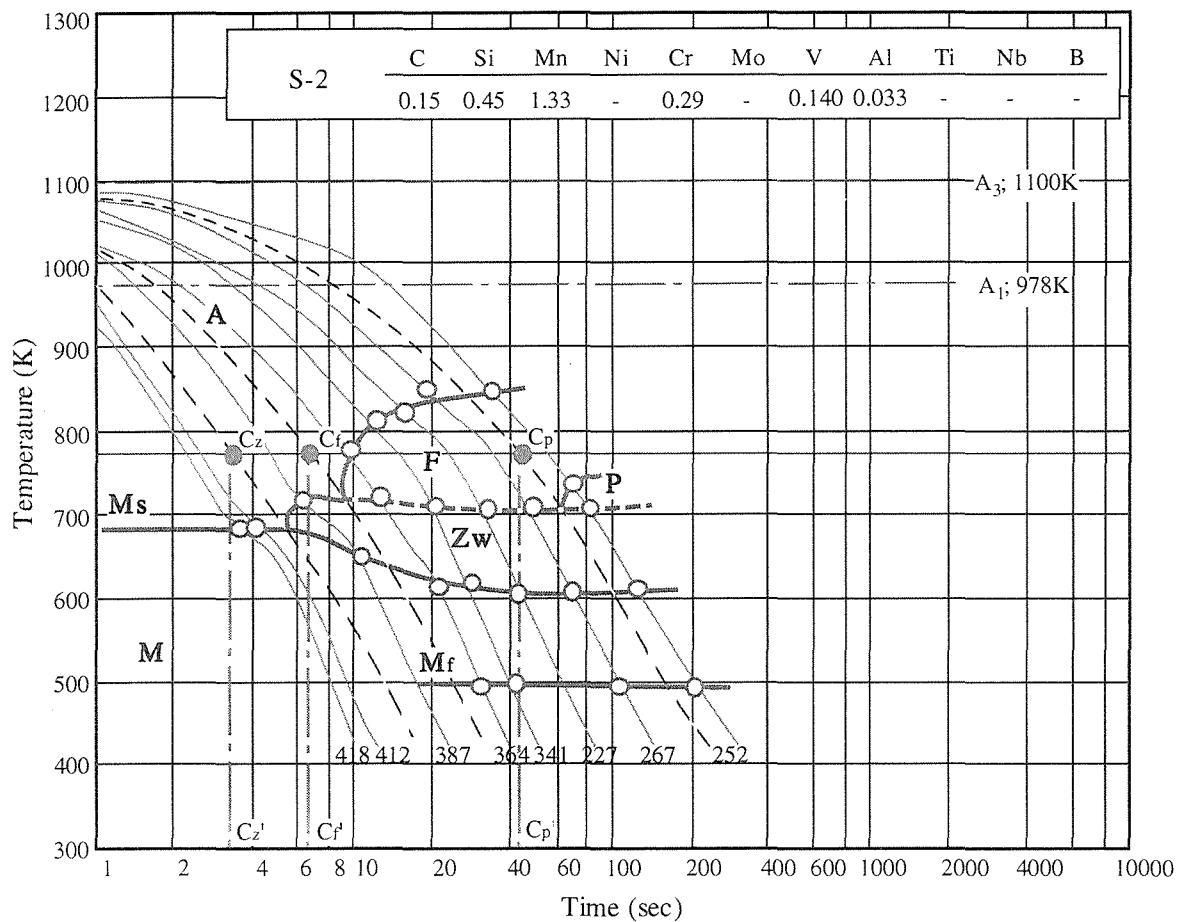
Steel	Chemical Composition (mass%)														Page	Ref.
	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V	Ti	Nb	Al	B		
2H-Cr	0.1	0.39	0.97	-	-	0.14	0.5	-	0.33	-	-	-	0.01	-	194	P
Her-Ten60	0.18	0.54	1.27	-	-	0.12	0.14	-	-	-	-	-	0.018	-	195	P
6NE	0.2	0.21	1.26	-	-	0.8	0.3	-	0.55	-	-	-	-	-	196	P
ND	0.21	0.46	1.18	-	-	0.1	0.12	-	0.02	0.017	-	-	0.014	-	197	P
S-2	0.15	0.45	1.33	0.014	0.014	-	0.29	-	-	0.14	-	-	0.033	-	198	P
6NG	0.15	0.29	1.2	-	-	0.71	0.36	-	0.51	0.01	-	-	-	-	199	P
2H 6D	0.15	0.45	1.27	0.009	0.011	0.07	0.05	0.21	0.02	-	-	-	-	-	200	9
2H-50	0.11	0.34	1.21	-	-	0.45	0.2	-	0.15	-	-	-	-	-	202	P
6NB	0.15	0.28	1.34	-	-	1.15	0.02	-	0.31	-	-	-	-	-	203	P
S-4	0.14	0.45	1.22	0.017	0.01	0.48	0.32	-	-	0.12	-	-	0.033	-	204	P
YF	0.18	0.32	1.2	0.02	0.006	0.65	0.22	0.07	0.13	0.13	0.015	-	0.04	-	206	8
6Q	0.15	0.34	0.92	-	-	0.29	0.1	-	0.51	-	-	-	-	-	208	P
HY80 M1	0.08	0.4	0.61	-	-	3.71	1.46	-	0.57	-	-	-	0.05	-	209	P
PD	0.13	0.35	0.91	-	-	0.81	0.46	-	0.33	-	-	-	0.09	-	210	P
HT 60	0.12	0.33	1.37	-	-	0.19	0.03	-	0.01	0.08	-	-	0.042	-	212	P
J-6	0.13	0.4	0.97	0.011	0.007	0.52	0.55	0.13	0.28	0.05	-	-	0.044	-	214	11
J-1	0.07	0.29	0.37	0.01	0.016	3.12	1.28	0.12	0.28	-	-	-	0.005	-	216	9
2H 7C	0.15	0.25	1.1	0.013	0.011	0.65	0.11	0.24	0.21	-	-	-	-	-	218	12
PA	0.13	0.38	1.16	-	-	0.56	0.27	-	-	0.12	-	-	-	-	220	P
HY80 NE38	0.08	0.17	0.61	-	-	2.55	0.7	-	0.43	-	-	-	-	-	221	P
U-3	0.1	0.19	0.41	0.012	0.016	2.5	1.01	-	0.29	-	-	-	0.005	-	222	11
HY80 7H	0.13	0.25	0.35	0.009	0.009	2.5	1.17	-	0.27	-	-	-	-	-	224	9
HY80 7G	0.09	0.21	0.4	0.007	0.01	2.46	1	-	0.27	-	-	-	0.01	-	226	9
J-3	0.11	0.31	0.49	0.011	0.007	2.03	1.25	-	0.37	-	-	-	0.035	-	228	11
PB	0.12	0.42	0.49	-	-	0.41	0.25	-	0.41	-	-	-	0.028	0.002	230	P
2H-Supper	0.11	0.38	0.99	0.015	0.14	0.86	0.54	0.12	0.3	-	-	-	-	-	232	12
J-4	0.14	0.48	1.16	0.011	0.007	0.41	0.62	0.26	0.42	0.07	-	-	0.062	0.0021	234	11
HY80 Y1	0.1	0.28	0.57	-	-	2.54	0.79	-	0.45	-	-	-	-	-	236	P
U-2	0.09	0.35	0.38	0.014	0.008	2.46	1.18	-	0.29	-	-	-	0.031	-	238	11
UH-2	0.09	0.2	0.4	0.013	0.02	3.41	1.02	0.08	0.27	-	-	-	0.012	-	240	P

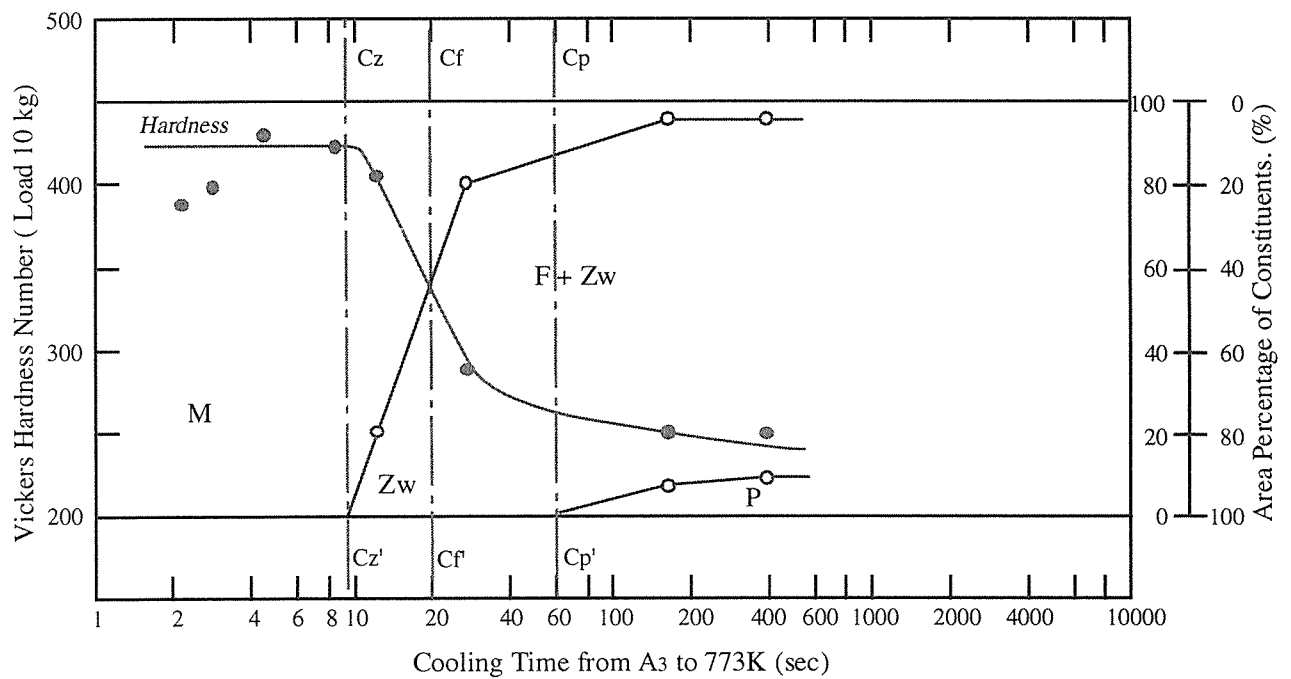
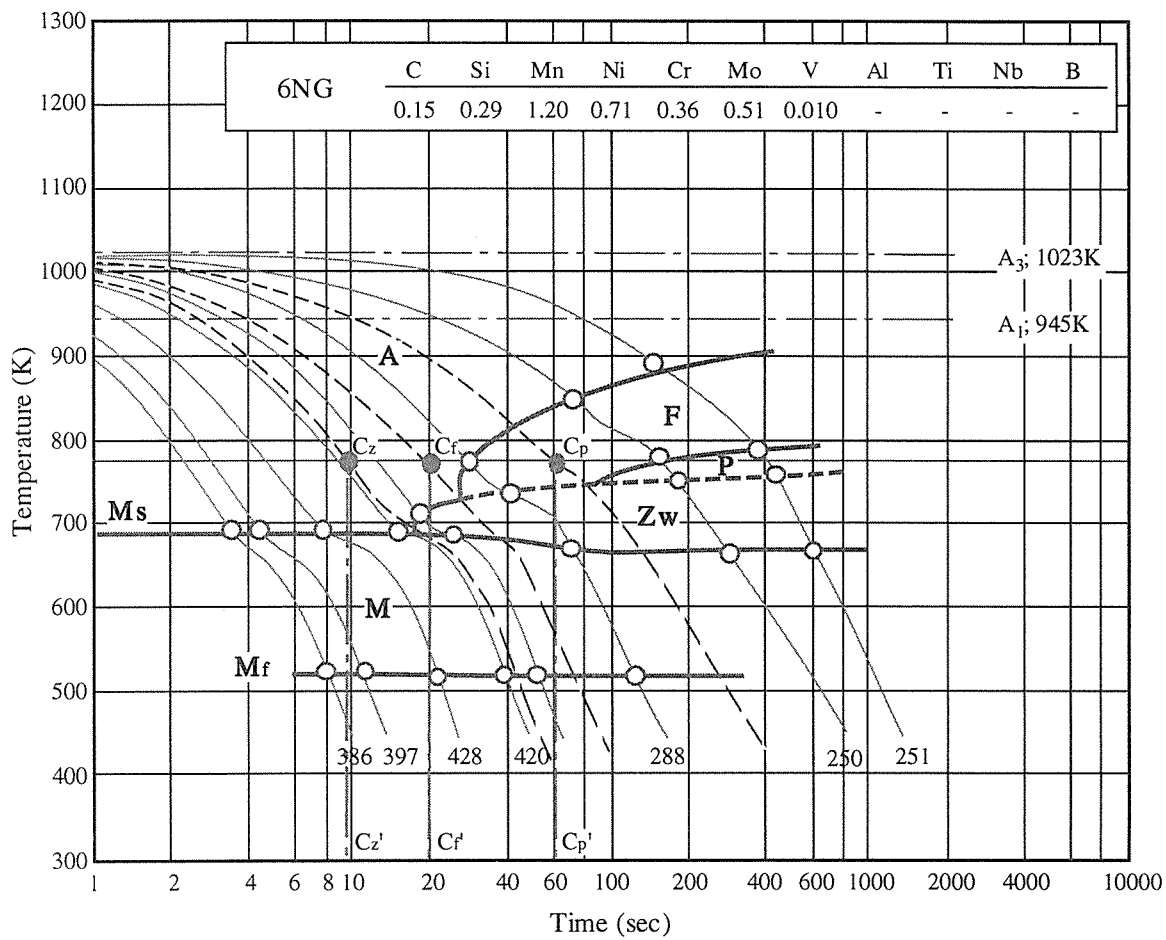


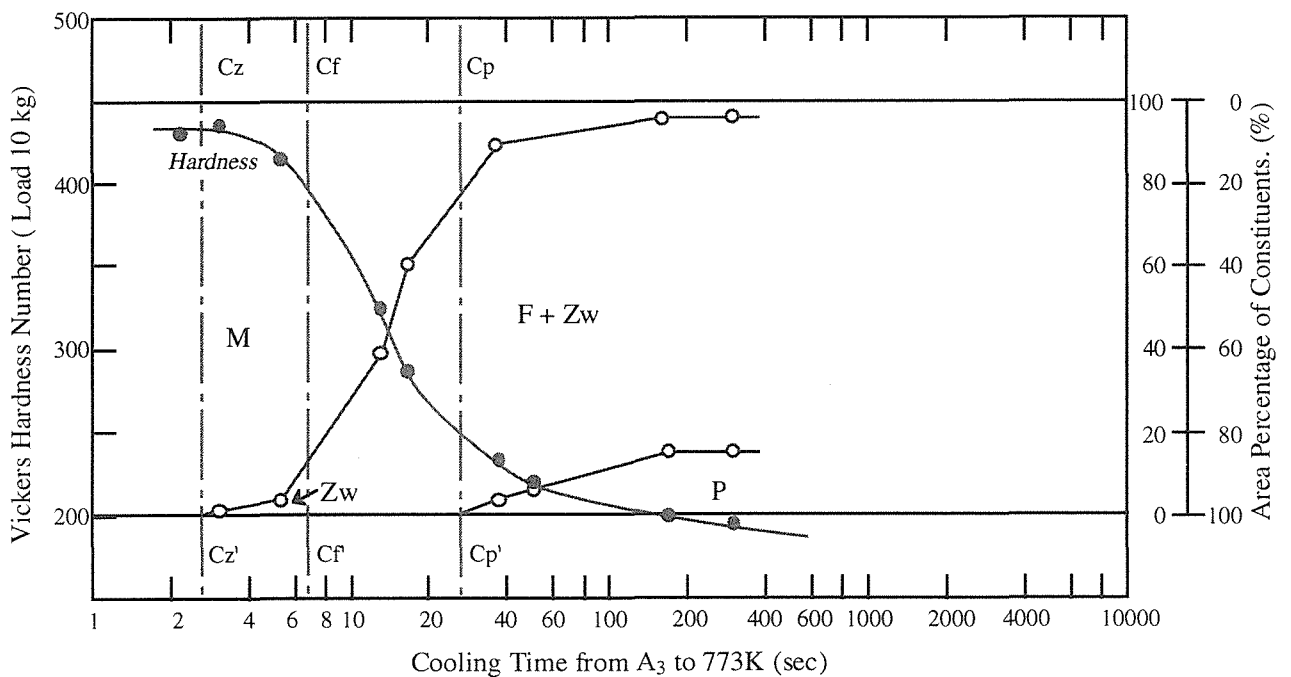
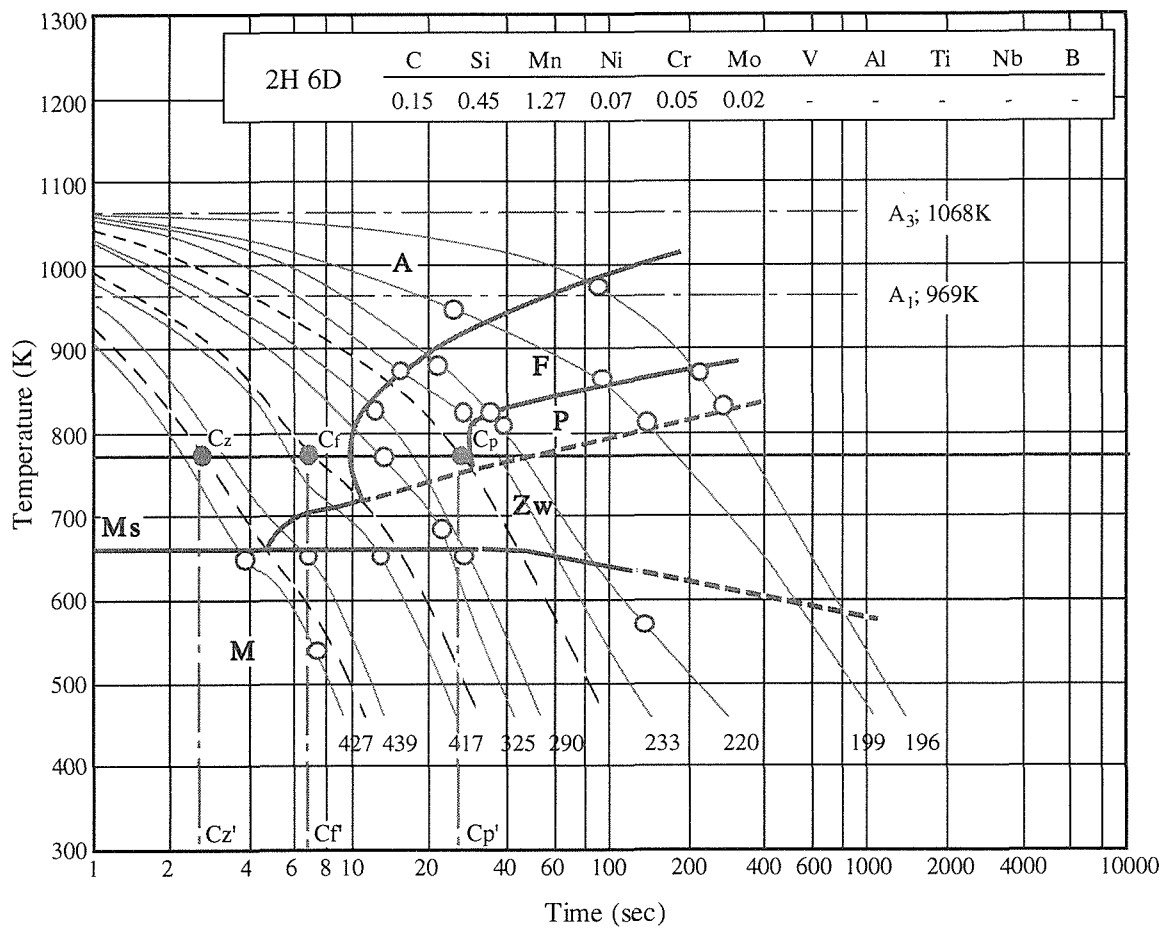


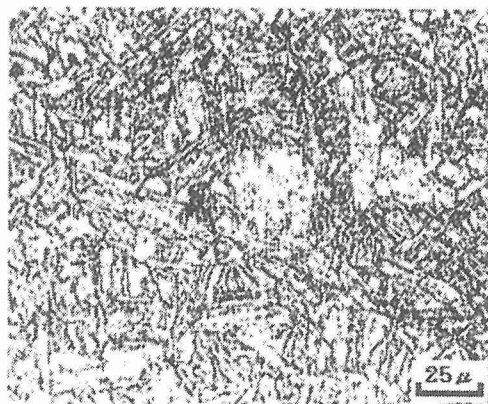




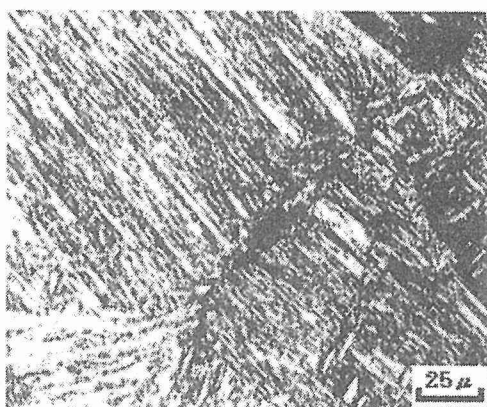




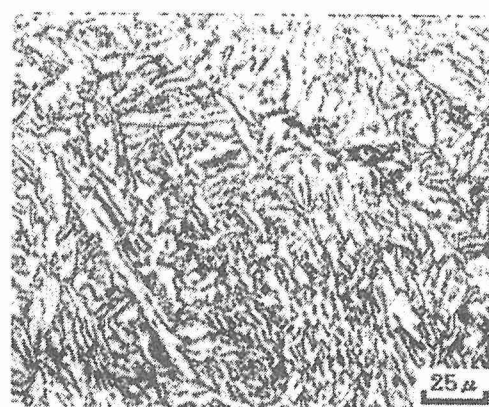




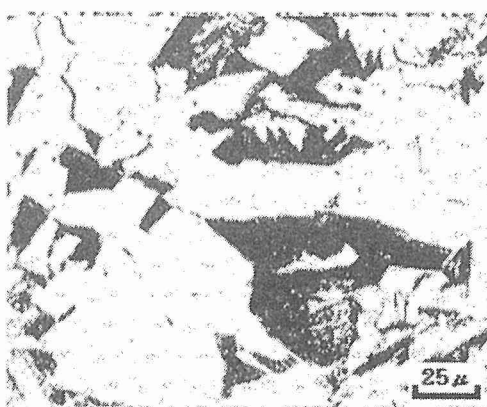
Base



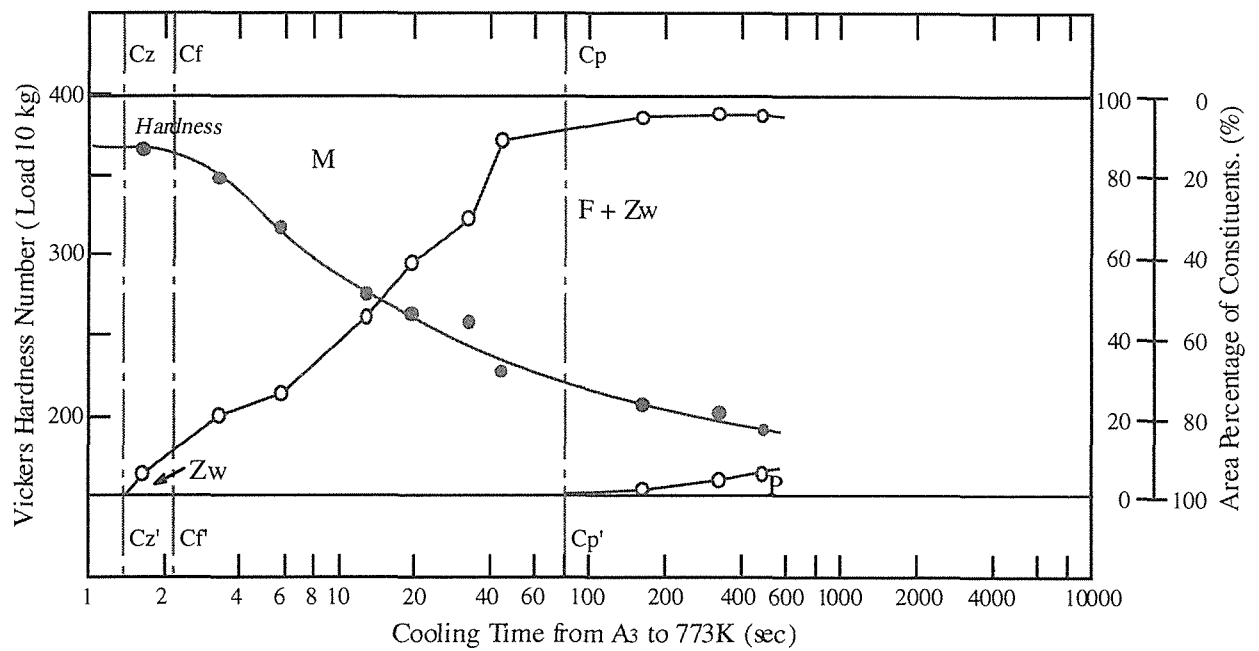
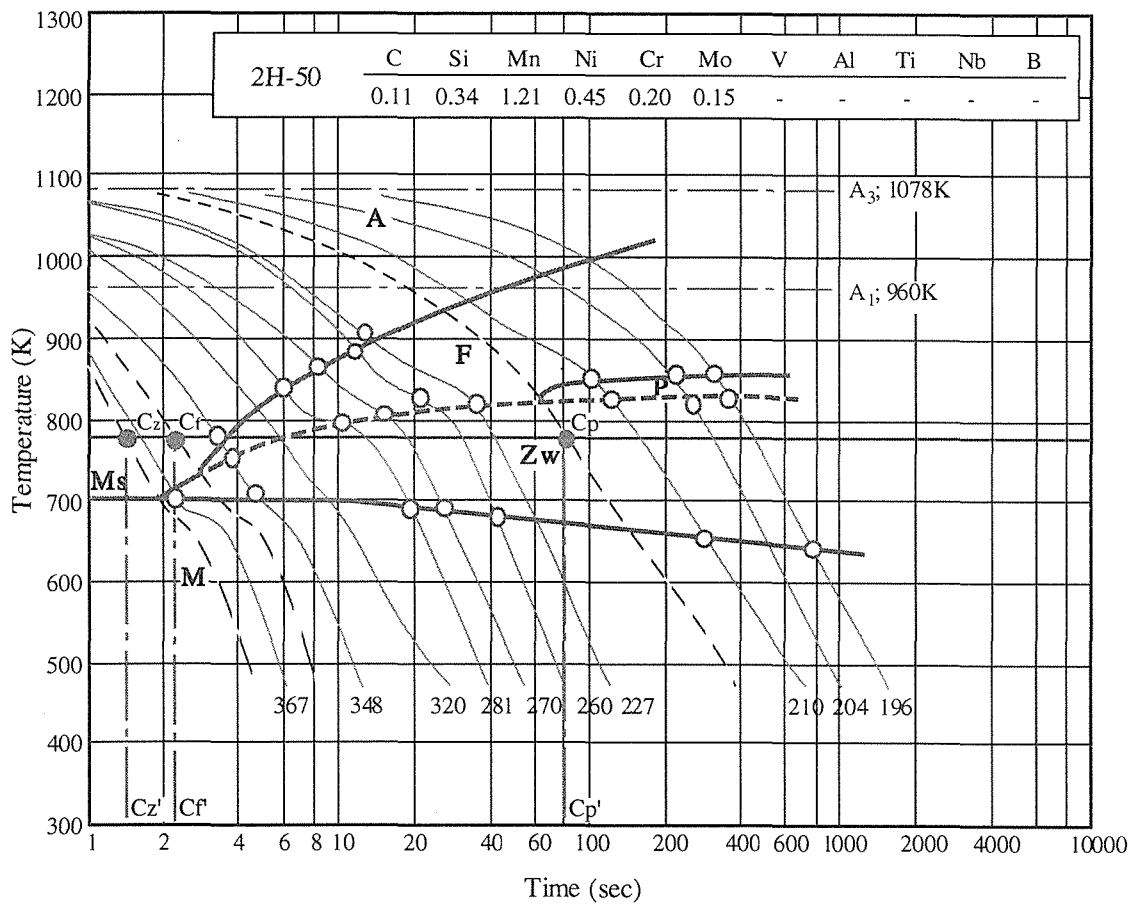
Time 2.5sec Hv 427

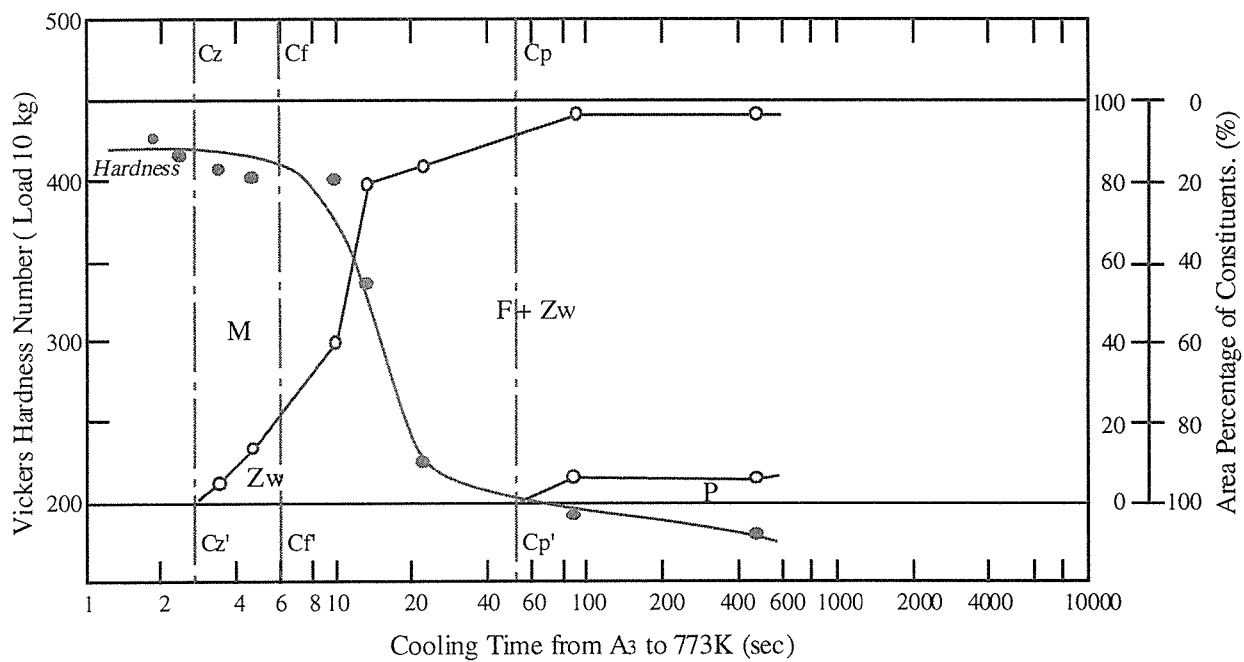
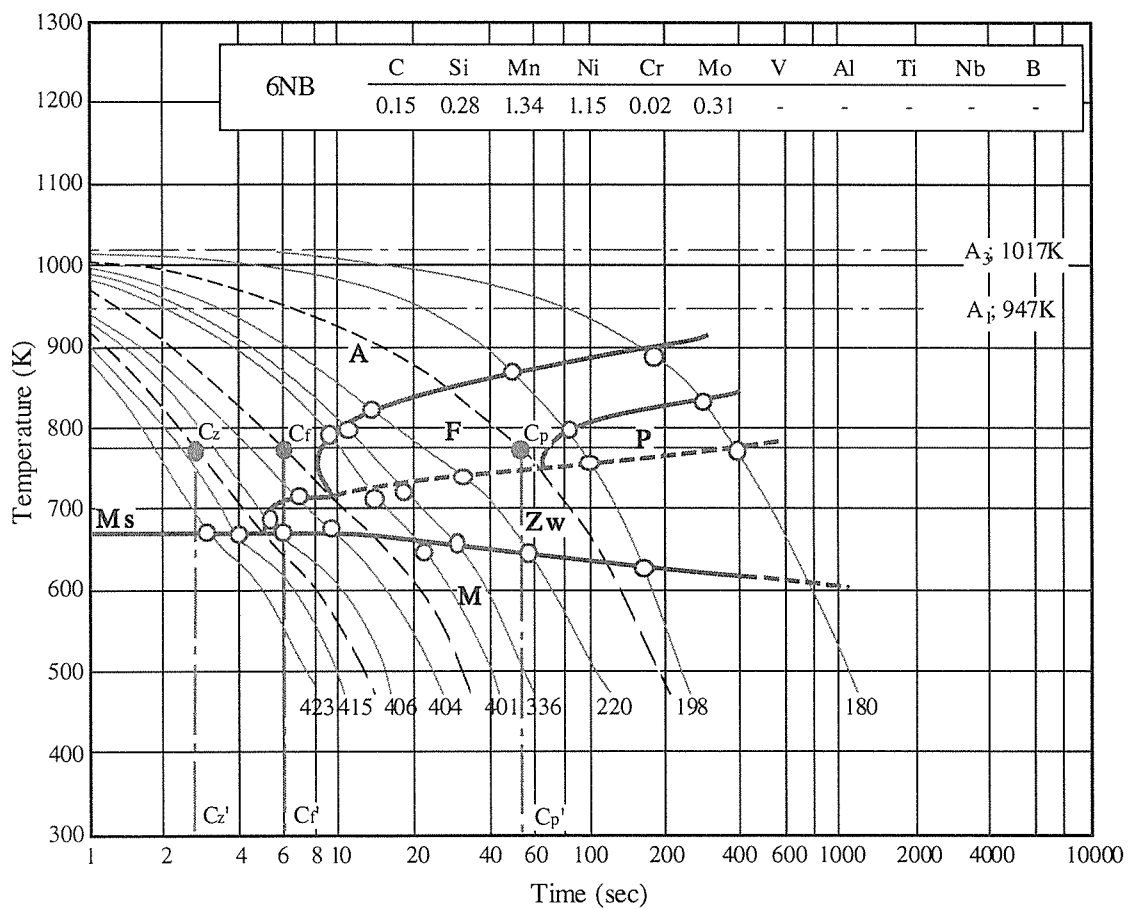


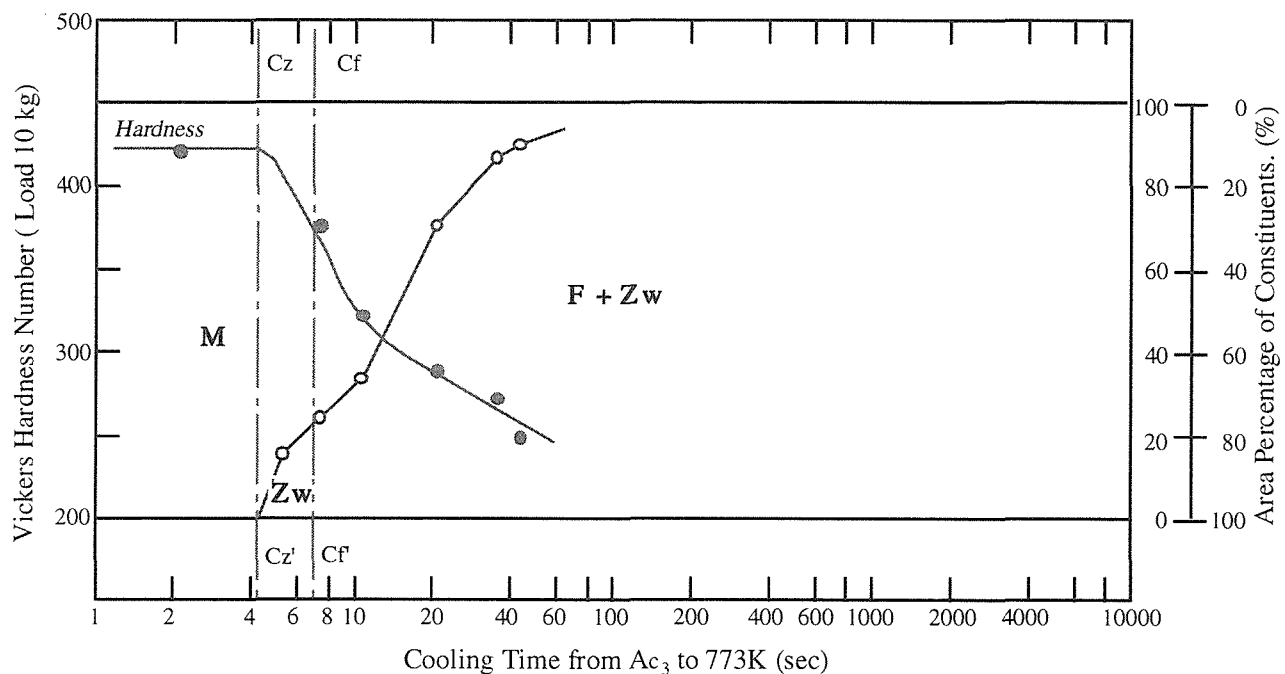
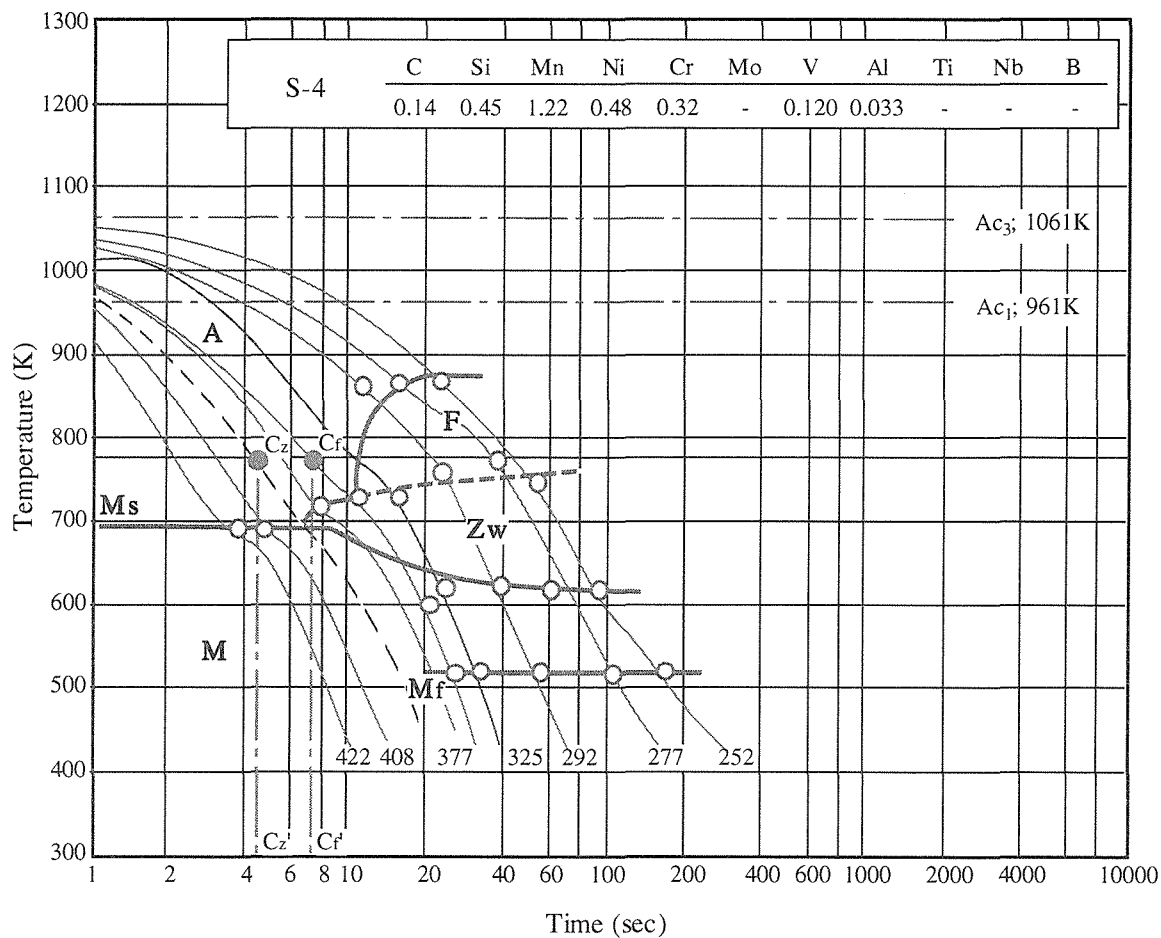
Time 45sec Hv 220

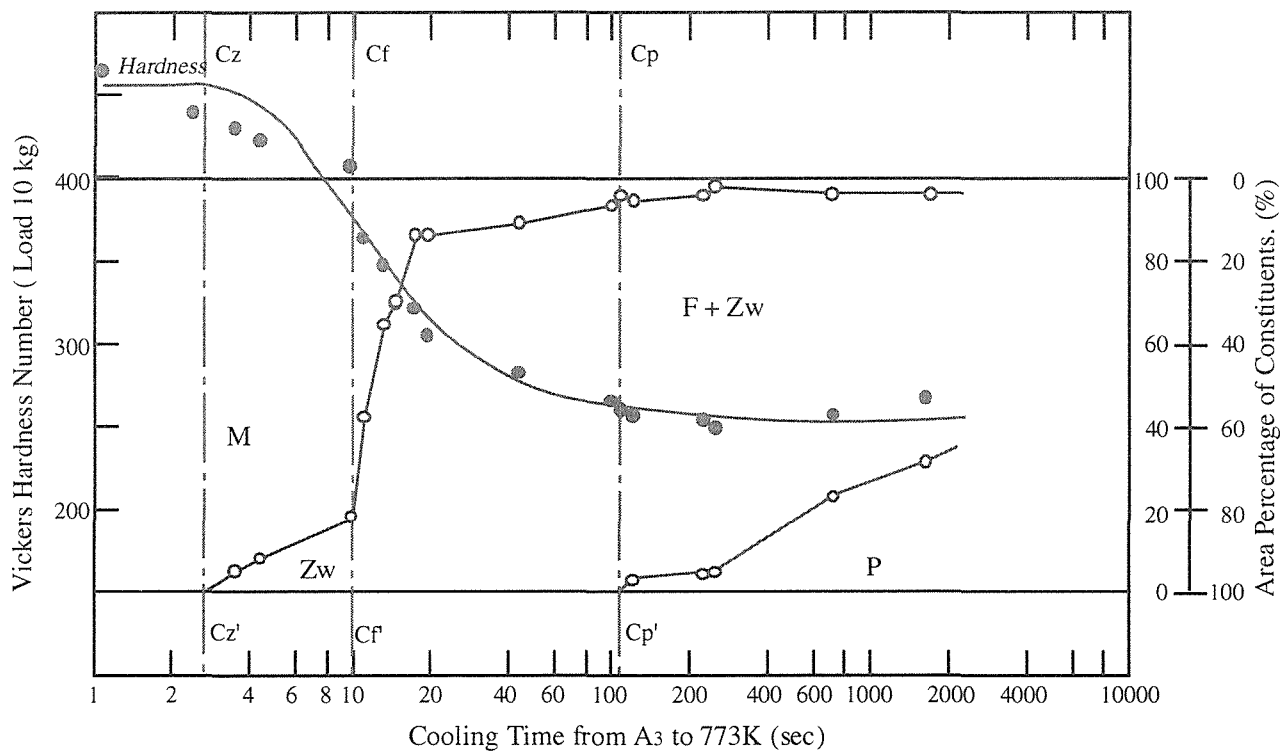
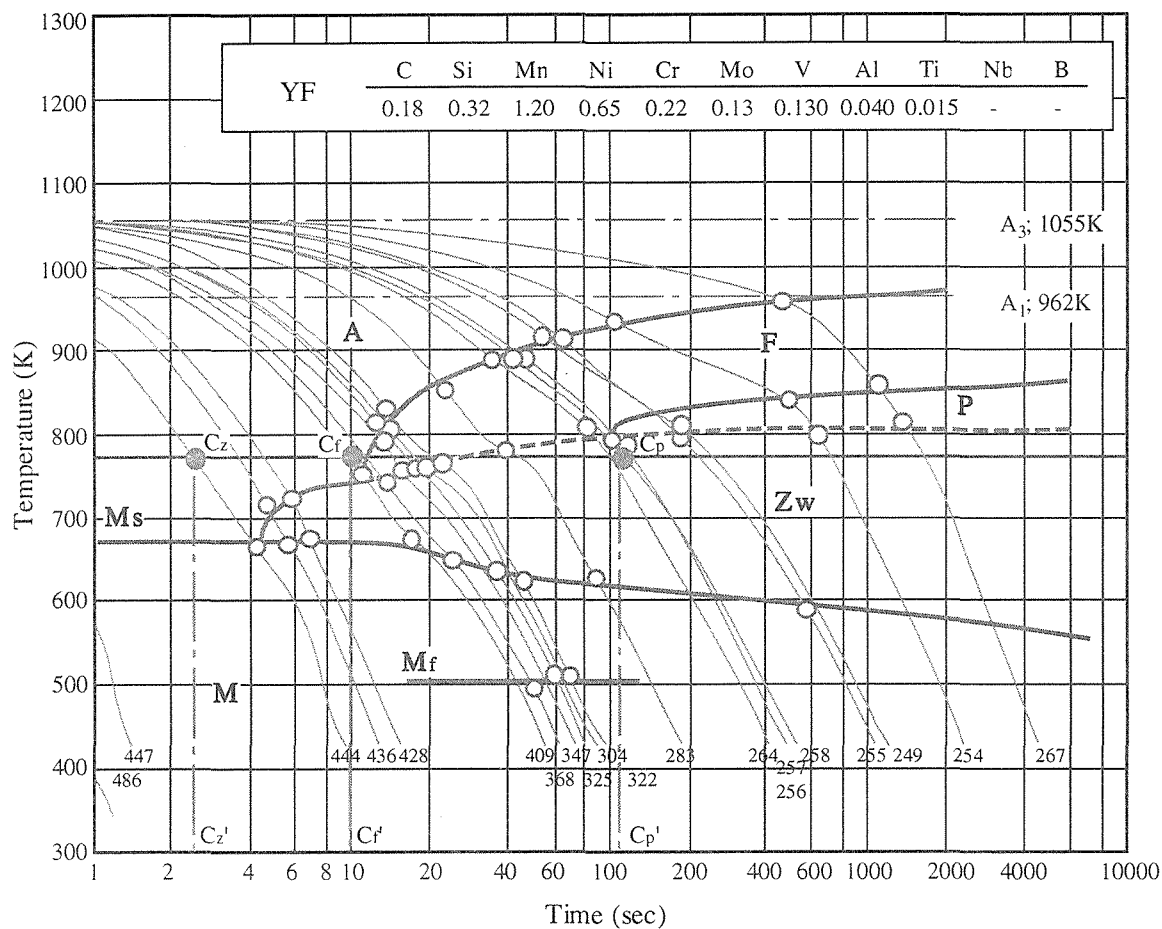


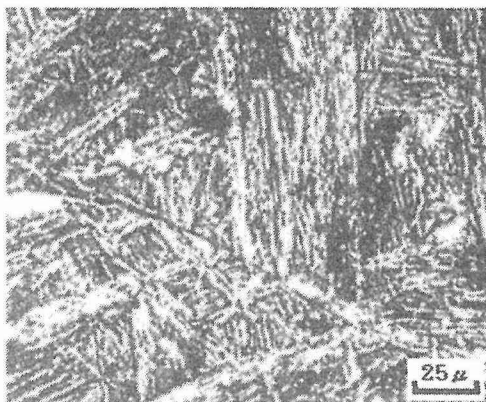
Time 350sec Hv 196



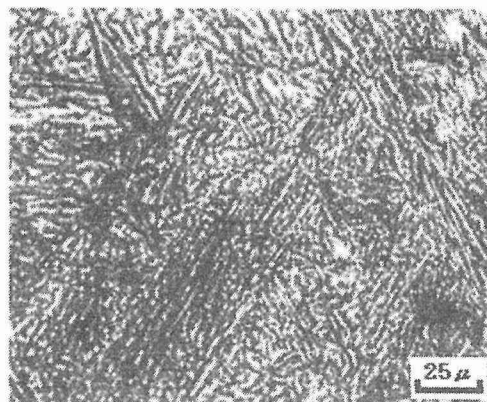




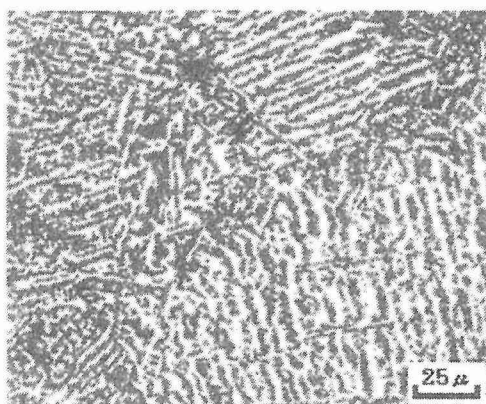




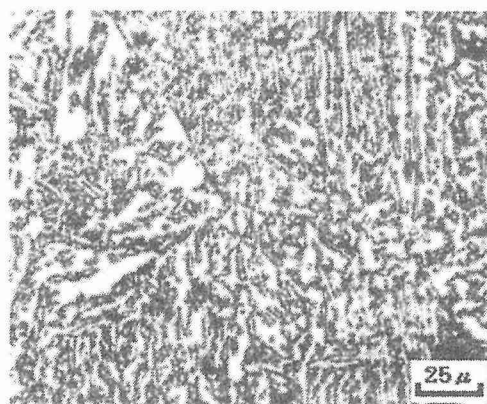
Time - Hv 486



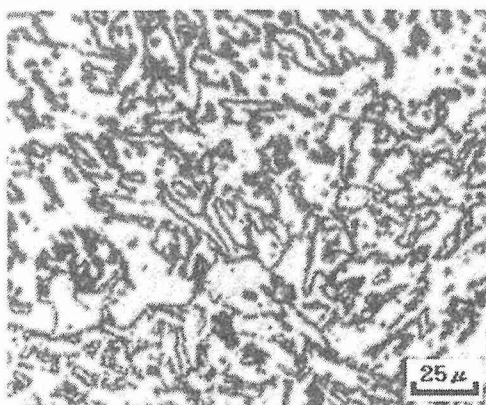
Time 9.5sec Hv 409



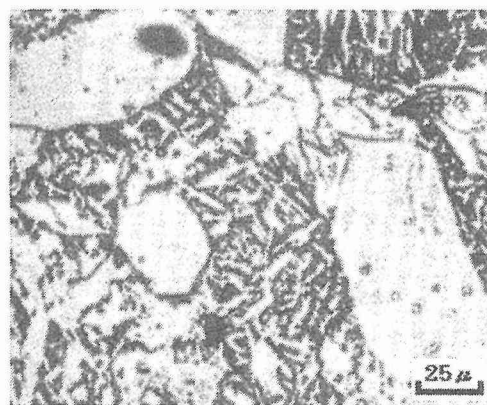
Time 15sec Hv 325



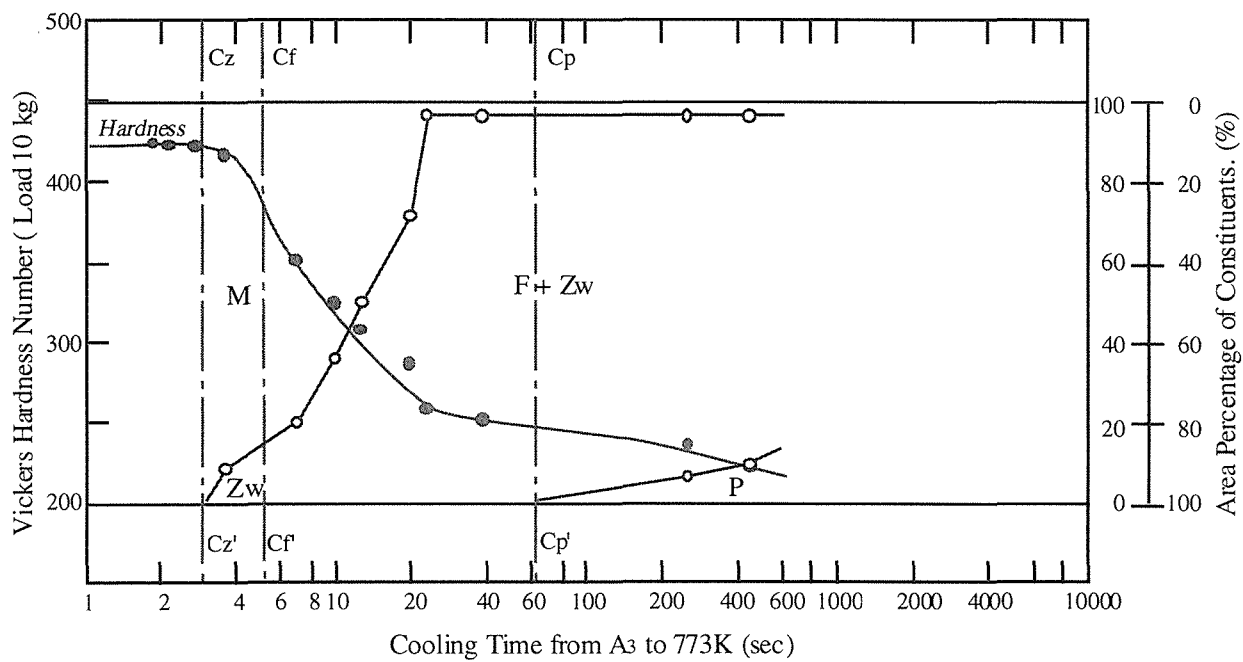
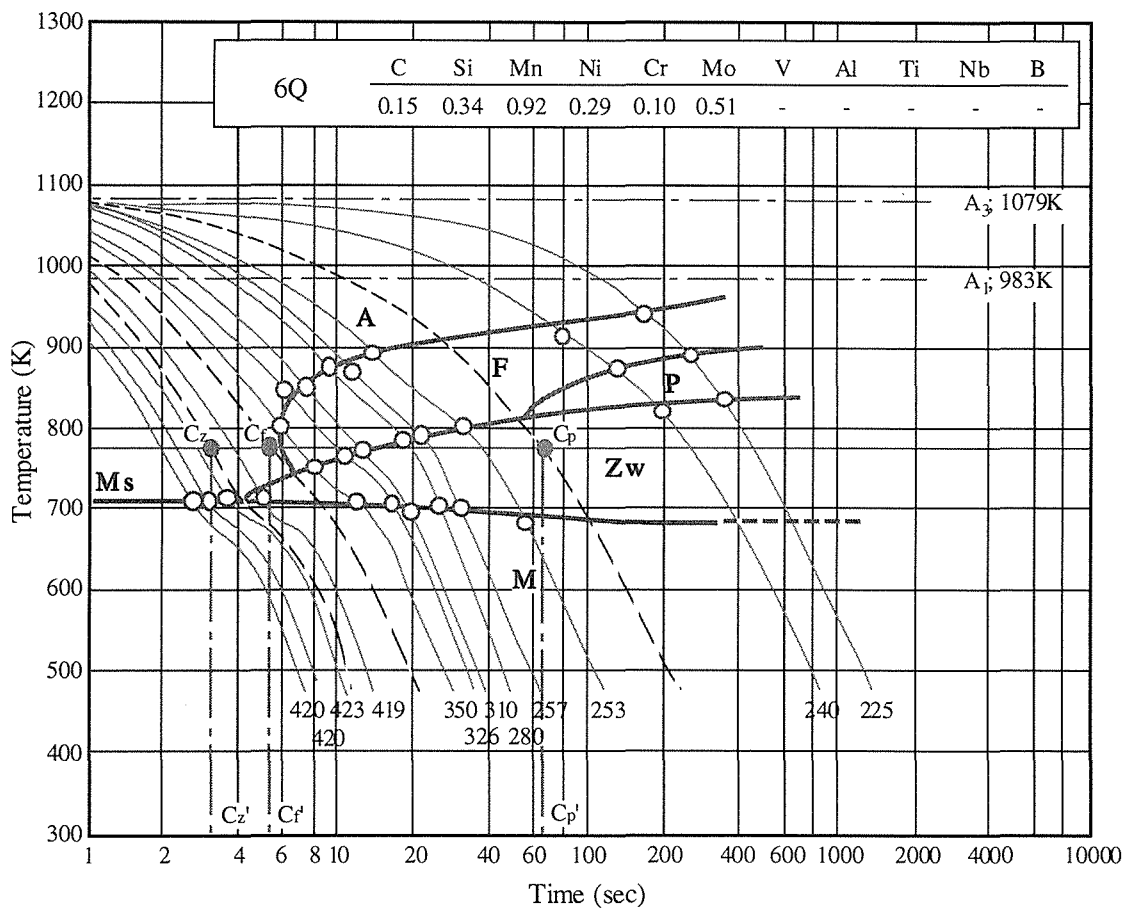
Time 45sec Hv 283

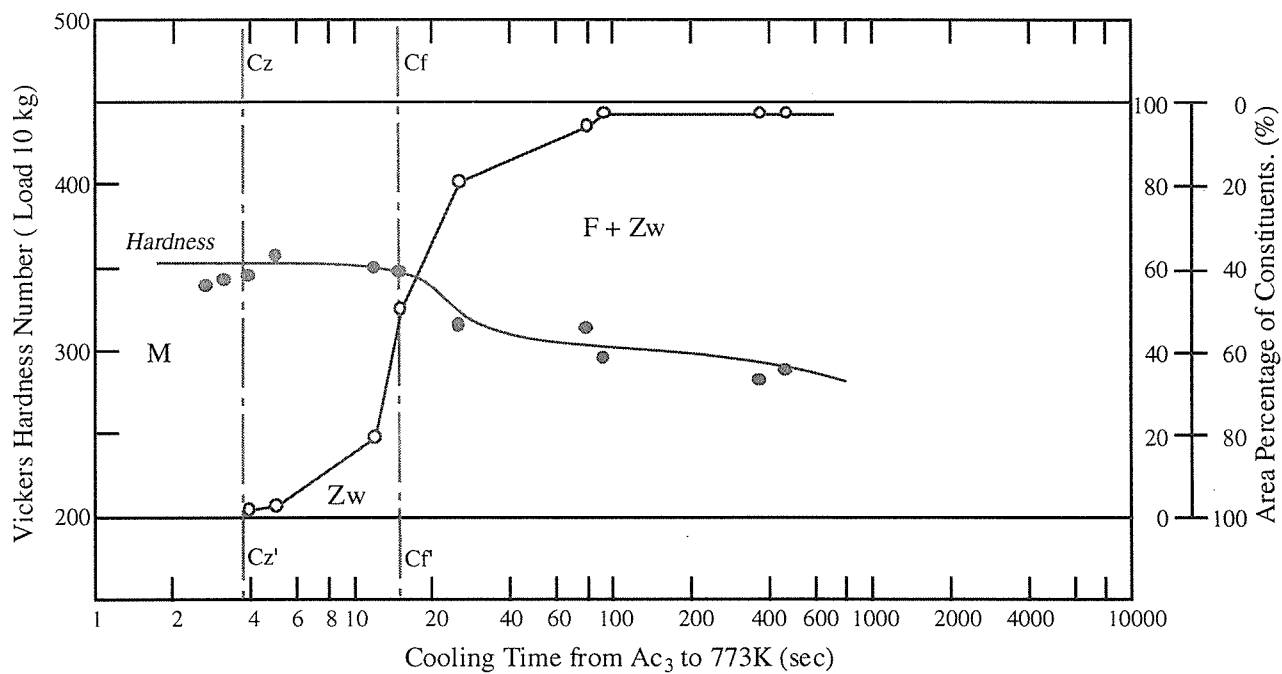
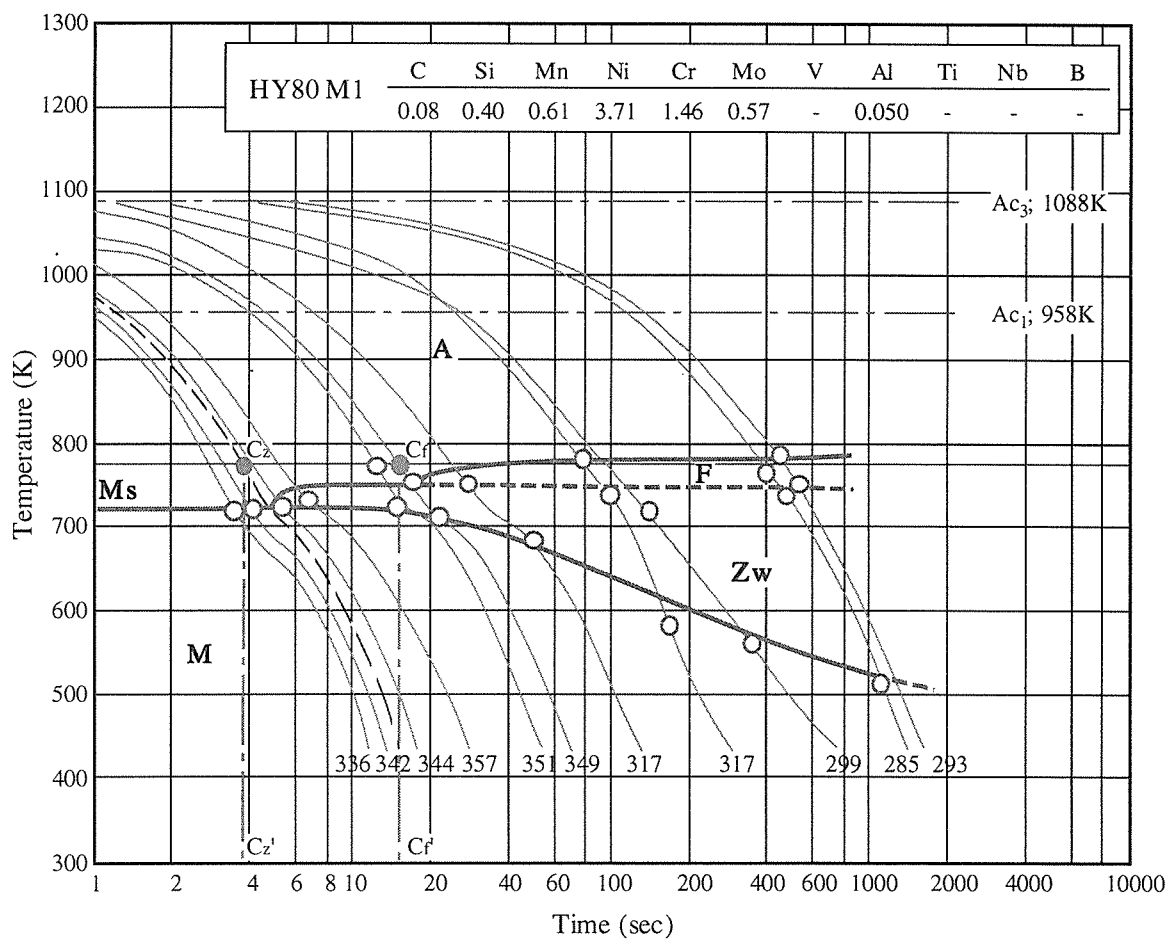


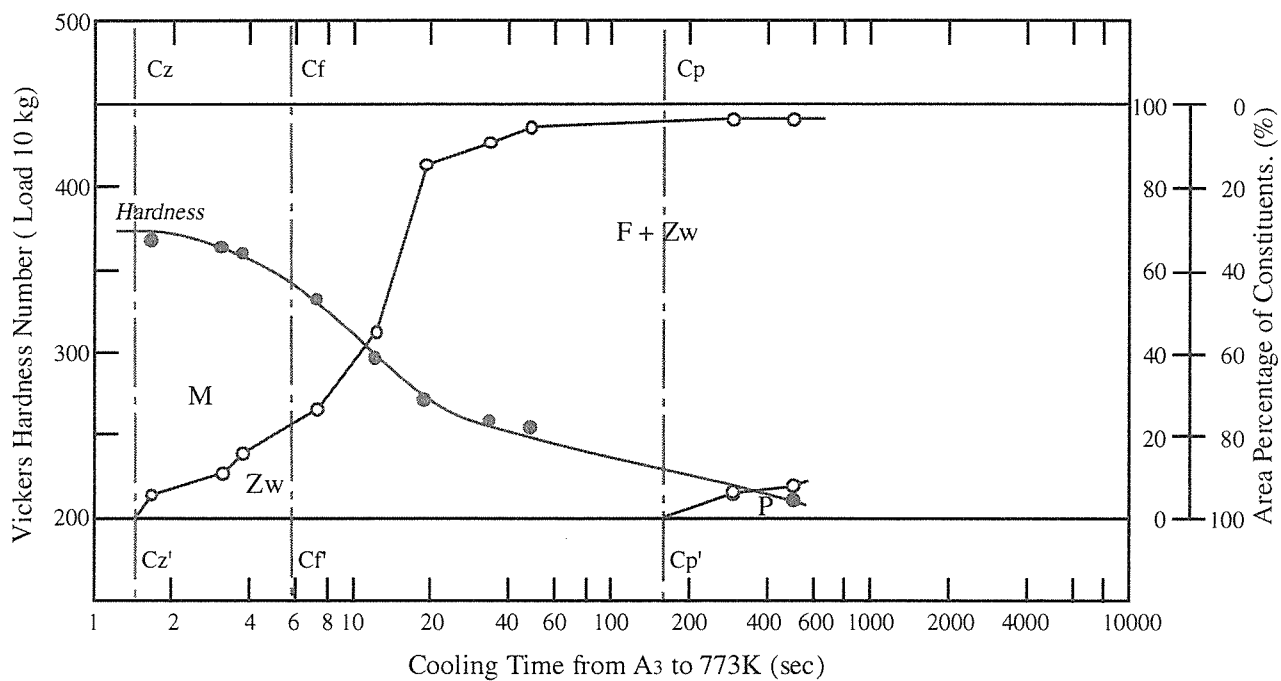
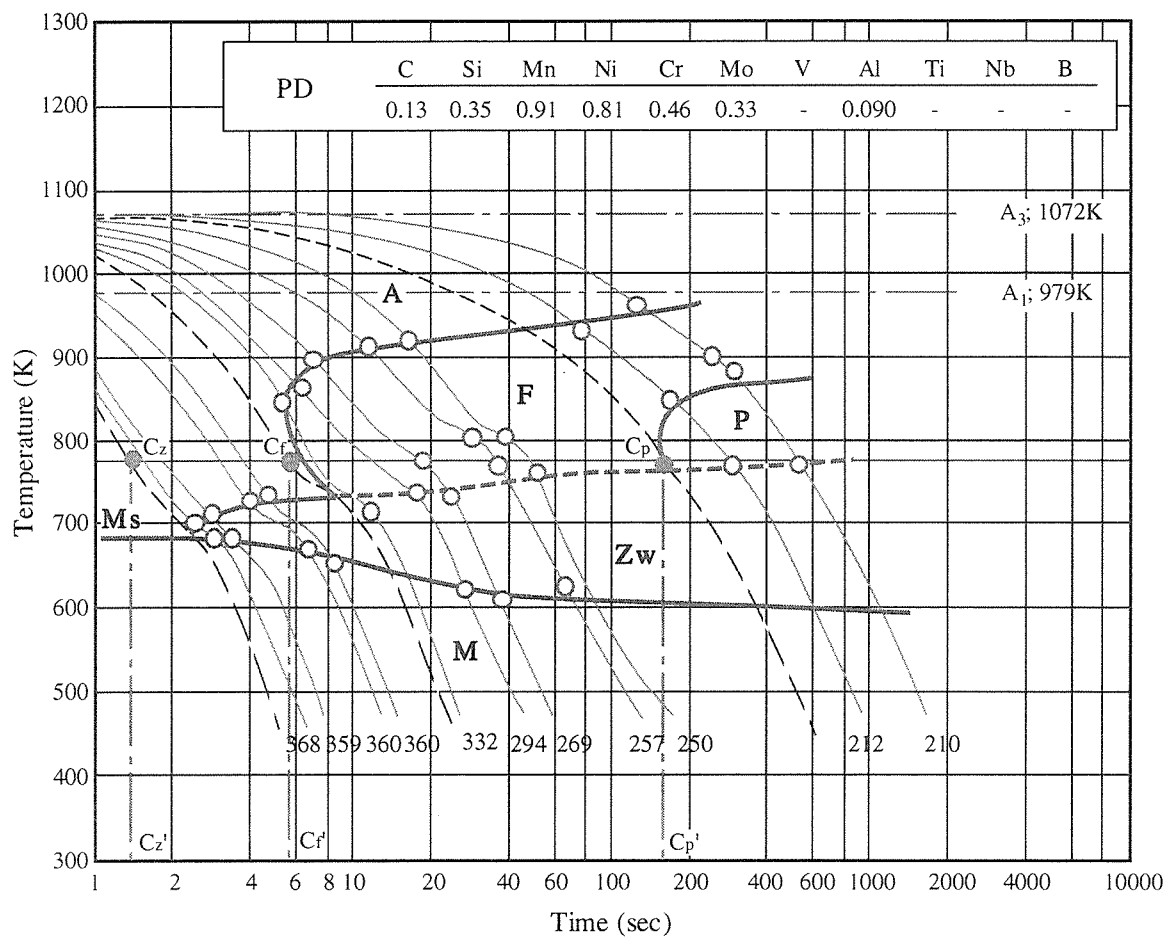
Time 250sec Hv 249

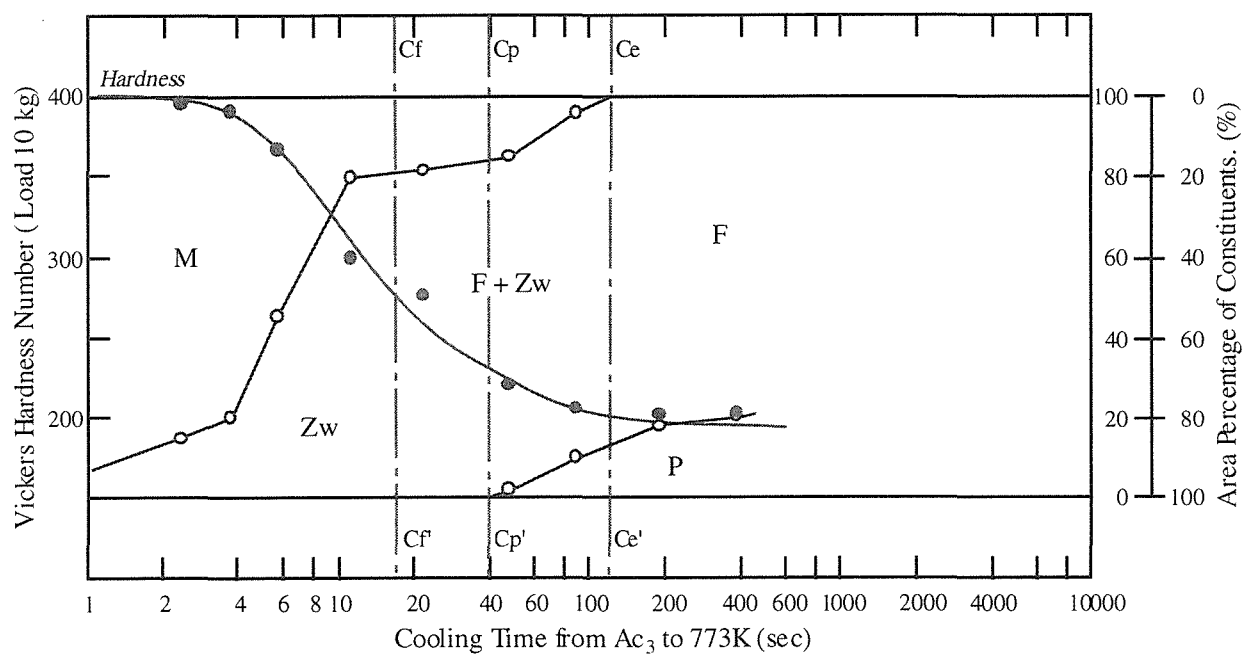
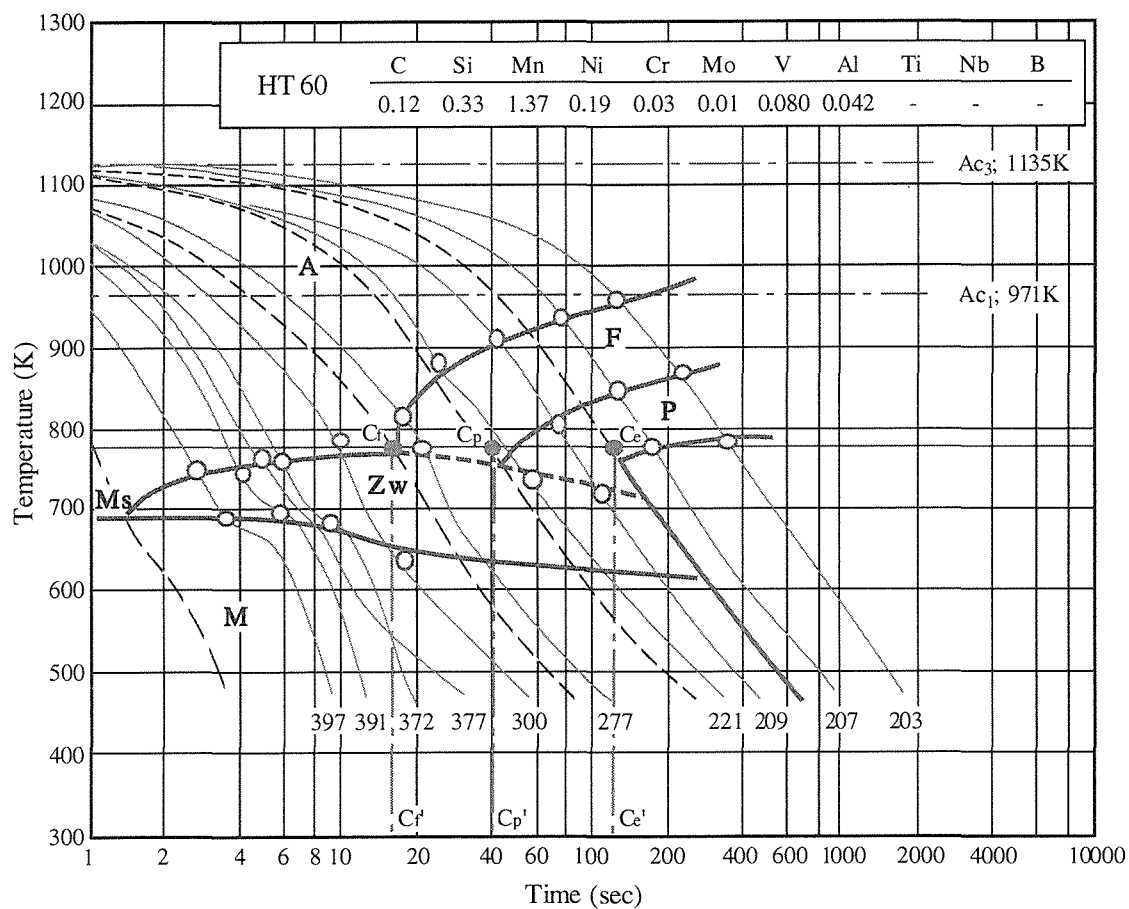


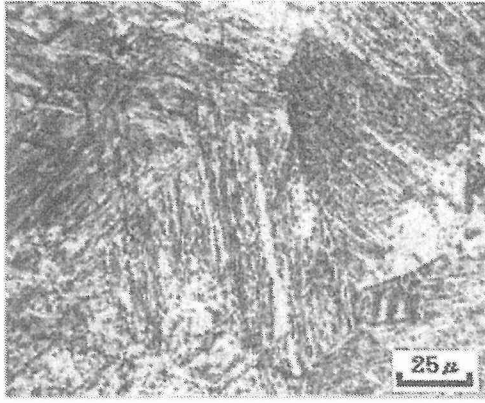
Time 700sec Hv 254



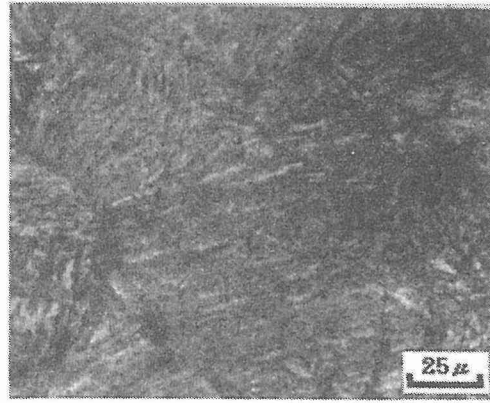




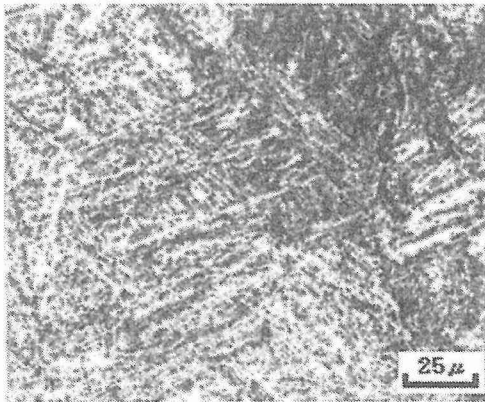




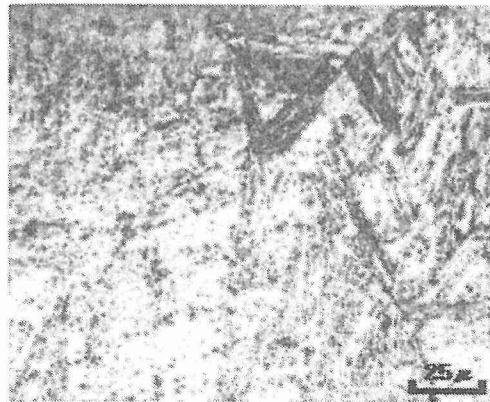
Time 2.5sec Hv 397



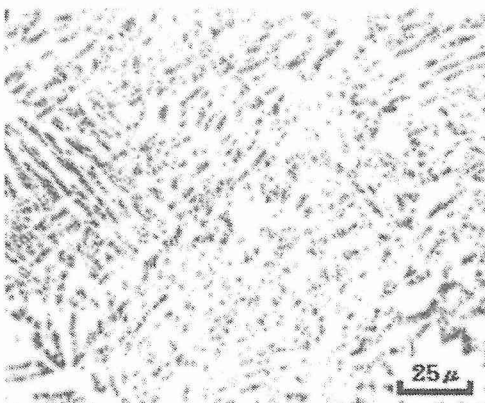
Time 3.8sec Hv 391



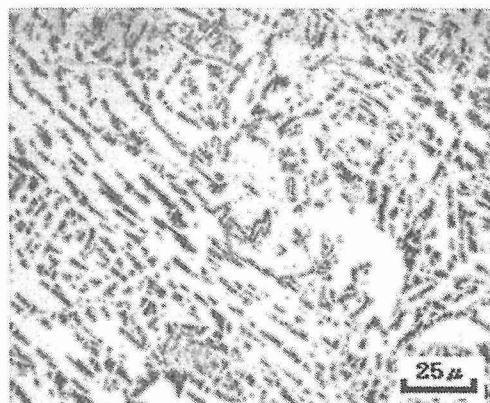
Time 4.5sec Hv 377



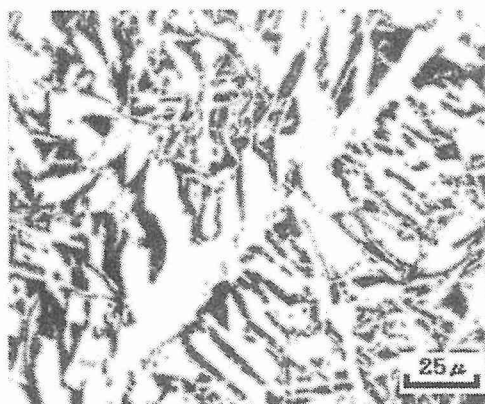
Time 5.5sec Hv 372



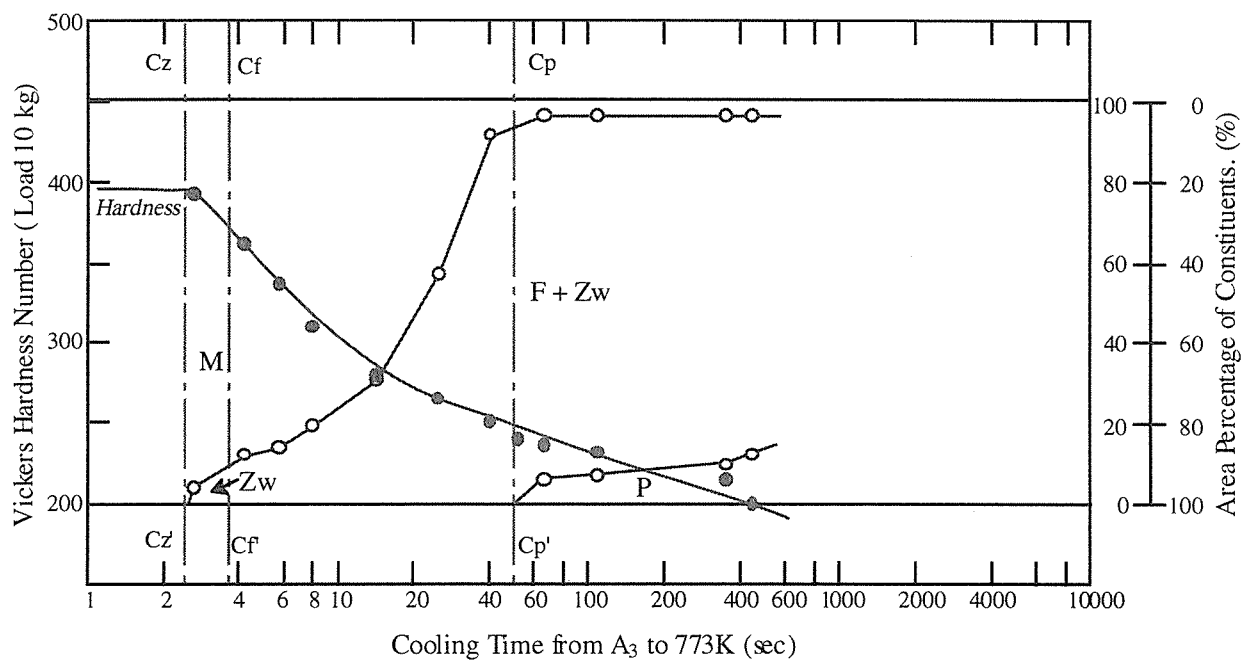
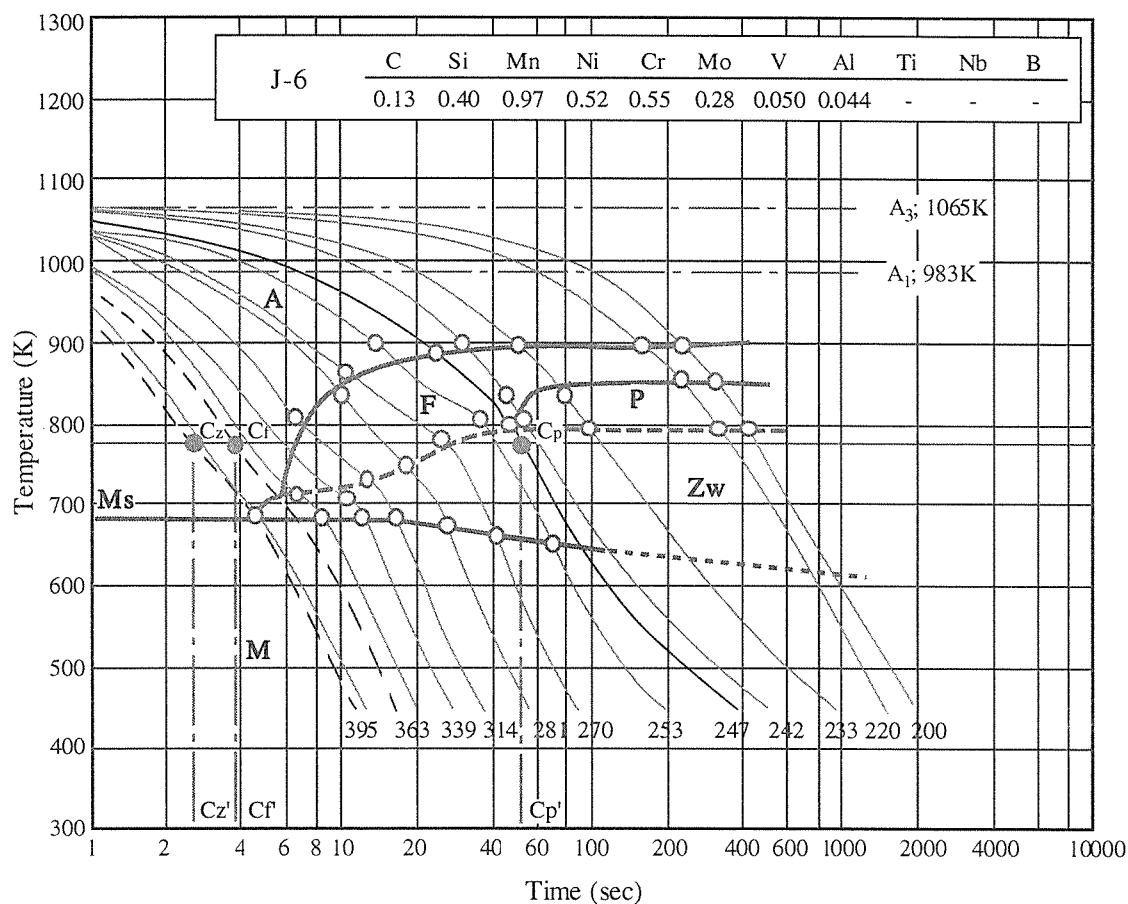
Time 85sec Hv 209

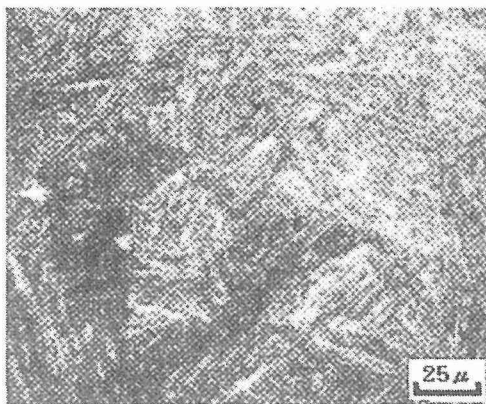


Time 180sec Hv 207

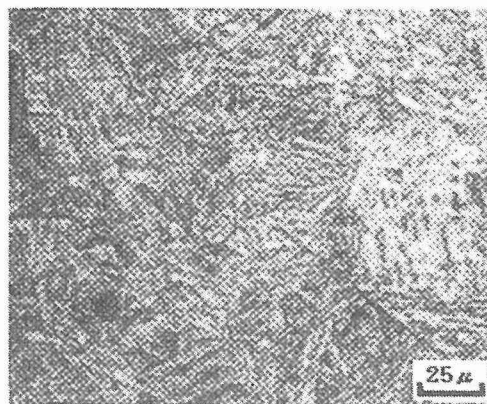


Time 370sec Hv 203

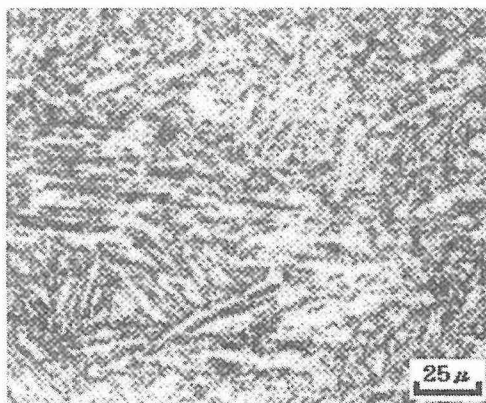




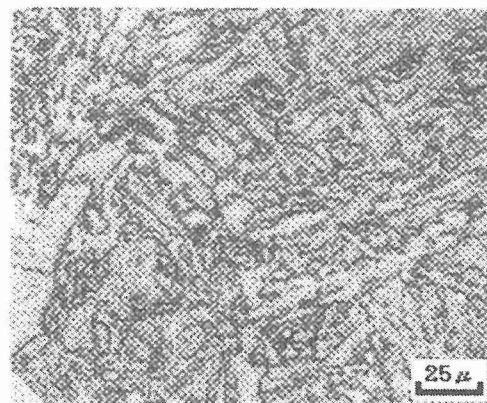
Time 4.4sec Hv 363



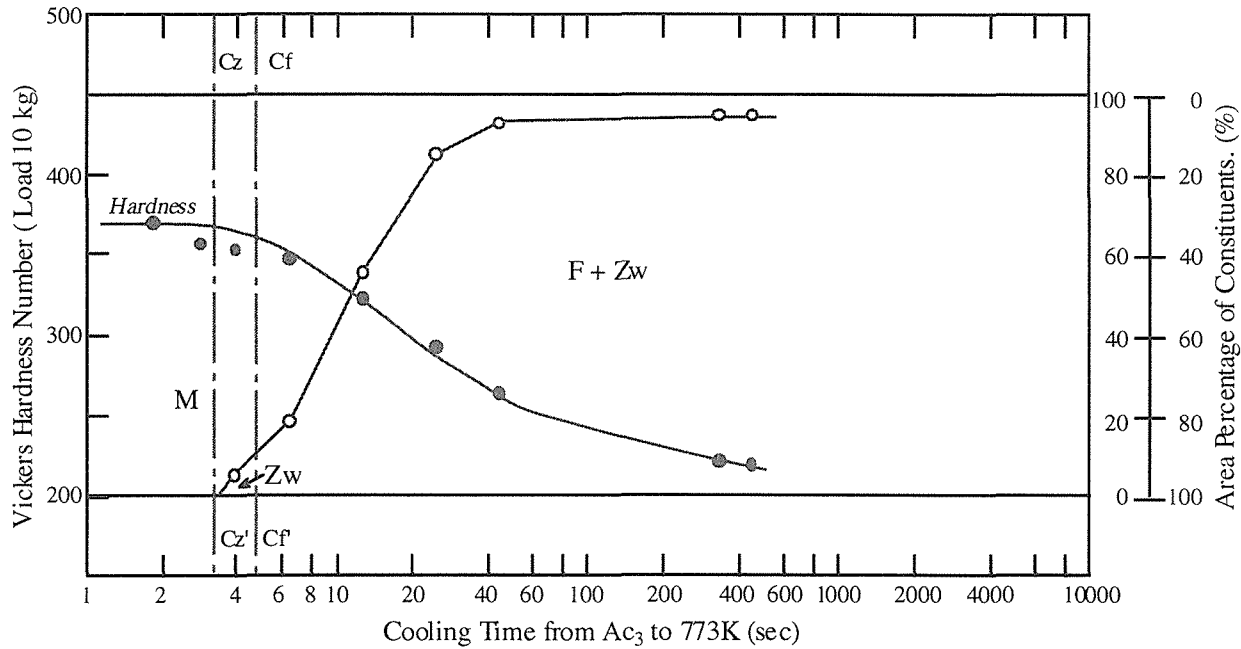
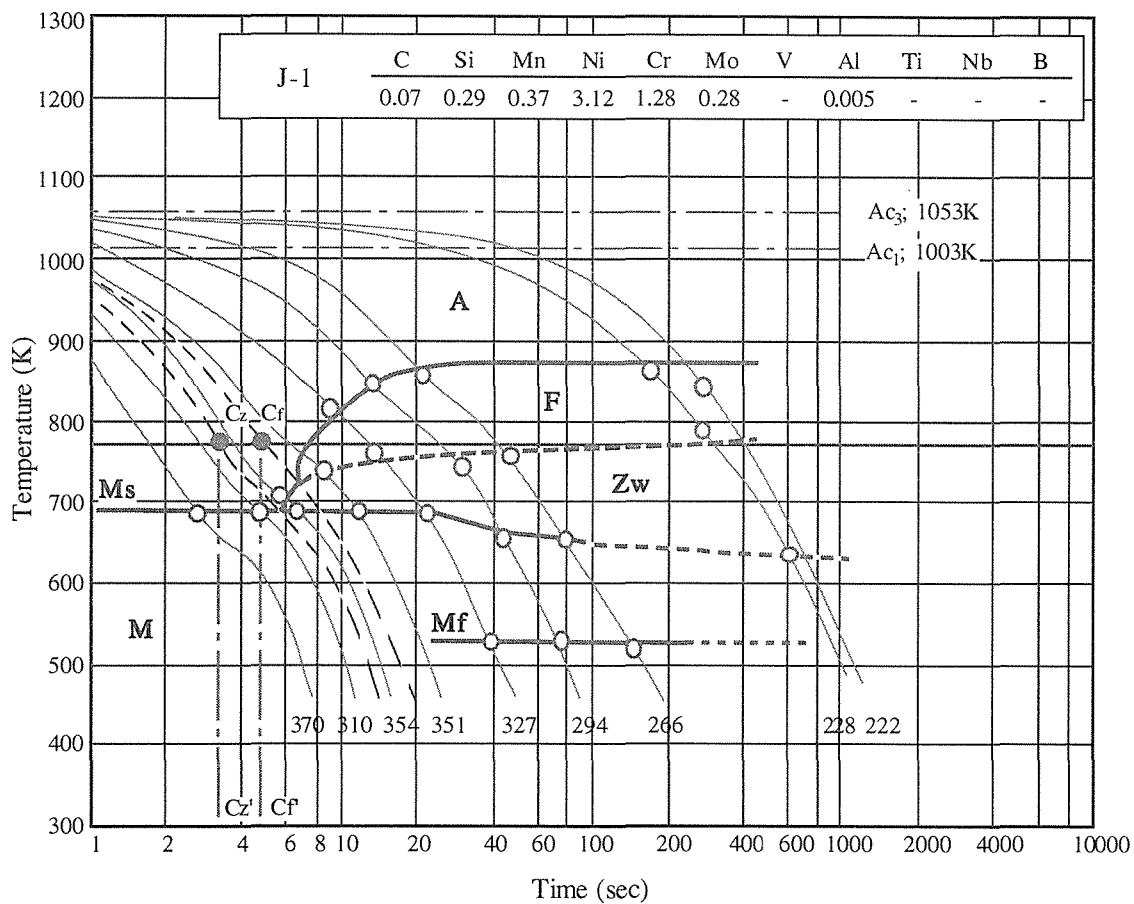
Time 16sec Hv 281

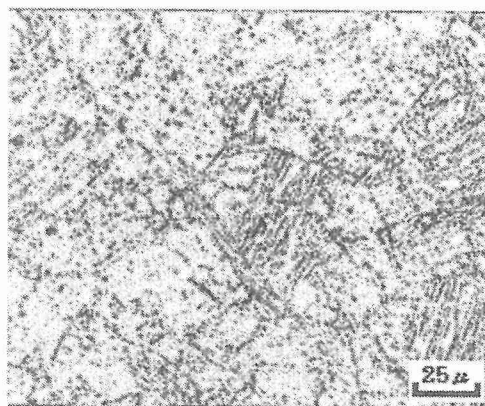


Time 100sec Hv 233

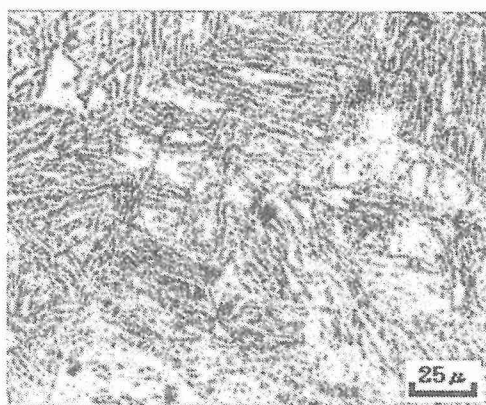


Time 480sec Hv 200

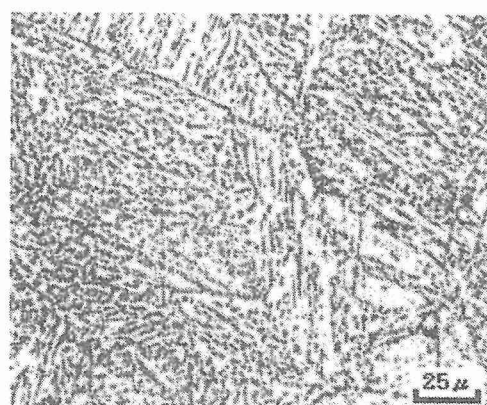




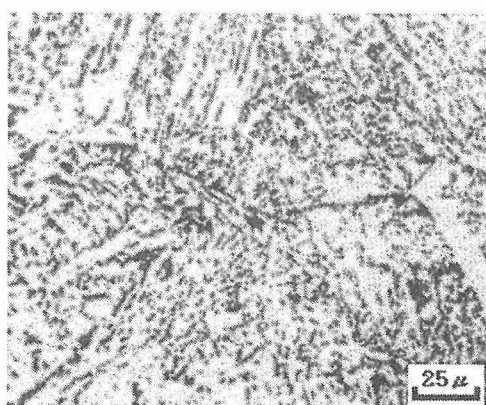
Base



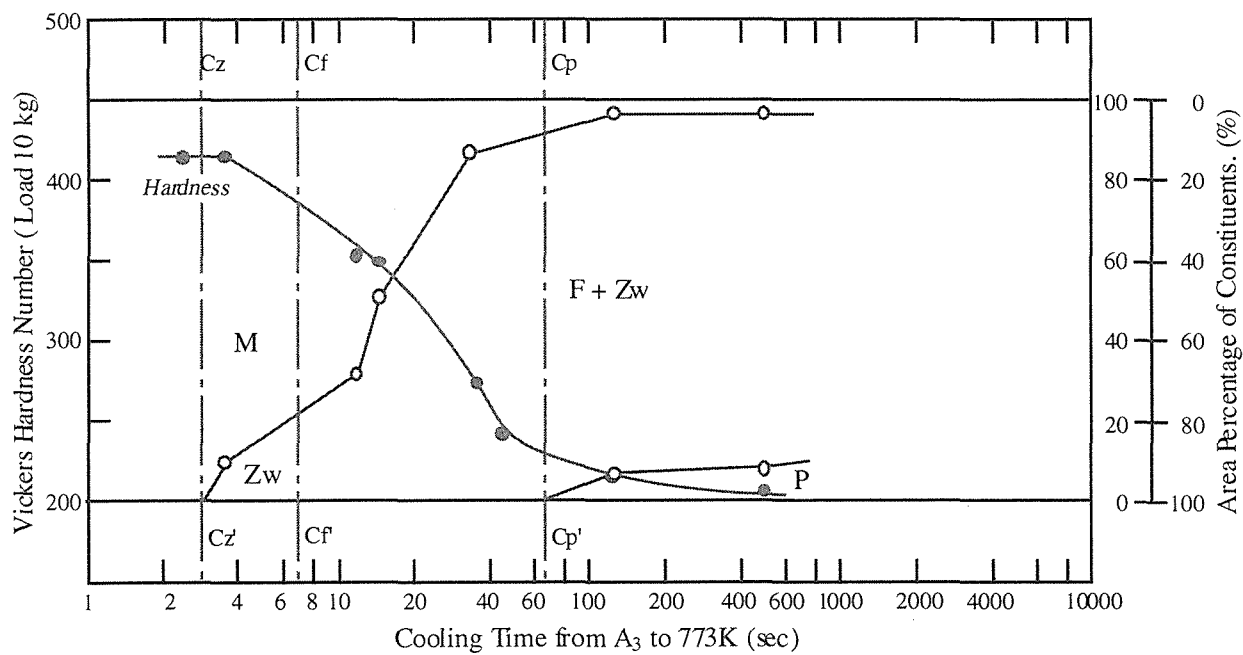
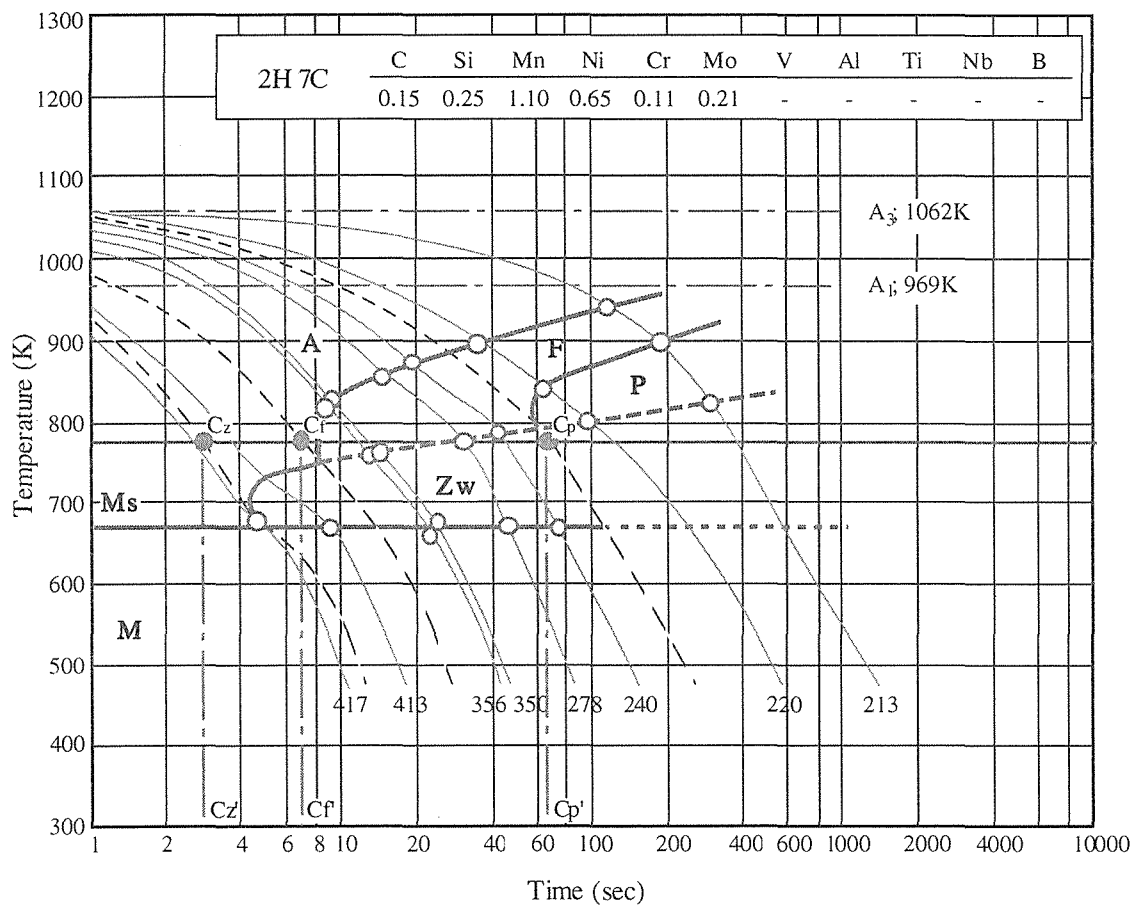
Time 1.8sec Hv 370

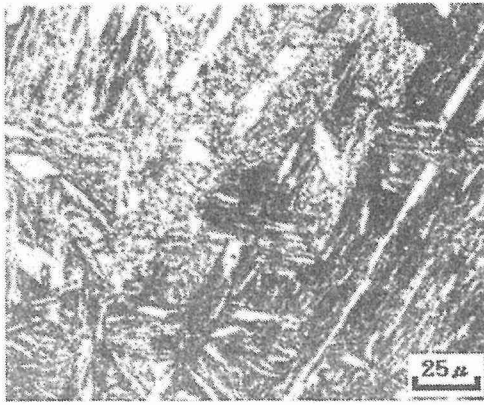


Time 42sec Hv 266

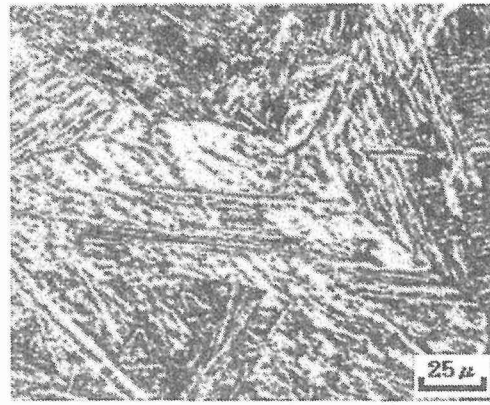


Time 400sec Hv 222

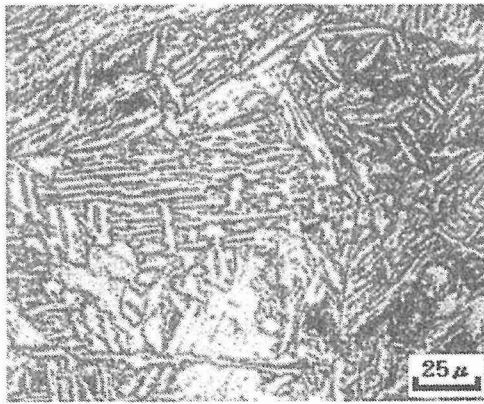




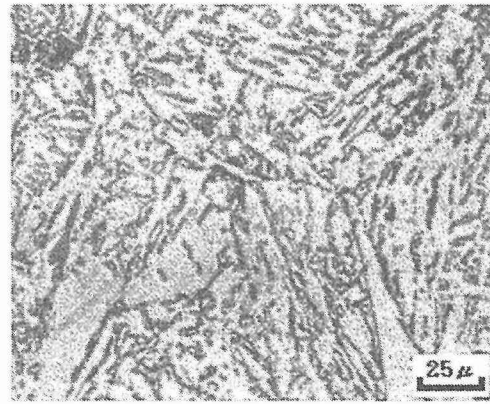
Time 3.8sec Hv 413



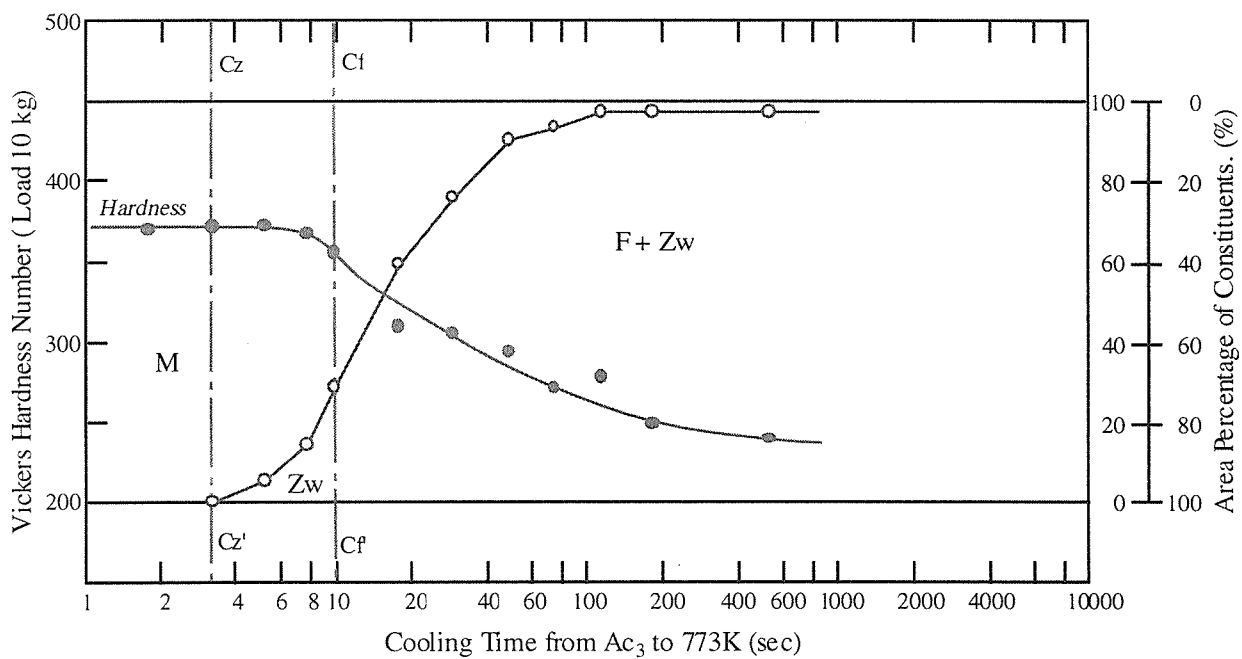
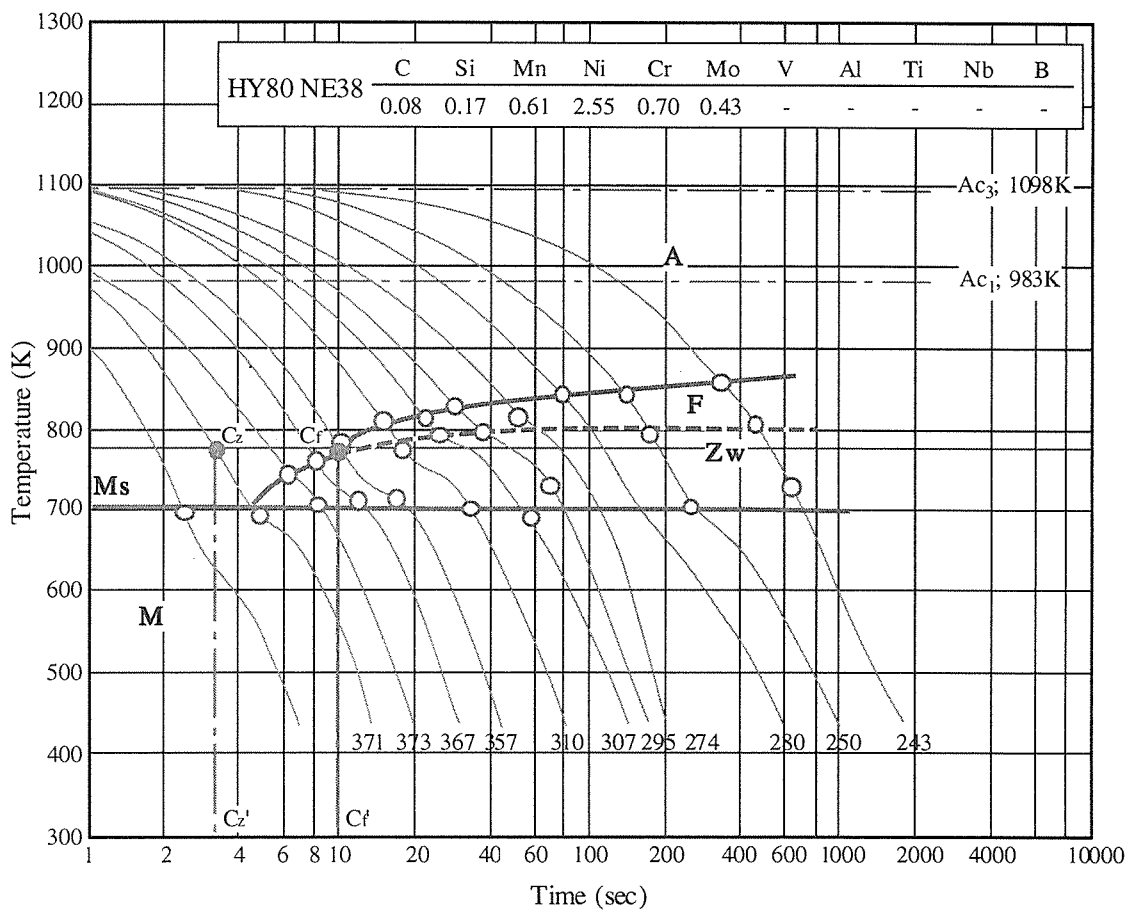
Time 14sec Hv 350

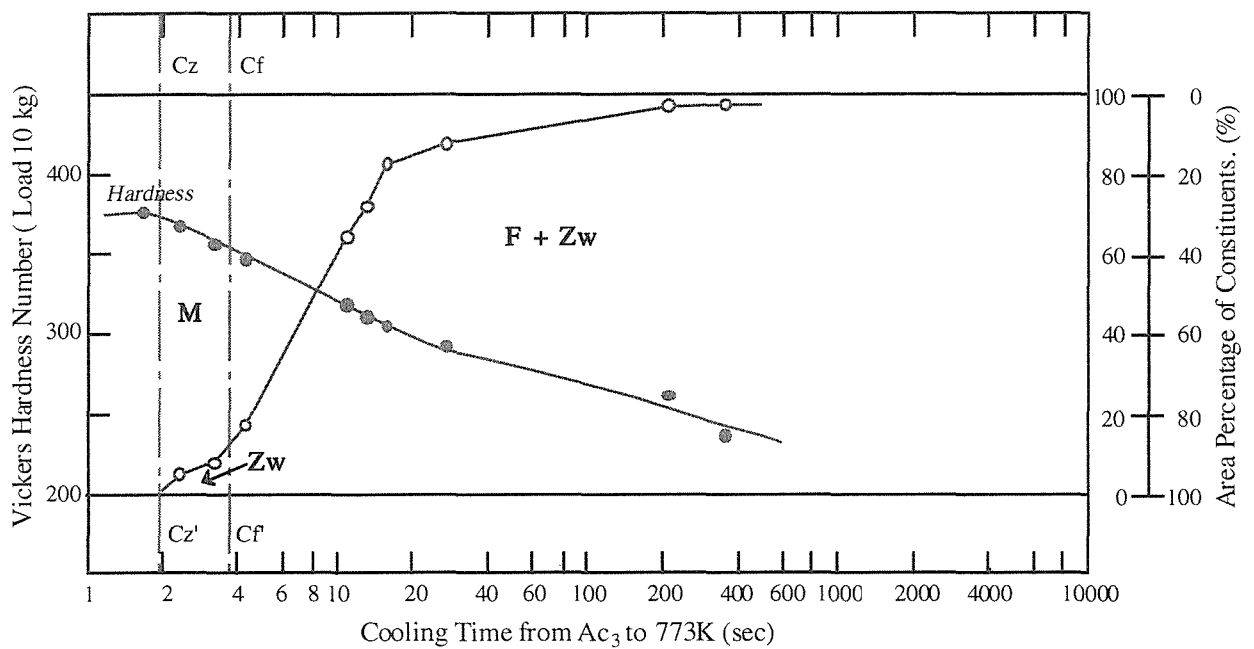
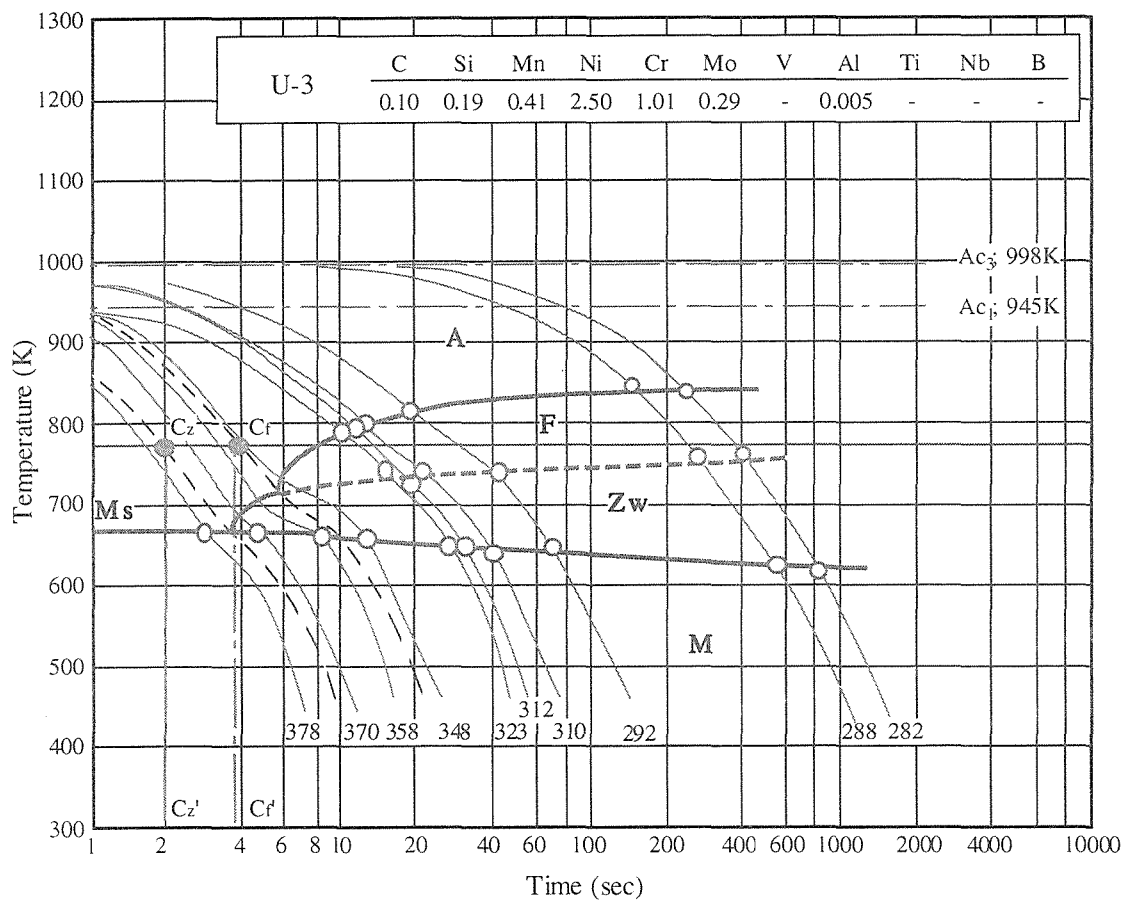


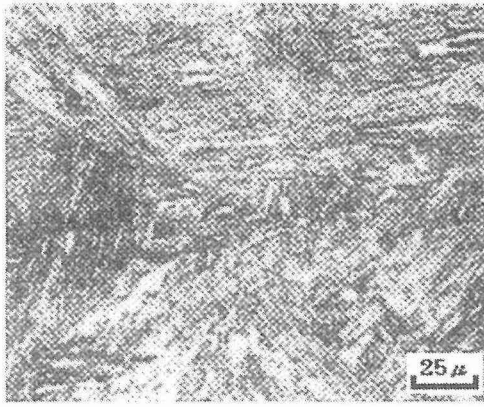
Time 46sec Hv 240



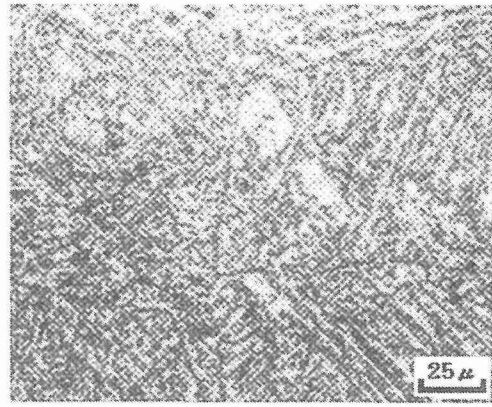
Time 120sec Hv 220



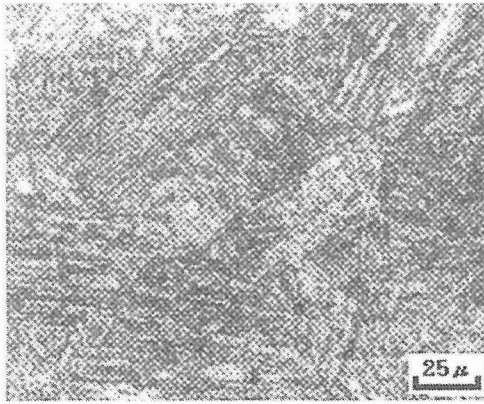




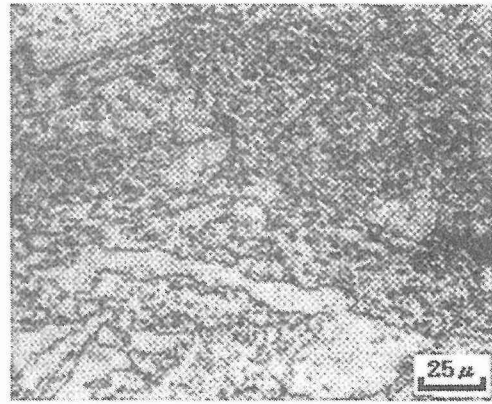
Time 1.8sec Hv 378



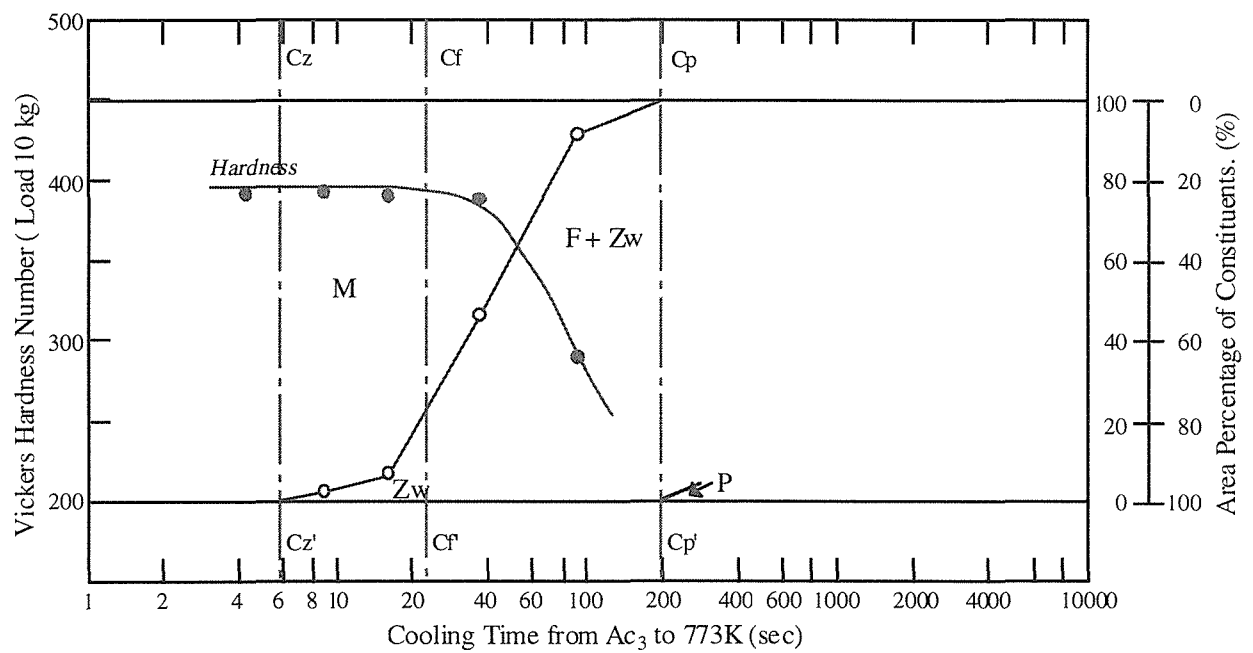
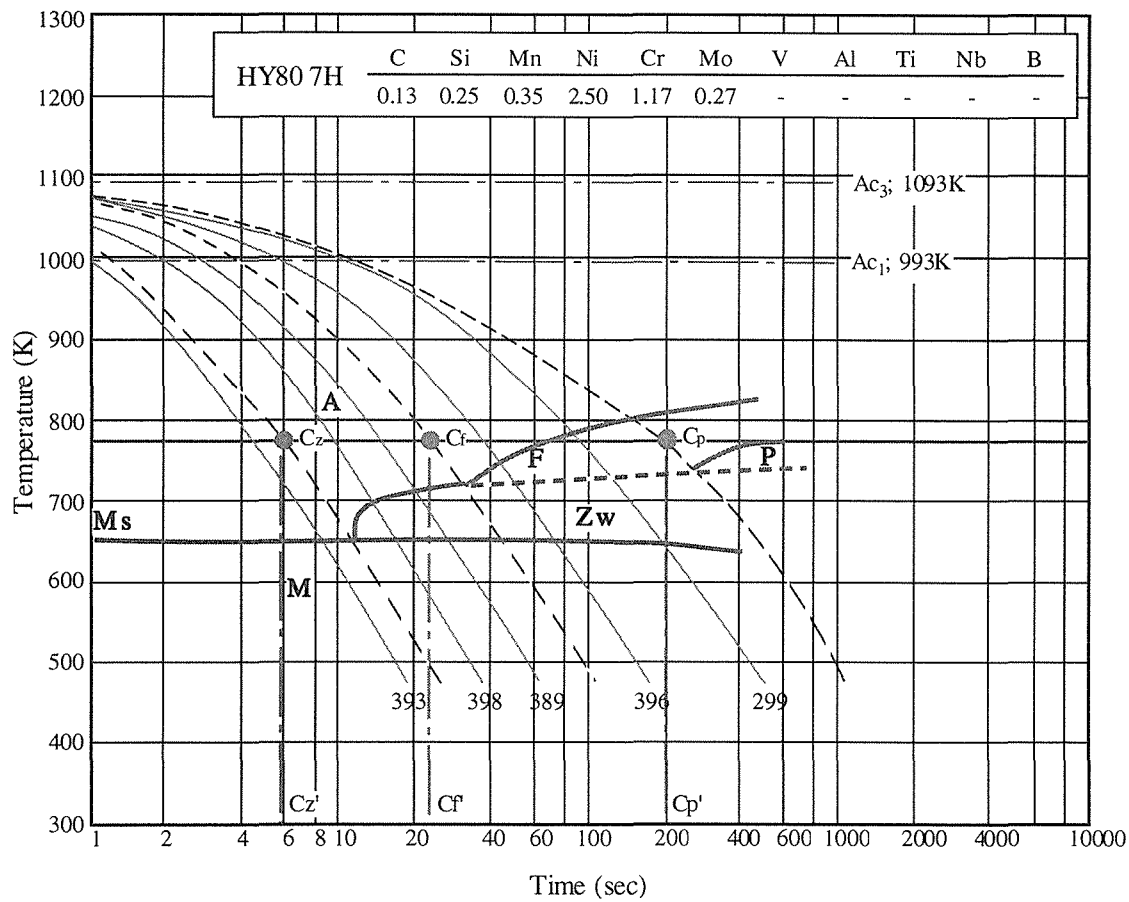
Time 4.2sec Hv 348

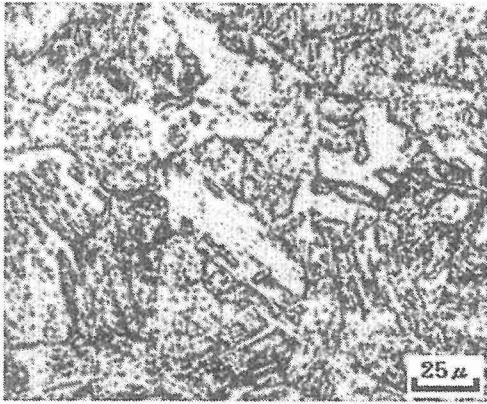


Time 30sec Hv 292

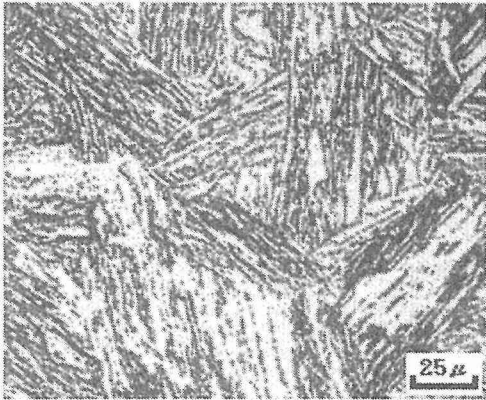


Time 390sec Hv 237

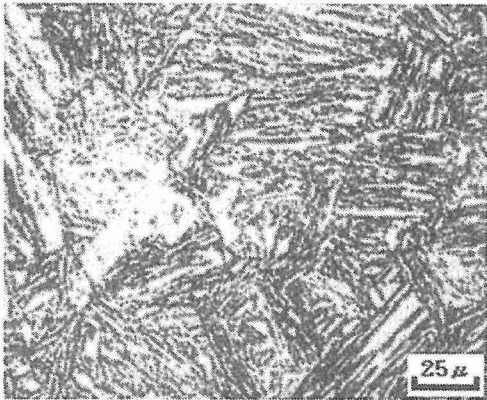




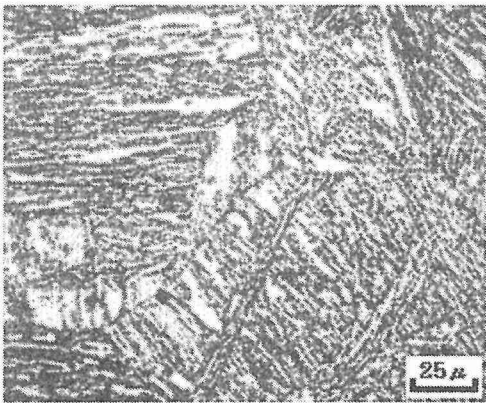
Base



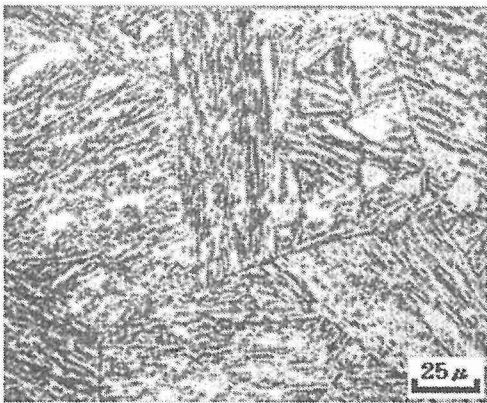
Time 4.4sec Hv 393



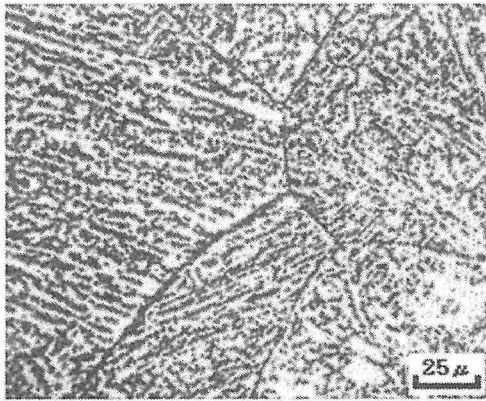
Time 9.4sec Hv 398



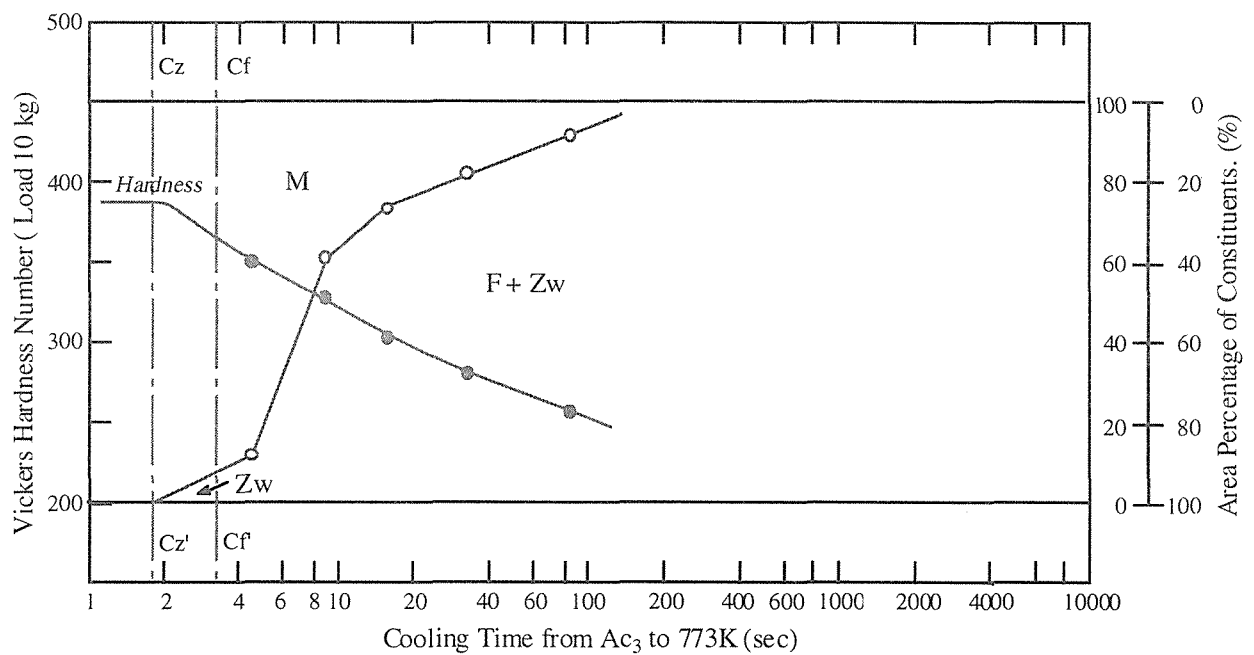
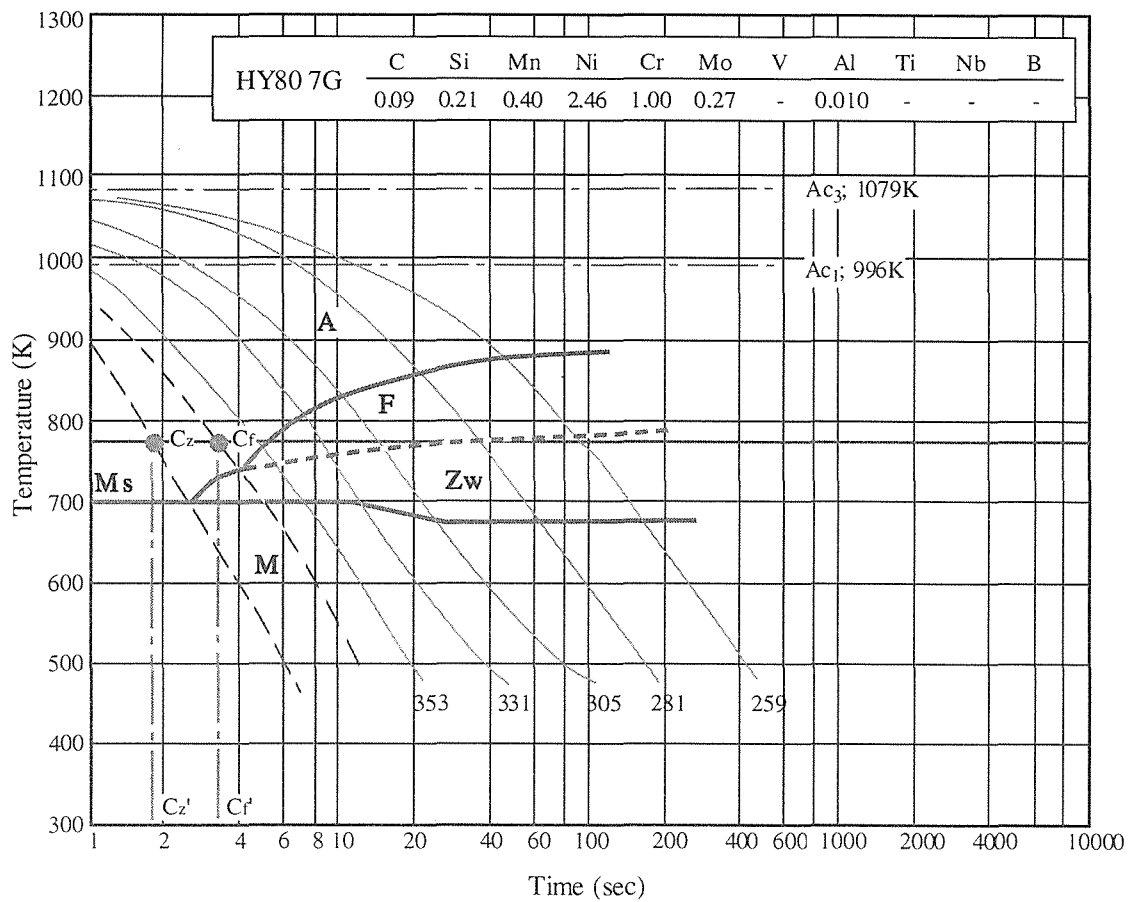
Time 15sec Hv 389

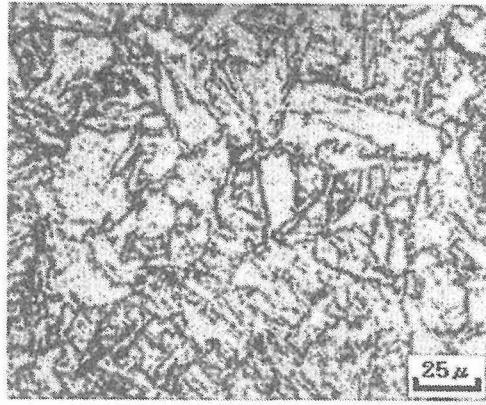


Time 37sec Hv 396

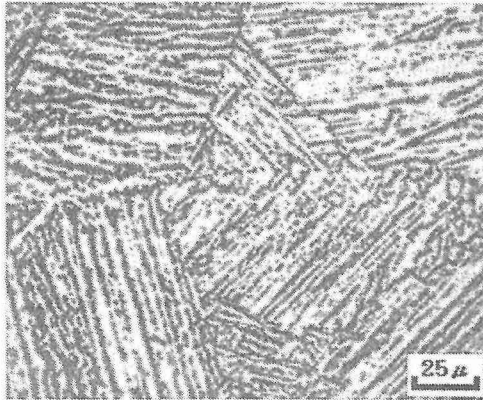


Time 90sec Hv 299

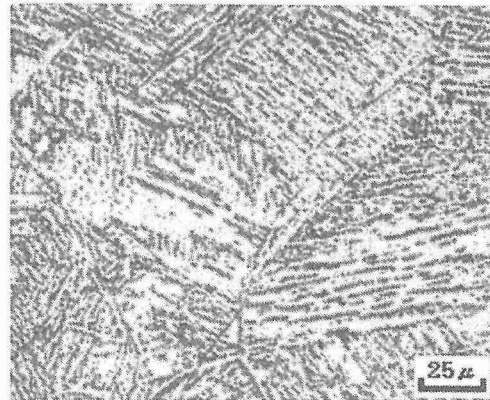




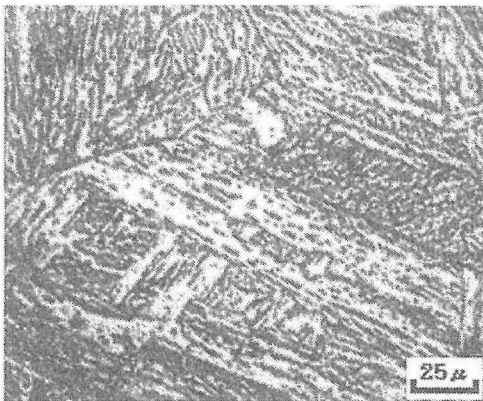
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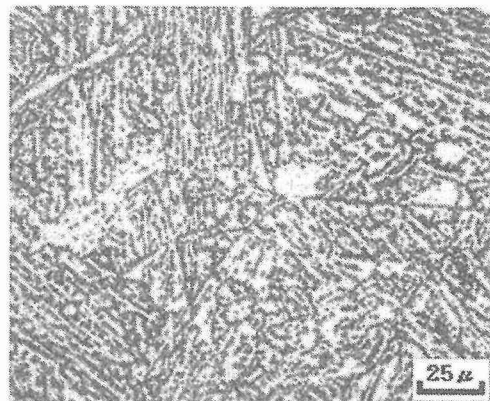
Time 4.8sec Hv 353



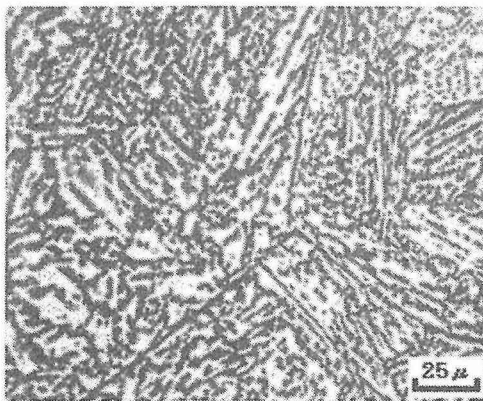
Time 8.6sec Hv 331



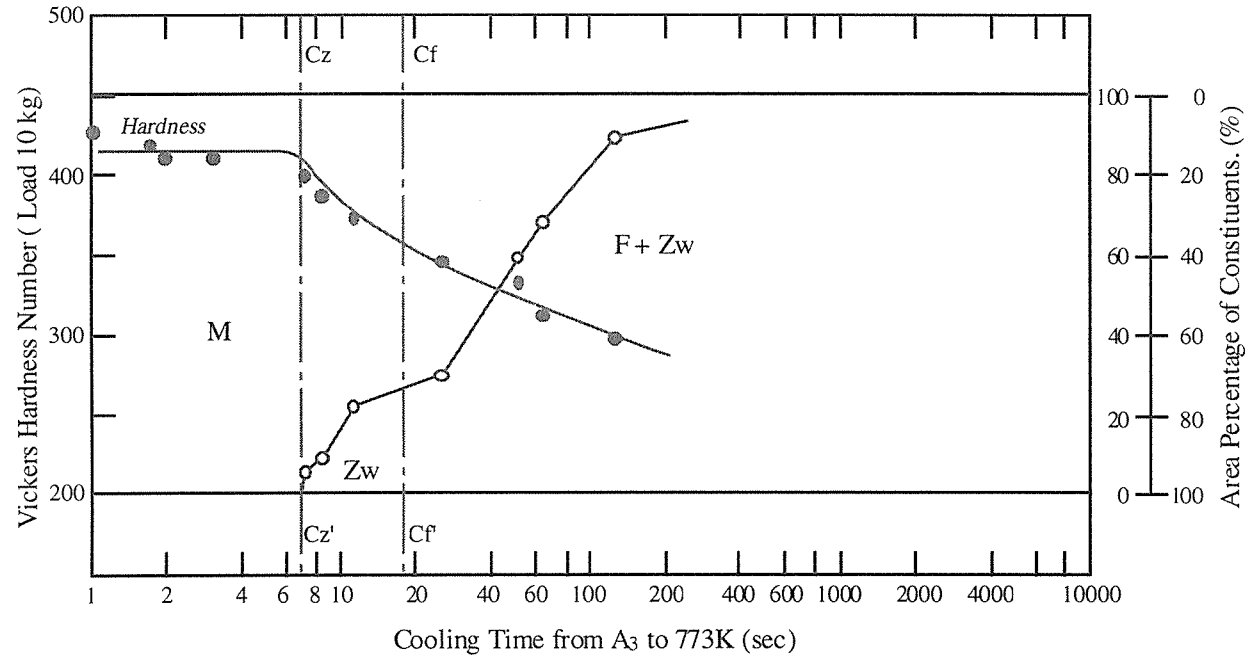
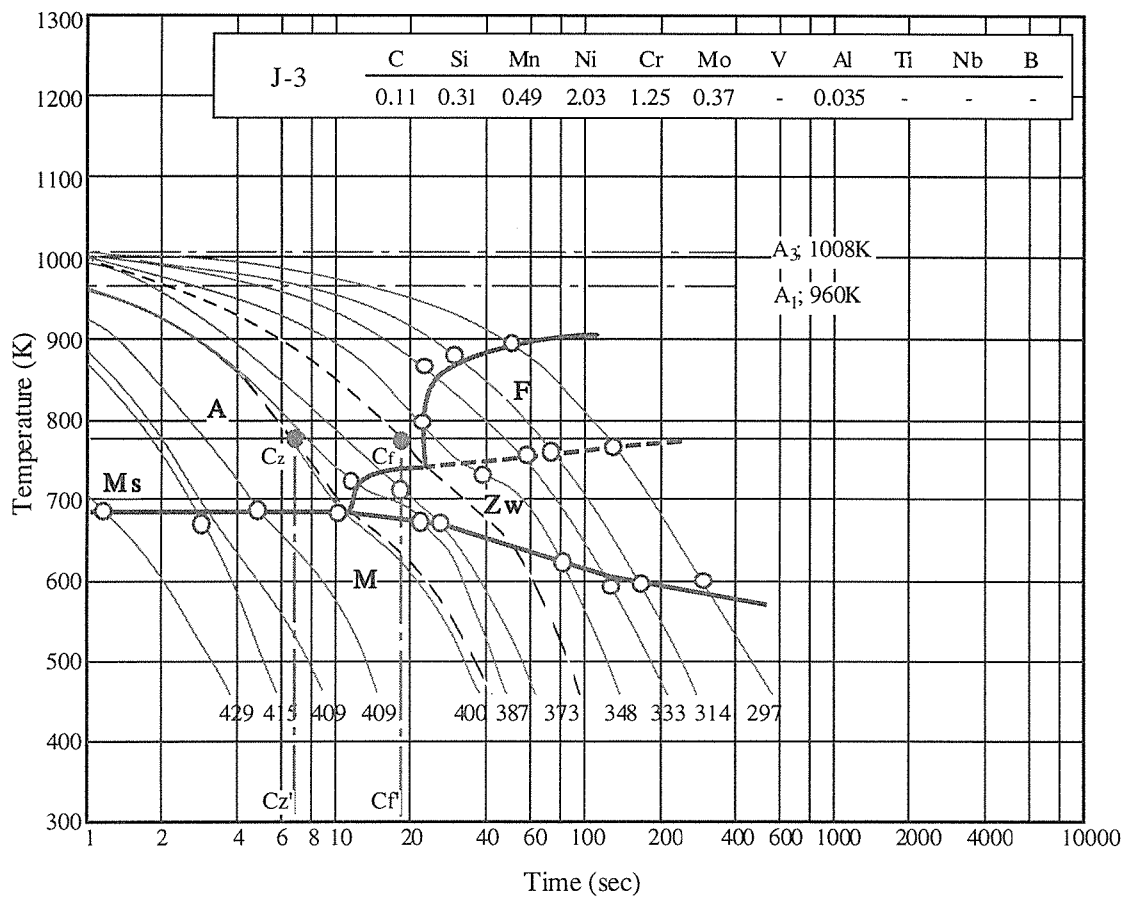
Time 15sec Hv 305

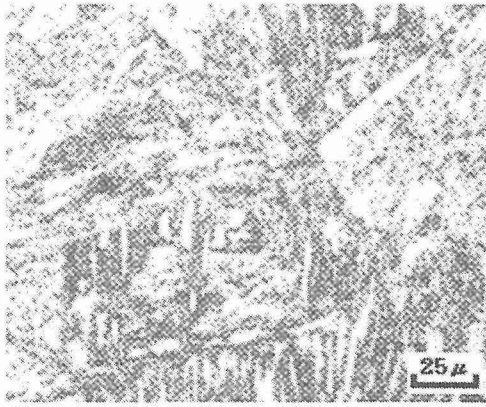


Time 36sec Hv 281

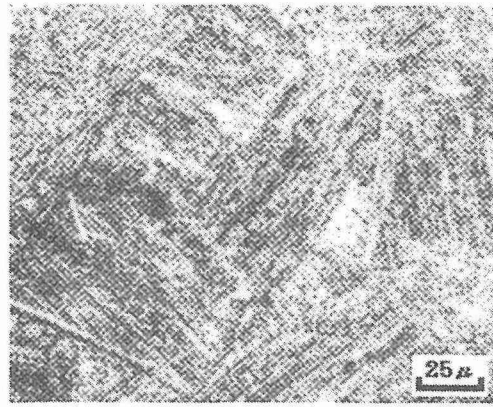


Time 90sec Hv 259

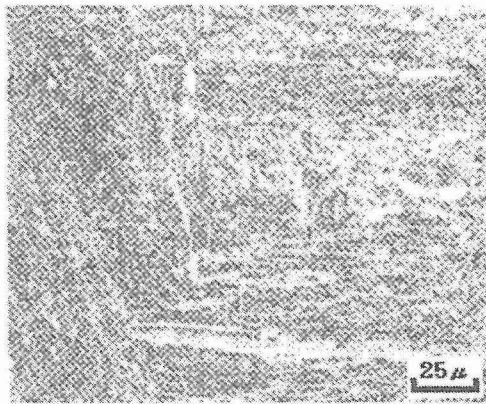




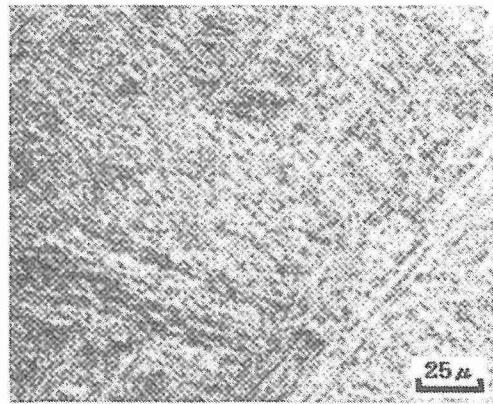
Time 3sec Hv 409



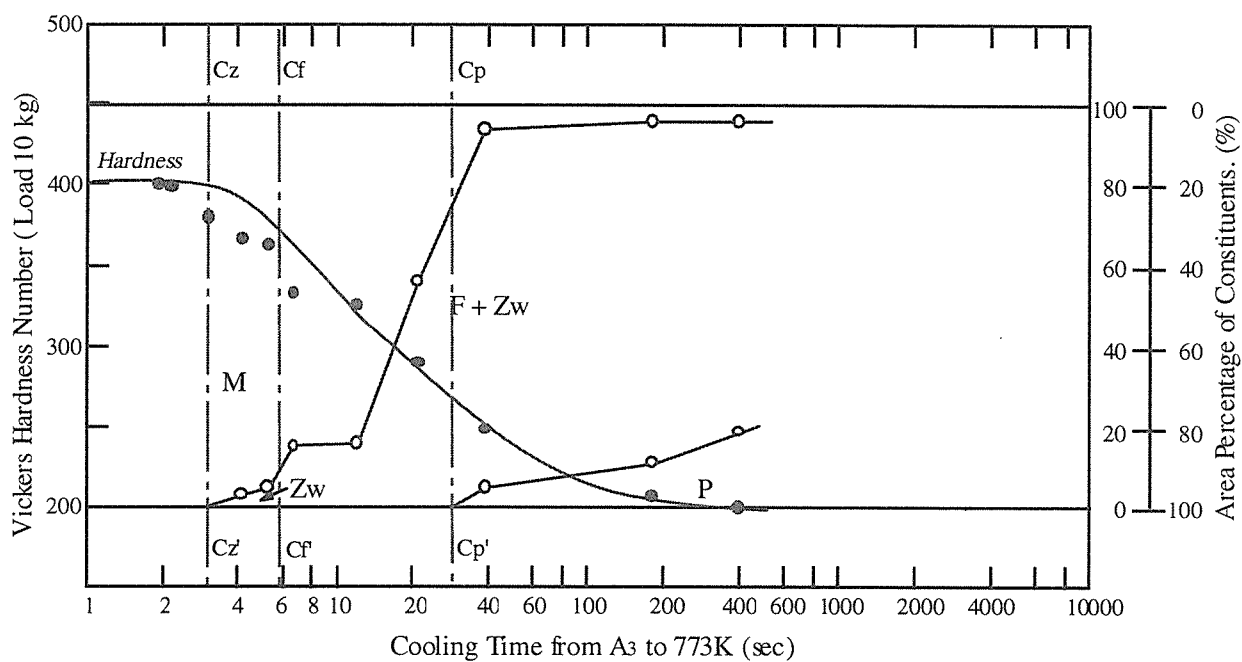
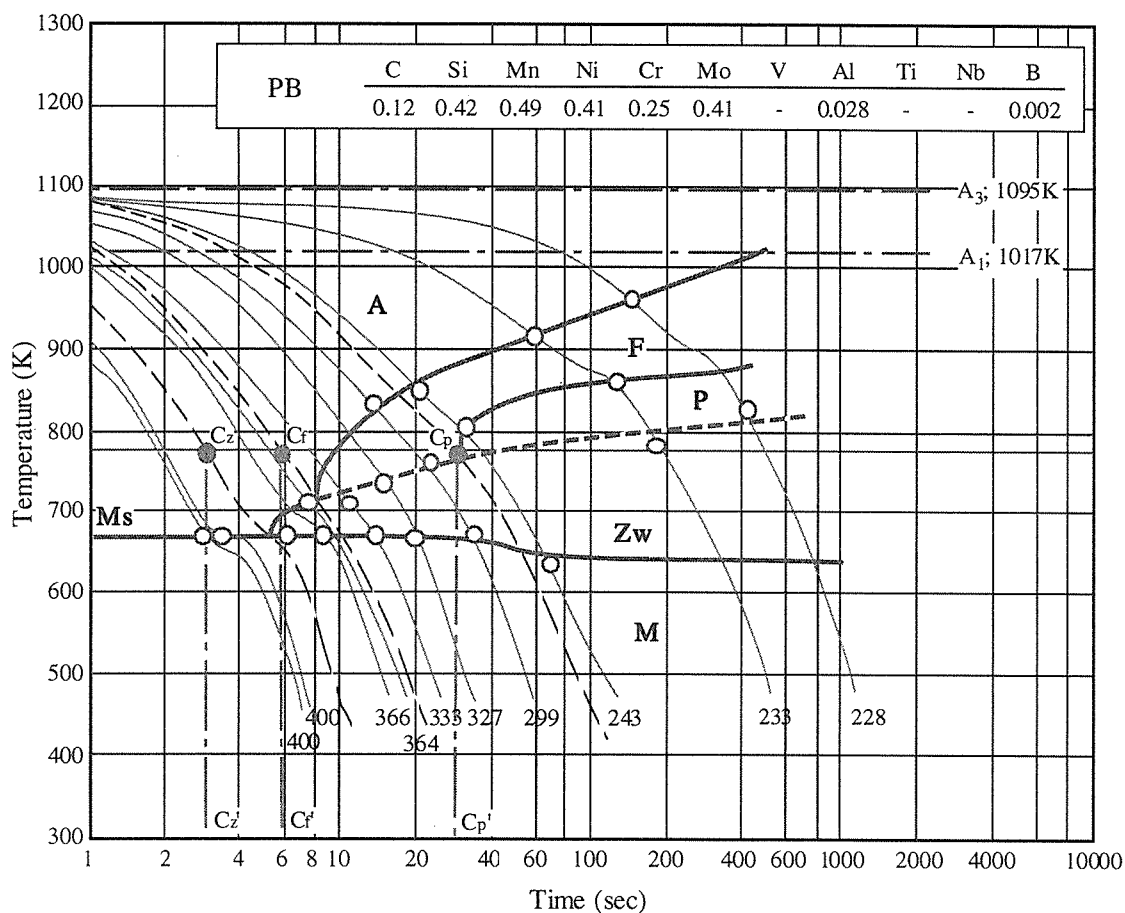
Time 6.3sec Hv 400

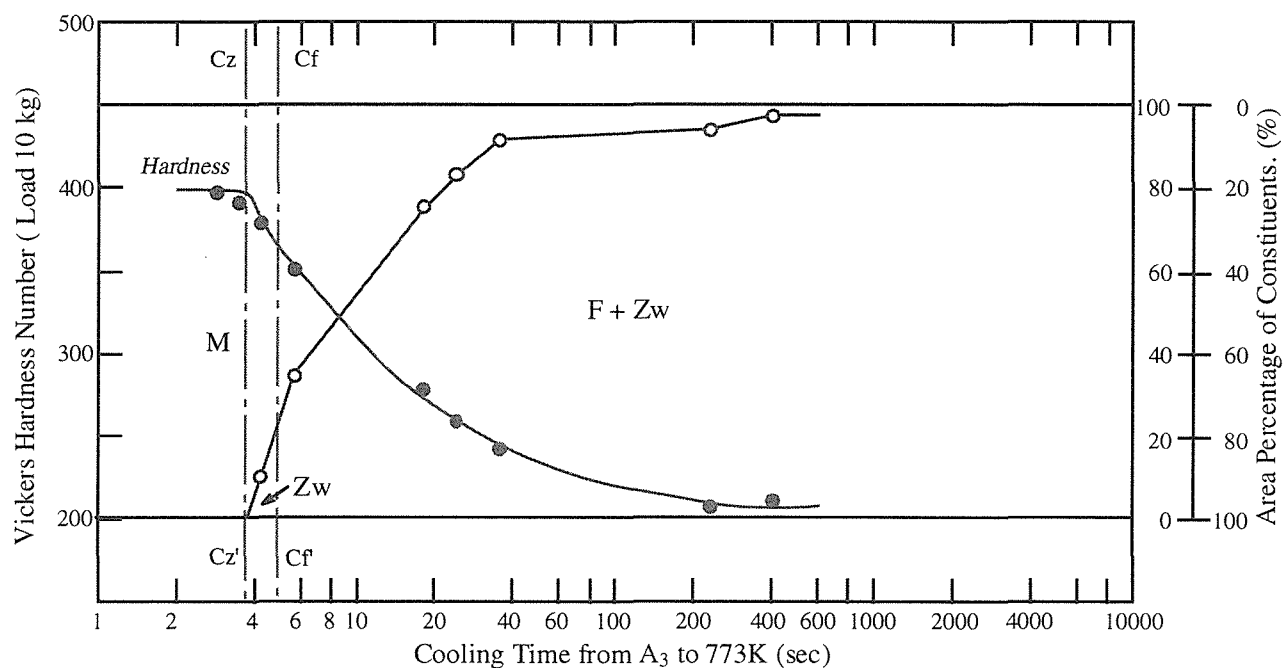
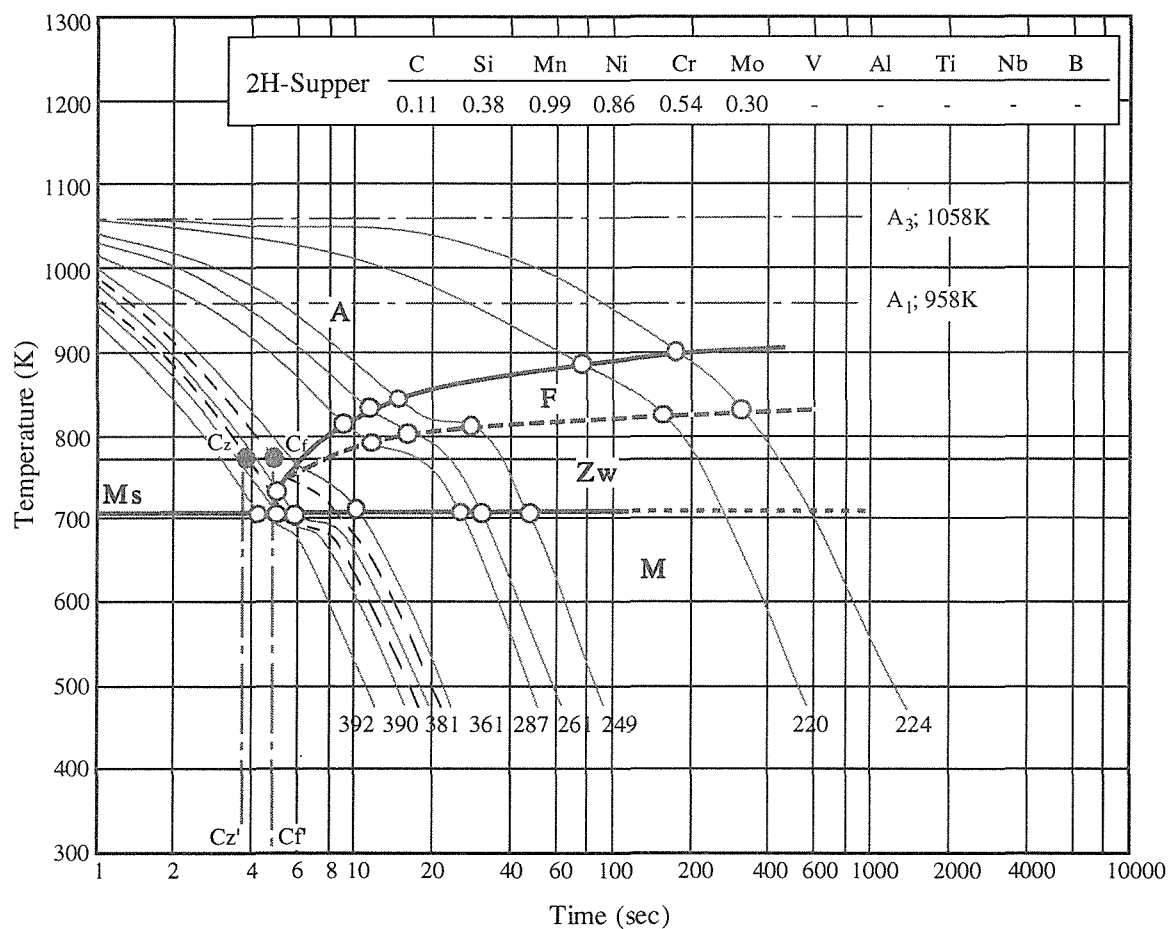


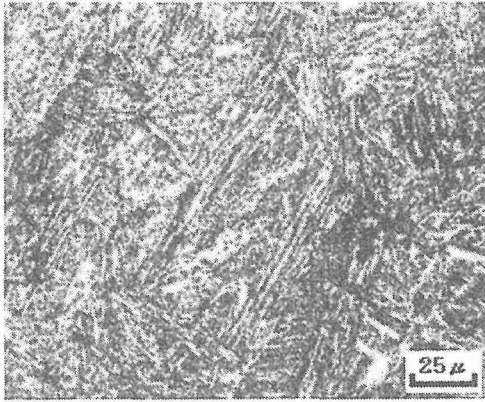
Time 12sec Hv 373



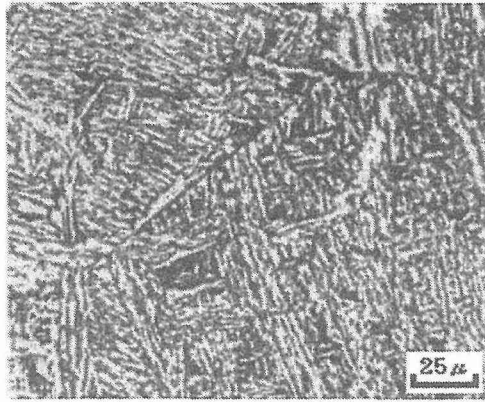
Time 130sec Hv 297



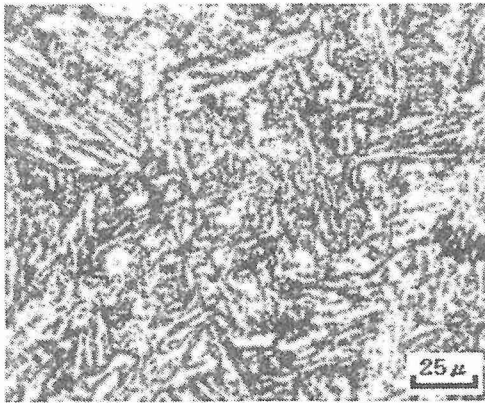




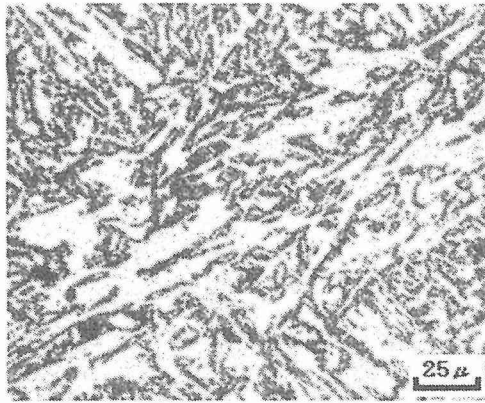
Time 4.1sec Hv 381



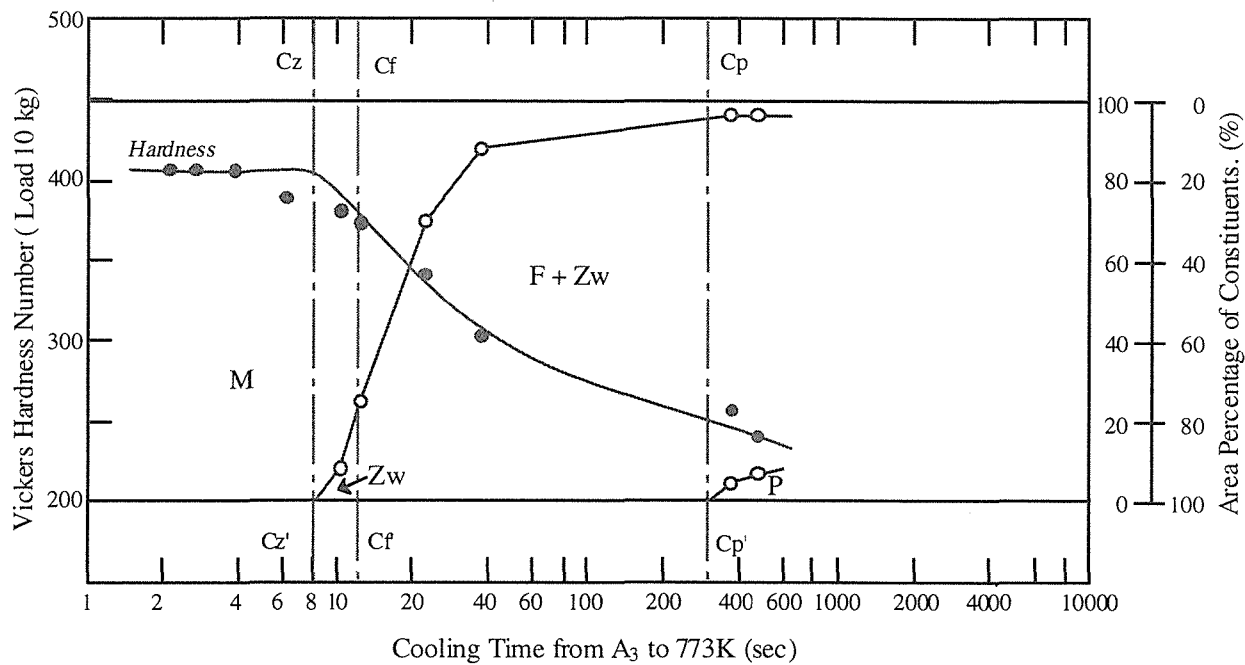
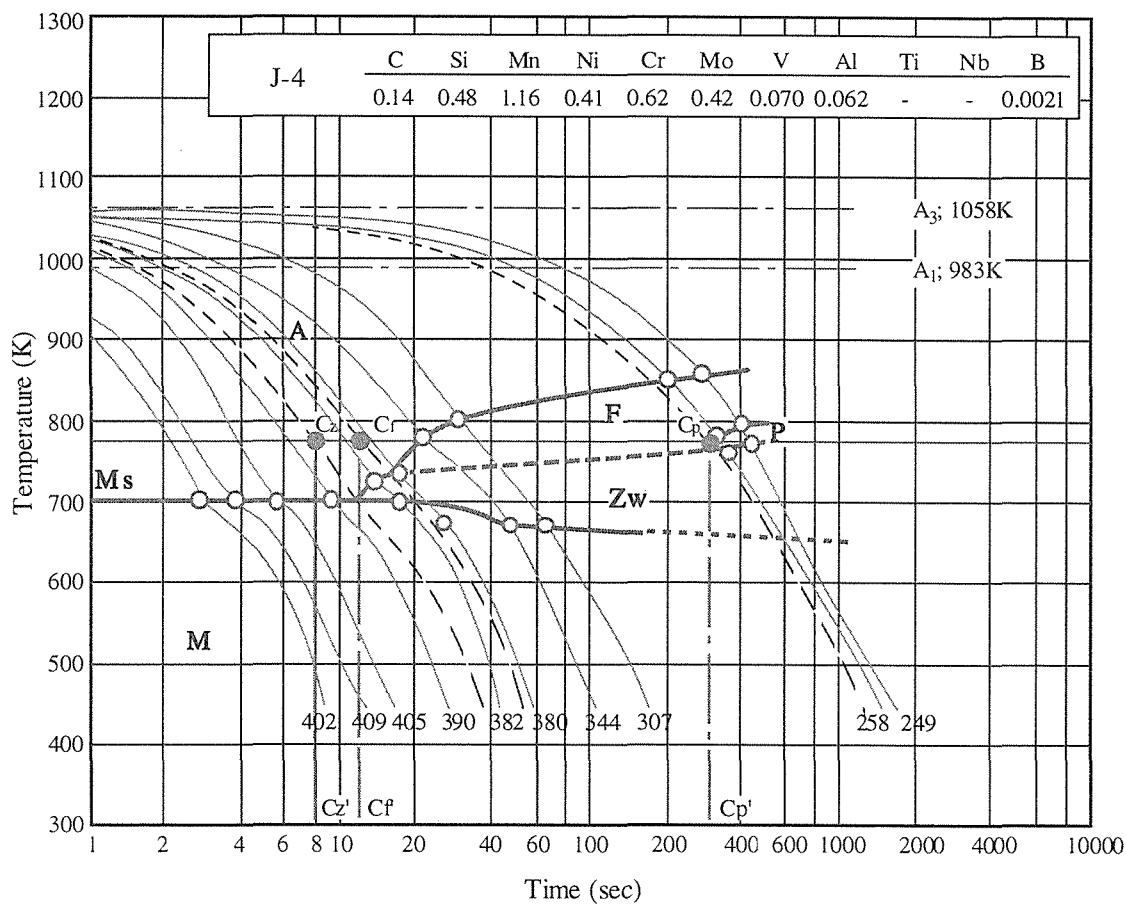
Time 17sec Hv 287

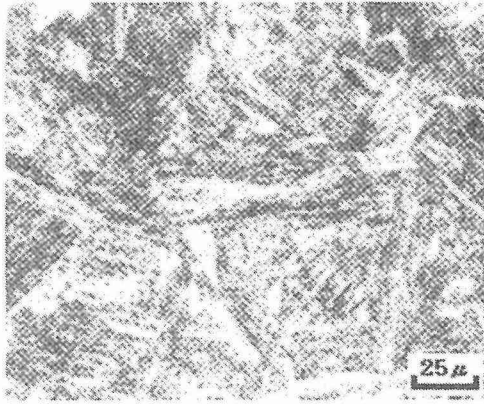


Time 38sec Hv 249

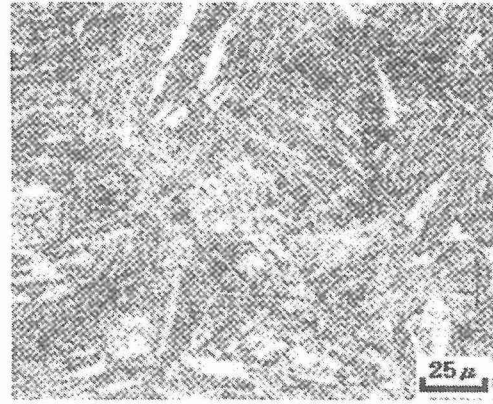


Time 400sec Hv 224

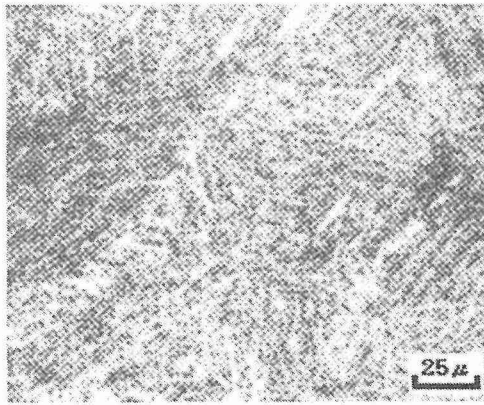




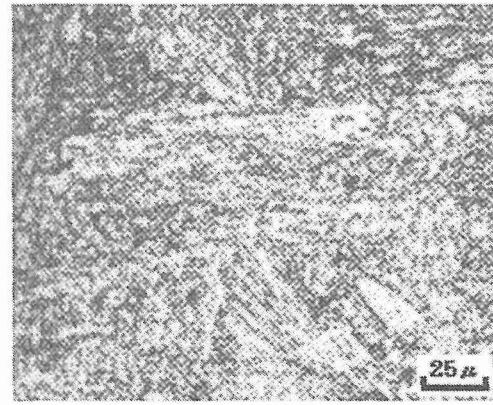
Time 2.8sec Hv 409



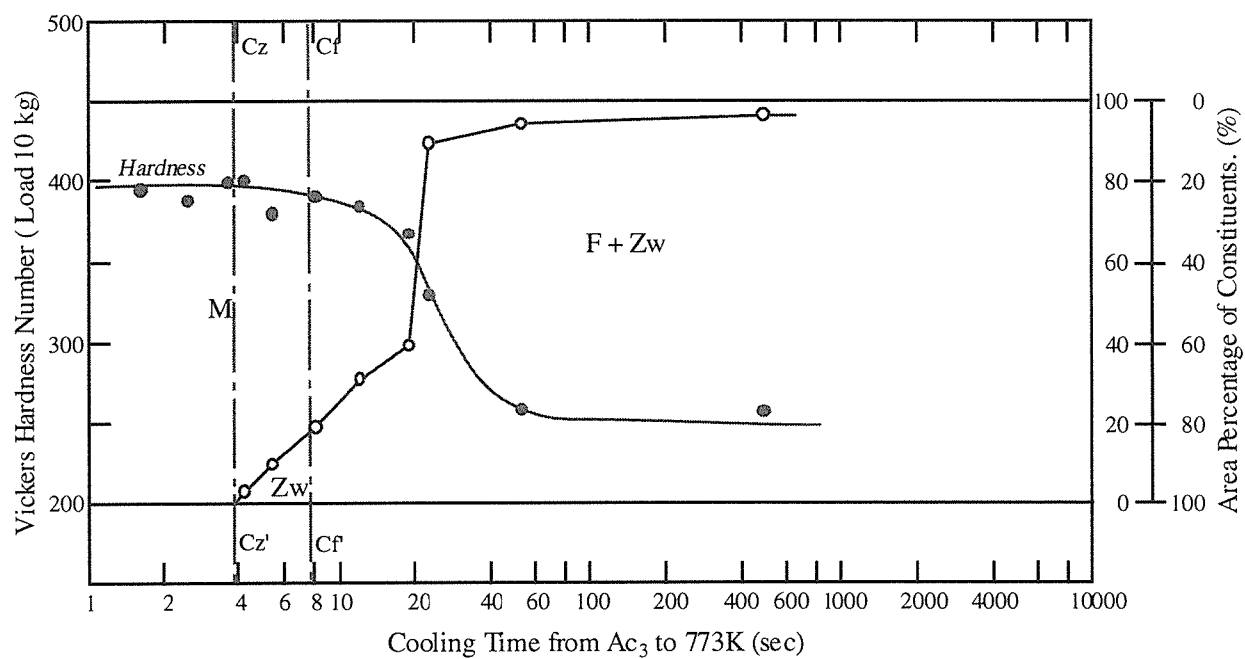
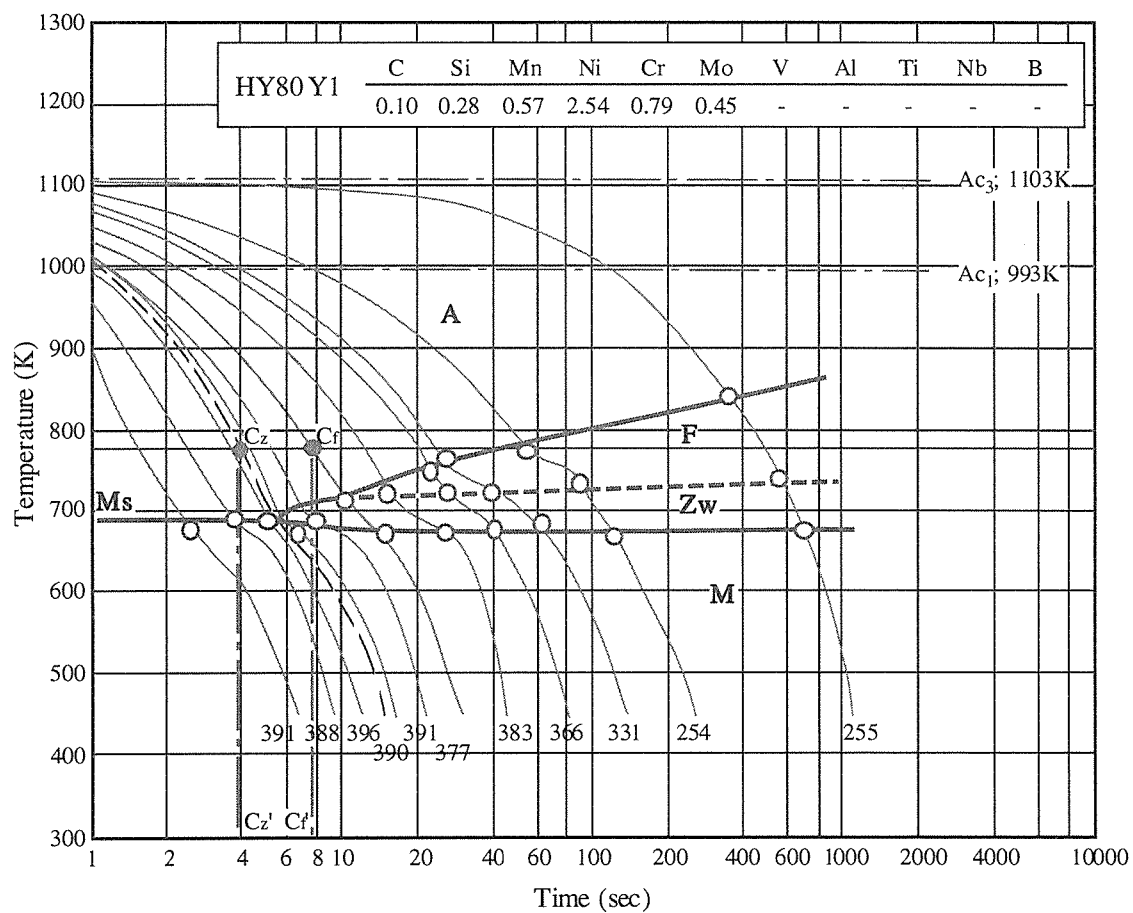
Time 11sec Hv 382

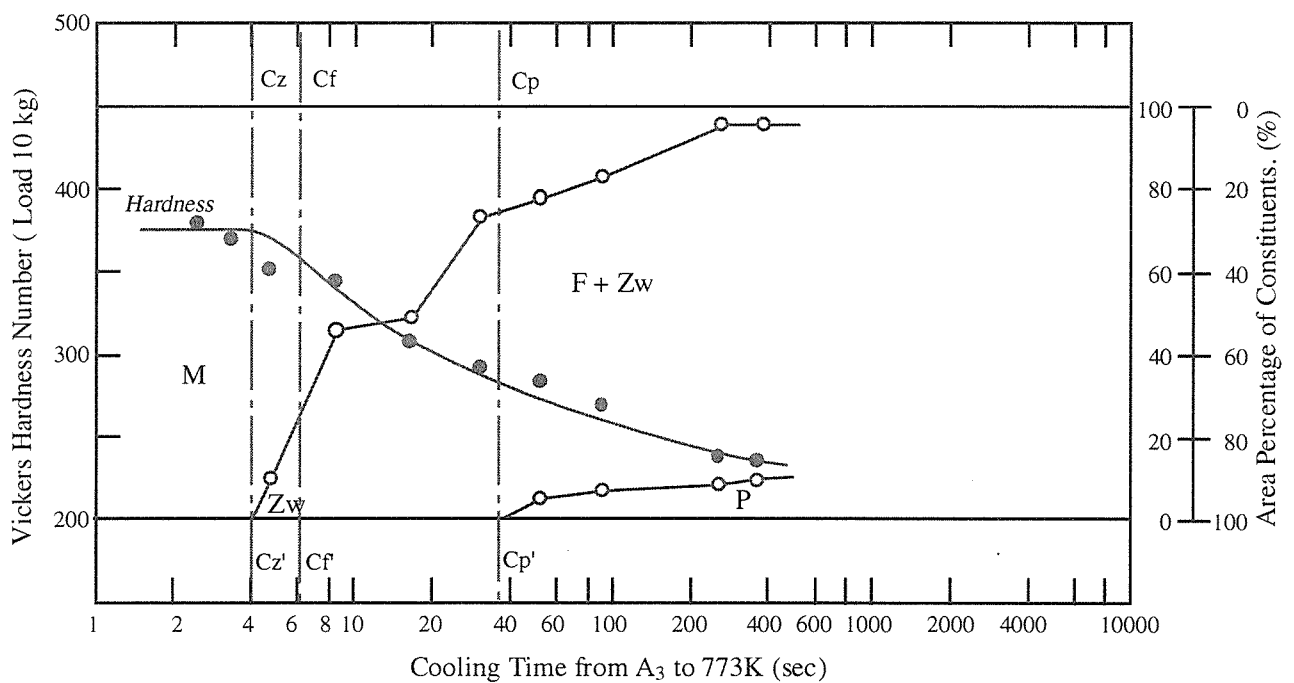
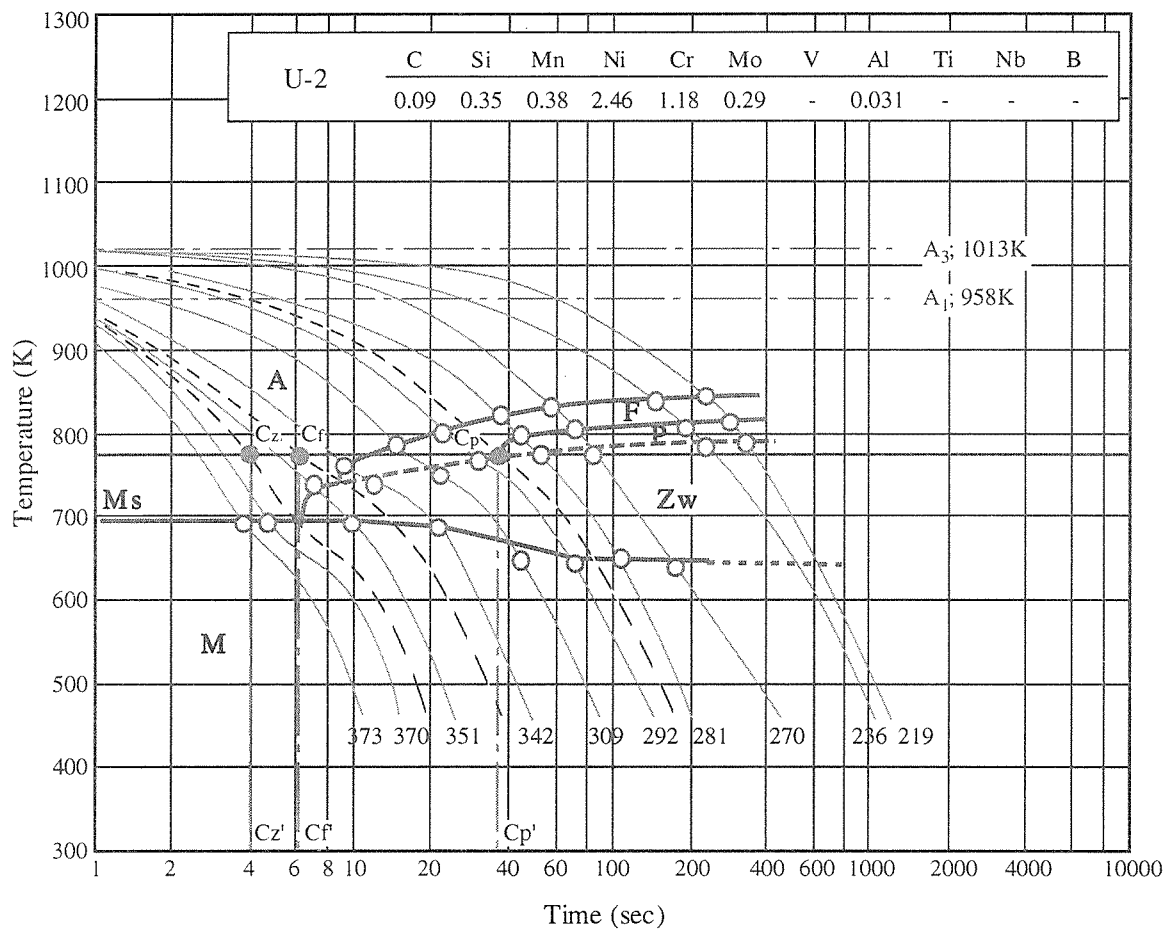


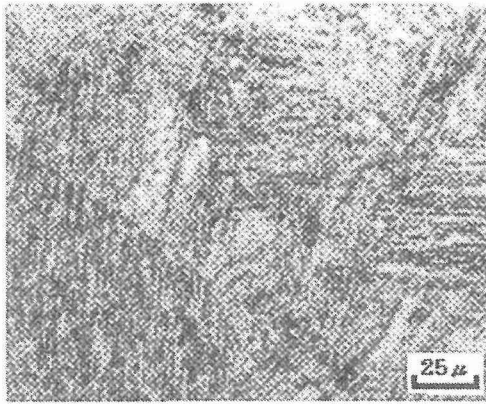
Time 14sec Hv 380



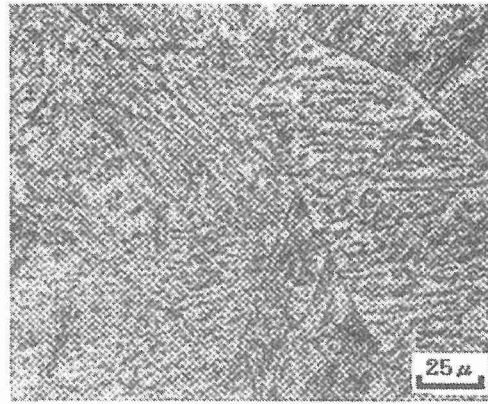
Time 450sec Hv 249



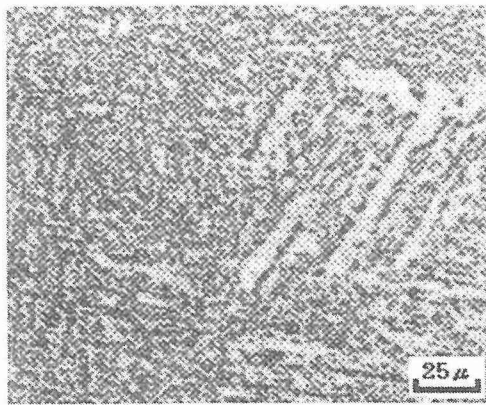




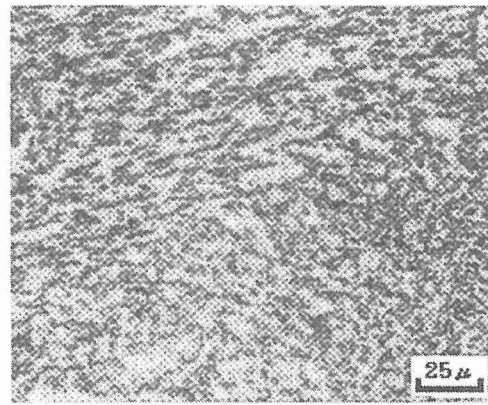
Time 2.8sec Hv 373



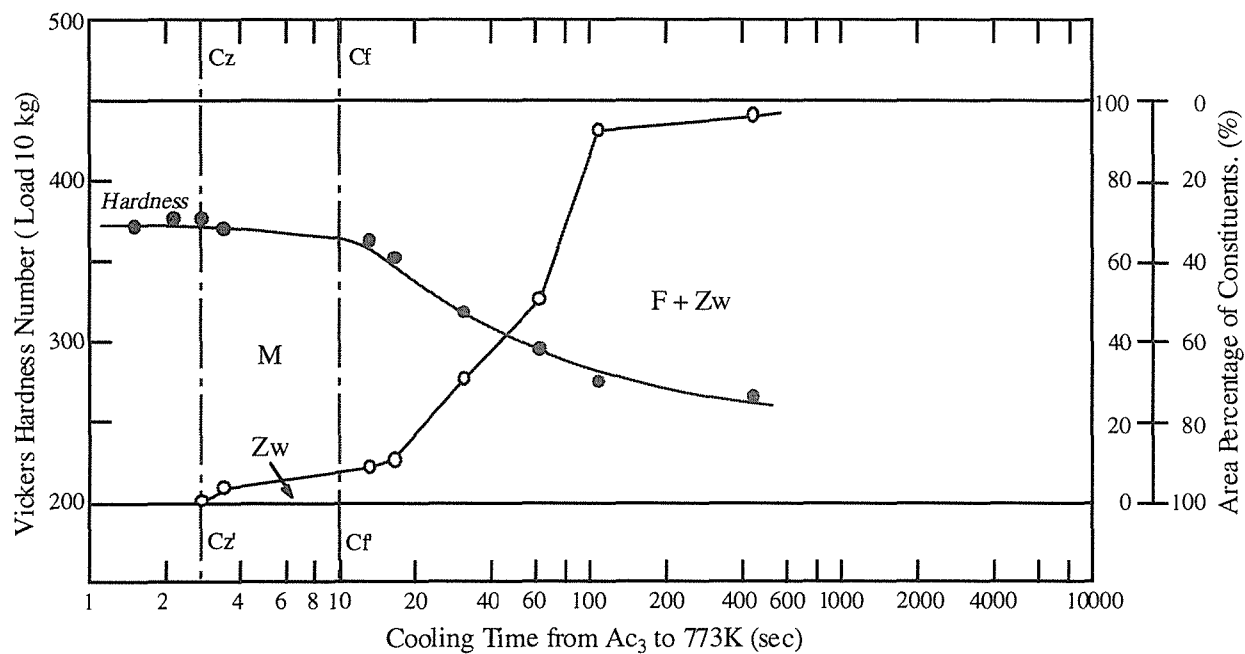
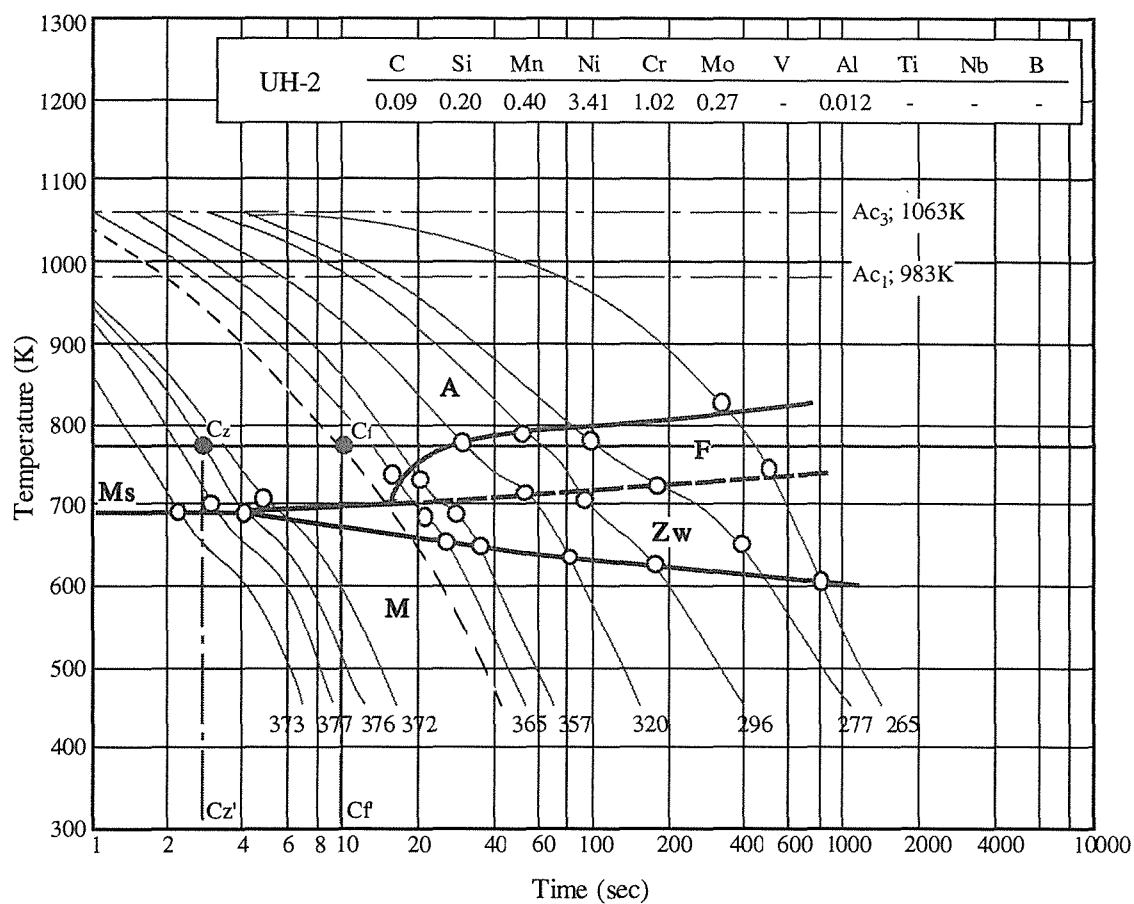
Time 17sec Hv 309



Time 90sec Hv 270

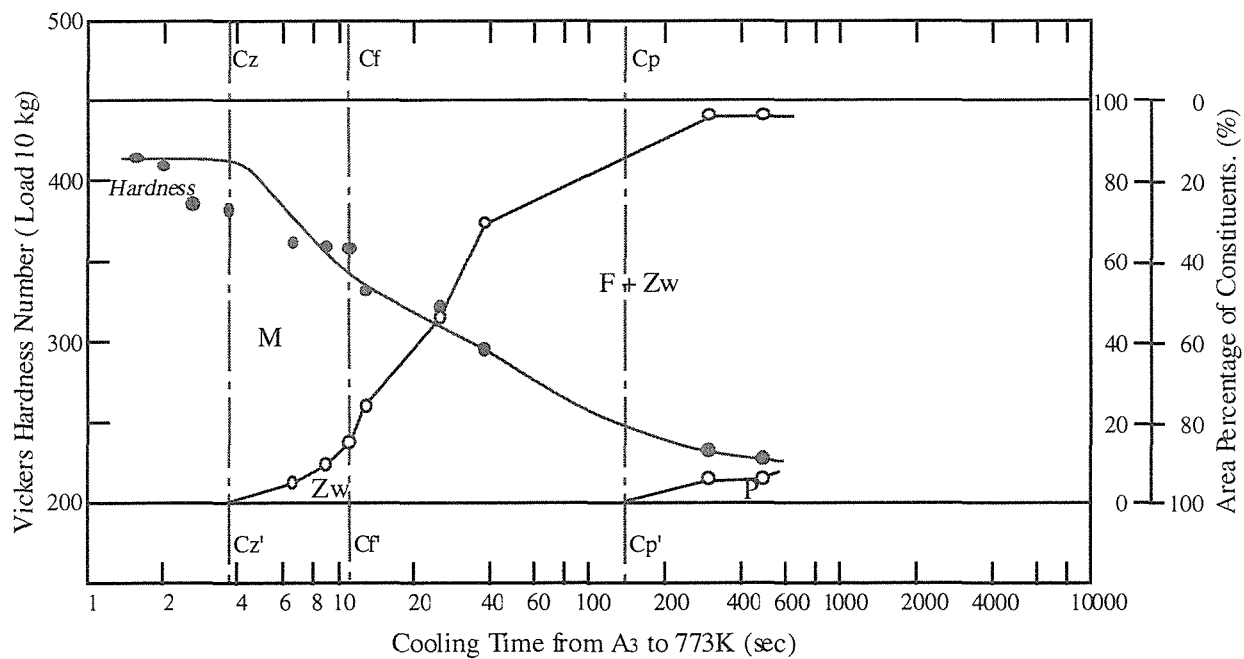
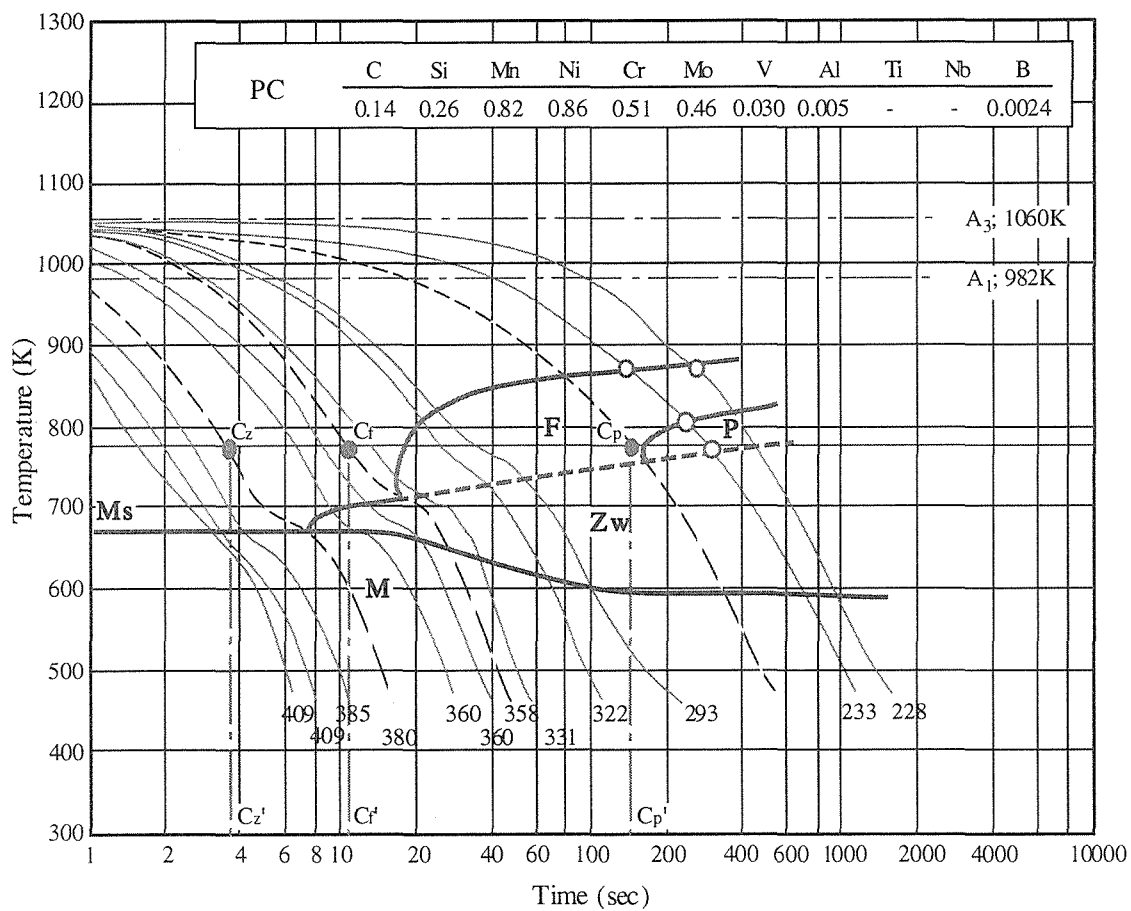


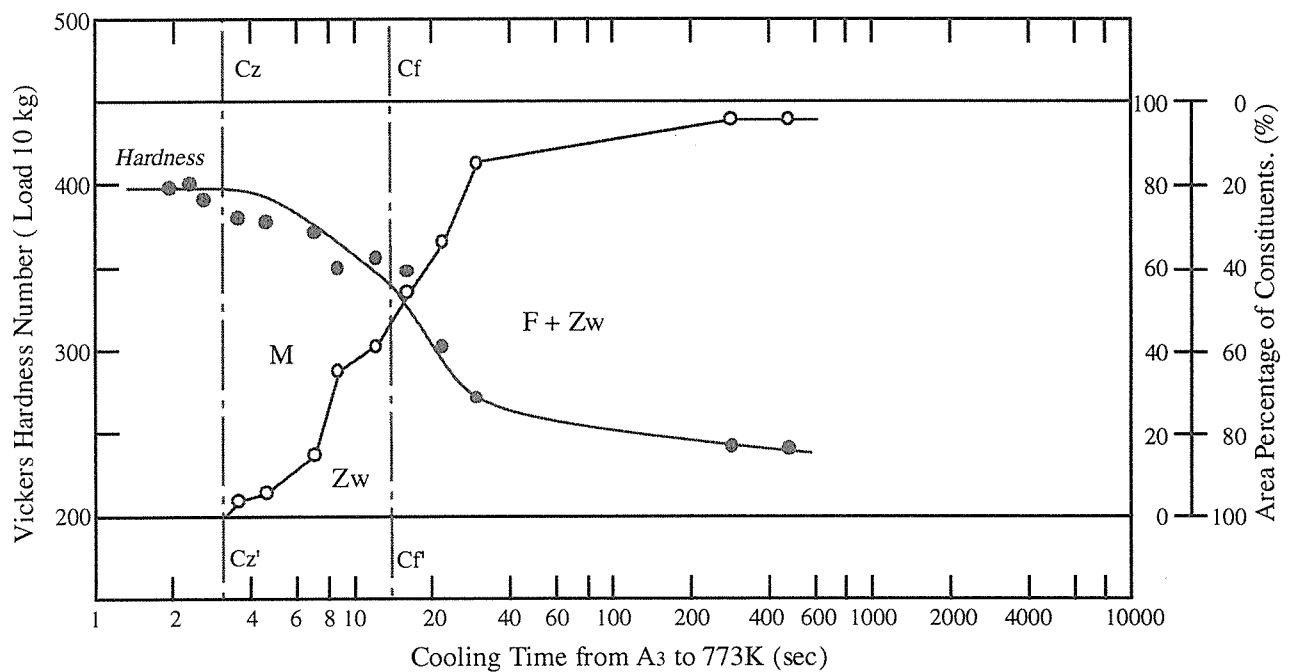
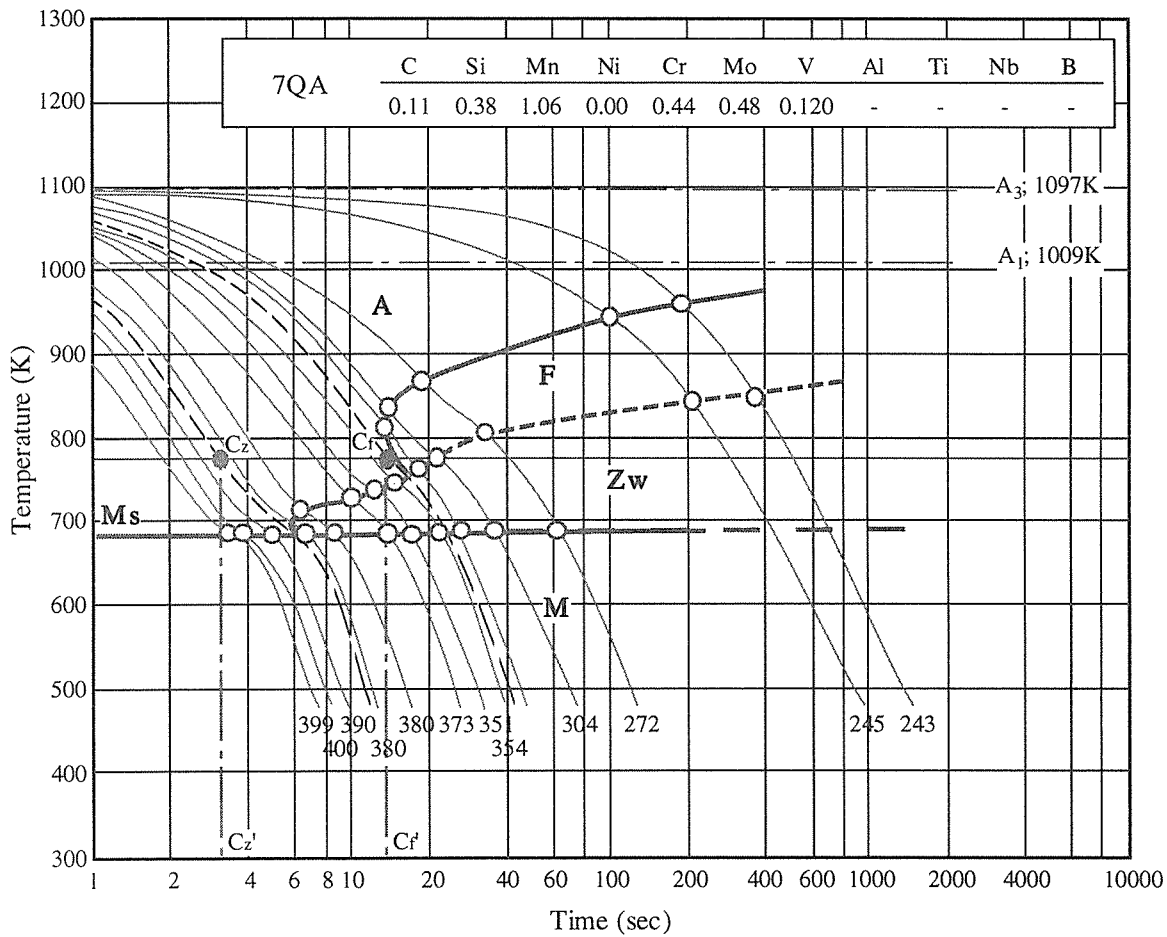
Time 360sec Hv 219

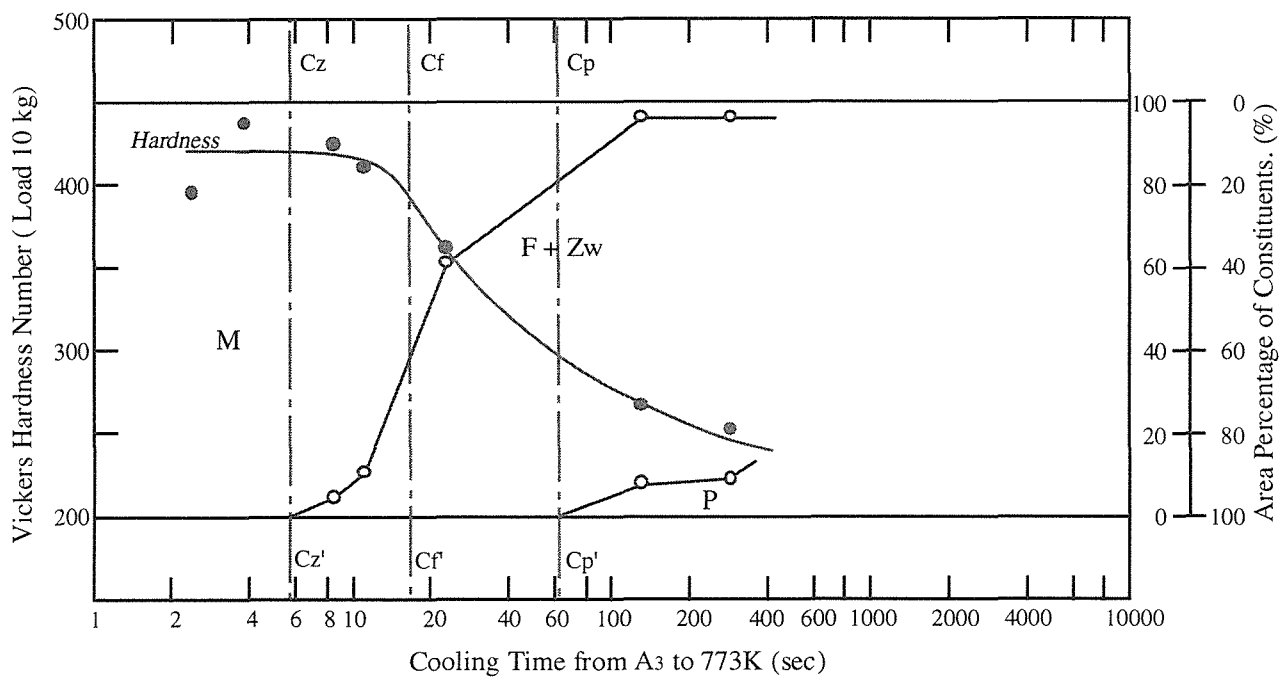
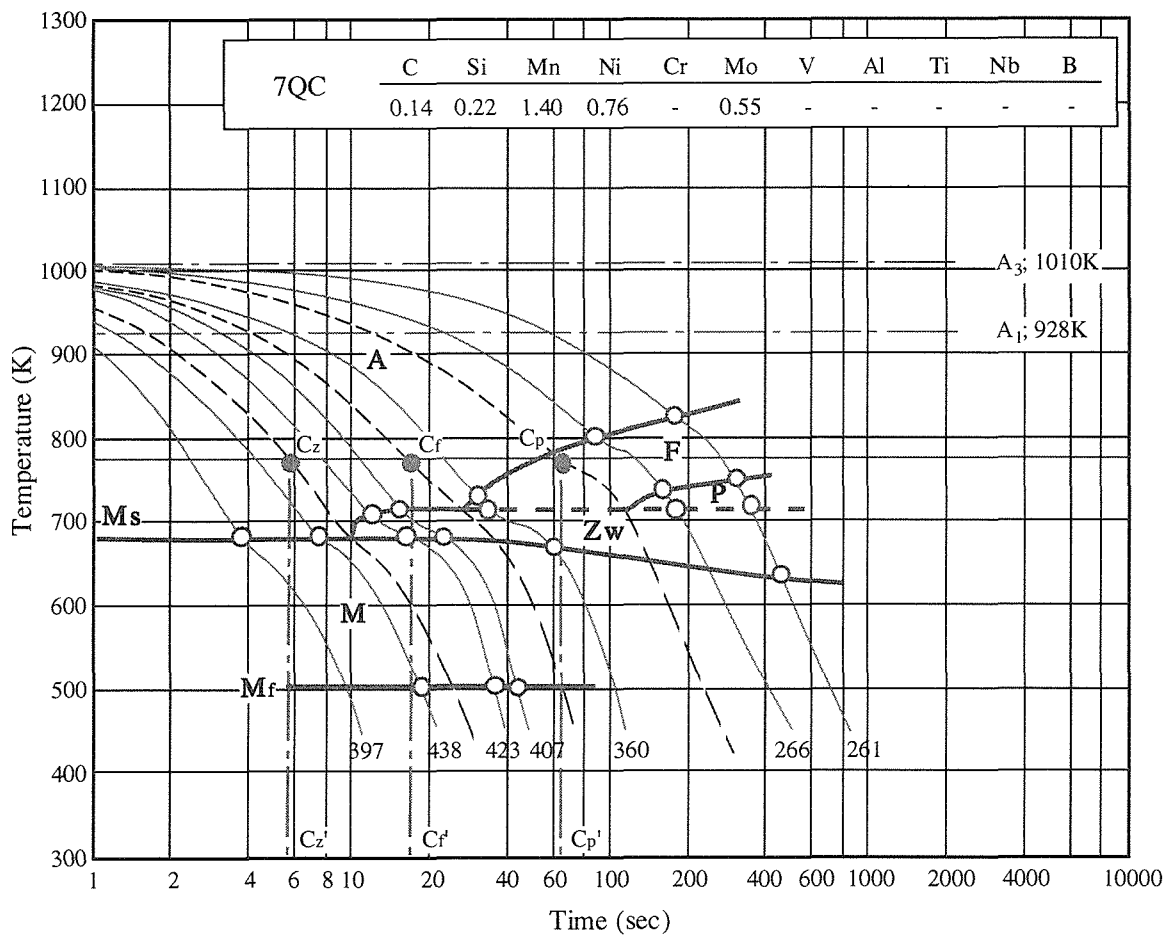


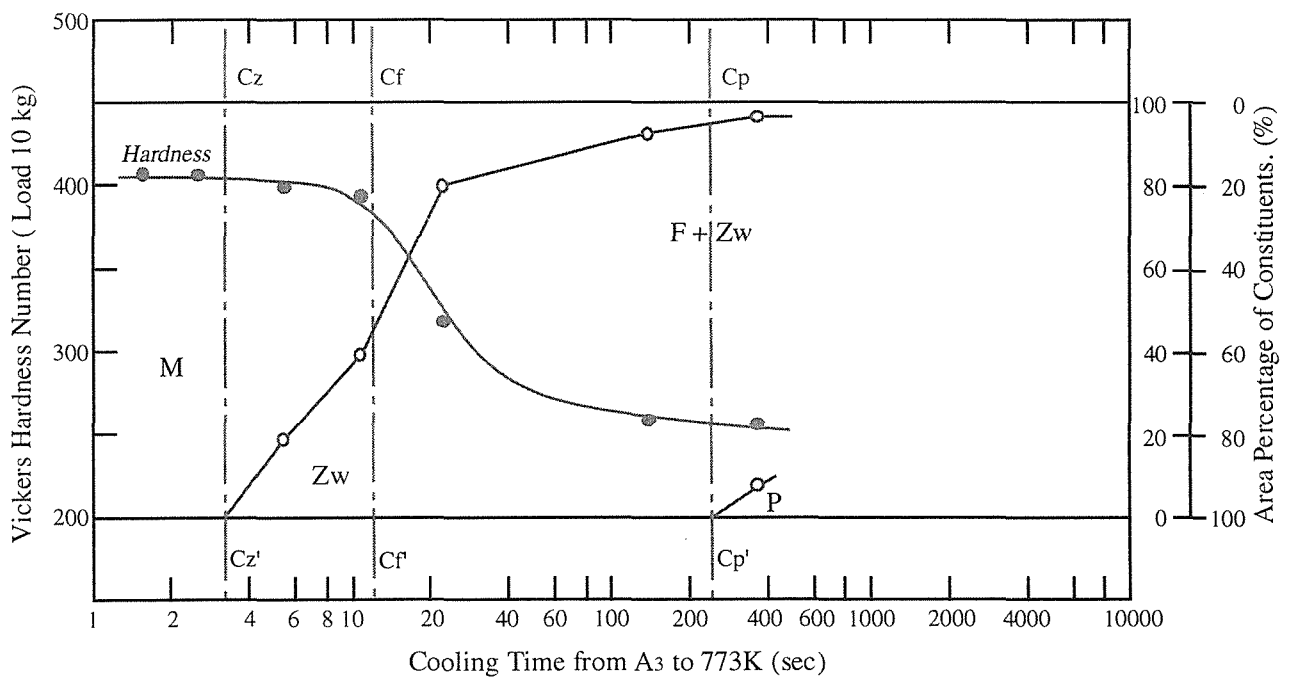
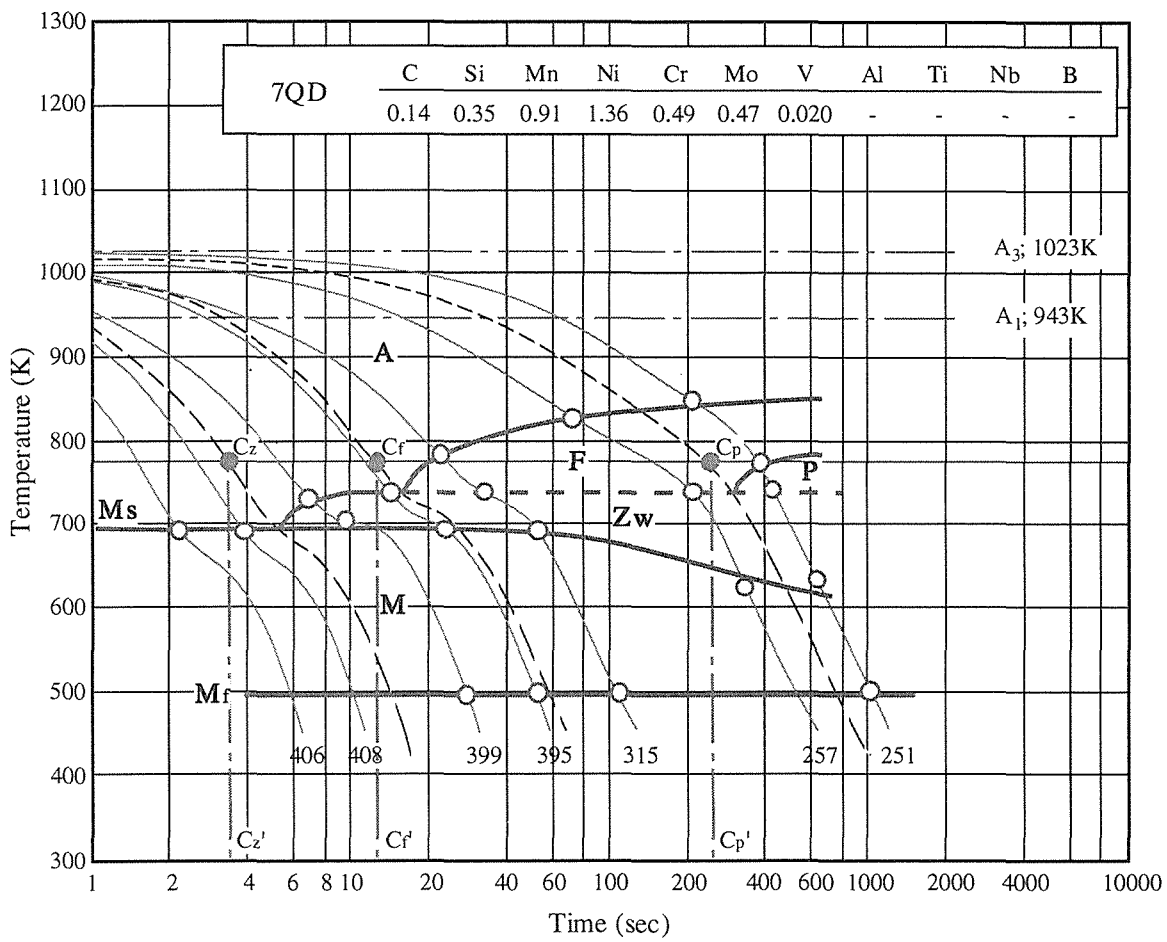
HT-80 kg/mm² Class

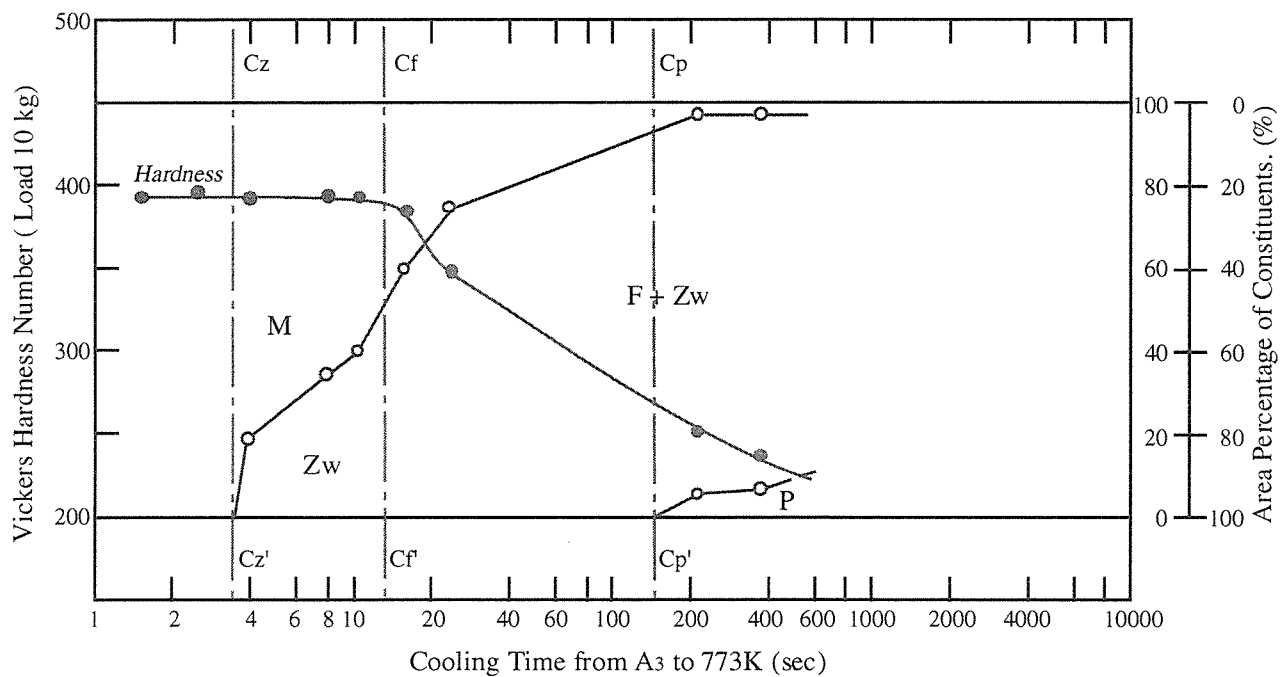
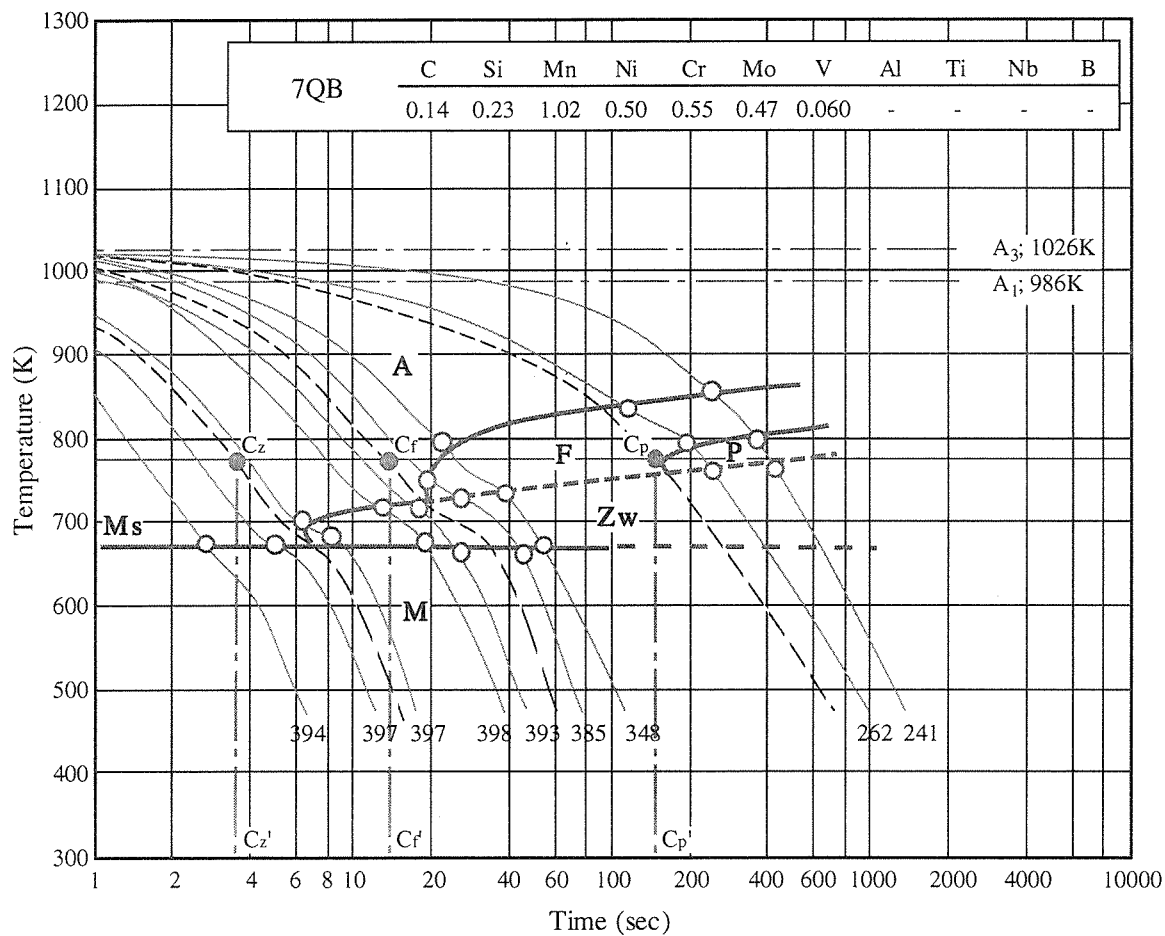
Steel	Chemical Composition (mass%)														Page	Ref.
	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V	Ti	Nb	Al	B		
PC	0.14	0.26	0.82	-	-	0.86	0.51	-	0.46	0.03	-	-	0.005	0.0024	242	P
7QA	0.11	0.38	1.06	-	-	-	0.44	-	0.48	0.12	-	-	-	-	243	P
7QC	0.14	0.22	1.4	-	-	0.76	-	-	0.55	-	-	-	-	-	244	P
7QD	0.14	0.35	0.91	-	-	1.36	0.49	-	0.47	0.02	-	-	-	-	245	P
7QB	0.14	0.23	1.02	-	-	0.5	0.55	-	0.47	0.06	-	-	-	-	246	P
J-2	0.14	0.16	0.75	0.014	0.012	1.91	0.63	0.15	0.47	-	-	-	0.01	-	248	11
HY80 K2	0.11	0.28	0.97	-	-	3.47	1.5	-	0.38	-	-	-	-	-	250	P
U-1	0.15	0.27	0.4	0.019	0.006	2.49	1.19	0.16	0.26	-	-	-	-	-	252	11
HY80 K4	0.09	0.29	0.53	-	-	3.53	0.9	-	0.36	-	-	-	-	-	254	P
HY80 Y4	0.11	0.25	0.62	-	-	3.4	1.43	-	0.42	-	-	-	-	-	255	P
HY80 NER38	0.12	0.31	0.53	-	-	3.55	0.52	-	0.3	-	-	-	-	-	256	P
UH-1	0.13	0.55	0.54	0.012	0.009	2.54	1.23	-	0.5	-	-	-	-	-	257	P
HY80 N4	0.14	0.35	0.52	-	-	3.06	0.95	-	0.31	0.06	-	-	-	-	258	P
HY80 K3	0.11	0.32	0.46	-	-	3.38	0.98	-	0.29	-	-	-	-	-	259	P
HY80 K1	0.13	0.32	0.45	-	-	2.51	1.59	-	0.44	-	-	-	-	-	260	P
HY80 NS63	0.08	0.25	0.49	-	-	3.48	0.62	-	0.3	-	-	-	-	-	261	P
HY80 NB	0.1	0.23	0.6	-	-	2.65	0.47	-	0.45	-	-	-	-	-	262	P
K2H-U	0.12	0.34	0.8	-	-	1.2	0.44	-	0.32	-	-	-	-	-	264	9
HY80 N2	0.1	0.18	0.65	-	-	3.58	0.35	-	0.44	-	-	-	0.005	-	266	P
HY80 N3	0.13	0.38	0.89	-	-	3.34	0.58	-	0.36	0.09	-	-	-	-	267	P
NRIM A-3	0.07	0.39	1.53	-	-	0.47	0.34	-	0.36	-	-	0.18	0.052	-	268	P
Welten80	0.14	0.26	0.83	0.012	0.008	1.06	0.61	0.26	0.45	0.05	-	-	-	0.02	270	9
NK-HT 80	0.12	0.26	0.86	-	-	0.85	0.53	-	0.54	0.05	-	-	0.018	0.0041	272	P
UH-4	0.19	0.35	0.55	0.011	0.008	2.68	1.21	-	0.54	-	-	-	0.017	-	273	P
WT-80C	0.14	0.17	0.91	-	-	-	0.99	-	0.48	-	-	-	-	0.003	274	P
WT-80	0.14	0.27	0.77	-	-	0.91	0.49	-	0.45	0.08	-	-	-	0.0028	275	P
2HB	0.15	0.35	1.03	-	-	0.8	0.38	-	0.44	-	-	-	-	-	276	P

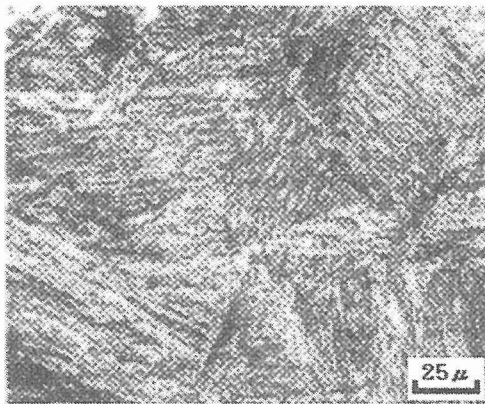




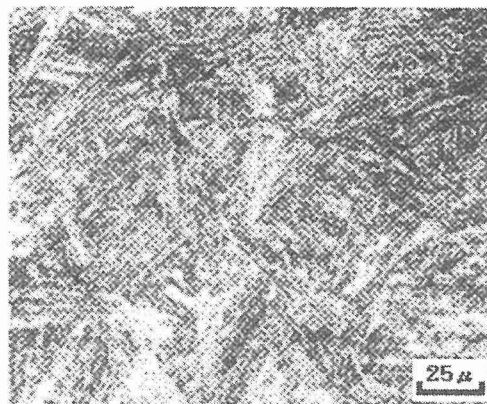




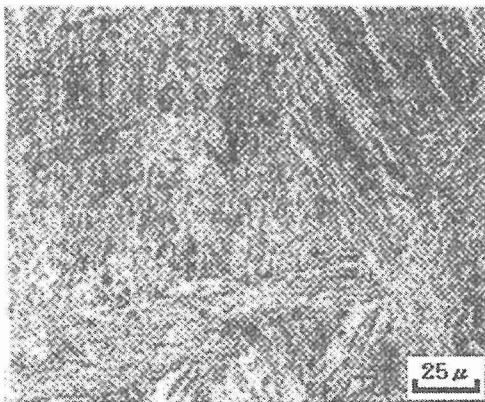




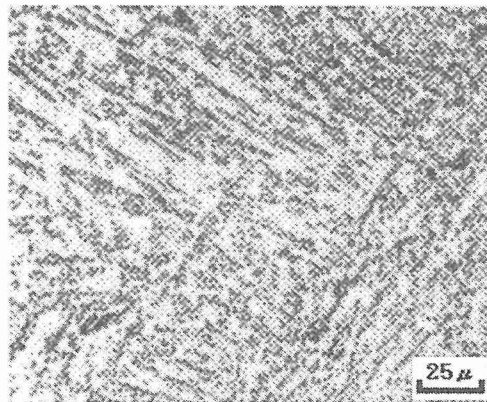
Time 1.9sec Hv 394



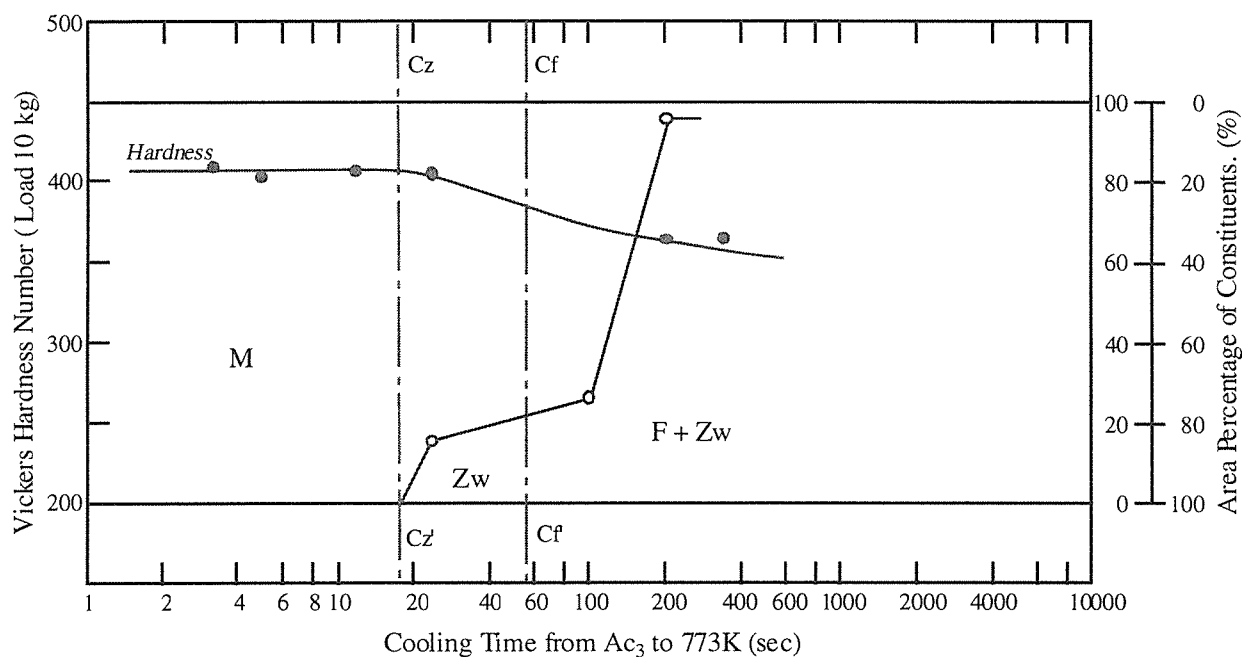
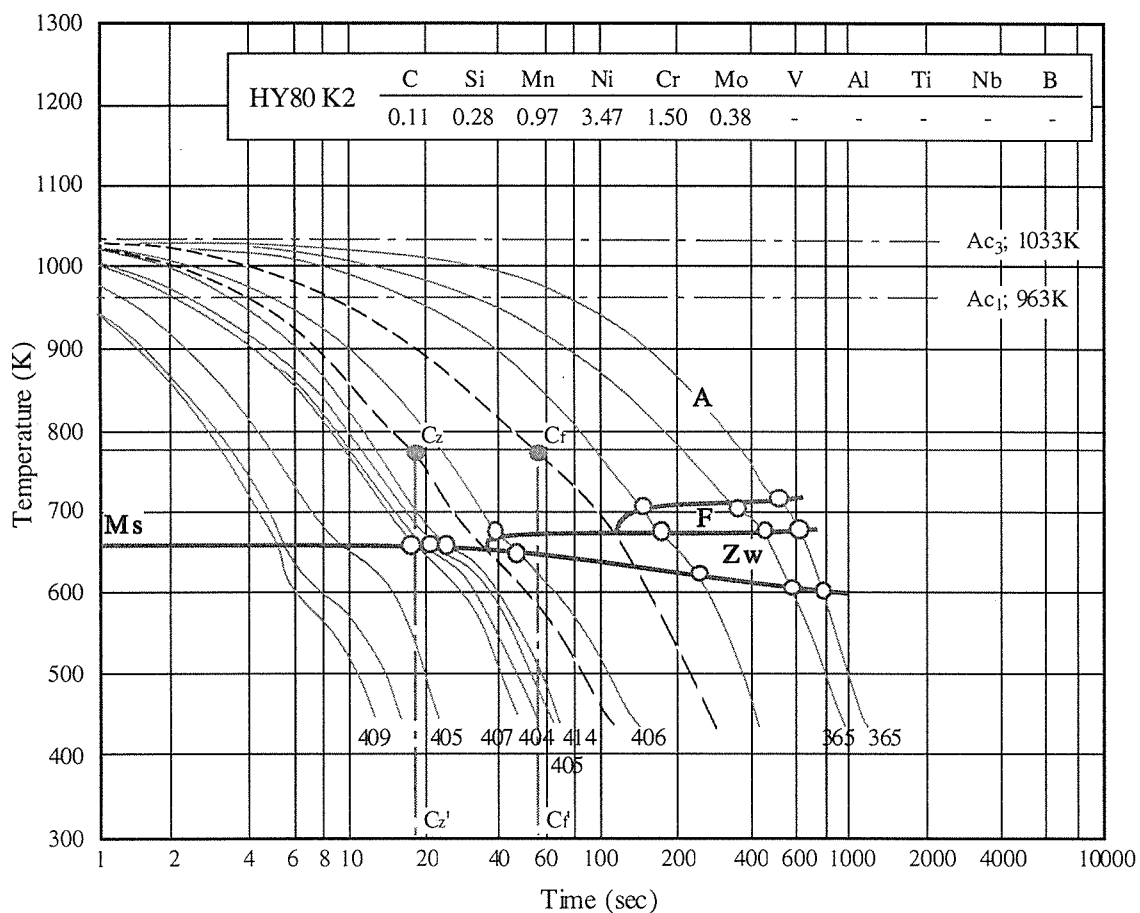
Time 15sec Hv 318

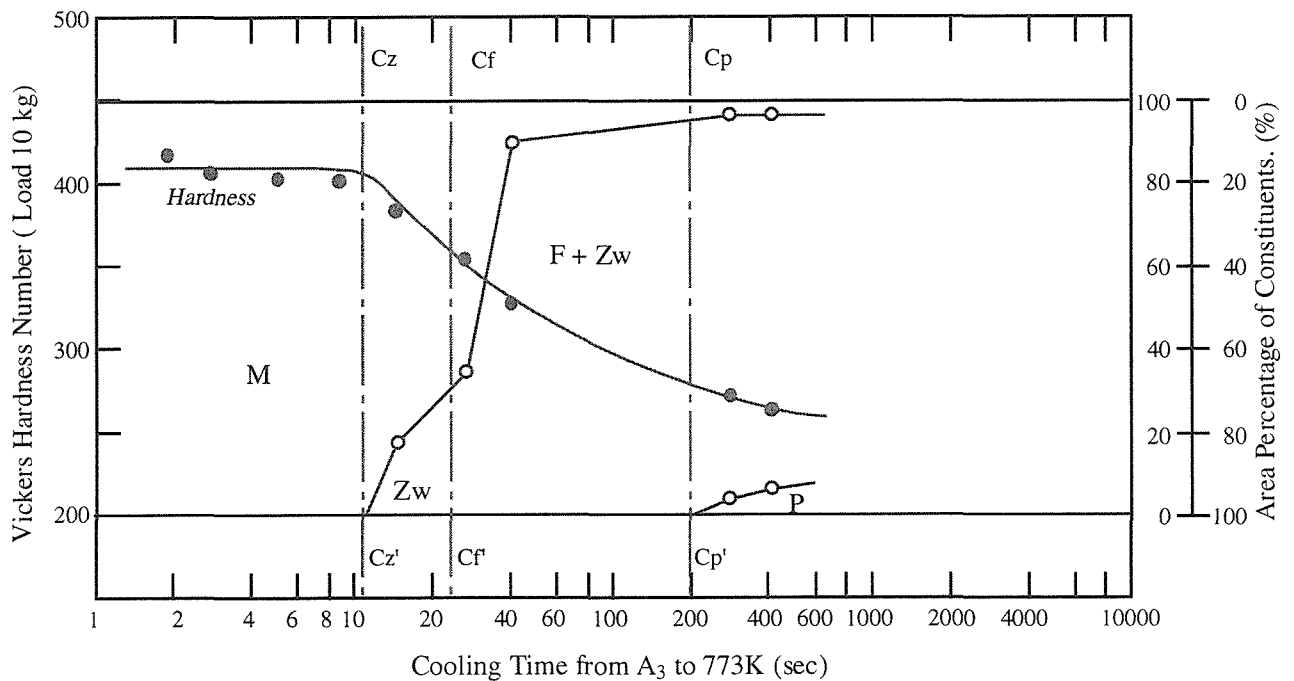
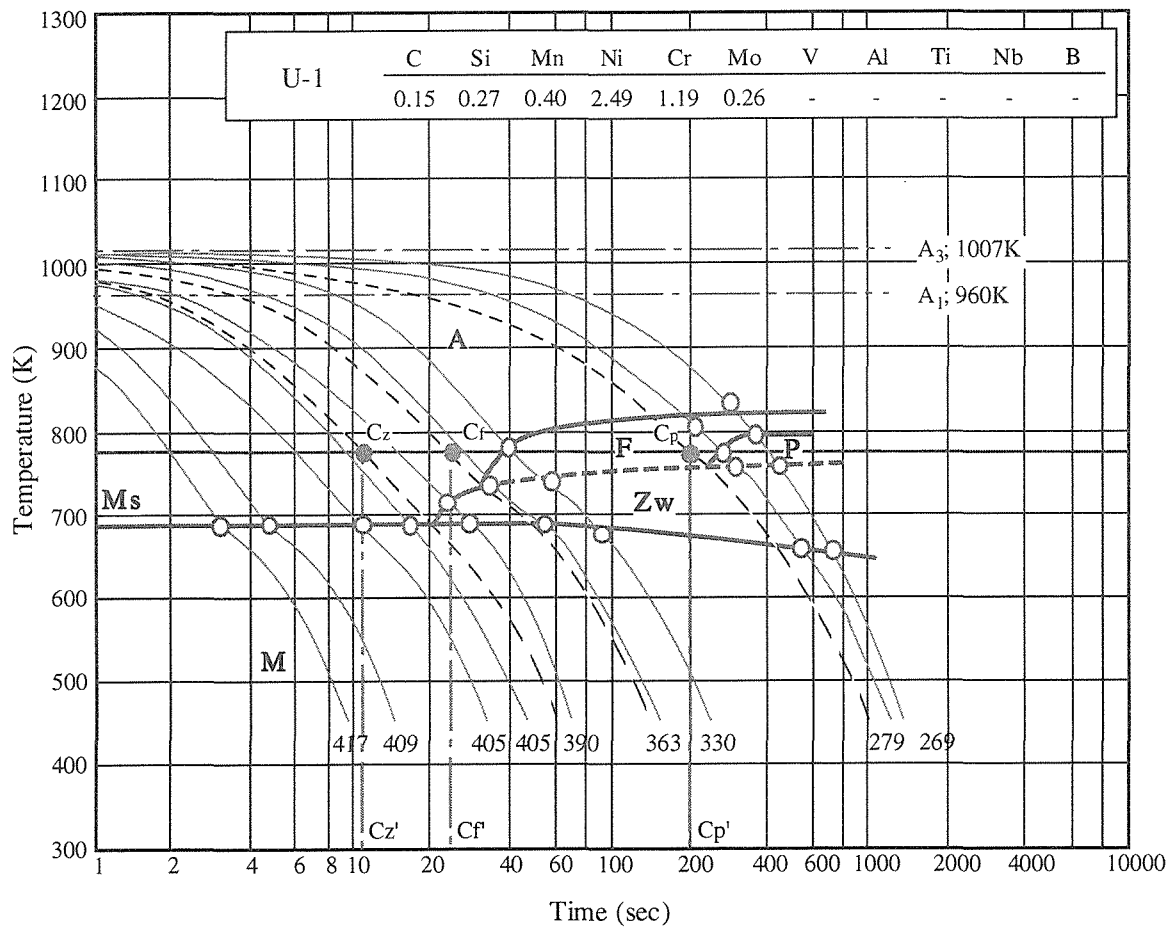


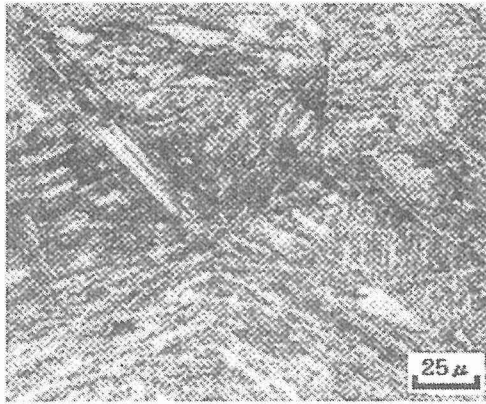
Time 42sec Hv 282



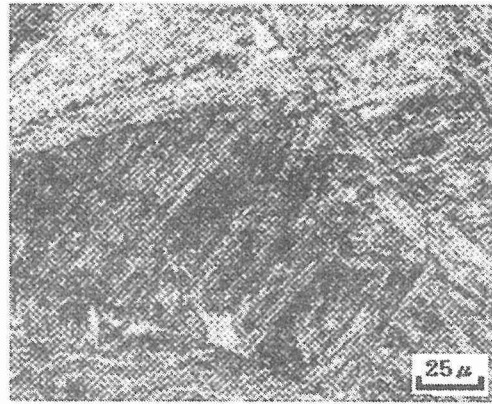
Time 450sec Hv 228



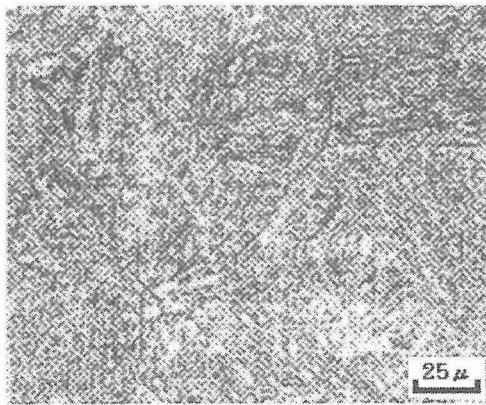




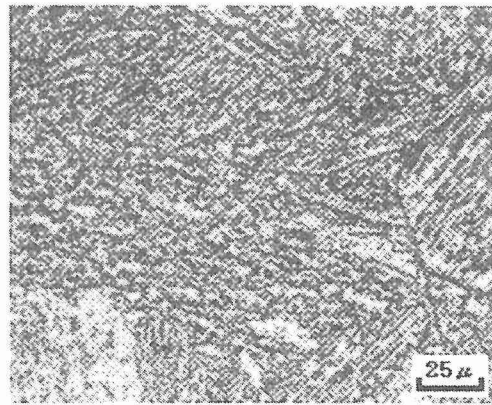
Time 6sec Hv 405



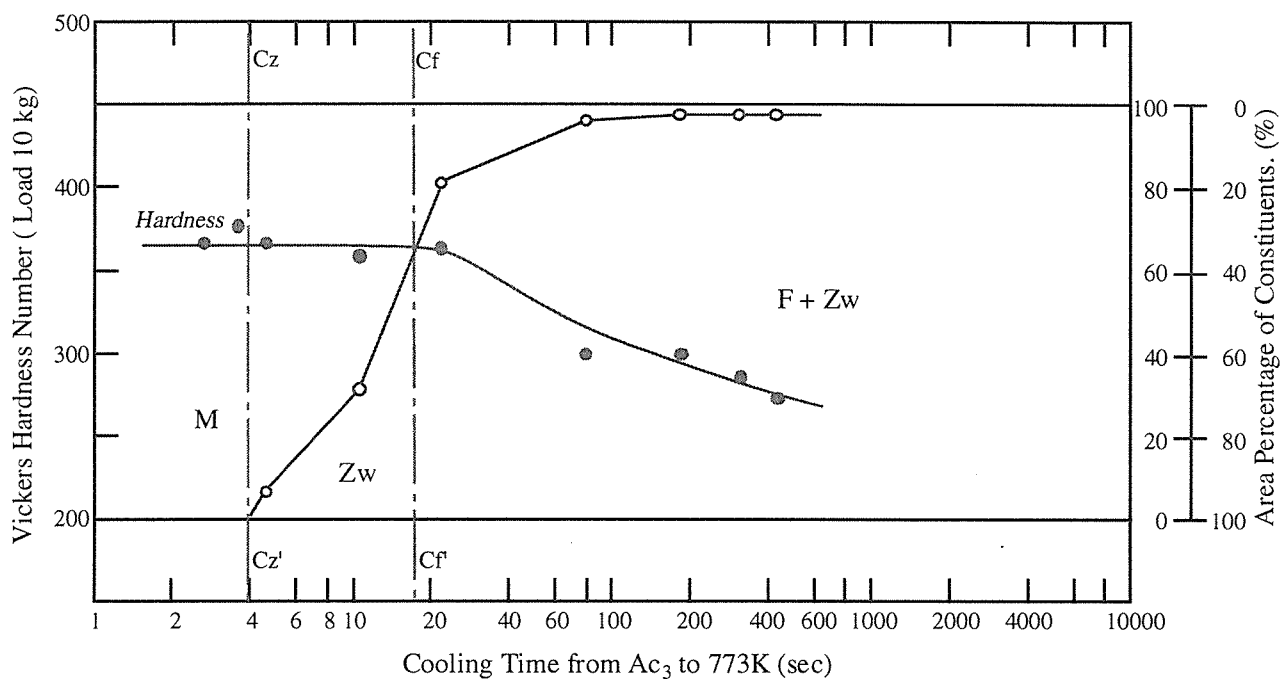
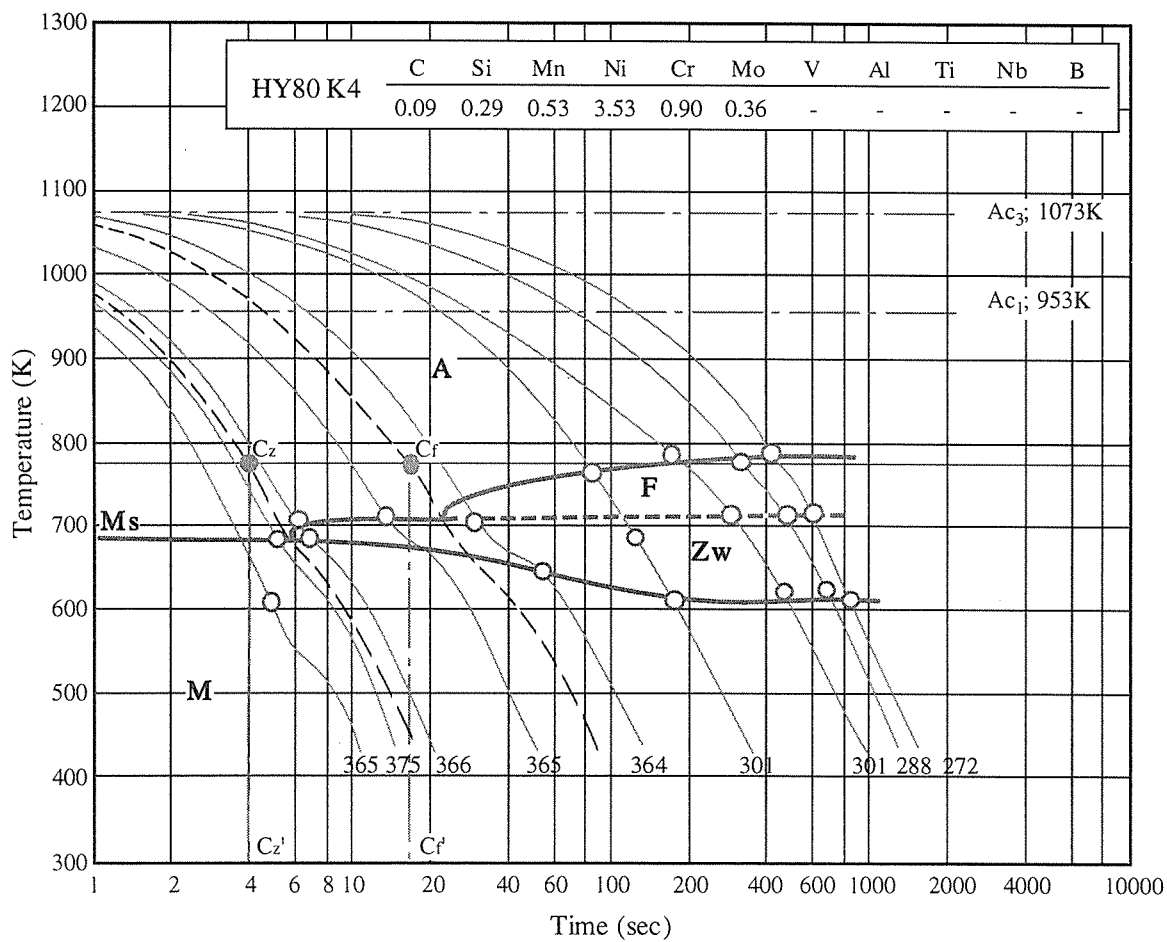
Time 15sec Hv 390

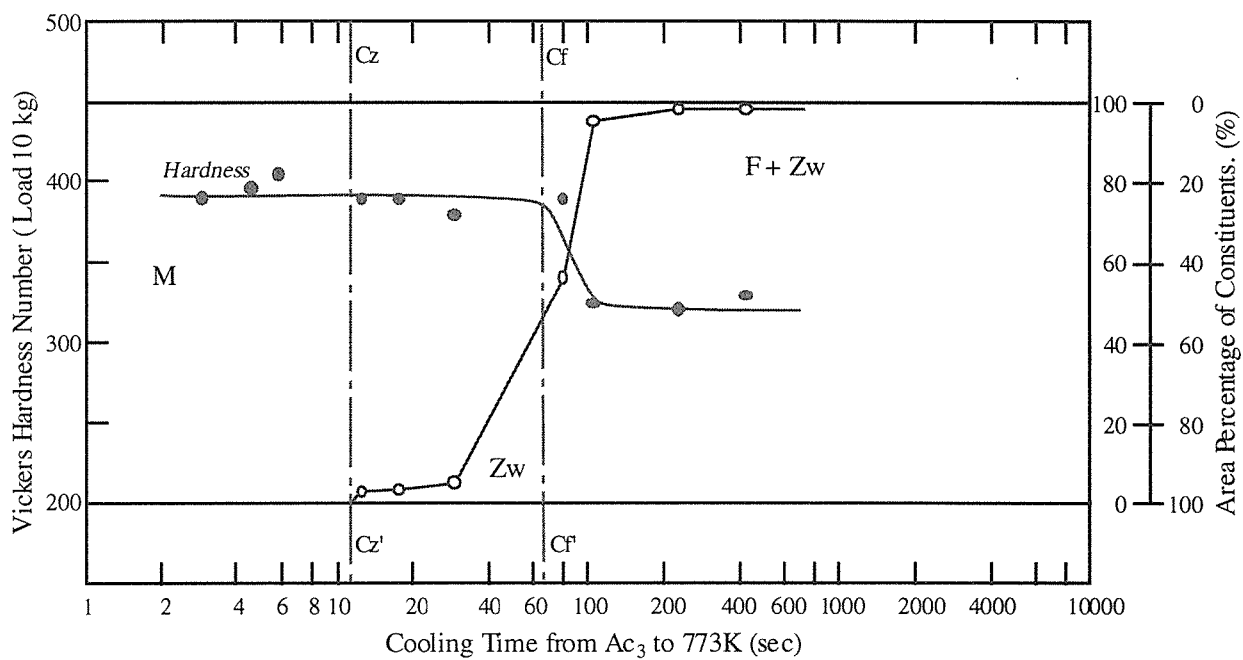
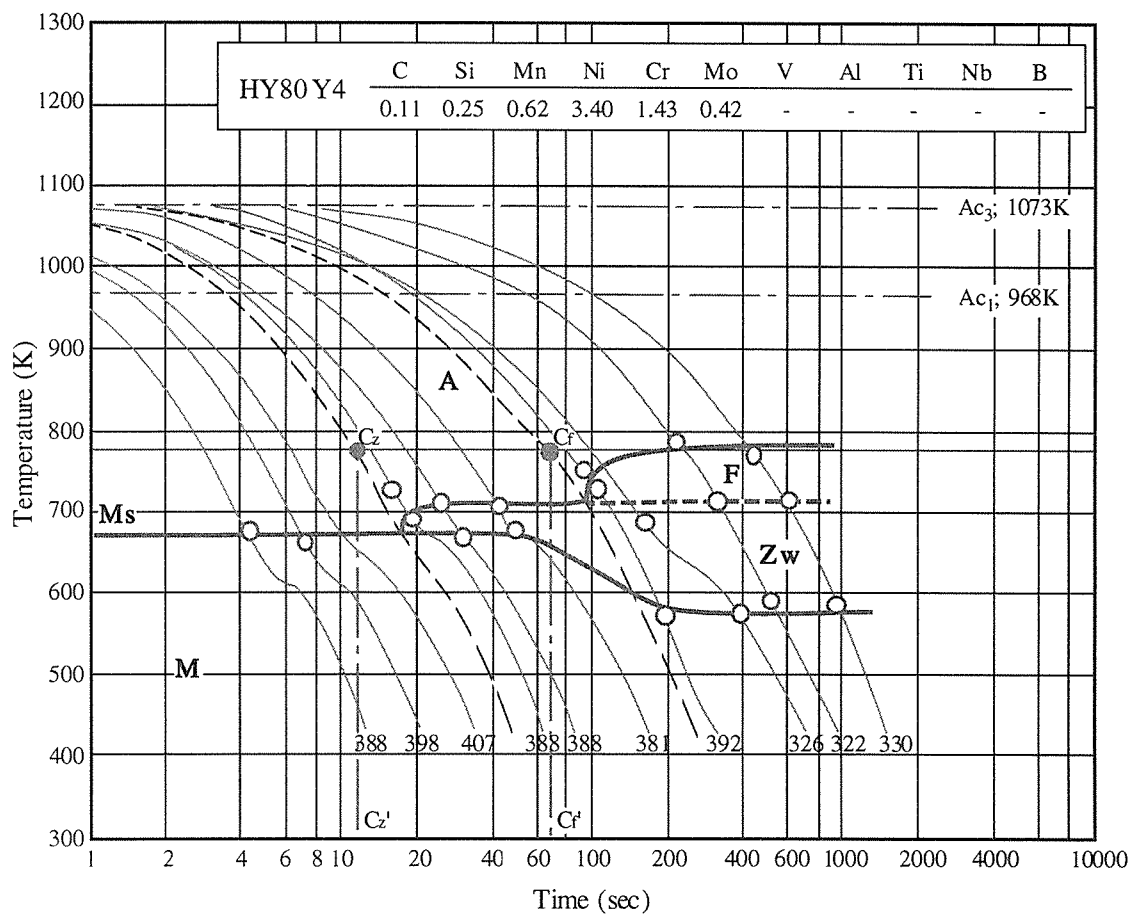


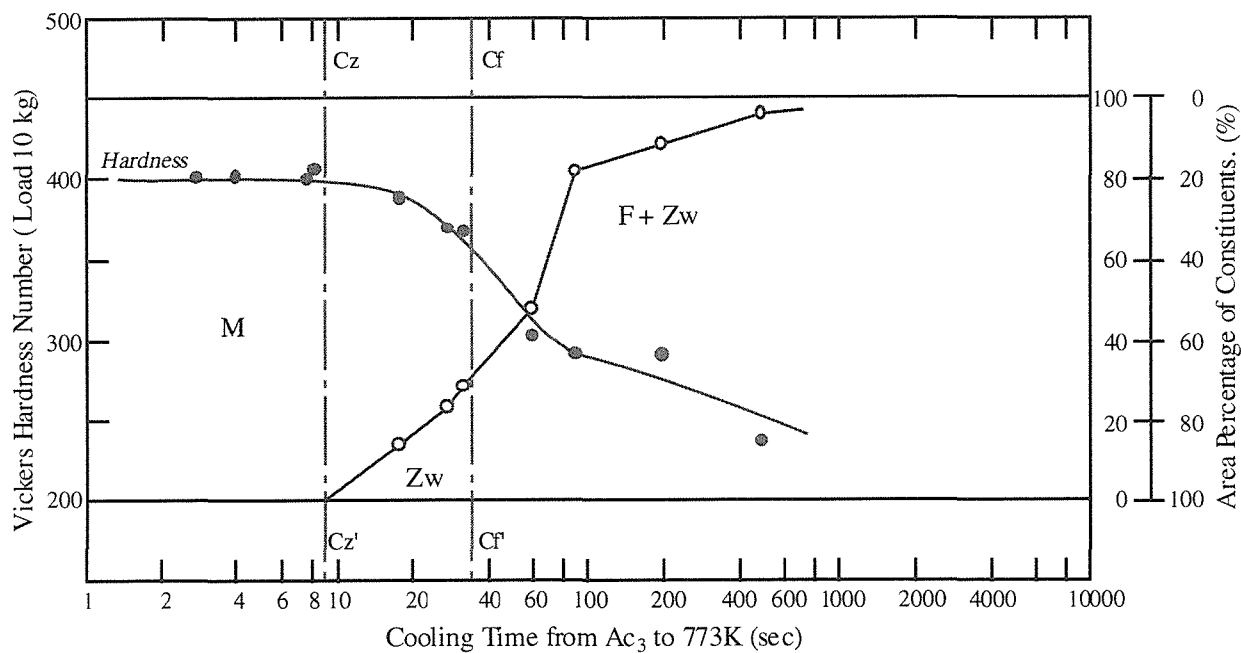
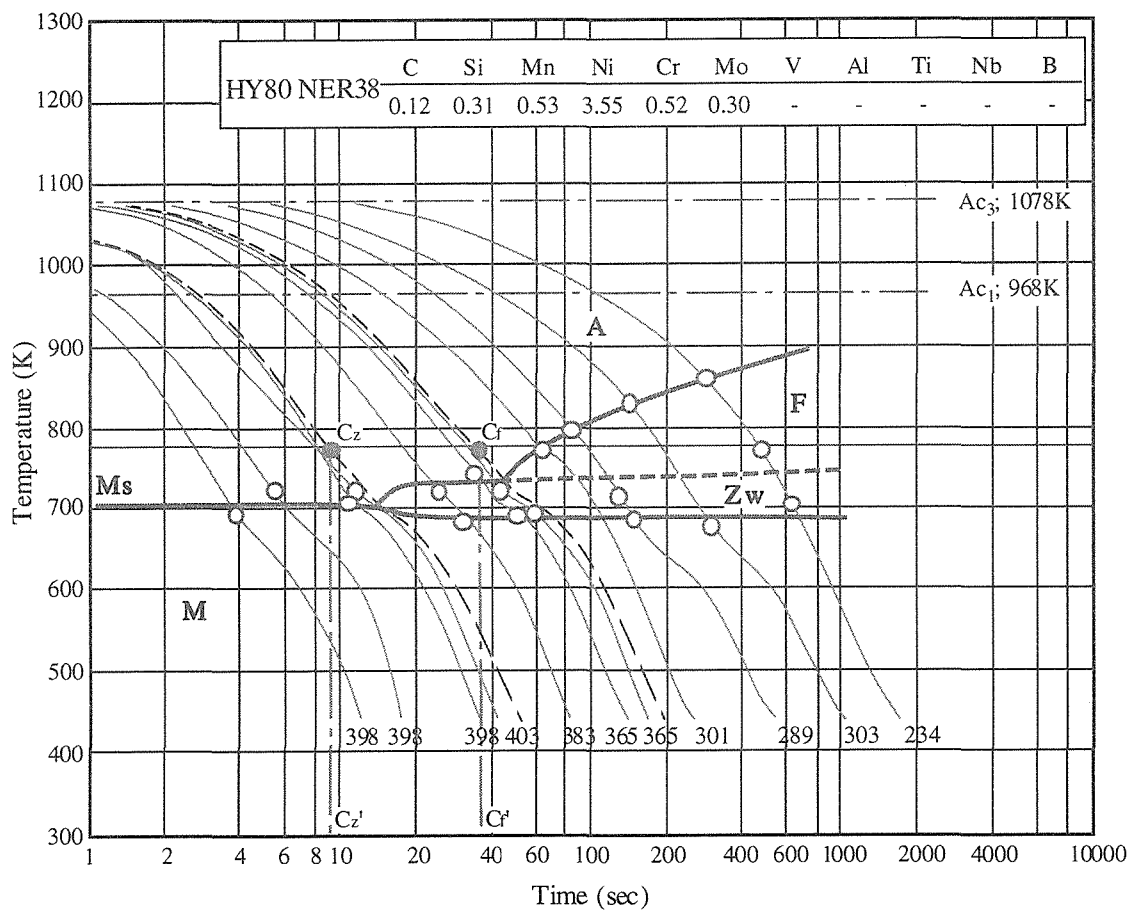
Time 40sec Hv 330

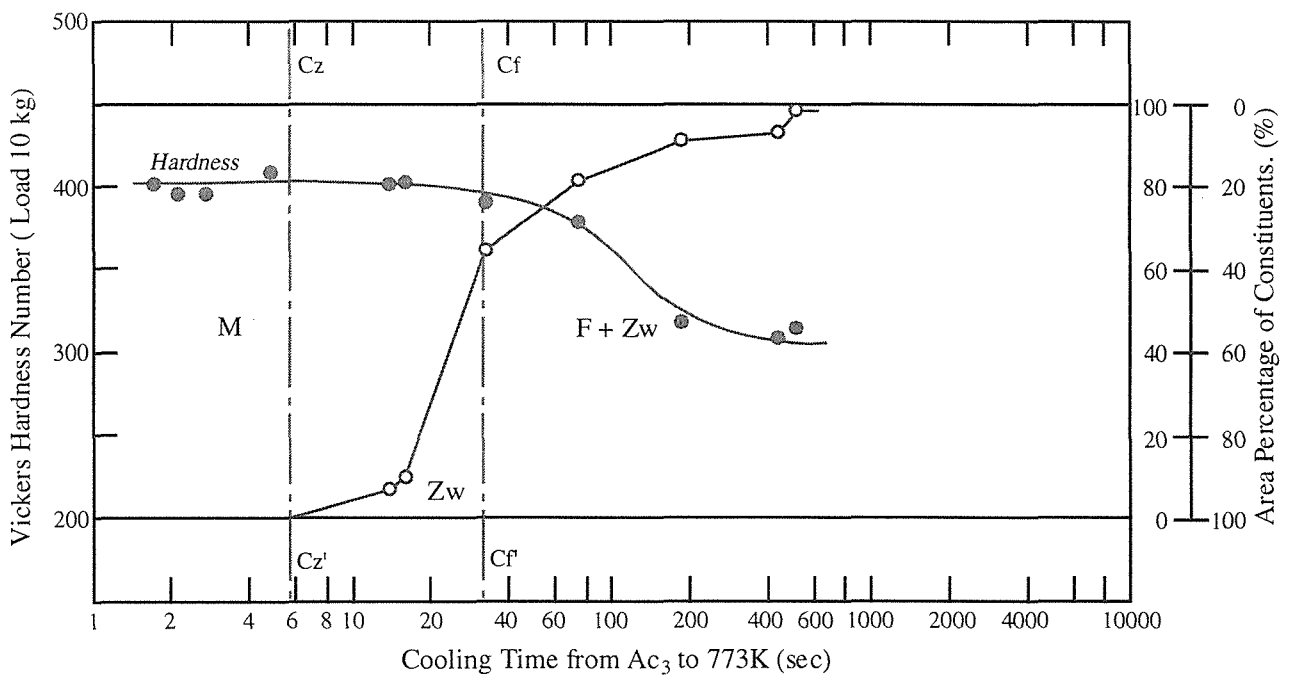
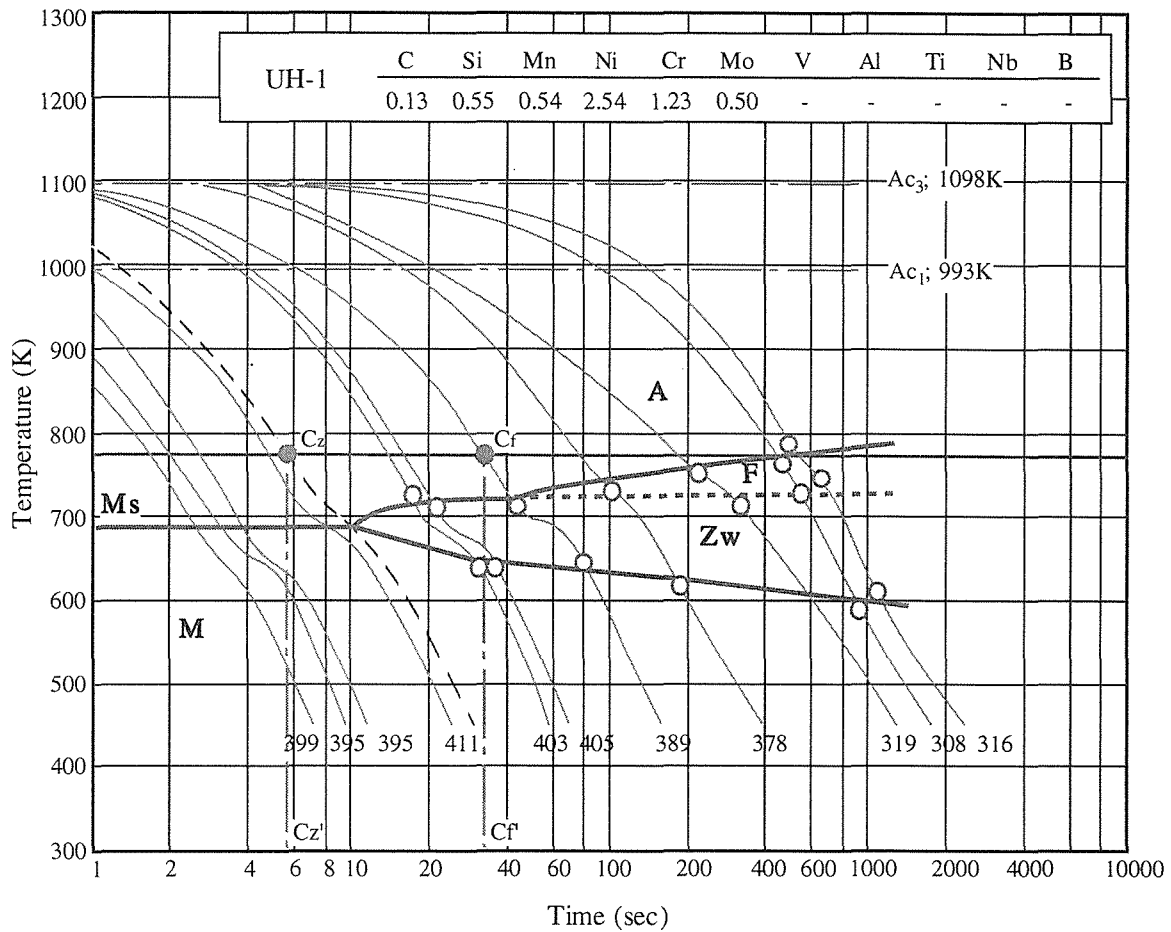


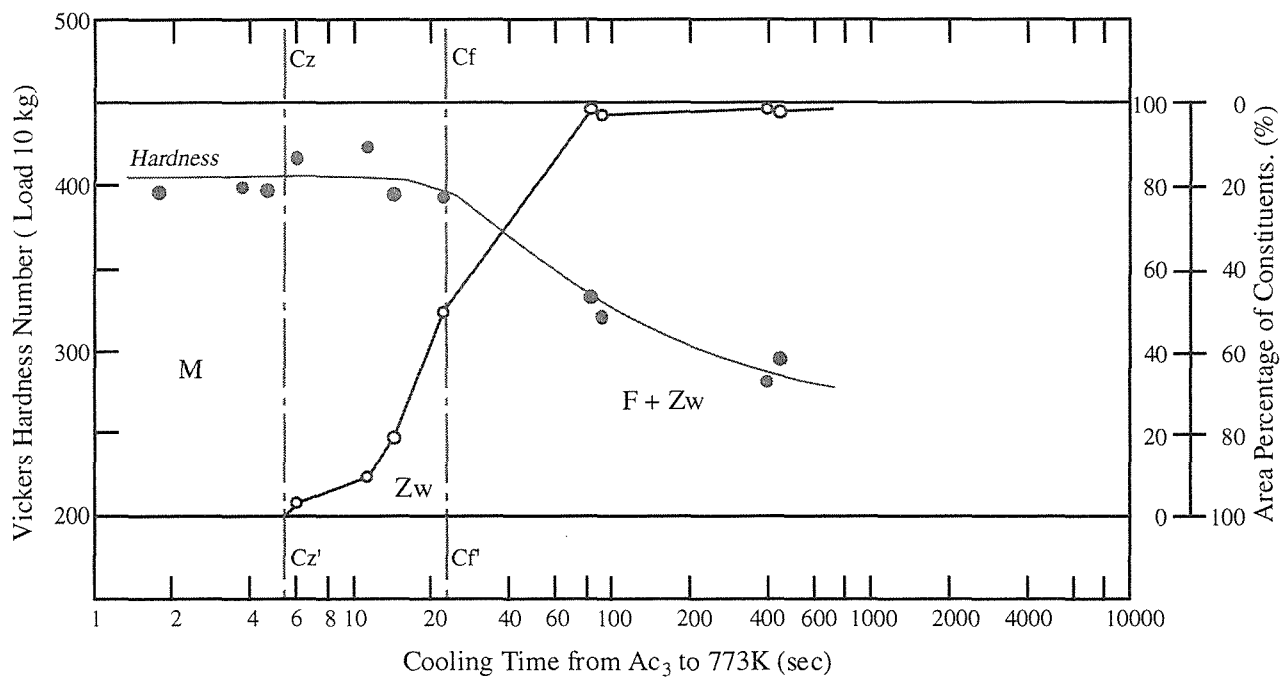
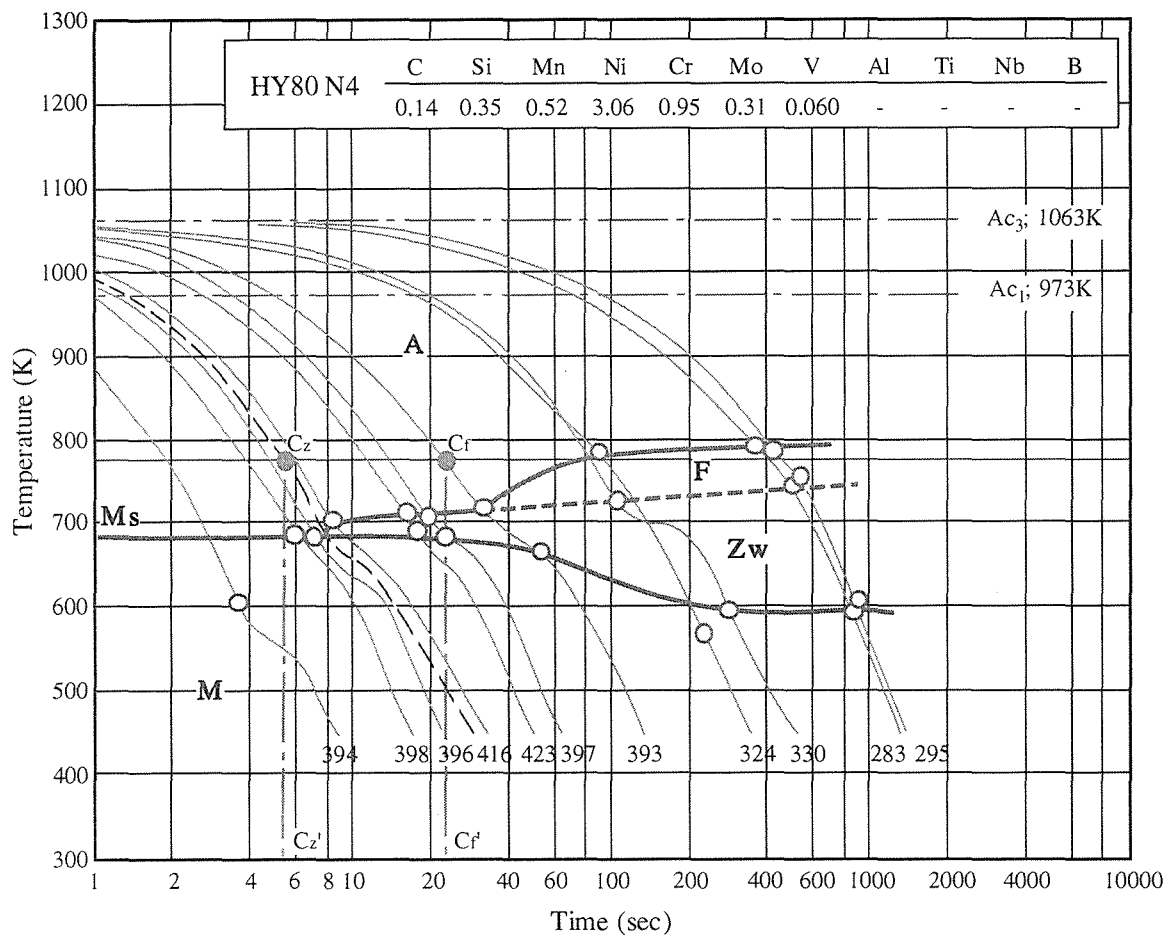
Time 400sec Hv 269

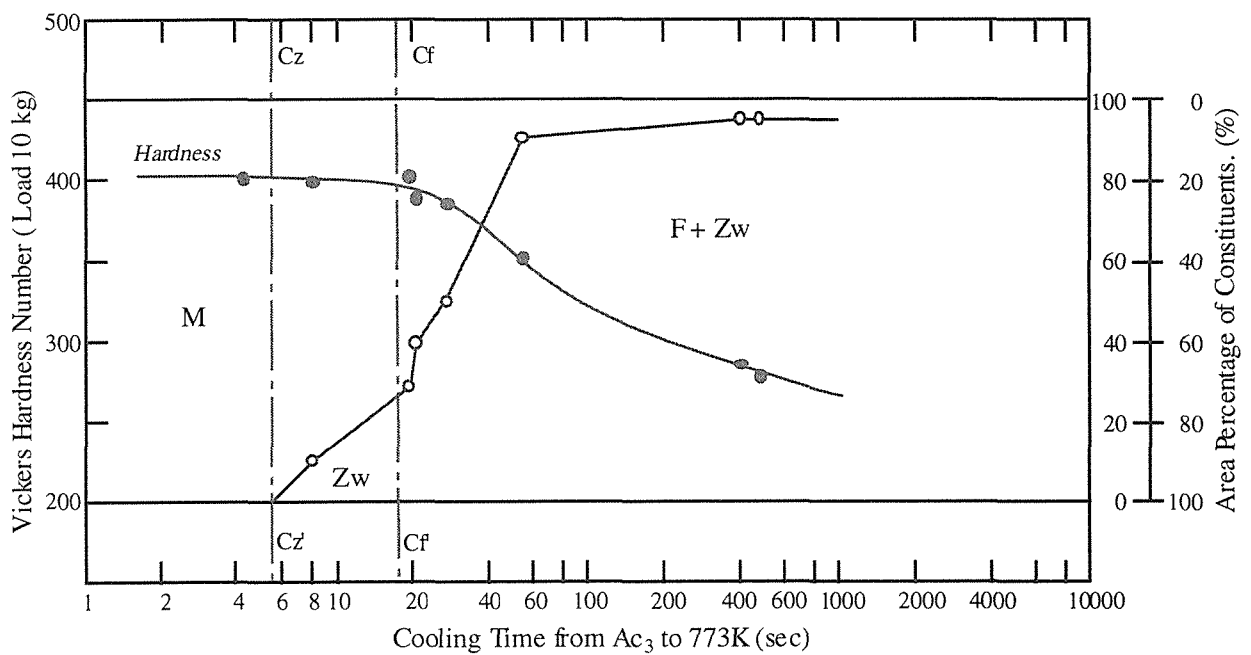
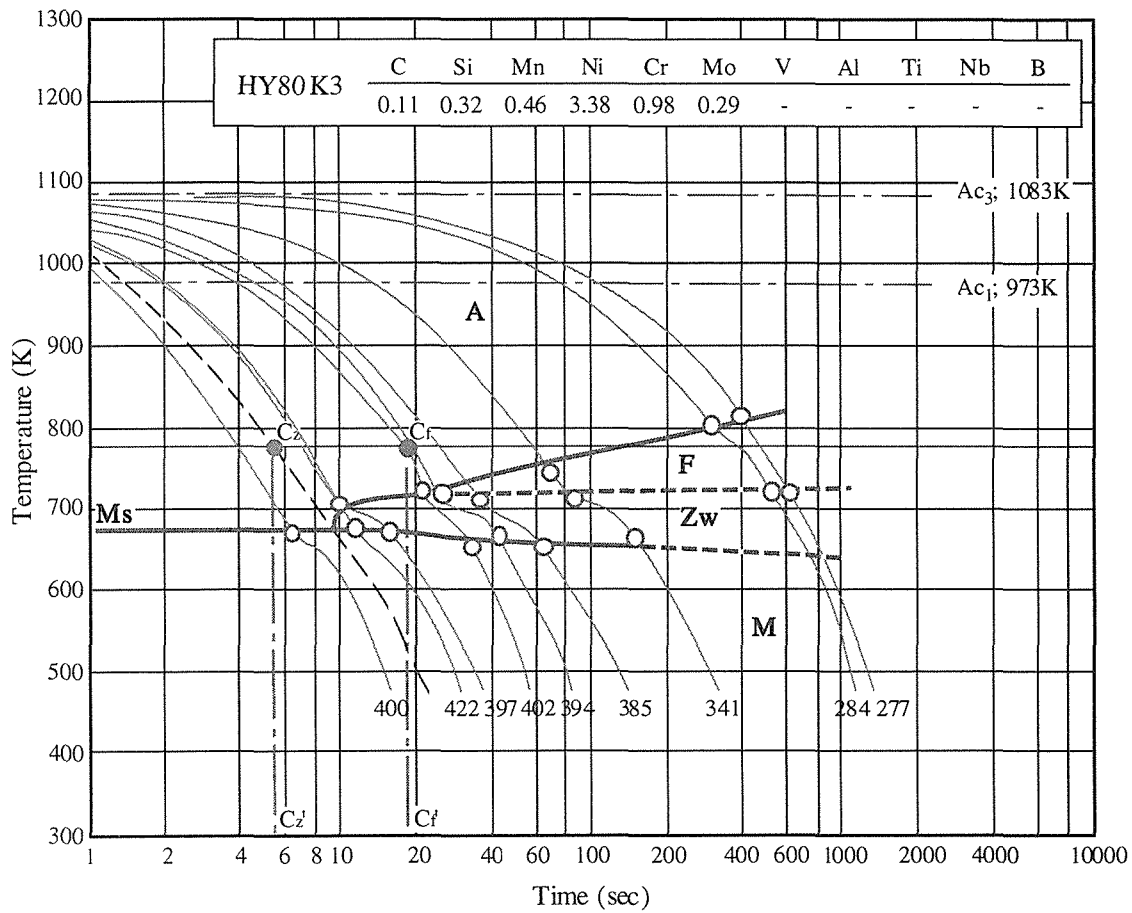


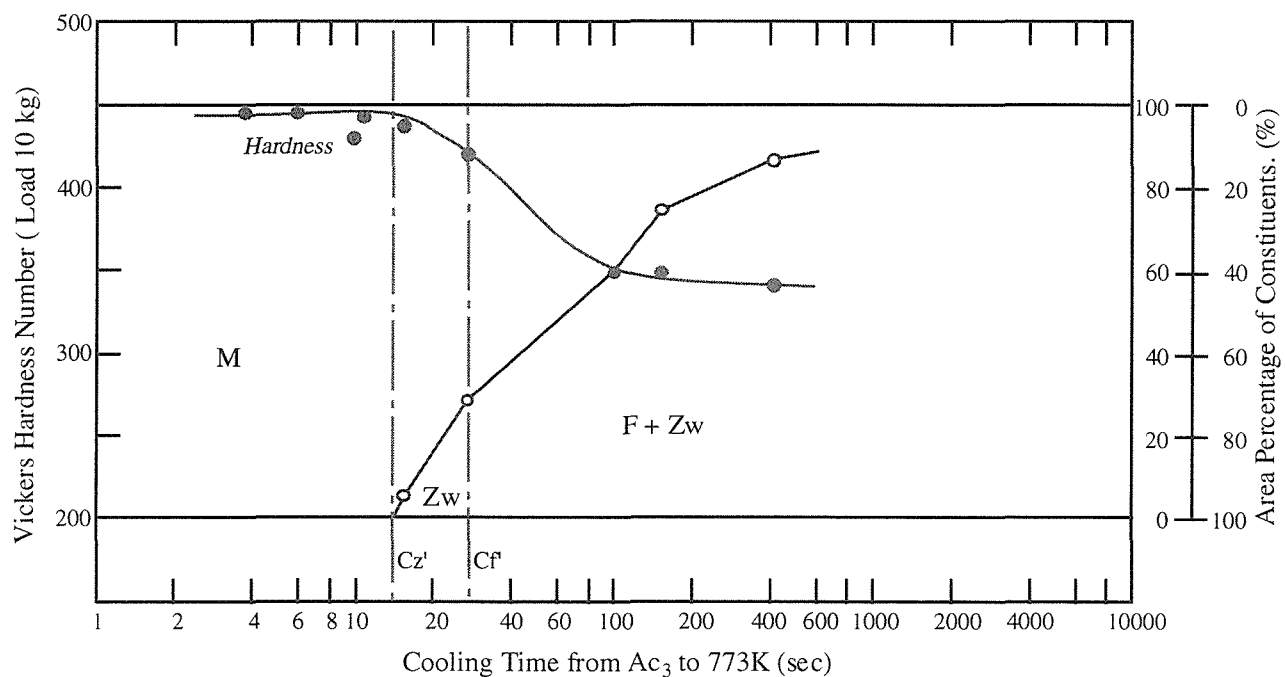
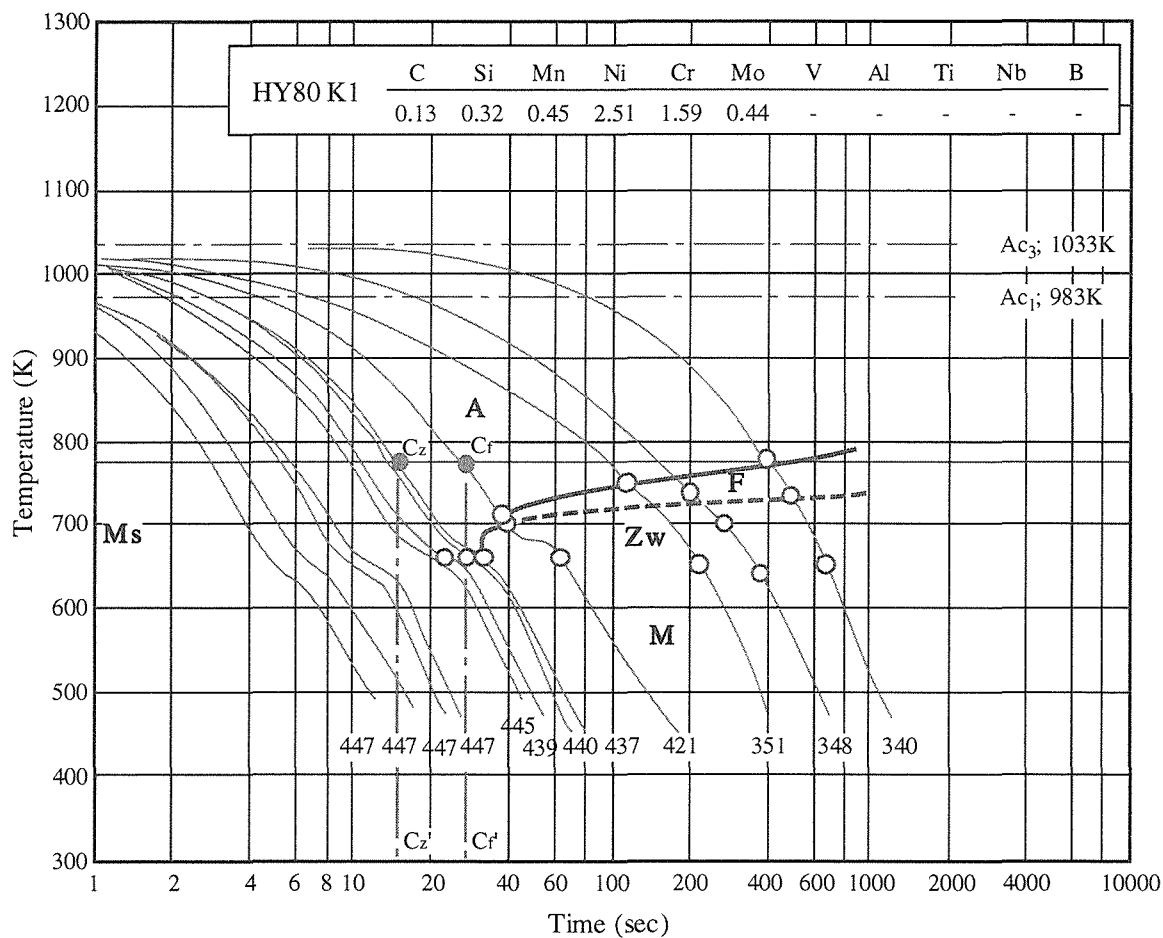


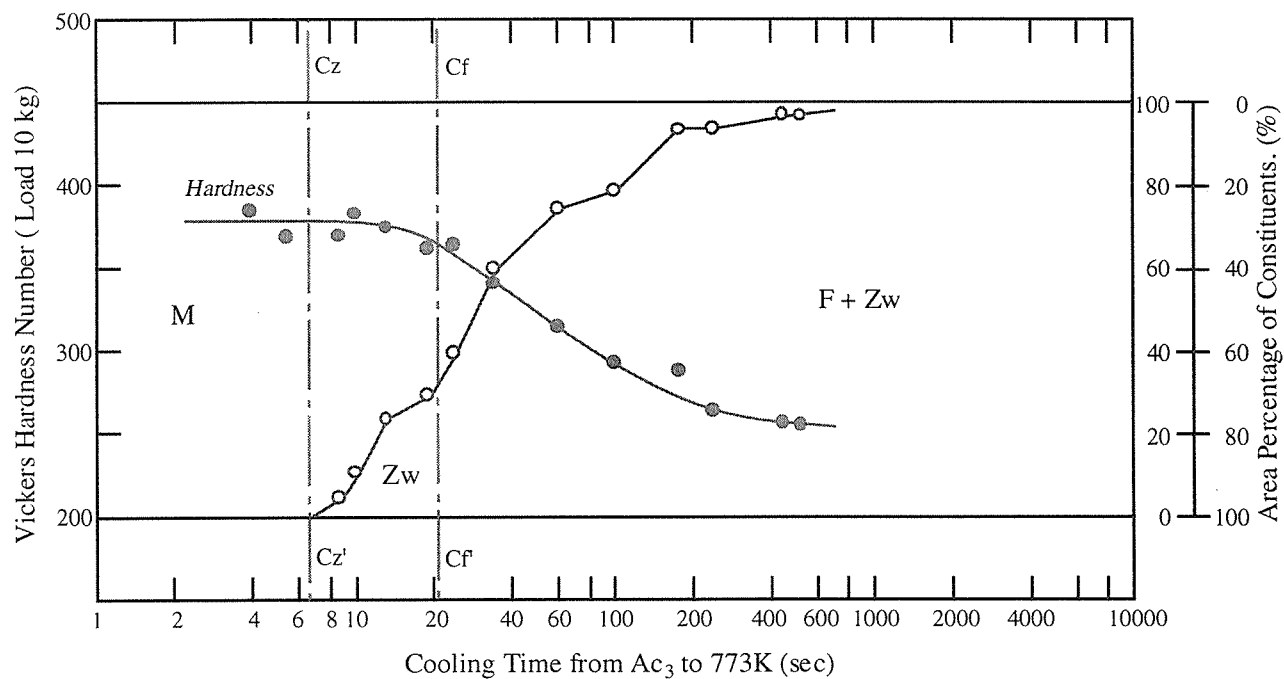
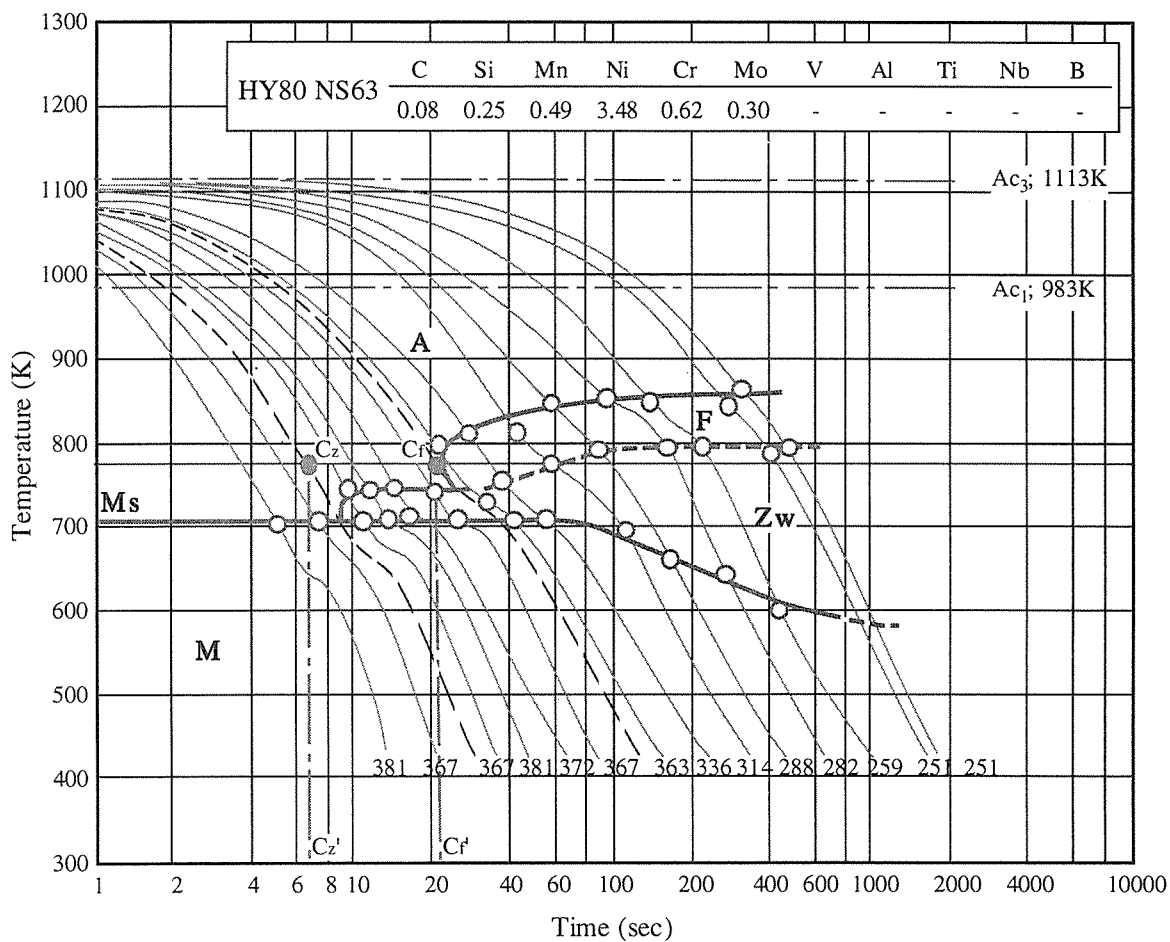


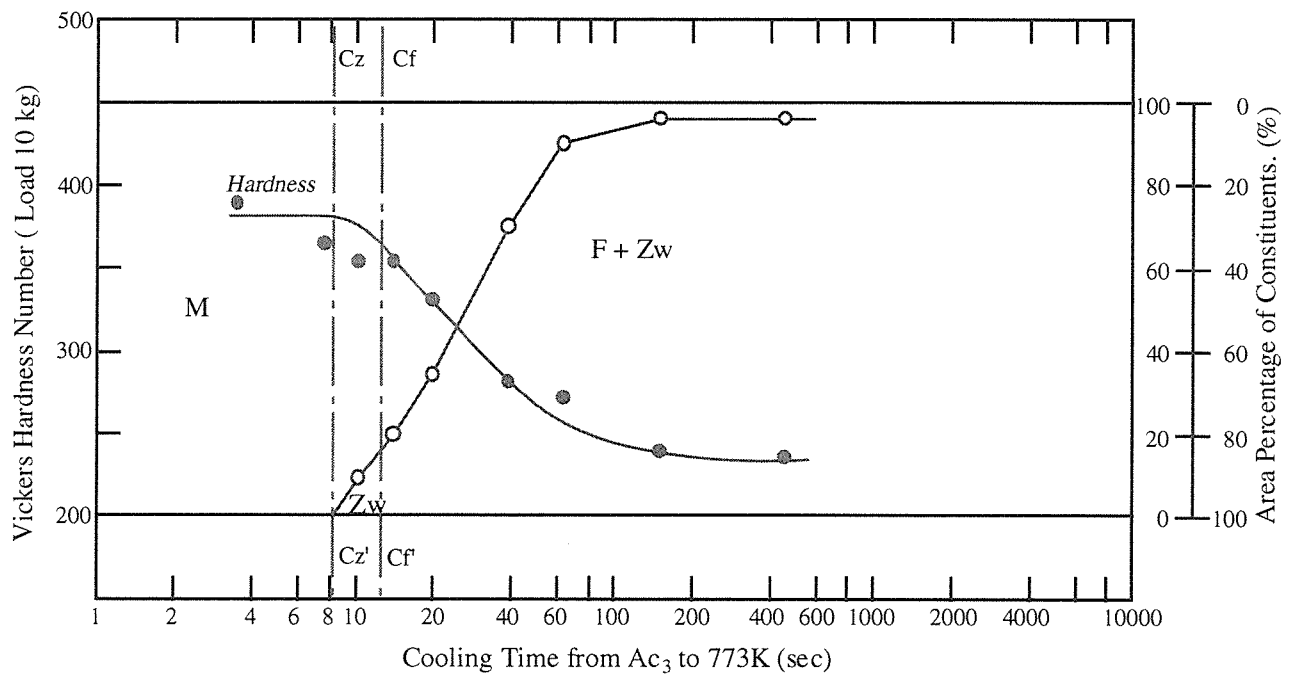
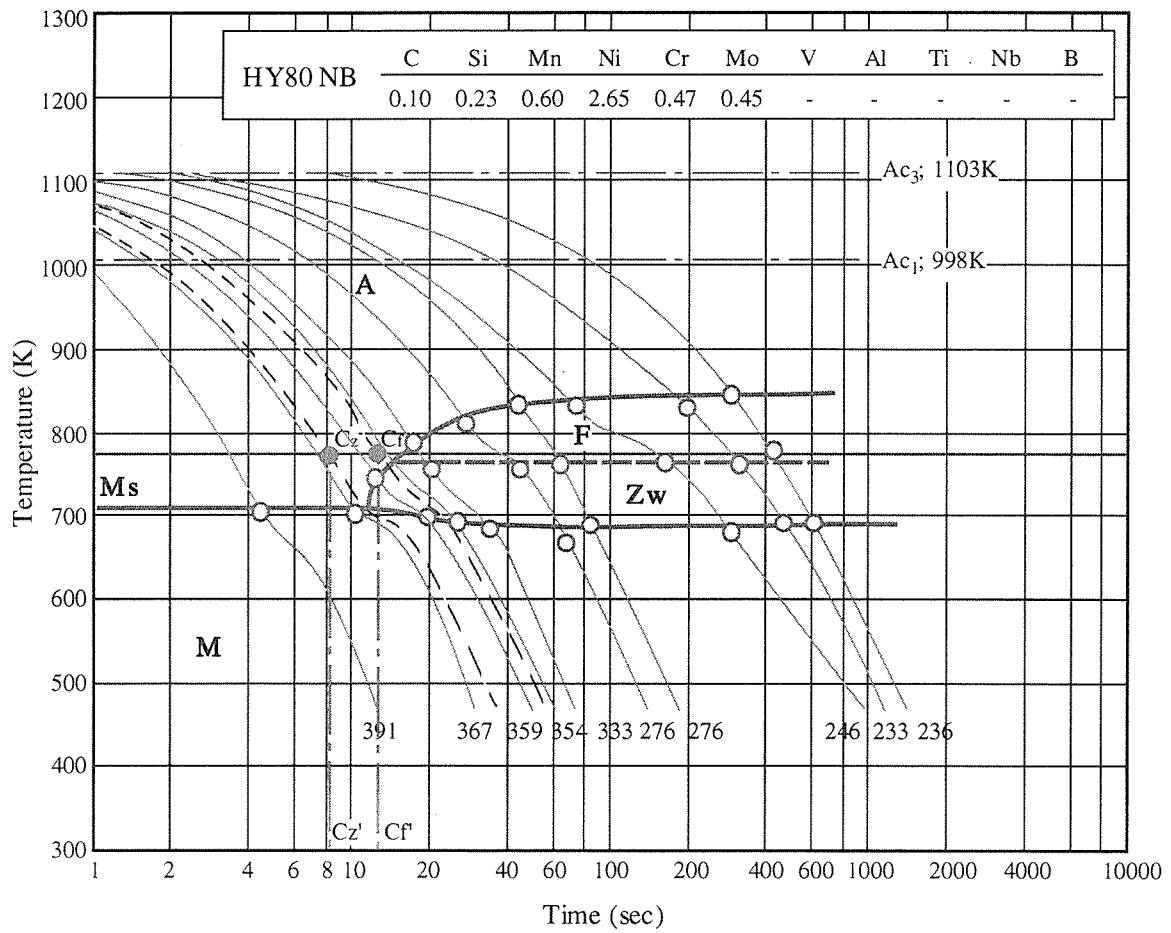


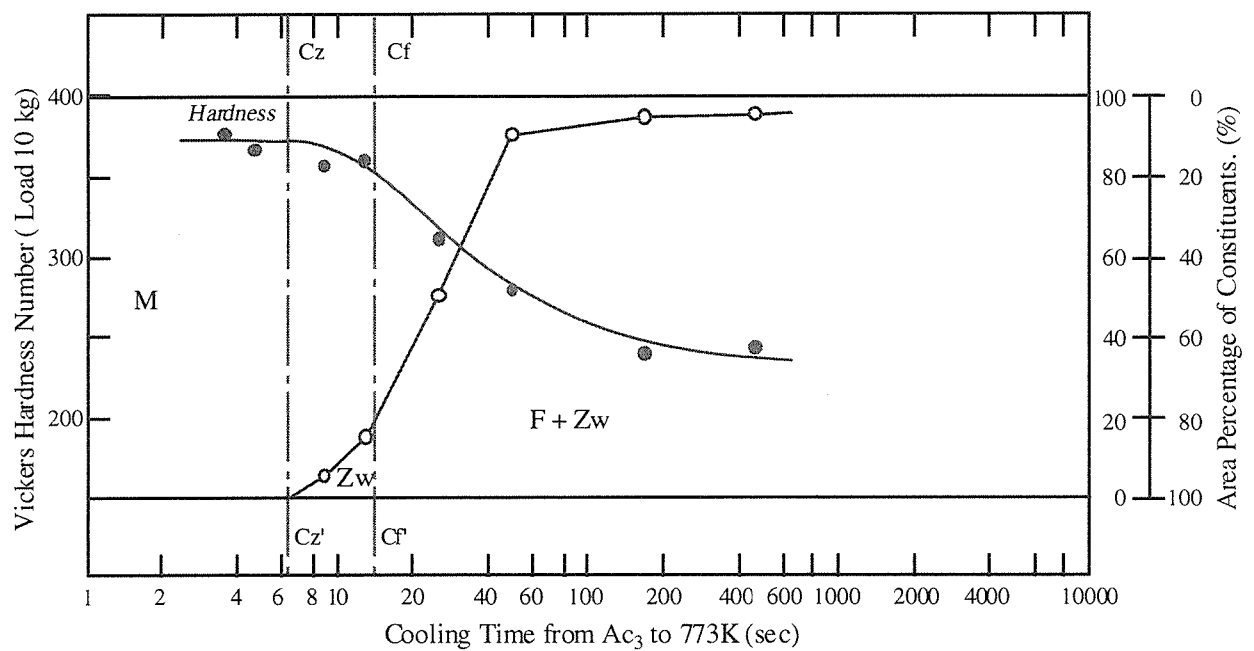
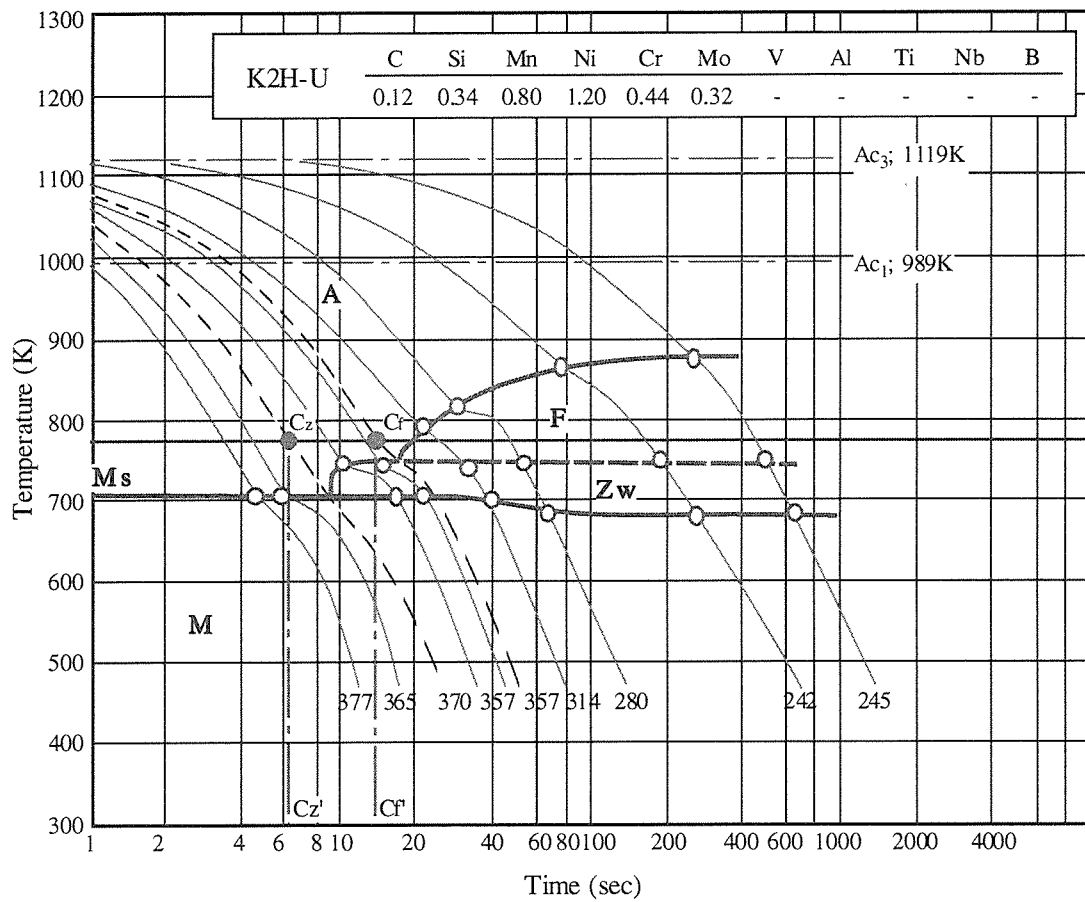


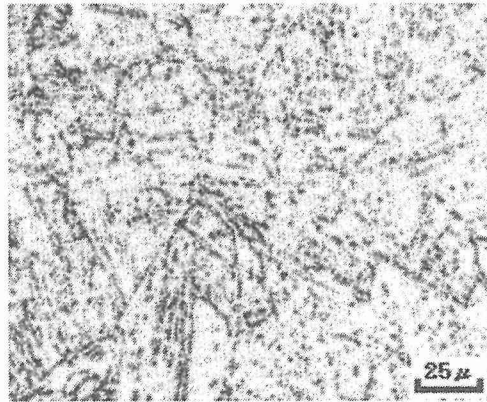




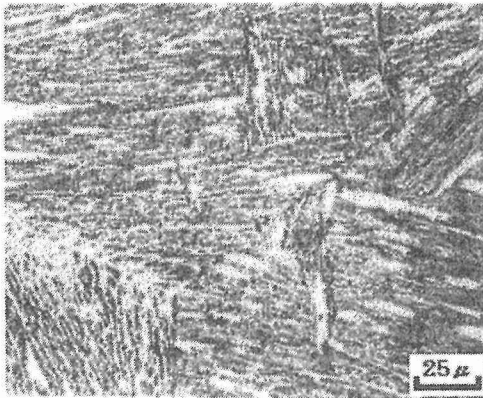




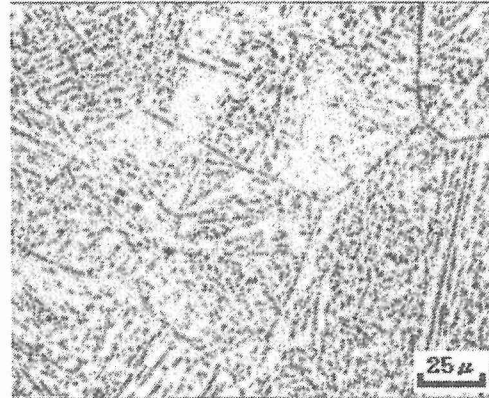




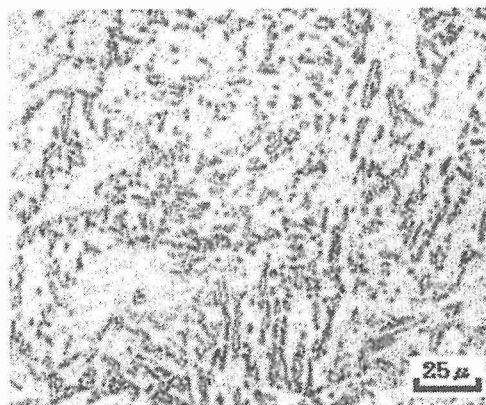
Base



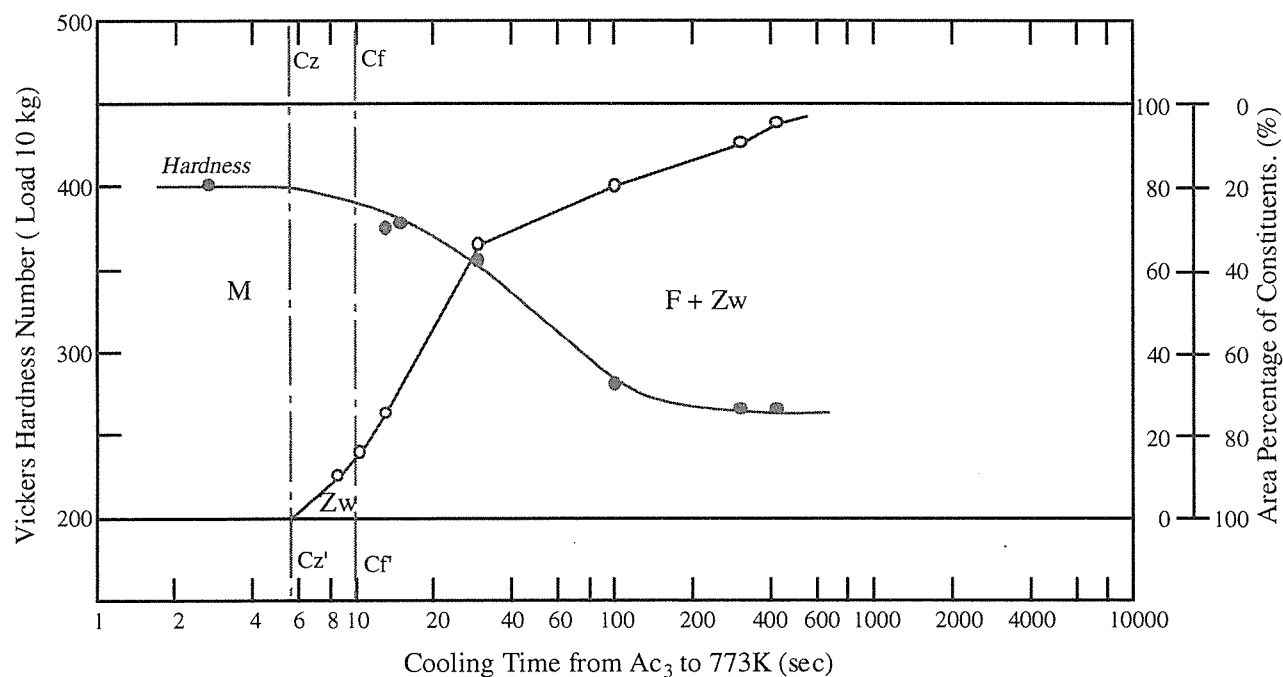
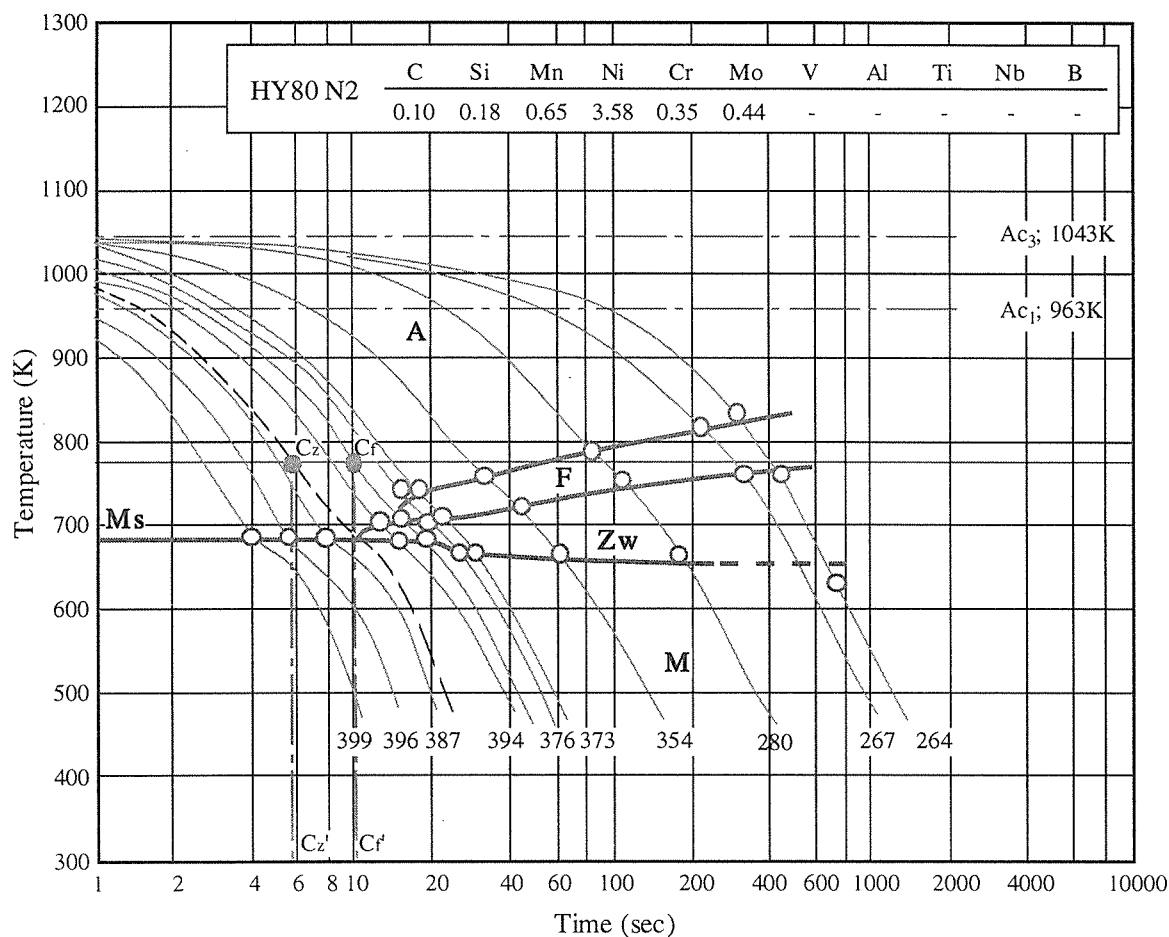
Time 3.8sec Hv 377

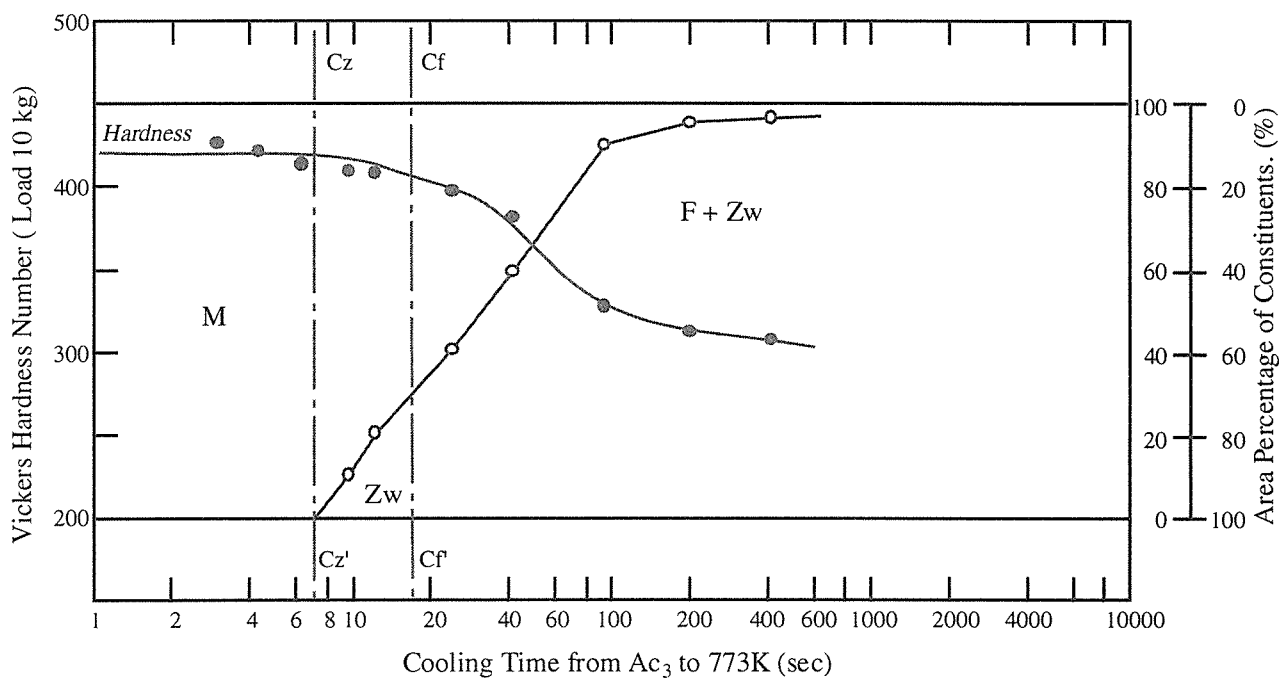
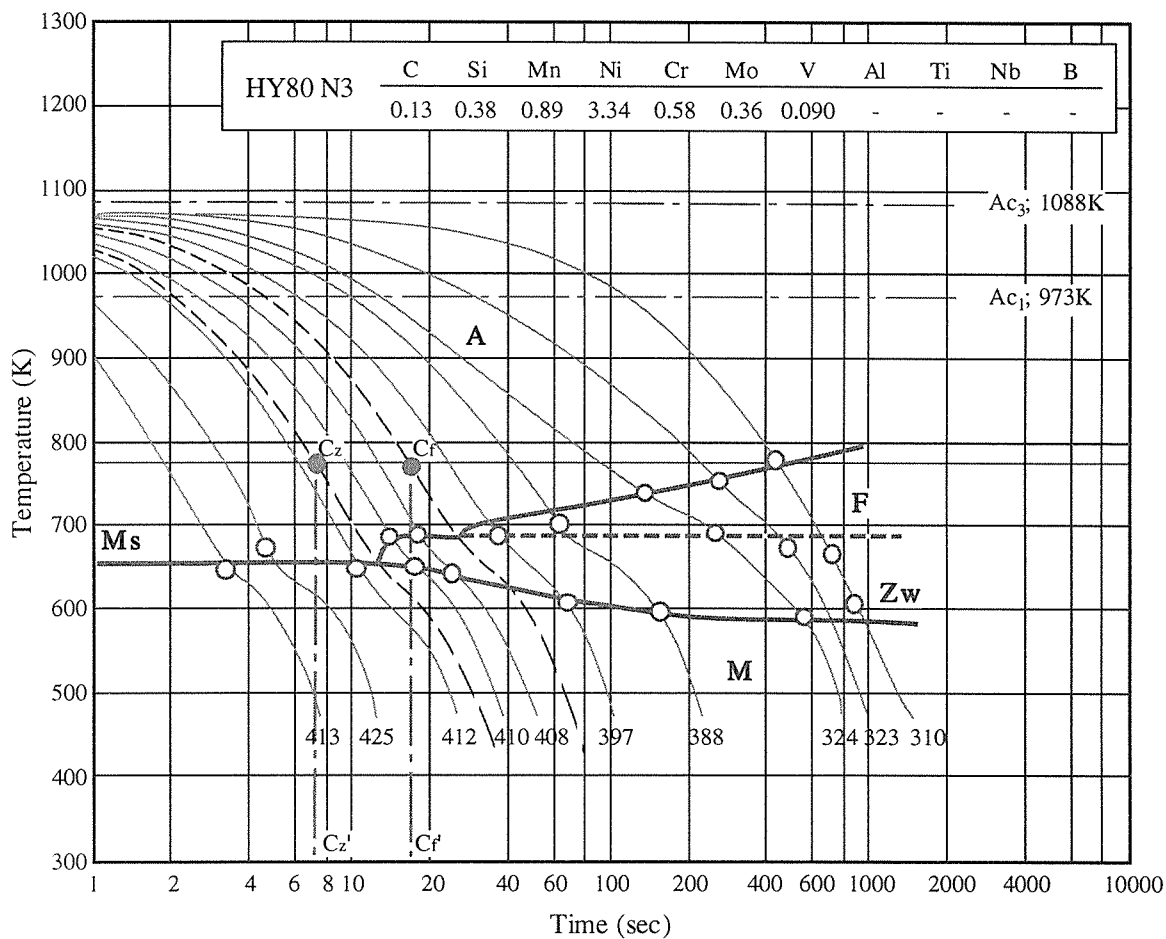


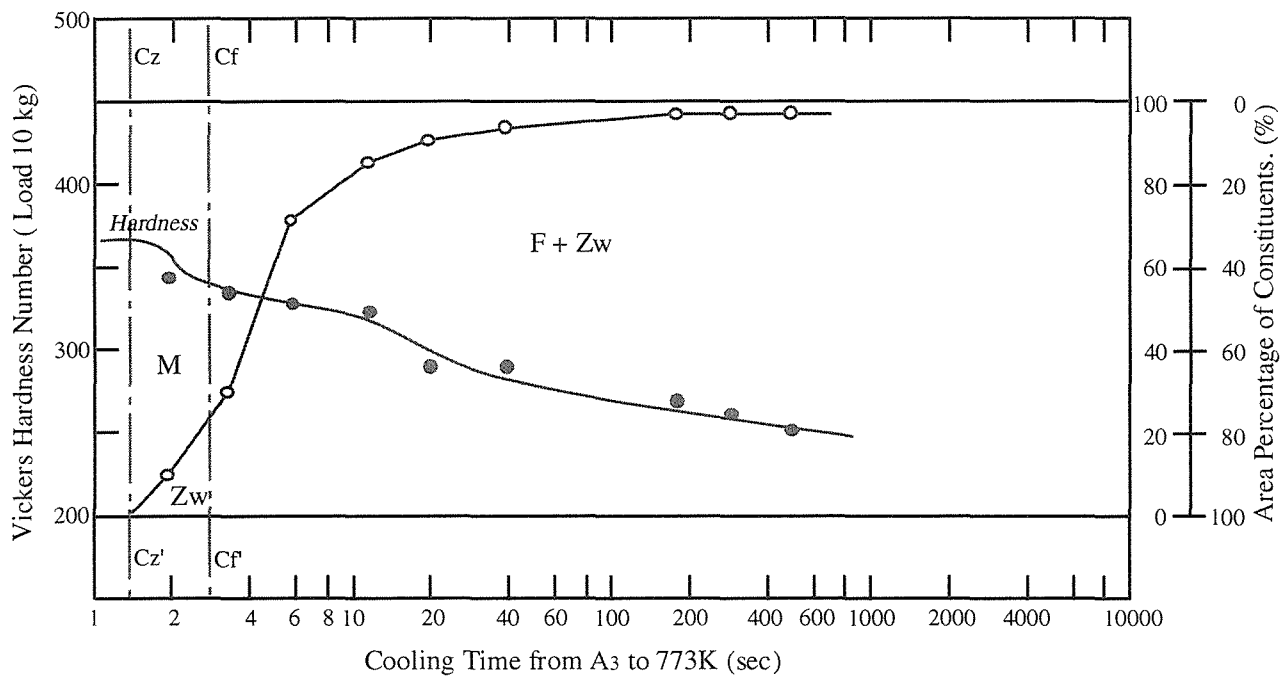
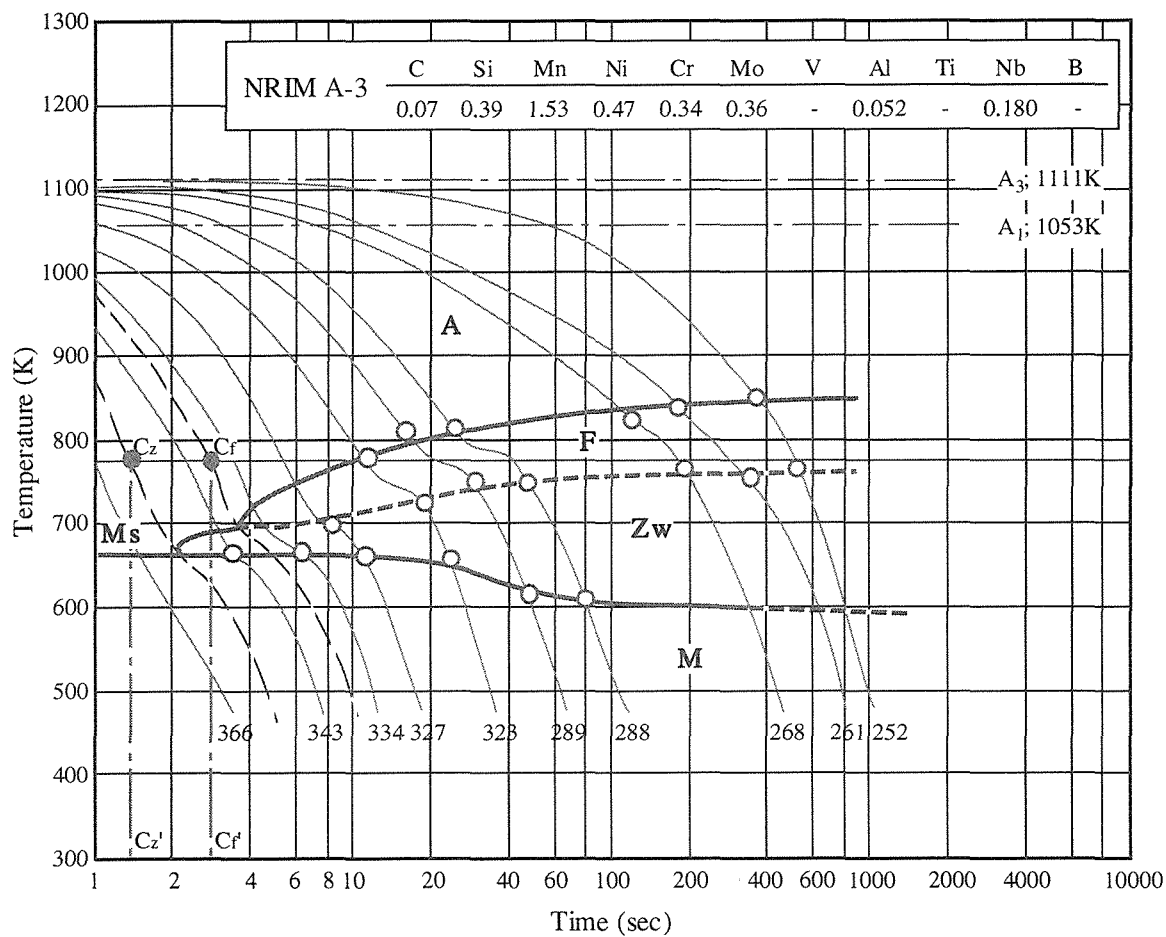
Time 52sec Hv 280

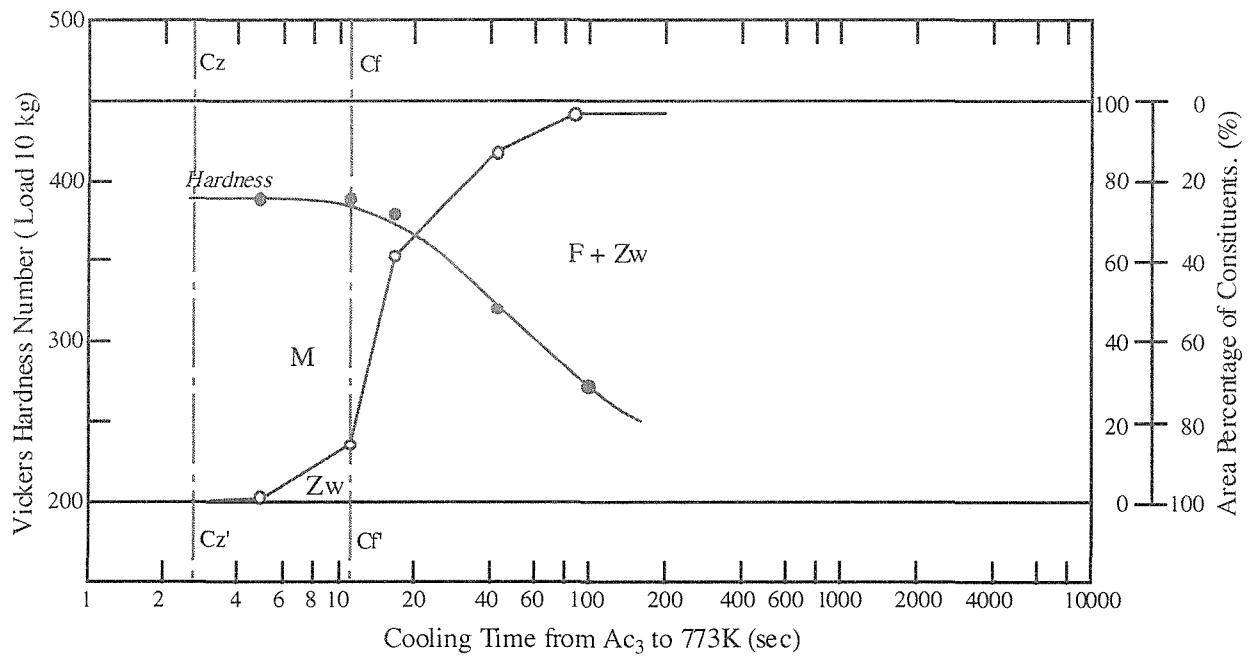
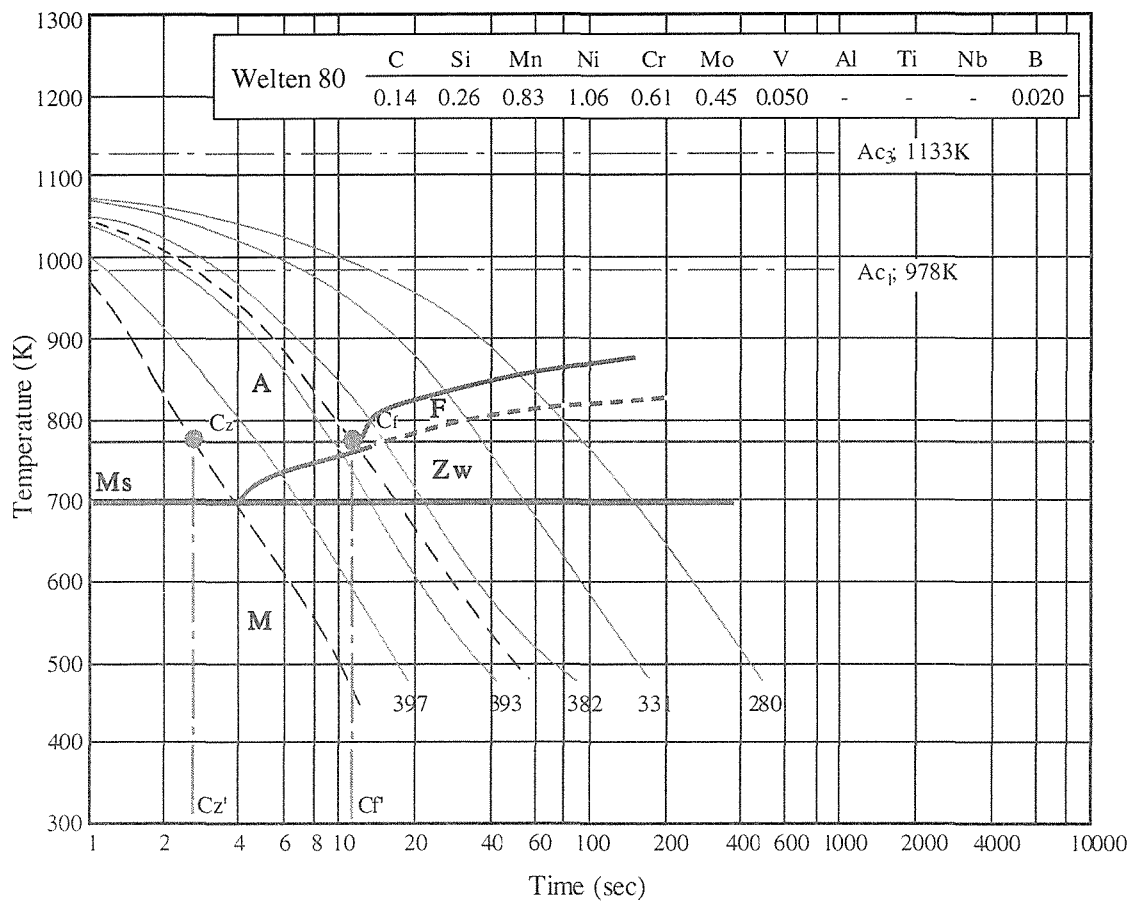


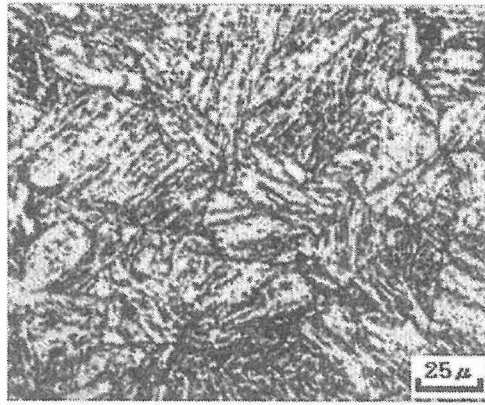
Time 500sec Hv 245



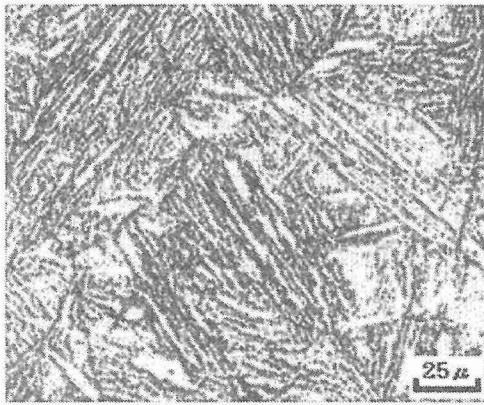




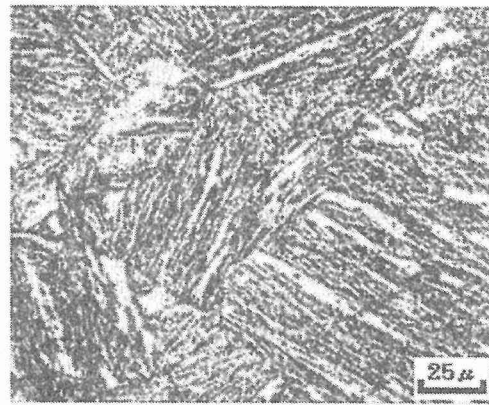




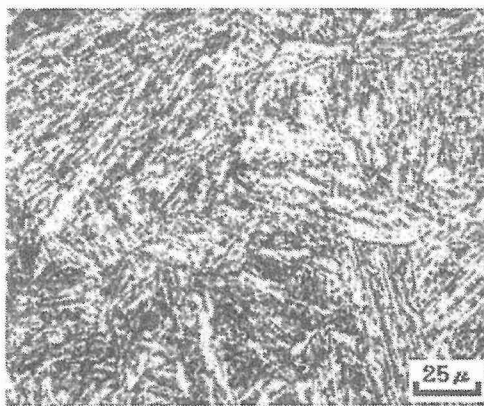
Base



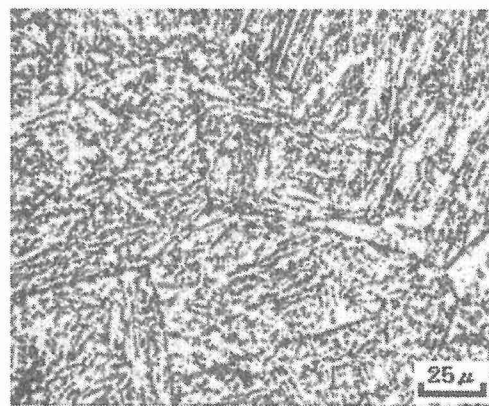
Time 4.5sec Hv 397



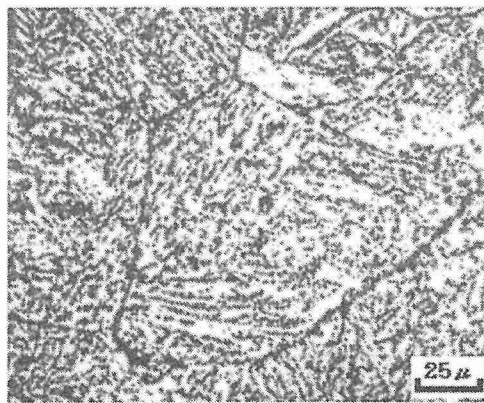
Time 9.4sec Hv 393



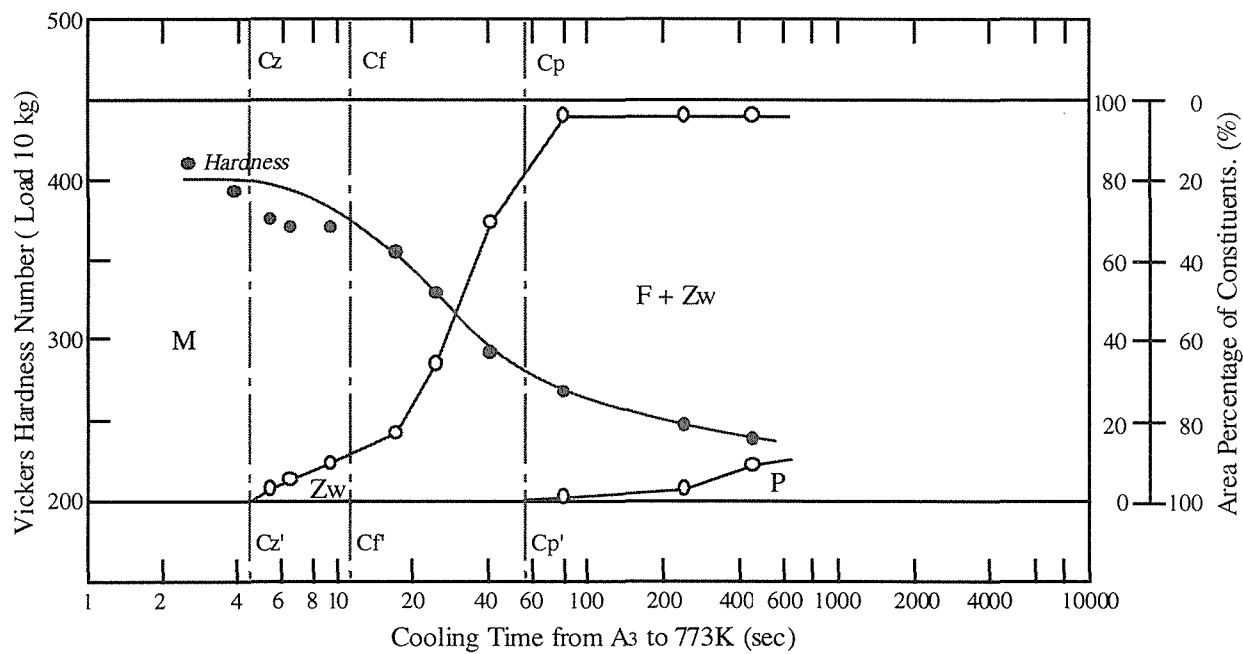
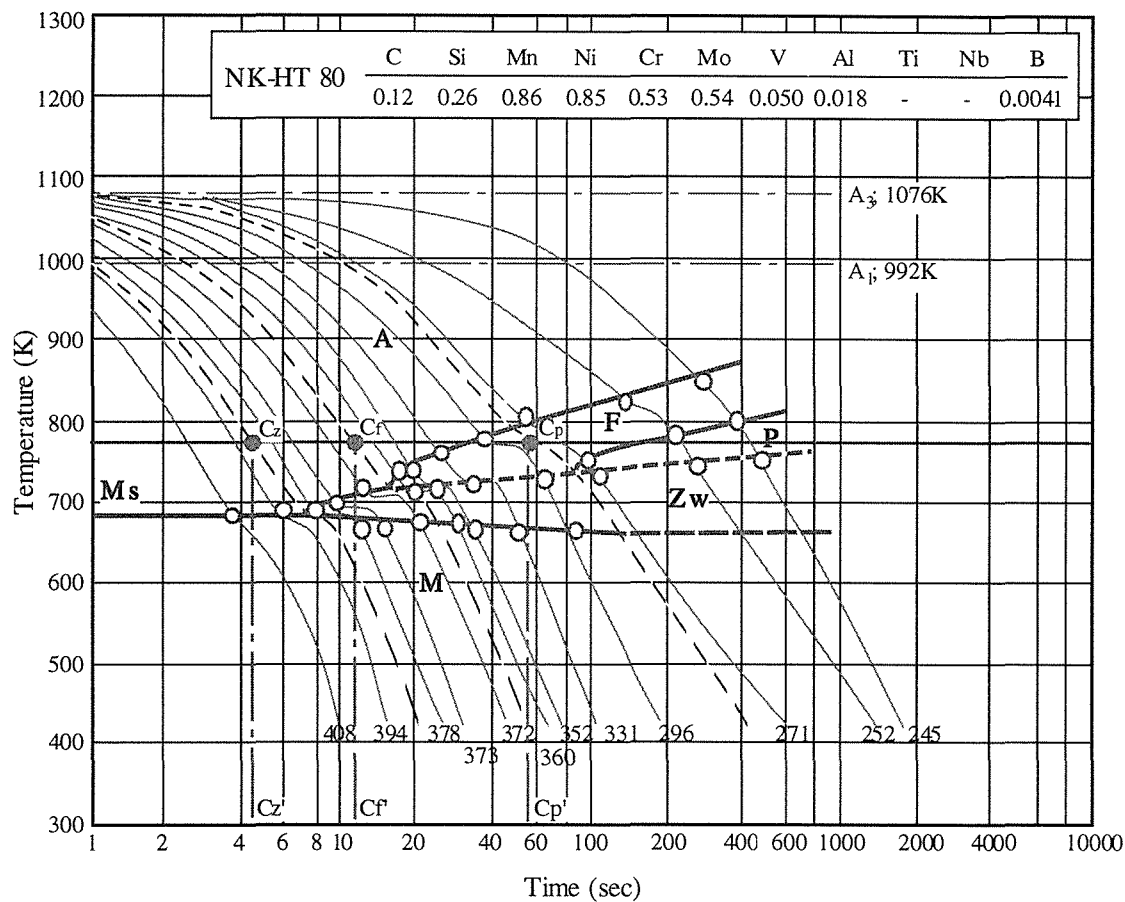
Time 15sec Hv 382

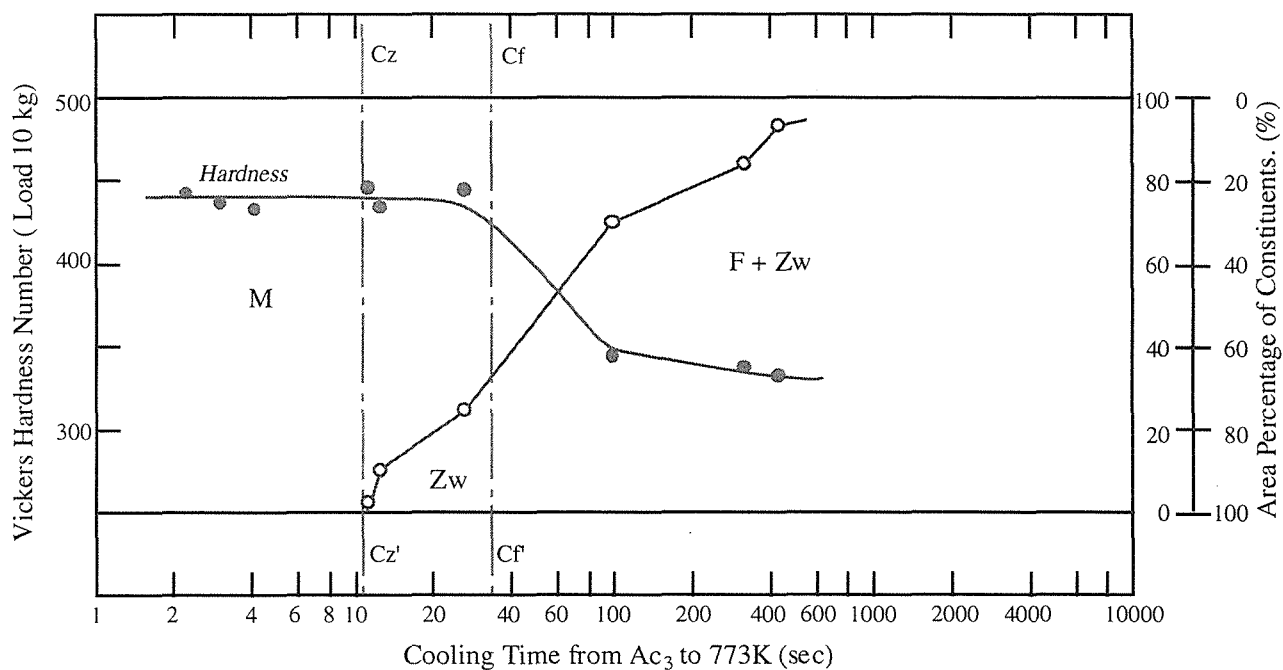
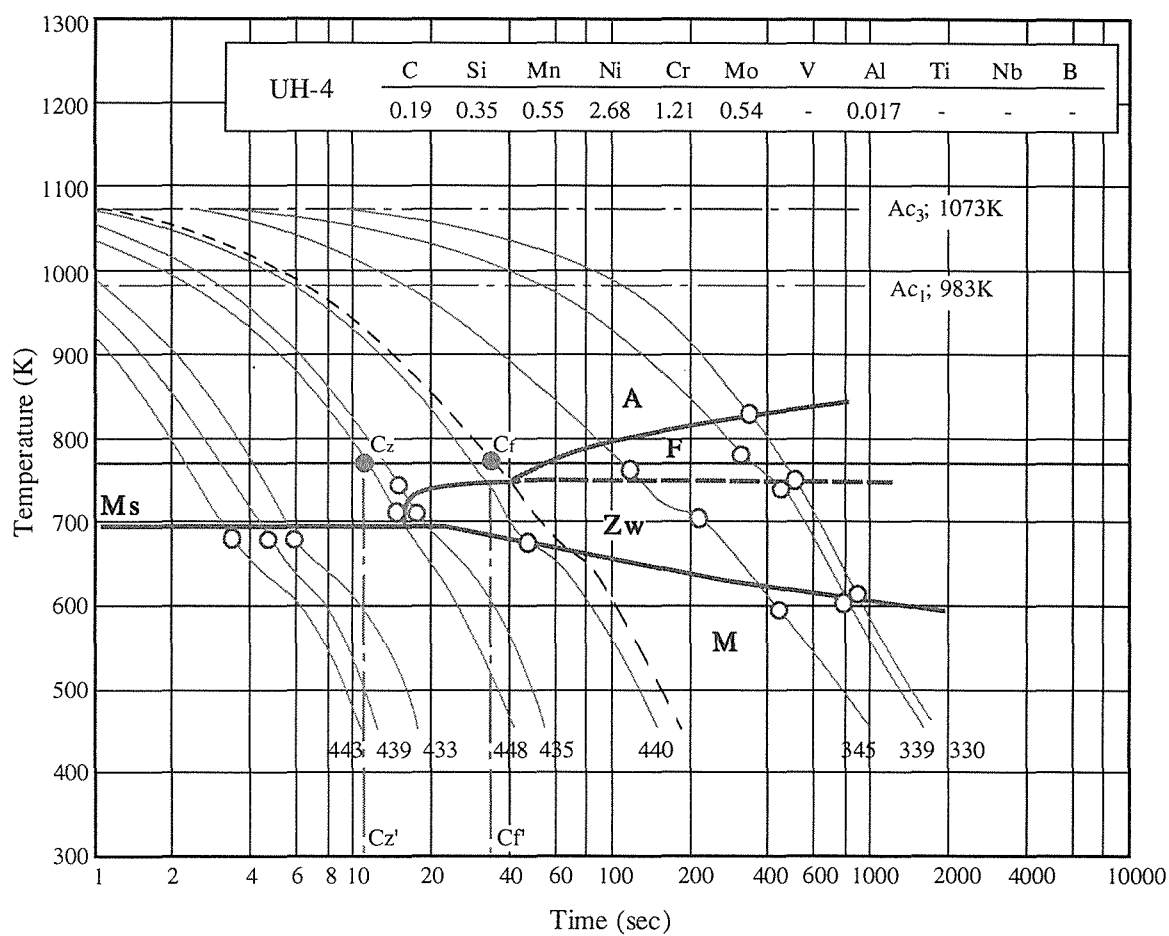


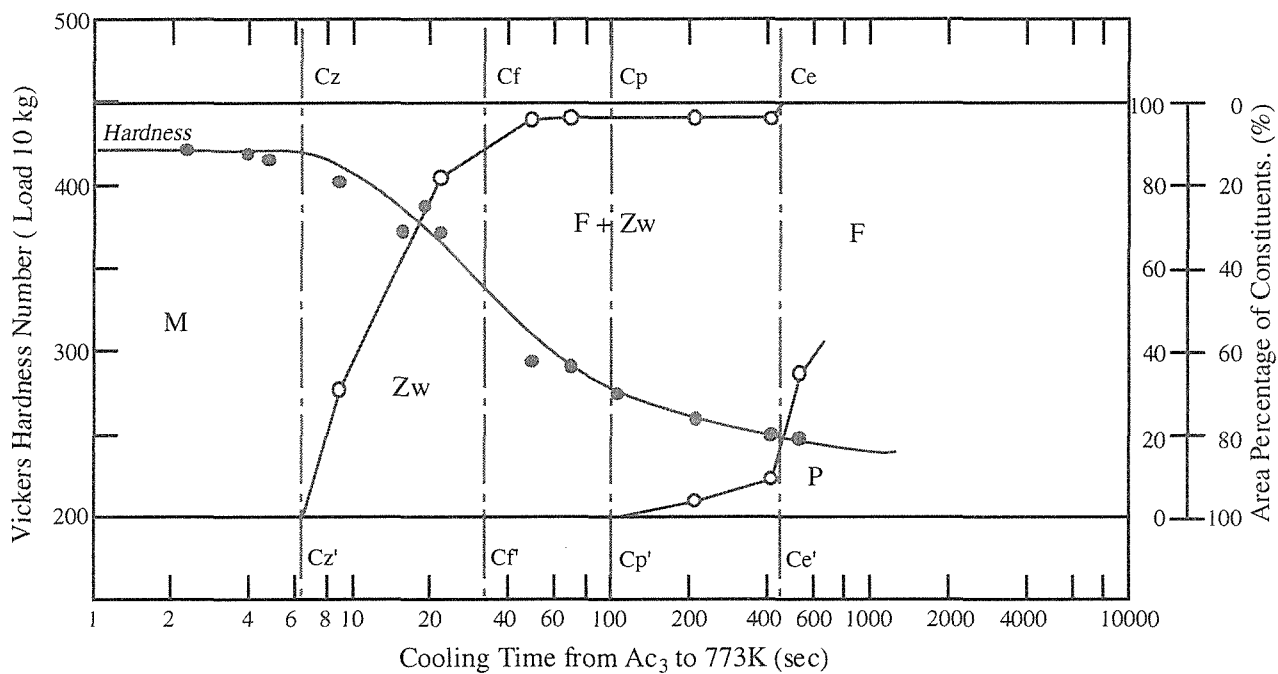
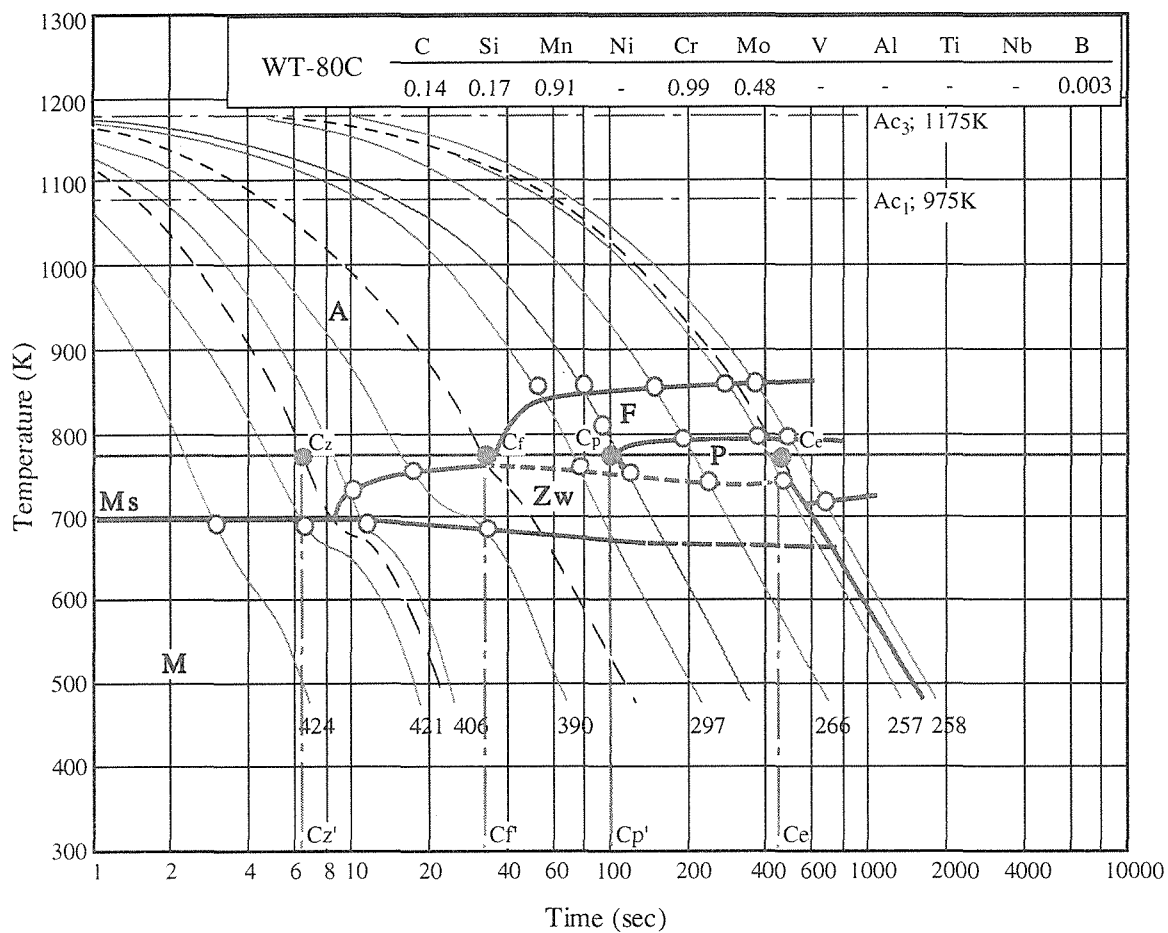
Time 36sec Hv 331

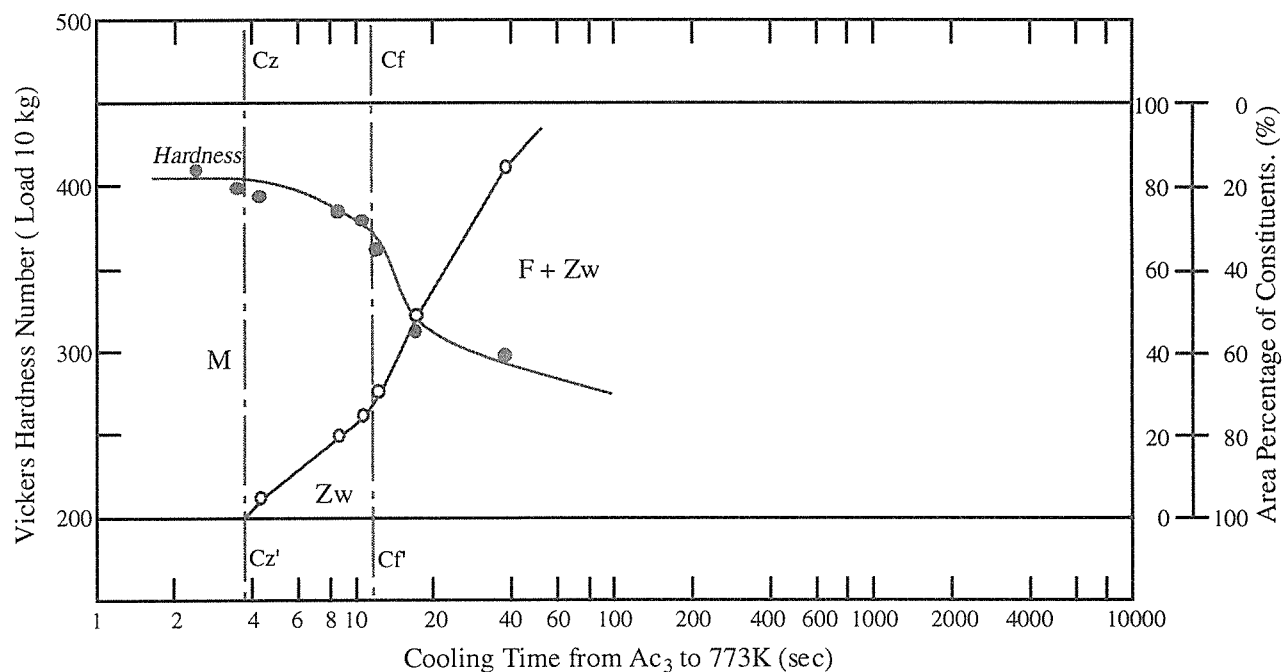
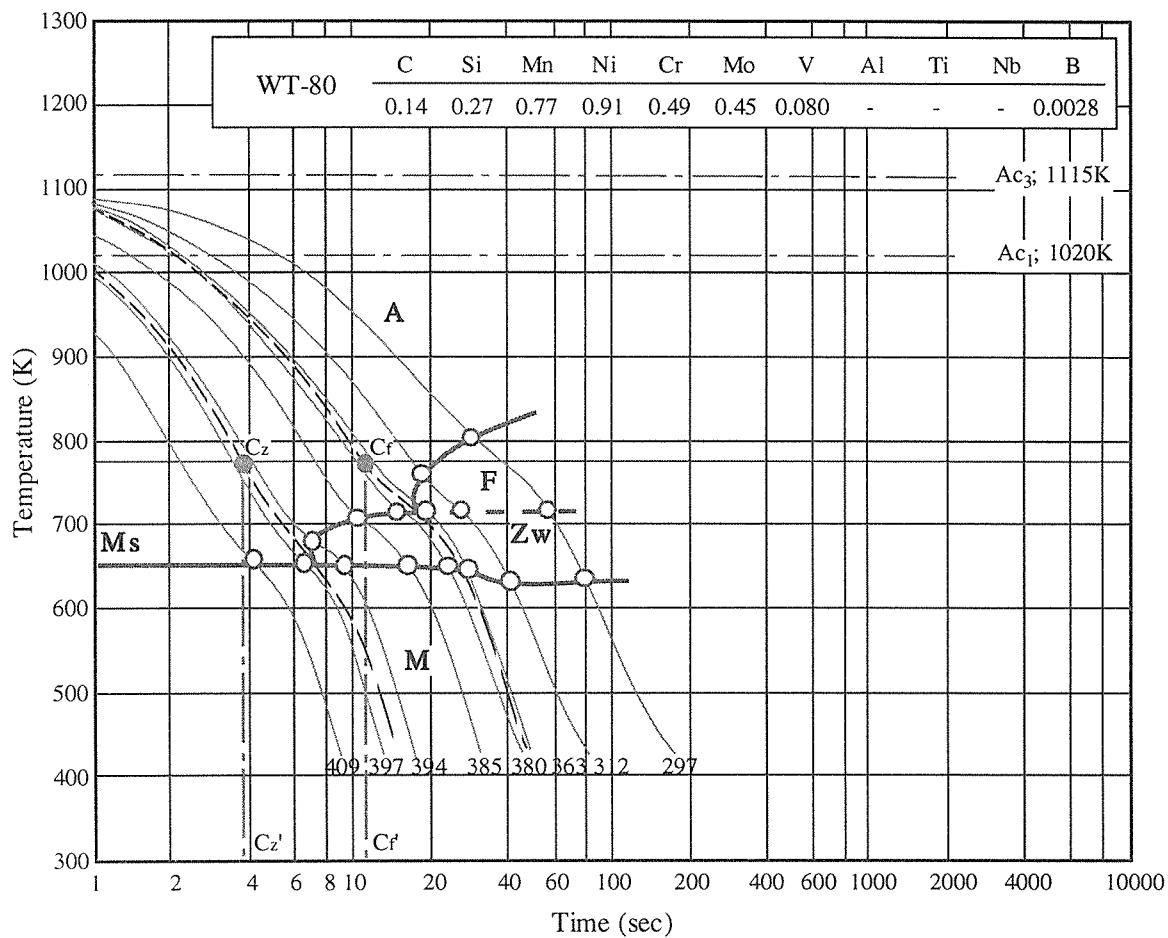


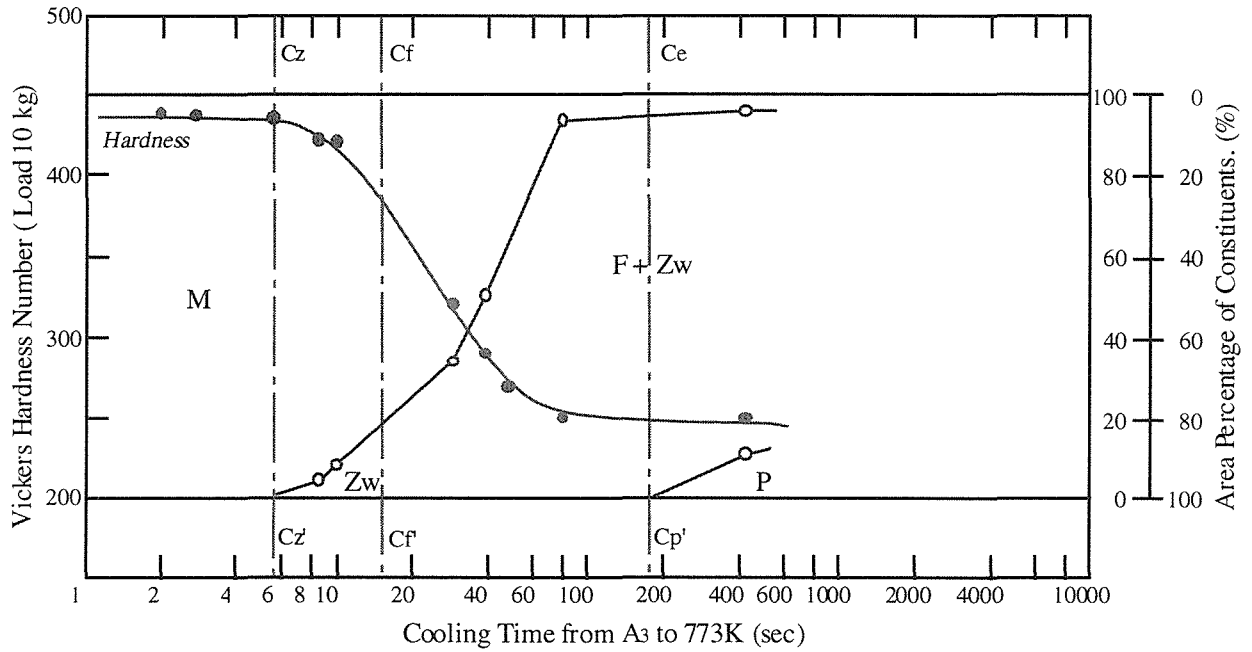
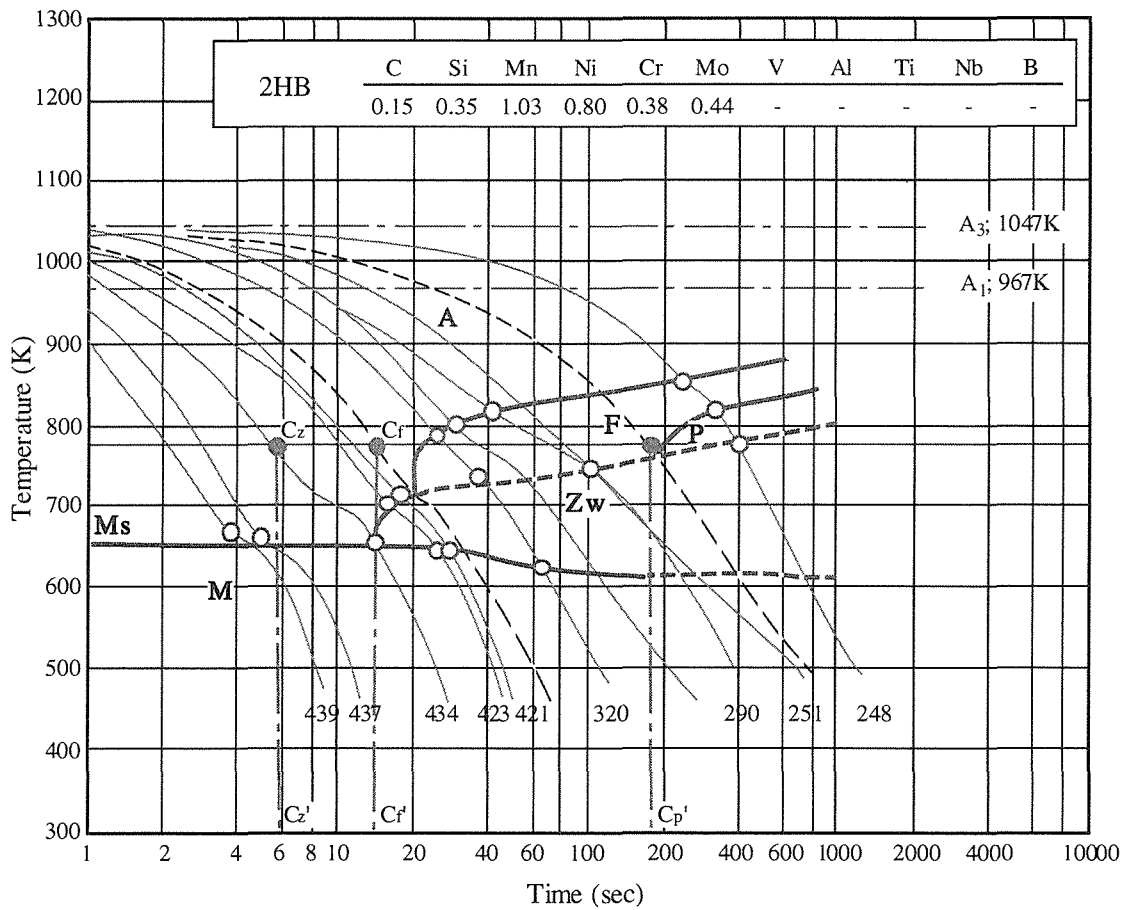
Time 90sec Hv 280





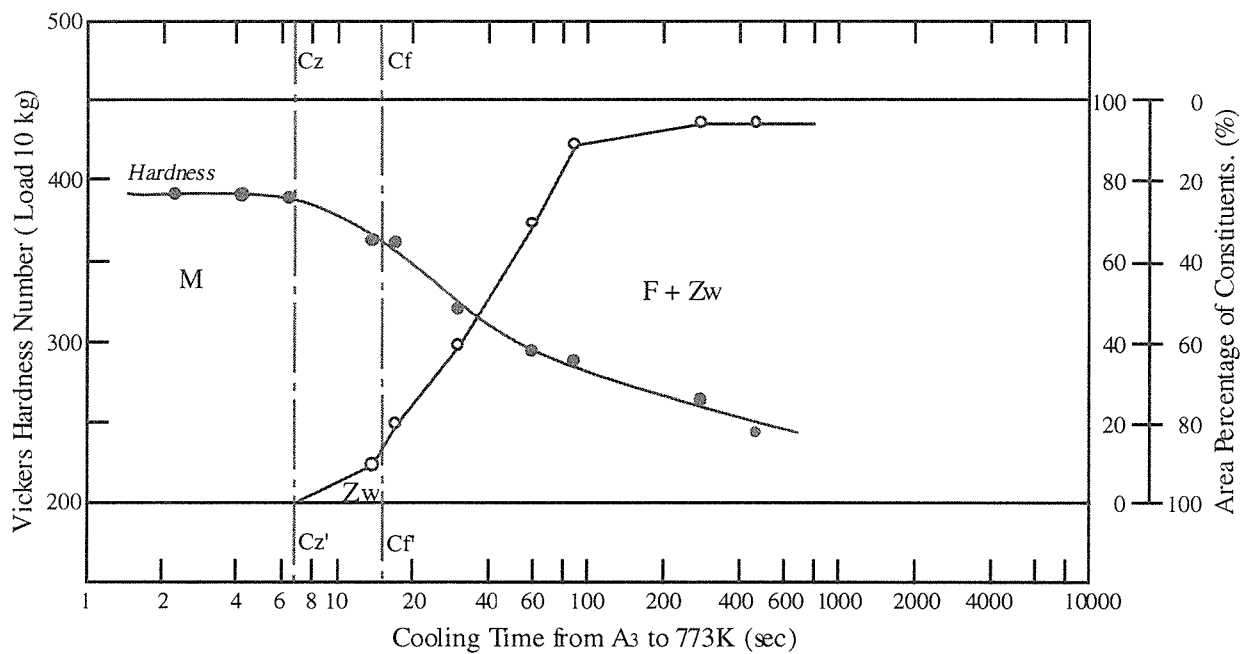
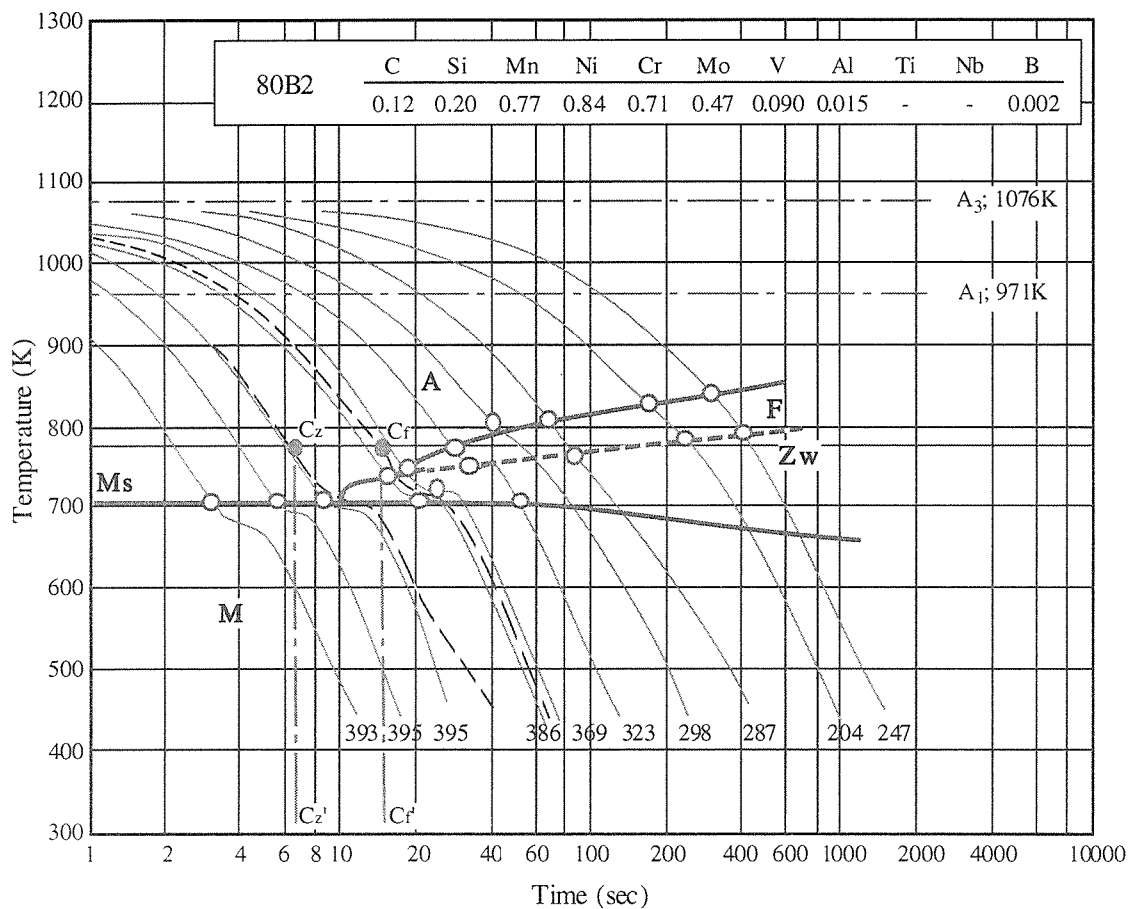


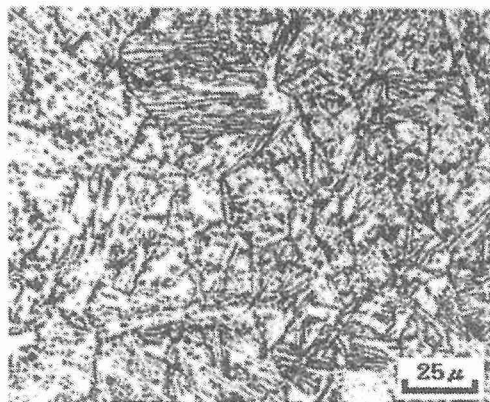




HT-90kg/mm² Class

Steel	Chemical Composition (mass%)														Page	Ref.
	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V	Ti	Nb	Al	B		
80B2	0.12	0.2	0.77	-	-	0.84	0.71	-	0.47	0.09	-	-	0.015	0.002	278	P
8A	0.15	0.33	1.03	0.011	0.014	0.8	0.38	0.25	0.44	-	-	-	-	-	280	12
80A2	0.1	0.35	0.78	-	-	1.29	0.44	-	0.29	-	-	-	0.022	-	282	P
HY80 NA	0.16	0.28	0.36	-	-	2.25	1.2	-	0.42	-	-	-	-	-	284	P
WT-80	0.12	0.27	0.86	-	-	0.94	-	-	0.41	0.004	-	-	-	0.0012	285	P
2HUltra	0.13	0.4	0.83	0.017	0.014	0.95	0.48	0.24	0.5	-	-	-	-	-	286	12
Hi-Z	0.12	0.3	0.69	0.018	0.017	0.82	0.54	0.32	0.47	0.068	-	-	-	0.004	288	10
8B	0.15	0.35	1.06	0.01	0.008	0.81	0.43	0.25	0.4	-	-	-	-	-	290	12
T-1	0.16	0.26	0.75	0.025	0.031	0.79	0.51	0.32	0.46	0.05	-	-	-	0.005	292	9
KO	0.14	0.29	0.87	-	-	0.81	0.56	-	0.46	0.09	-	-	0.02	-	294	P
80C2	0.15	0.25	0.85	-	-	0.86	0.52	-	0.42	0.055	-	-	0.099	-	296	P
UH-3	0.15	0.34	0.38	0.014	0.008	2.92	0.74	0.09	0.53	-	-	-	-	-	298	P
UH-5	0.22	0.5	0.98	0.015	0.014	3	0.51	0.28	0.5	0.01	-	-	0.028	-	299	P





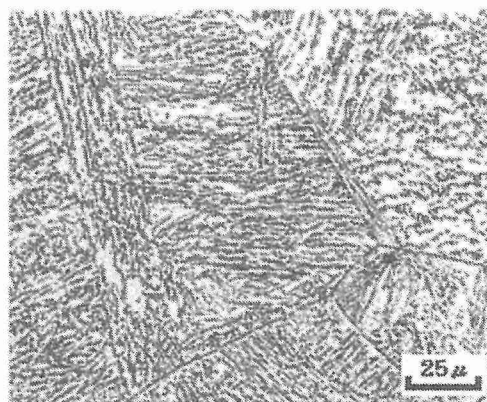
Base

Hv 265



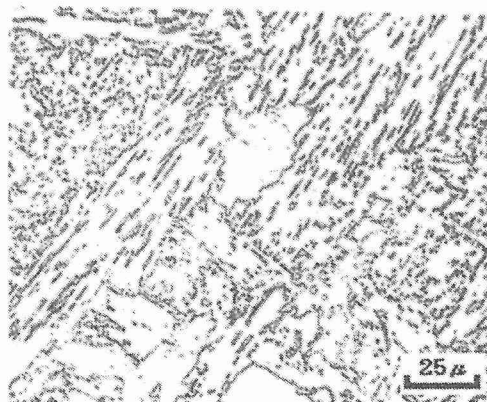
Time 2.2sec

Hv 393



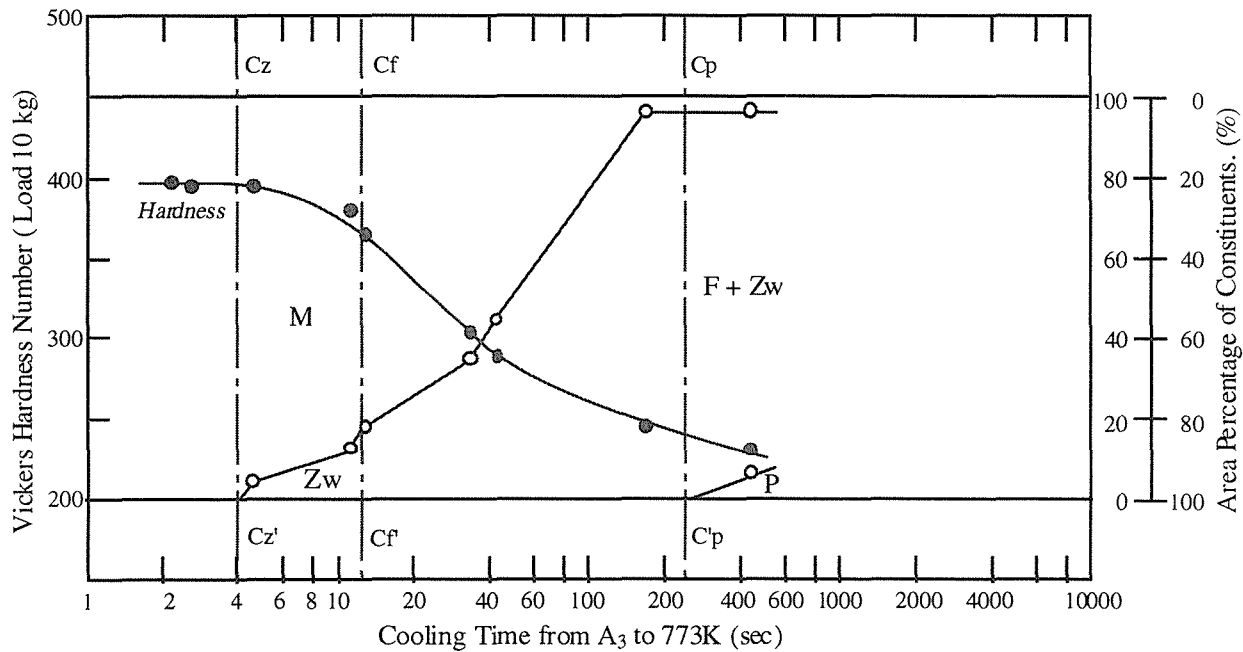
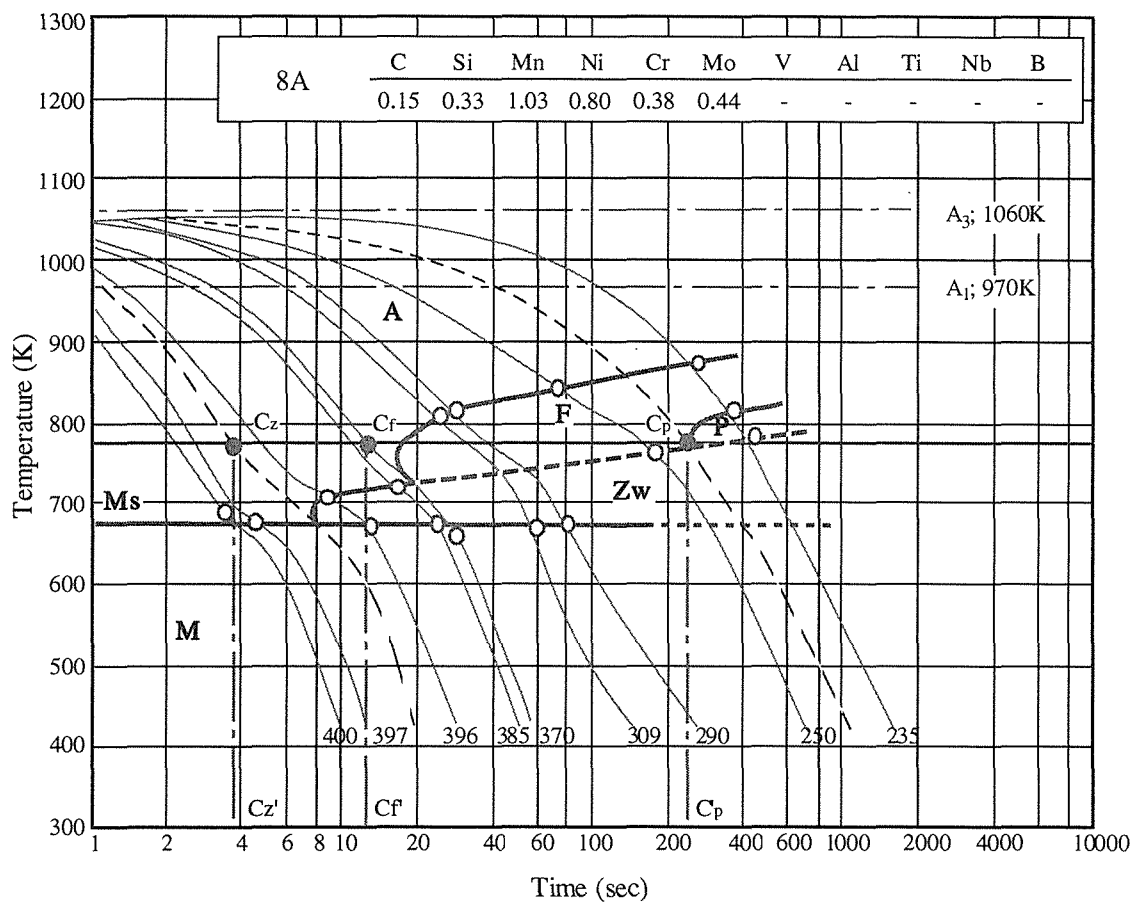
Time 30sec

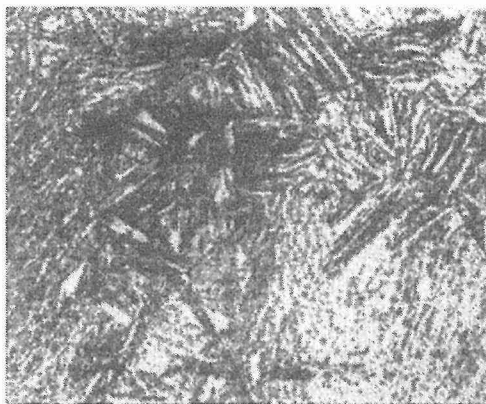
Hv 323



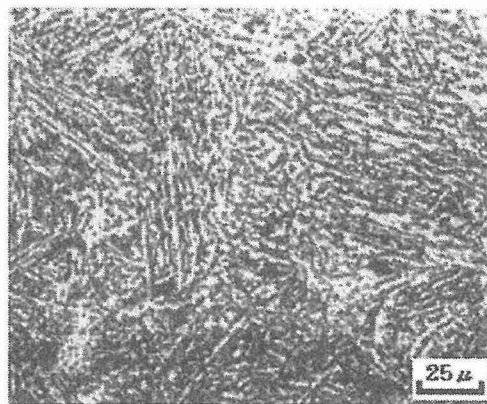
Time 450sec

Hv 247

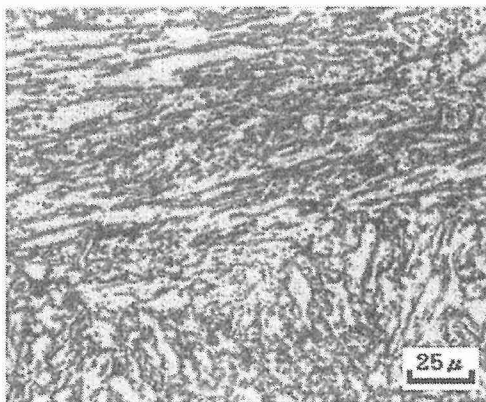




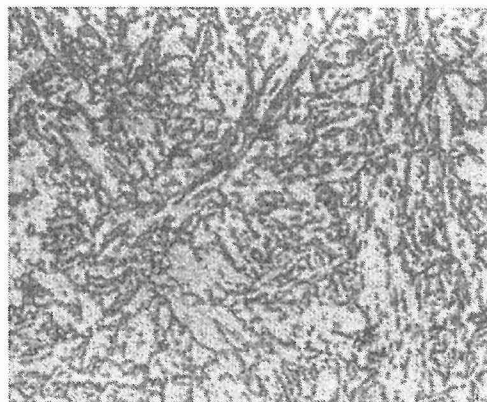
Time 4.9sec Hv 396



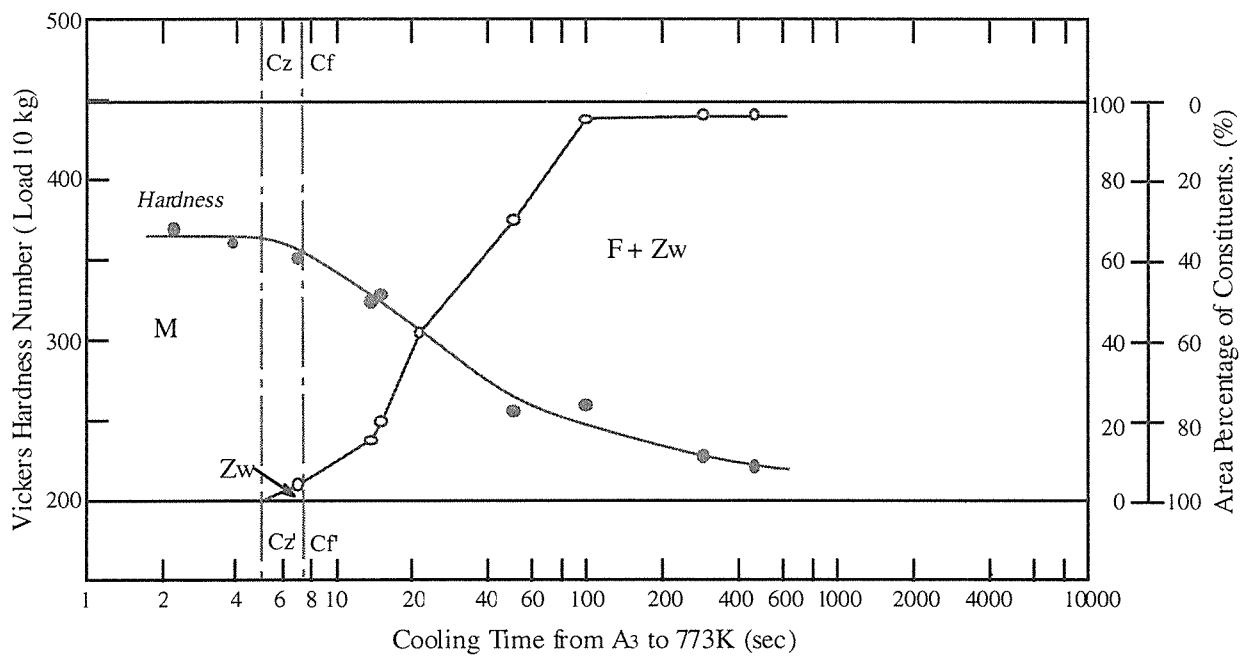
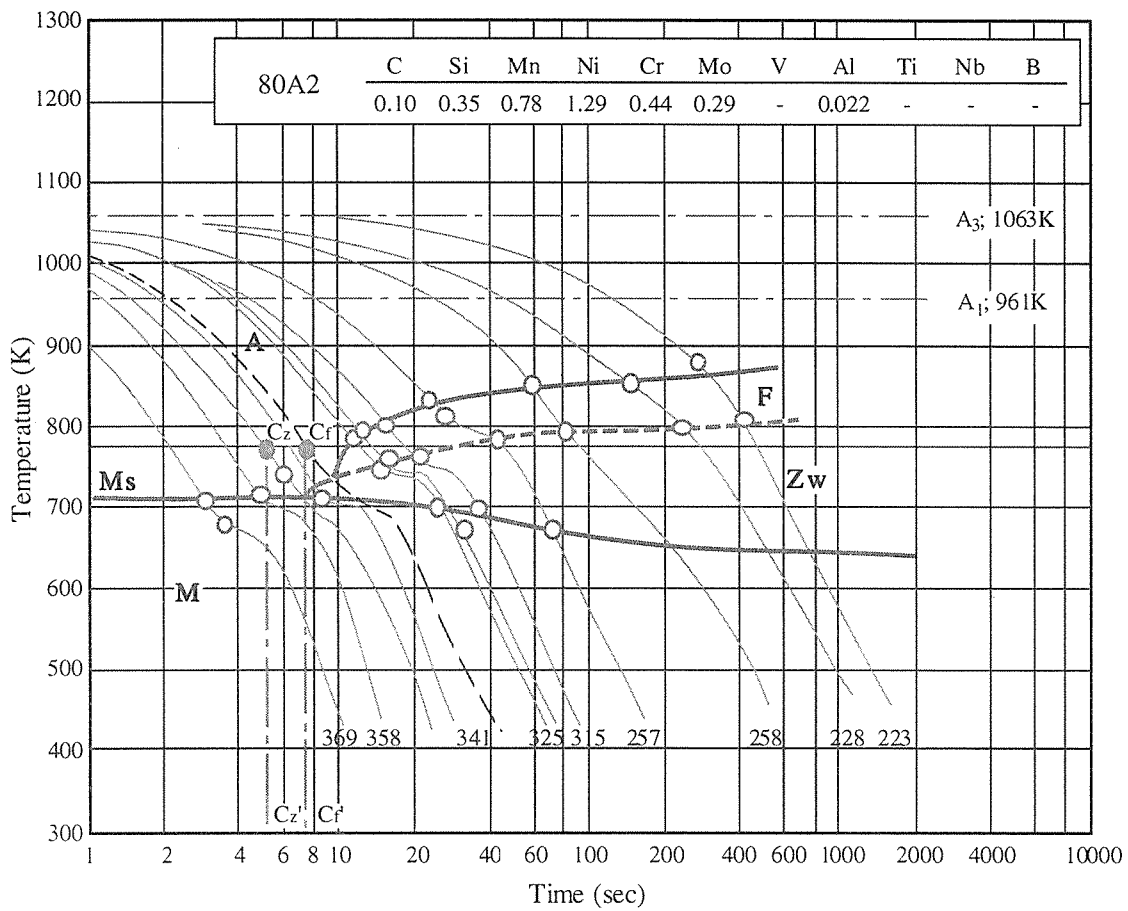
Time 35sec Hv 309

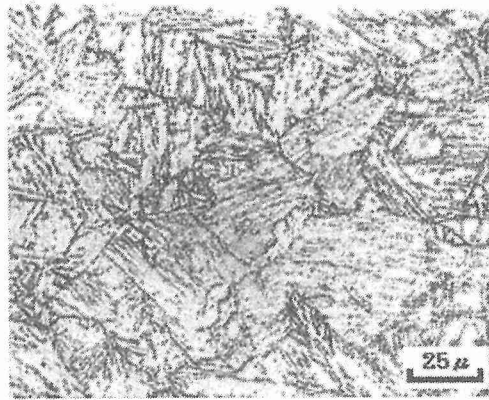


Time 170sec Hv 250



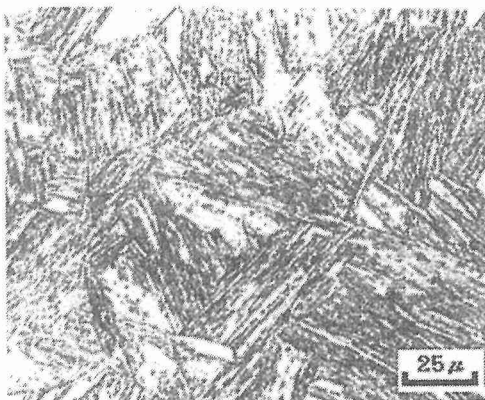
Time 450sec Hv 235





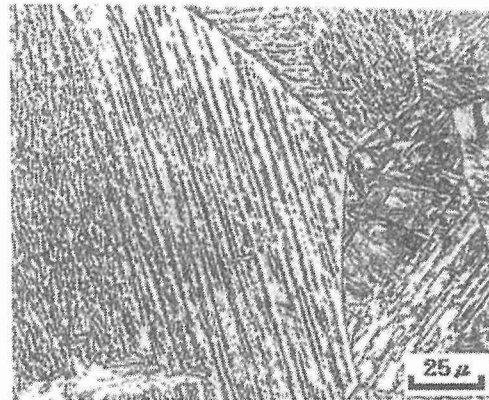
Base

Hv 287



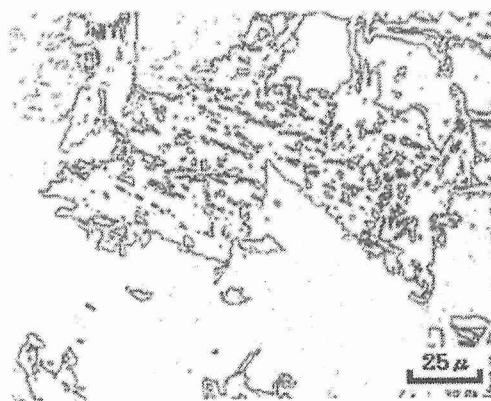
Time 2.2sec

Hv 369



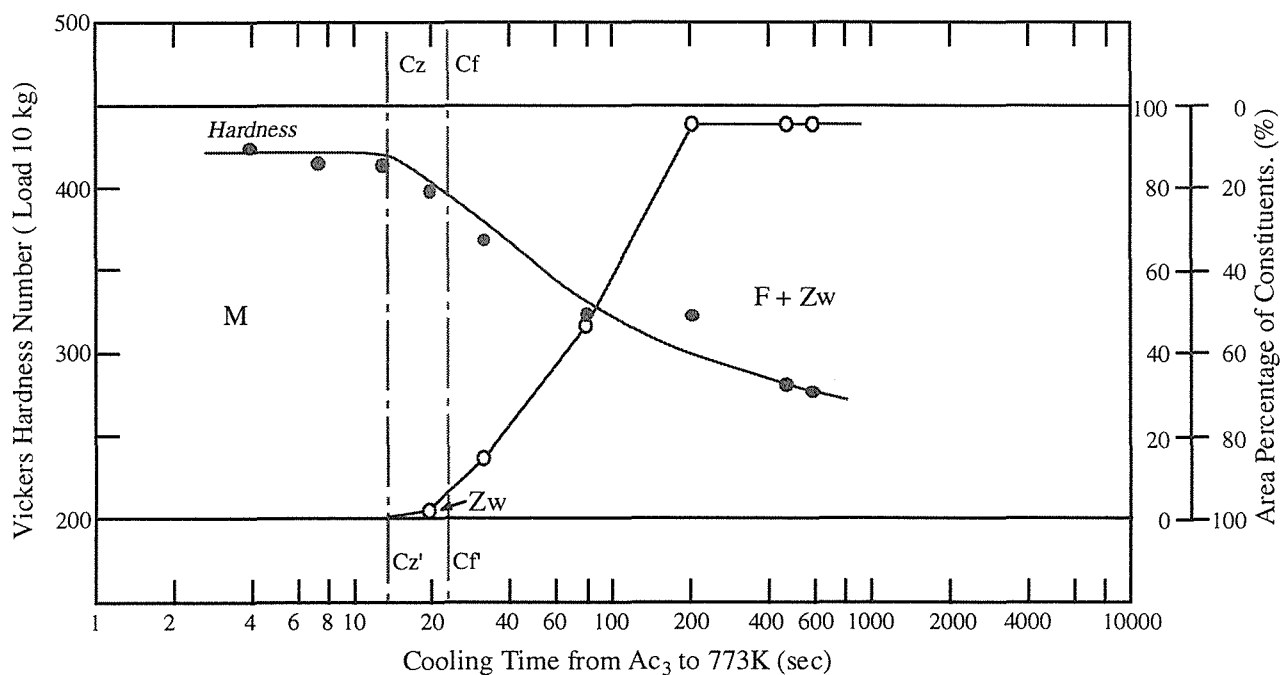
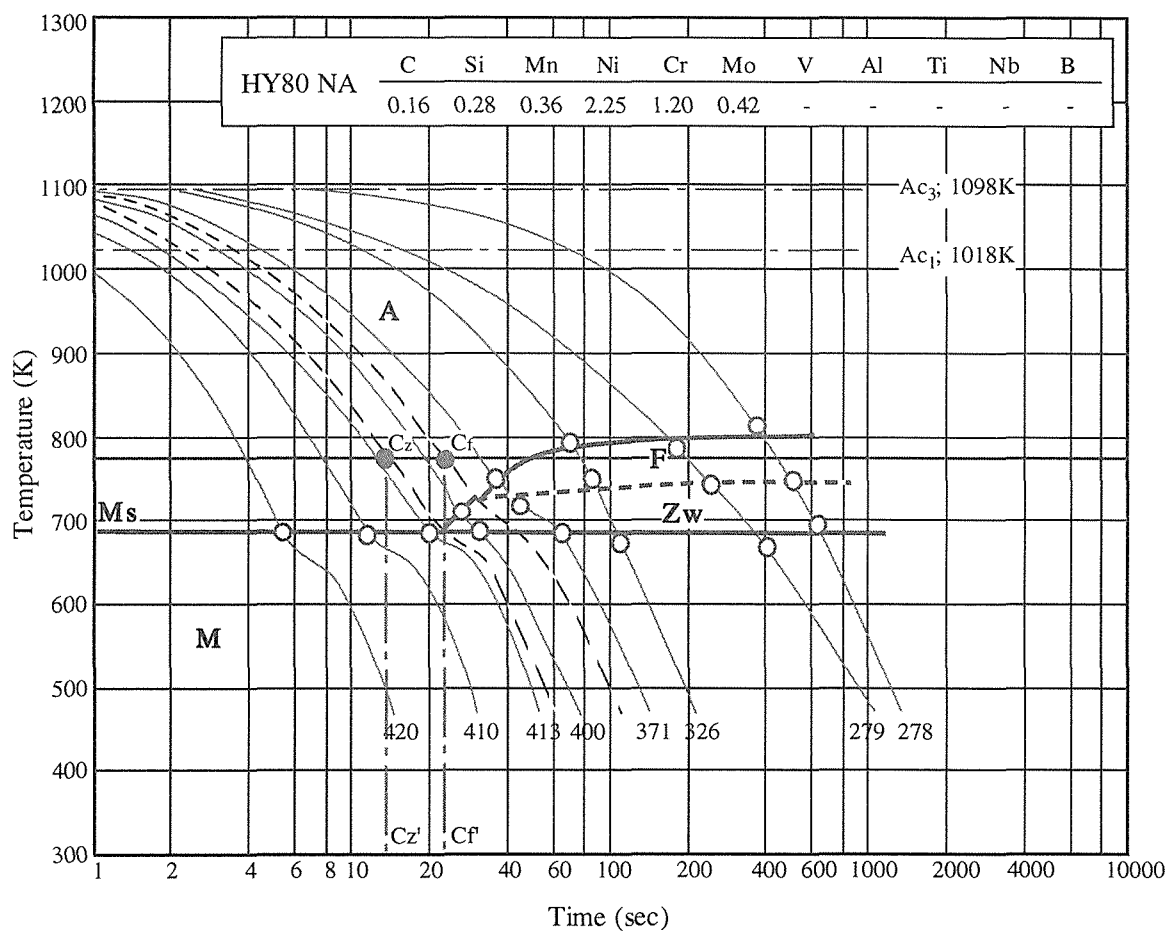
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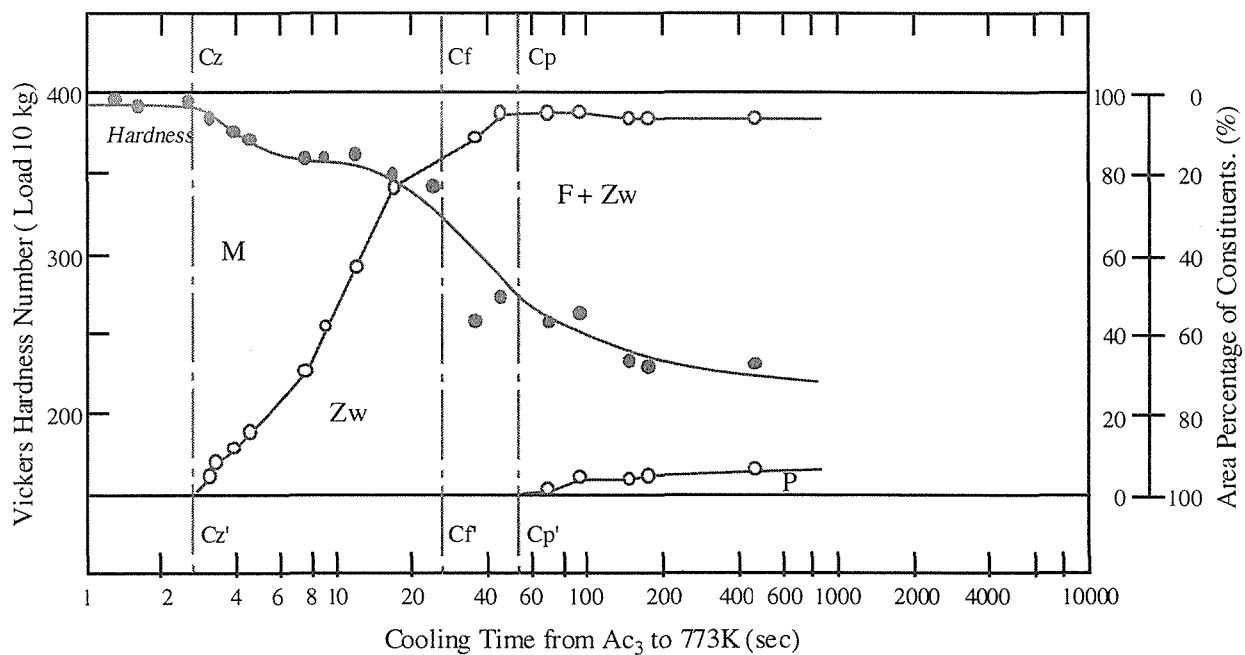
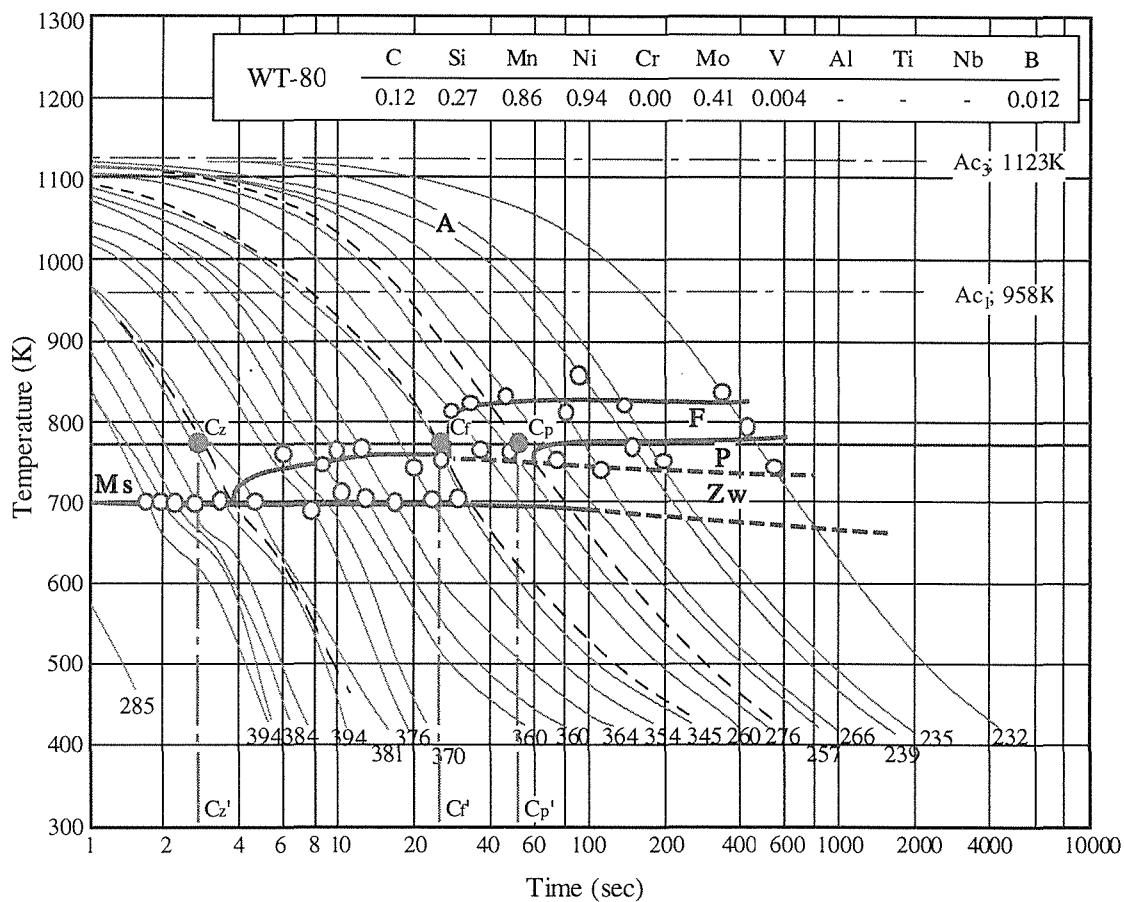
Hv 315

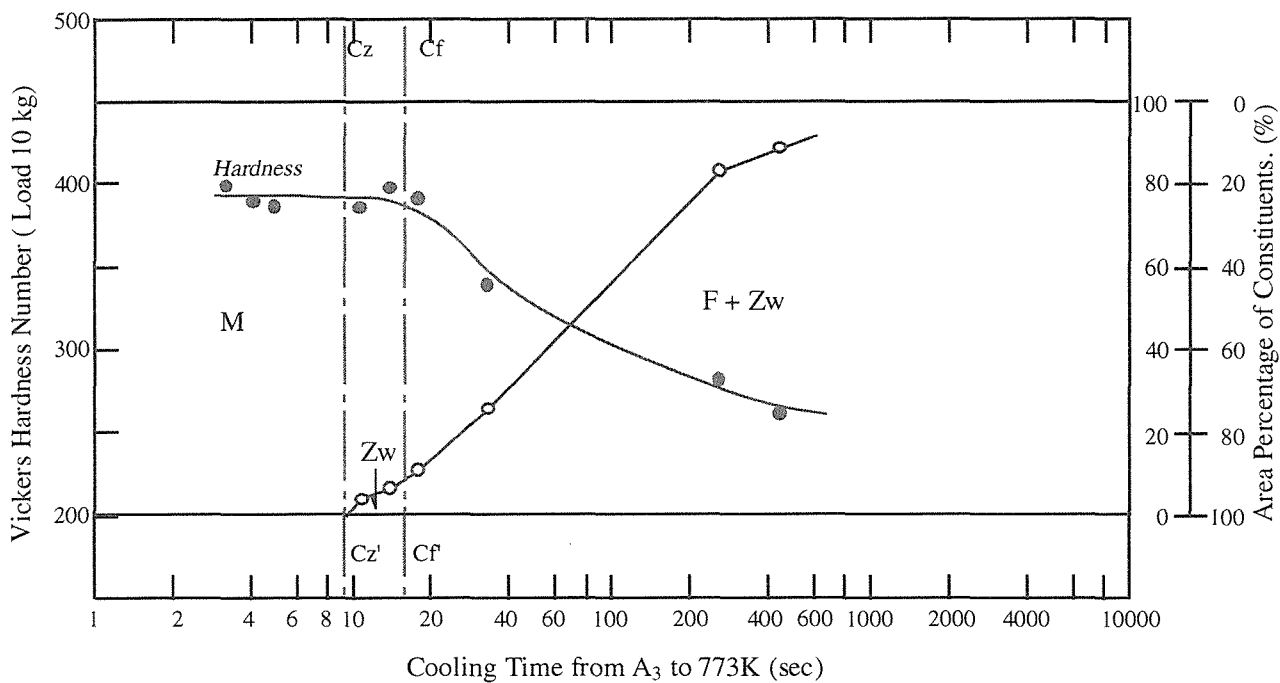
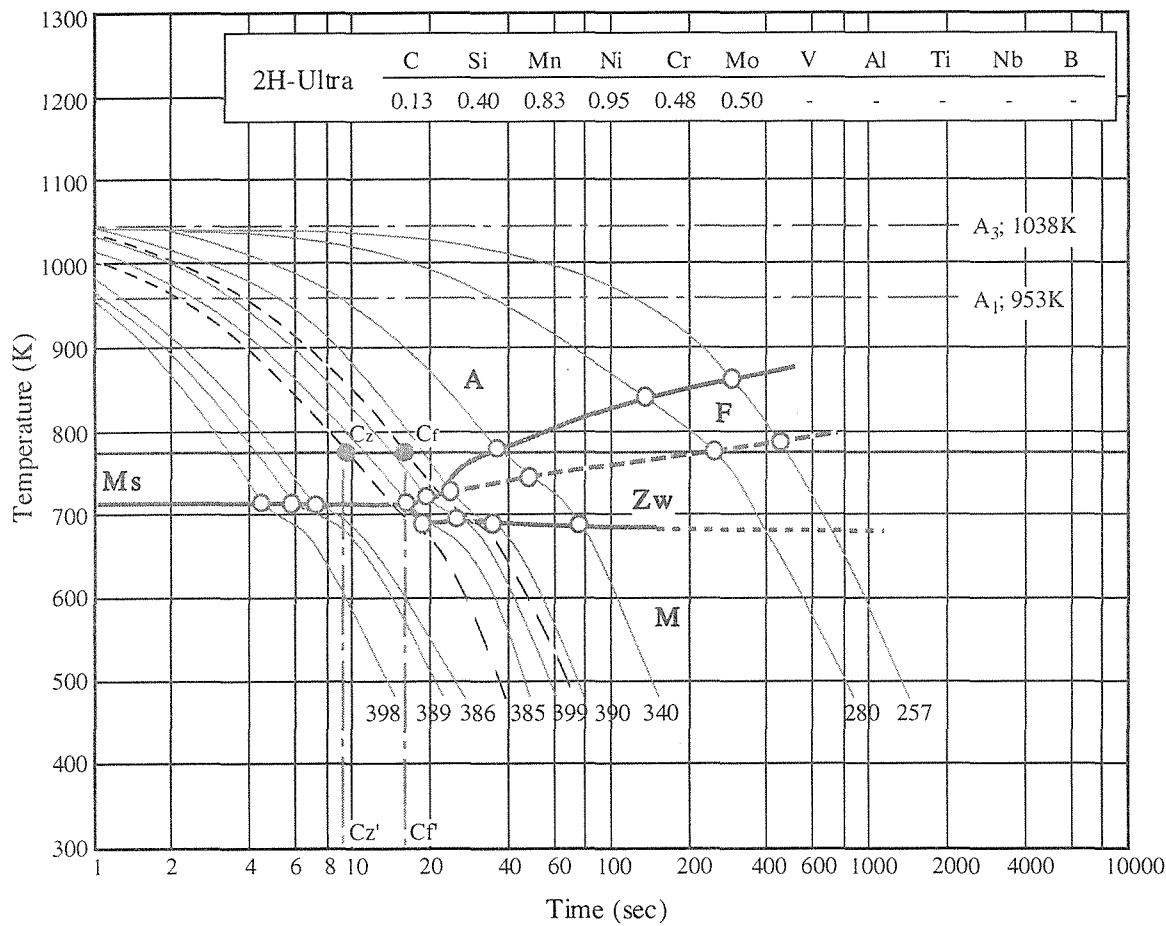


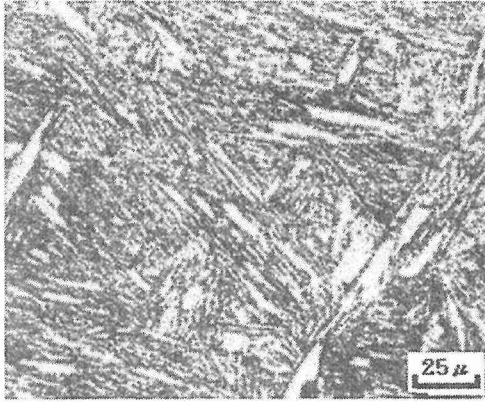
Time 290sec

Hv 228

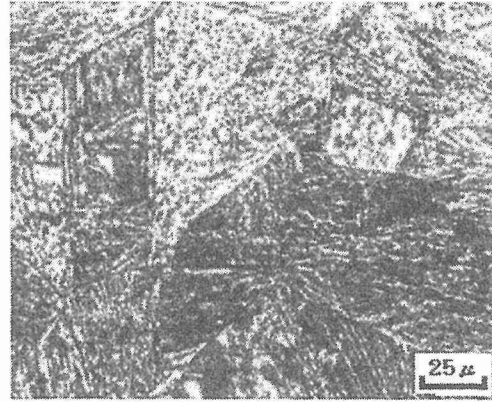




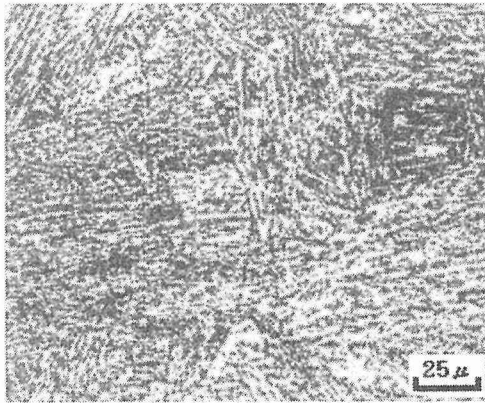




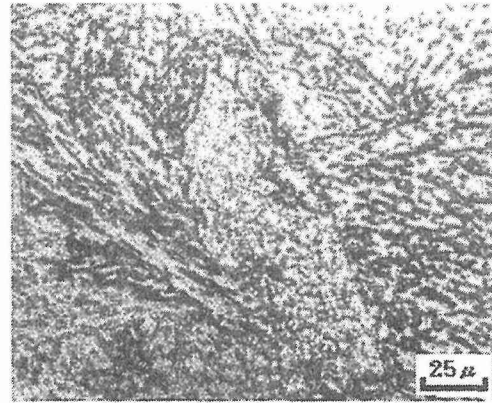
Time 3.5sec Hv 398



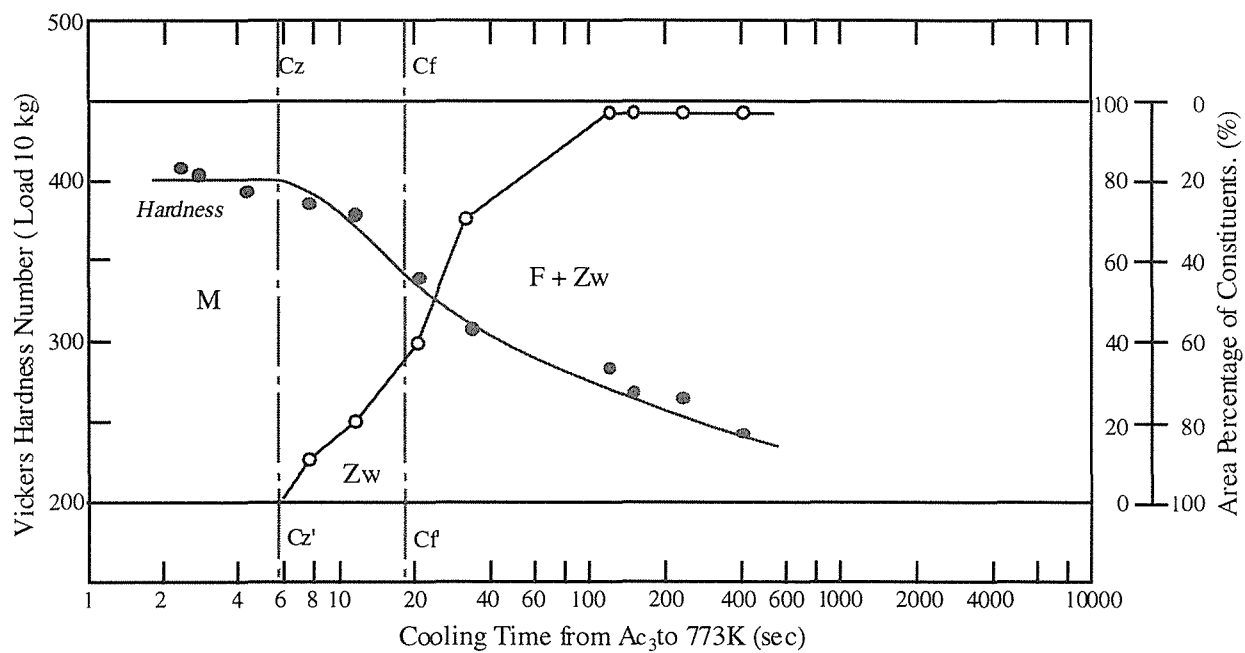
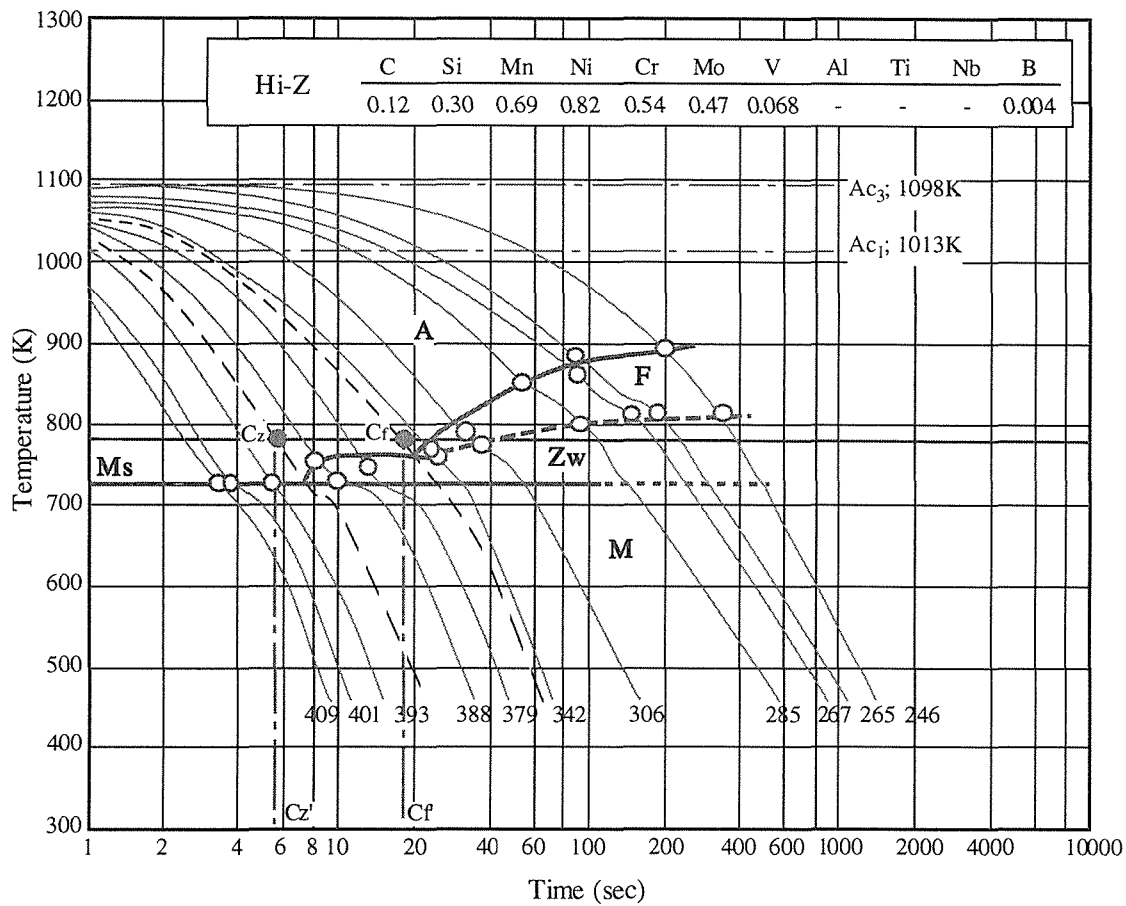
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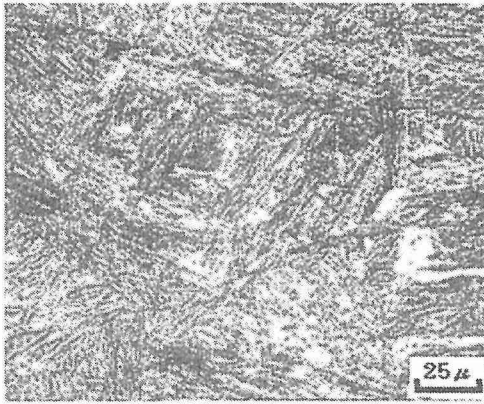


Time 39sec Hv 340

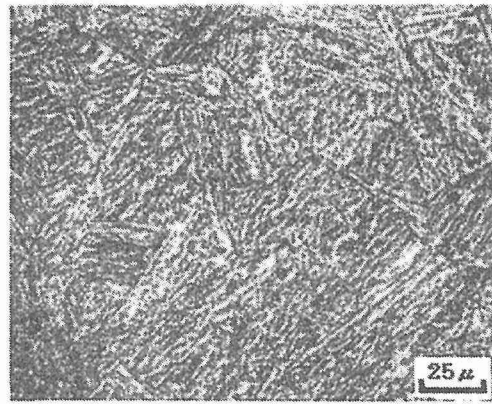


Time 490sec Hv 257

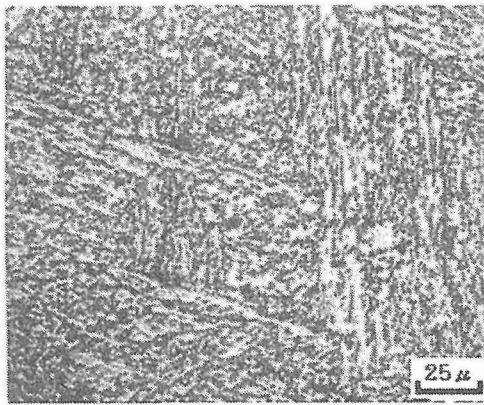




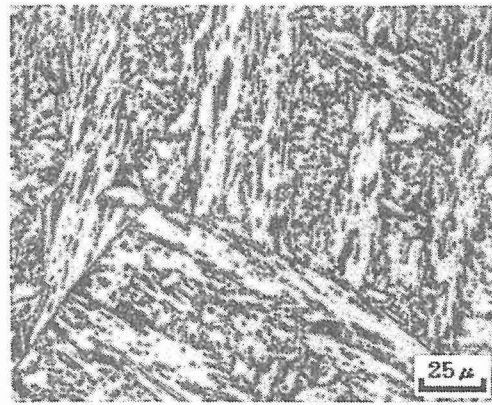
Time 3.0sec Hv 401



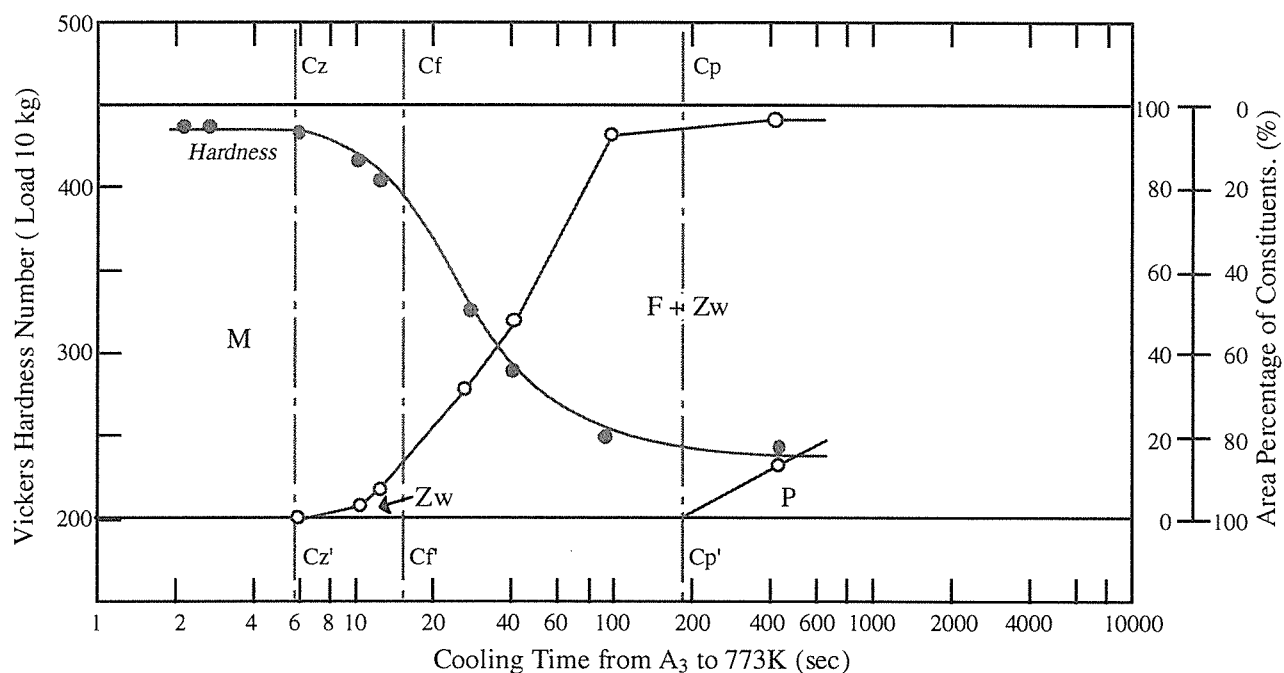
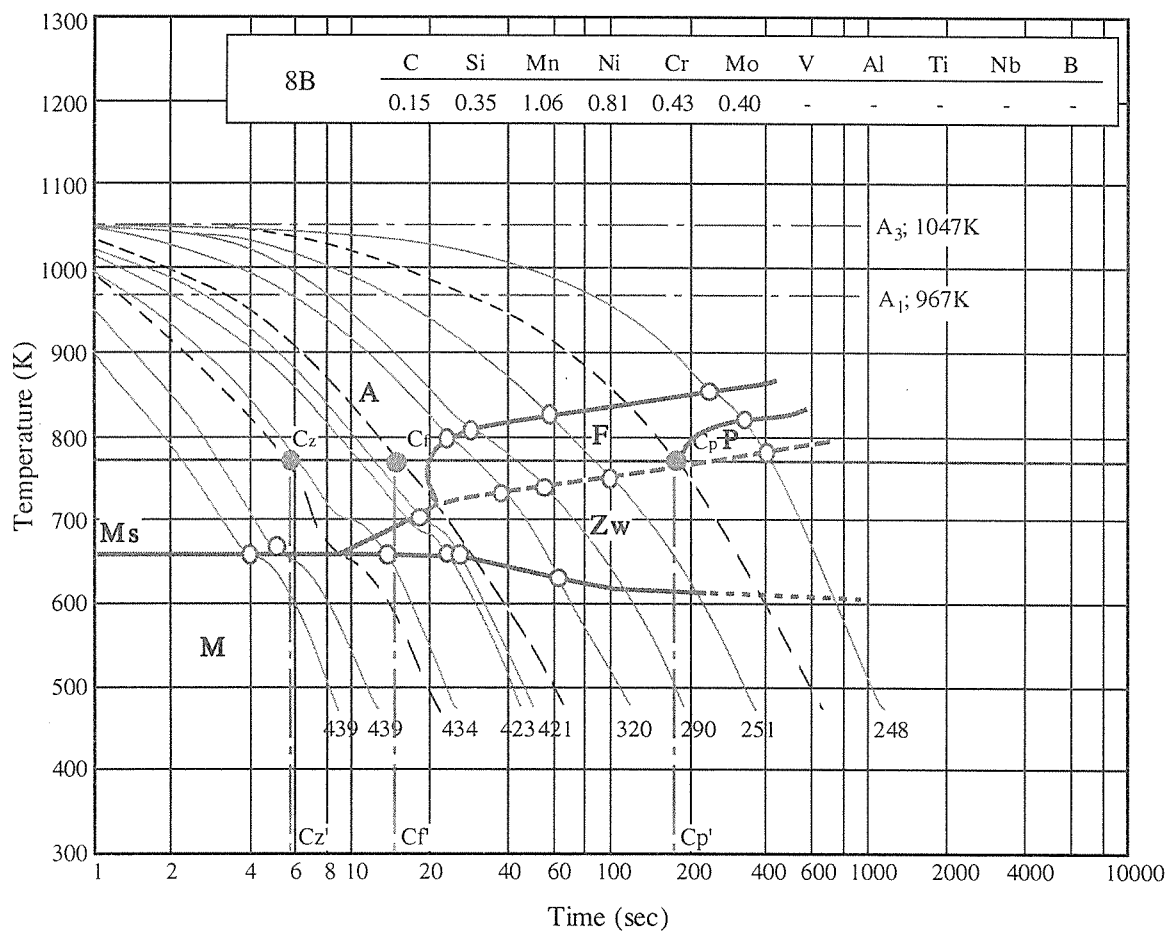
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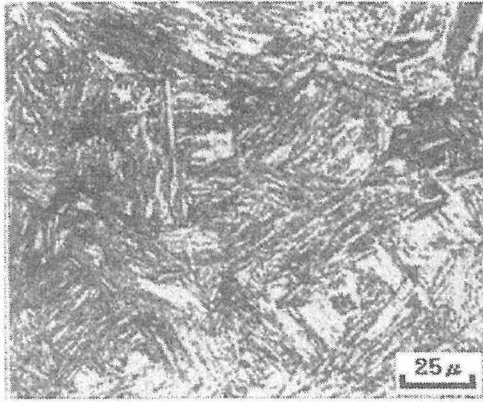


Time 250sec Hv 265

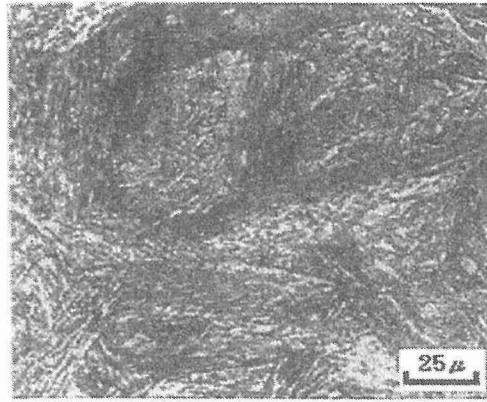


Time 400sec Hv 246

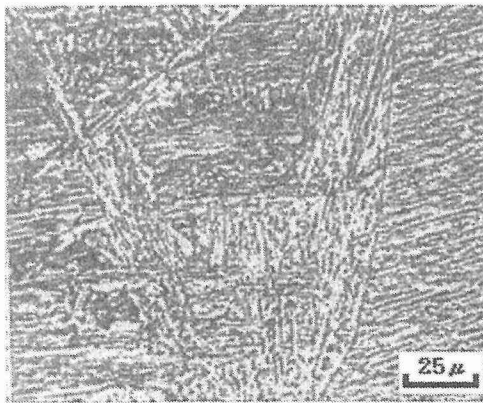




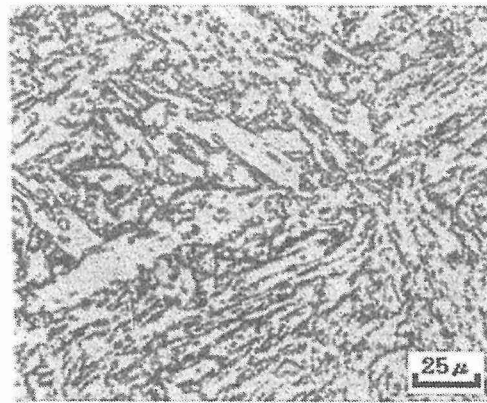
Time 6sec Hv 434



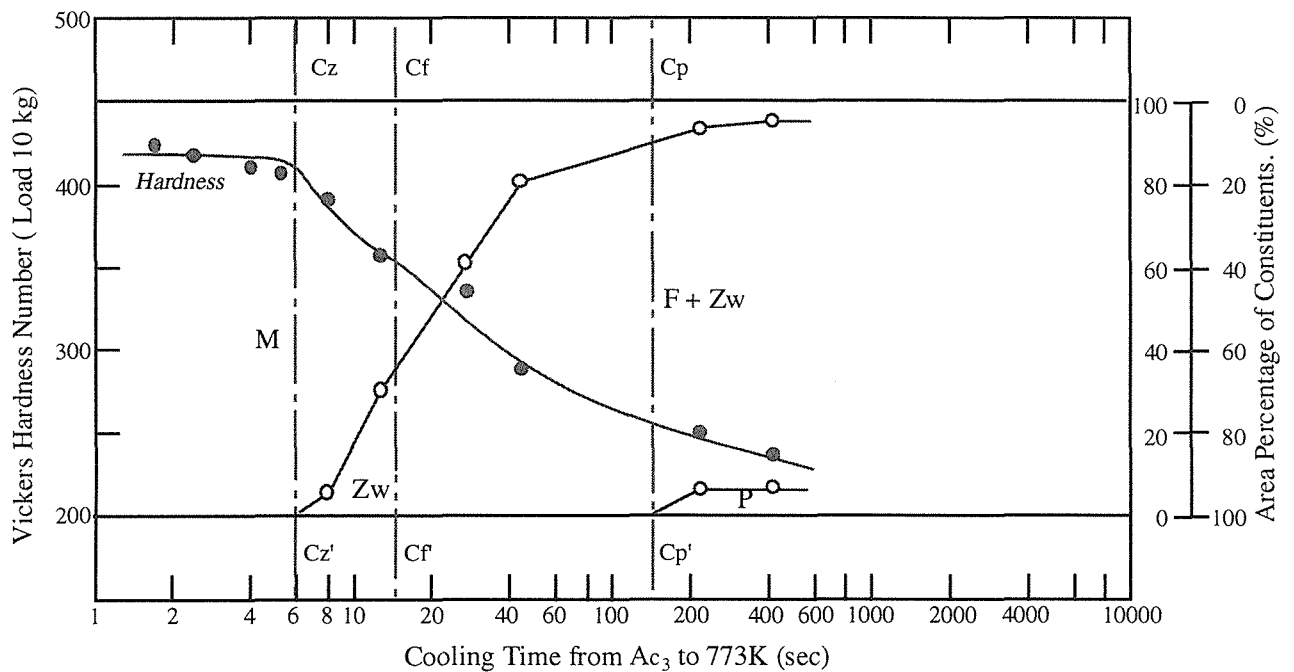
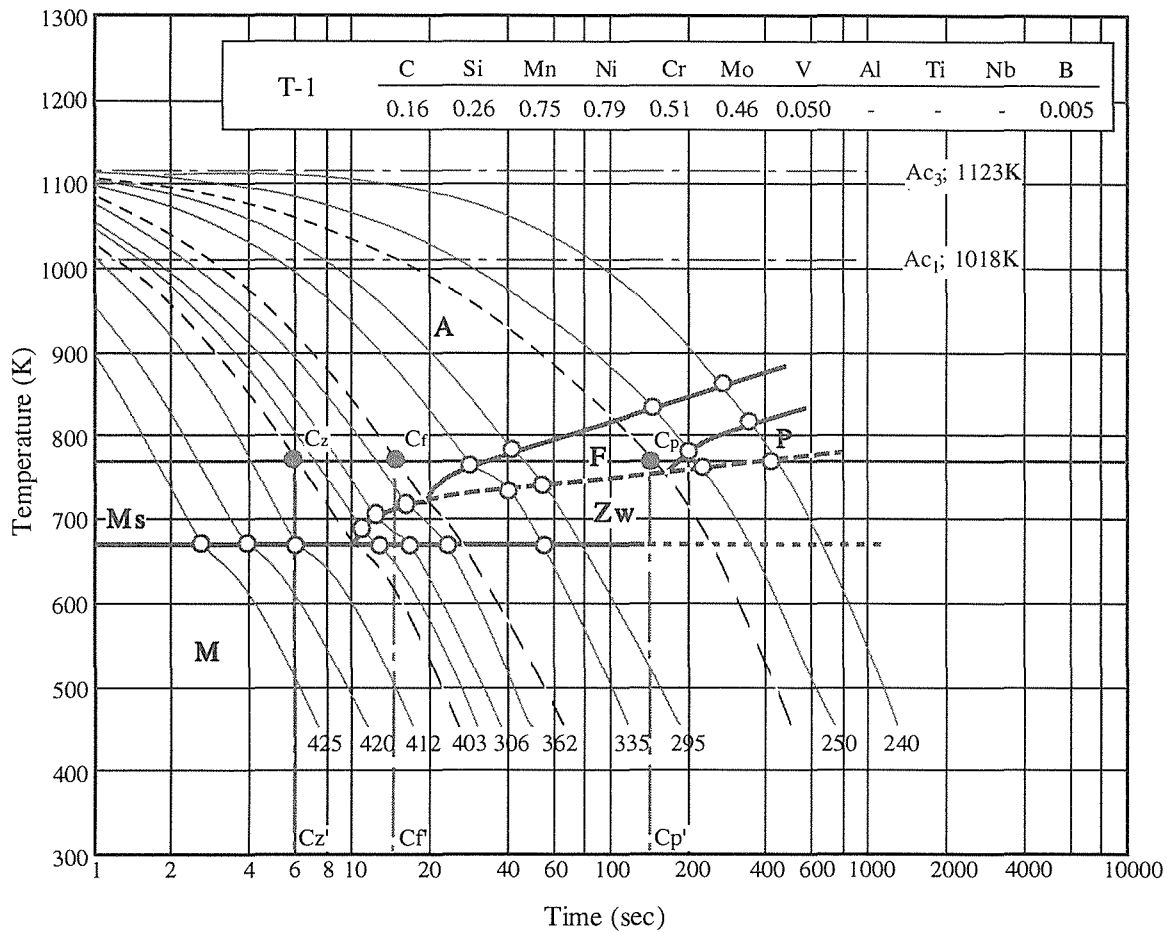
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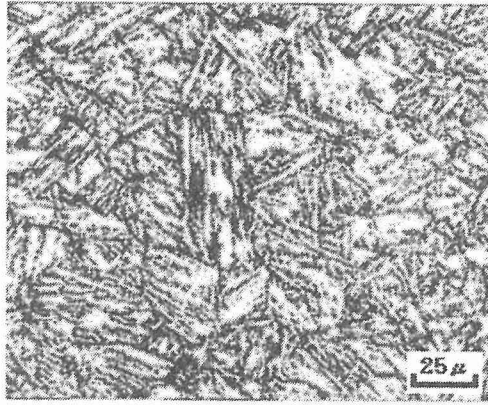


Time 42sec Hv 290

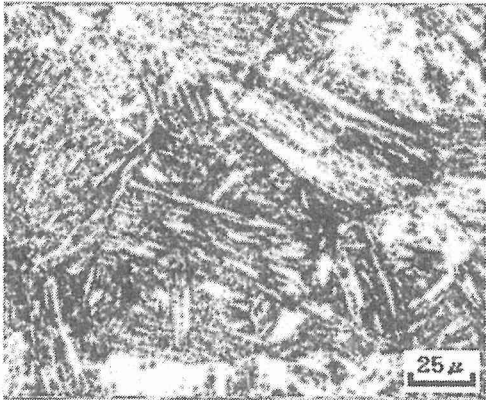


Time 410sec Hv 248

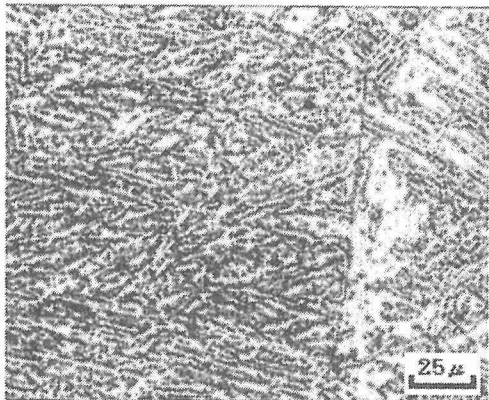




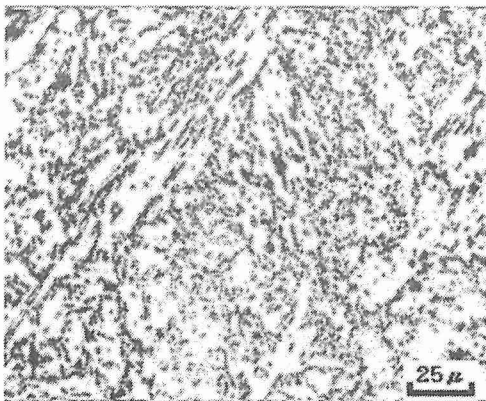
Base



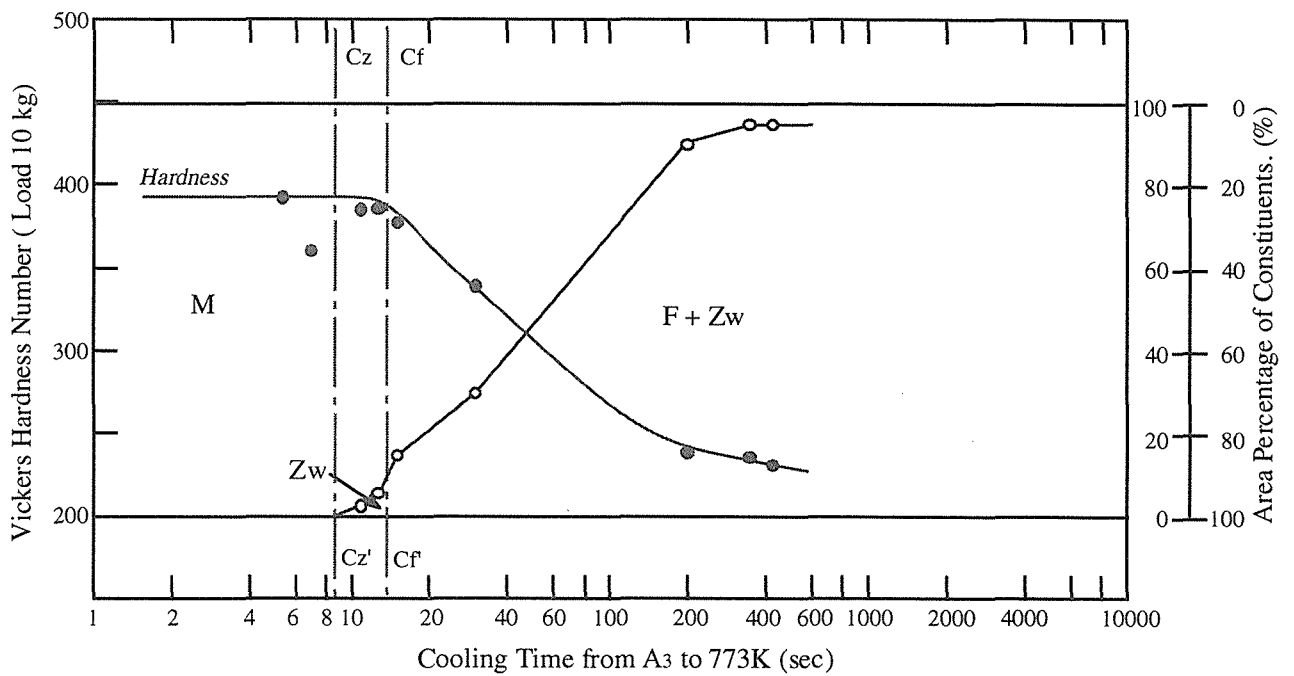
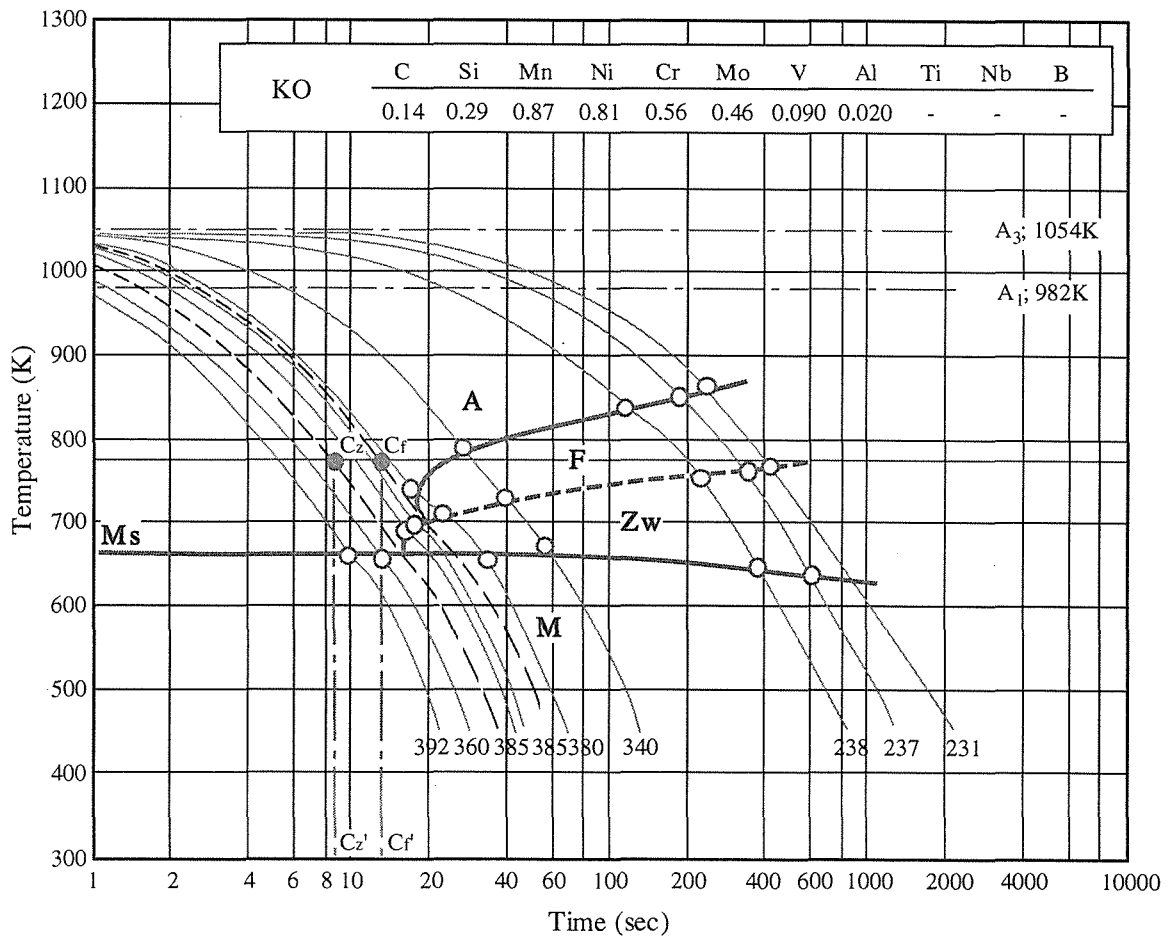
Time 2.5sec Hv 425

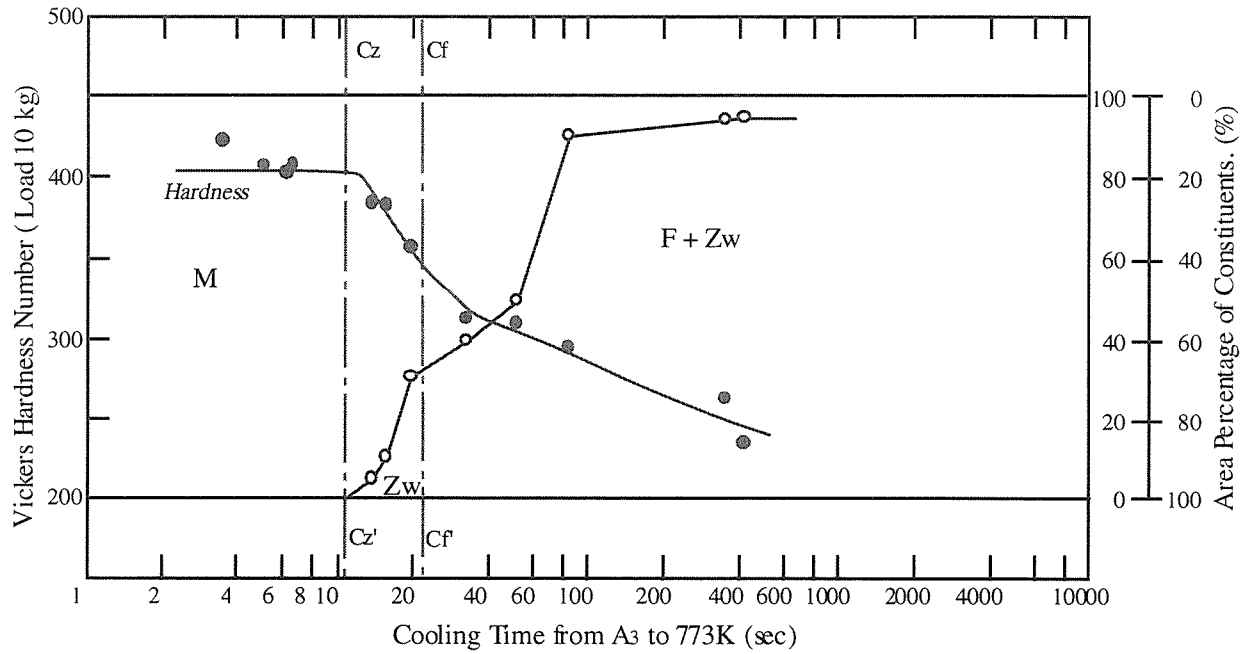
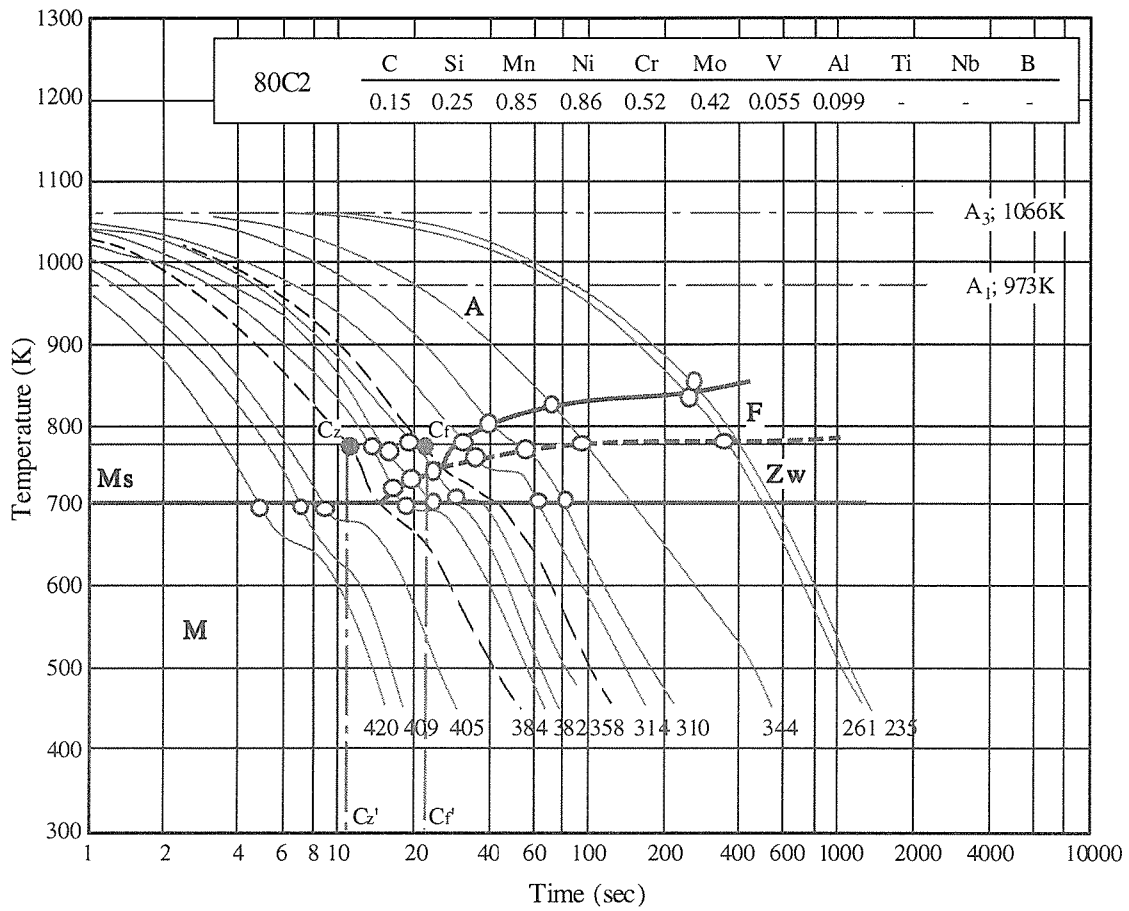


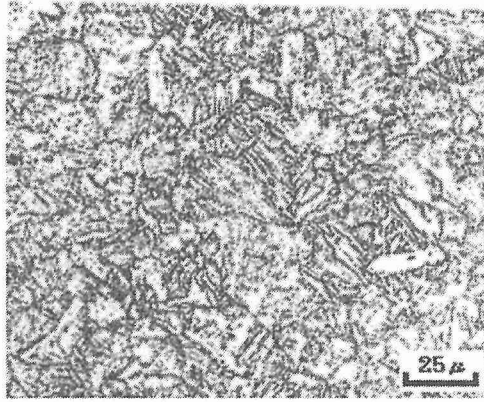
Time 45sec Hv 295



Time 420sec Hv 240

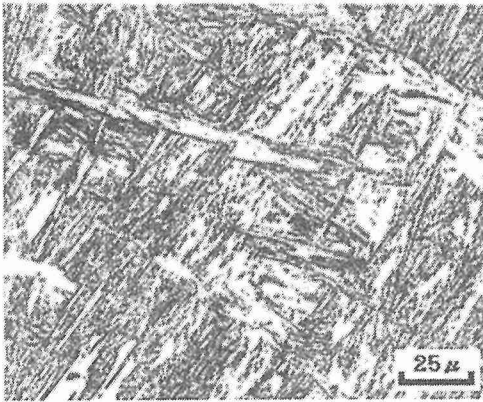






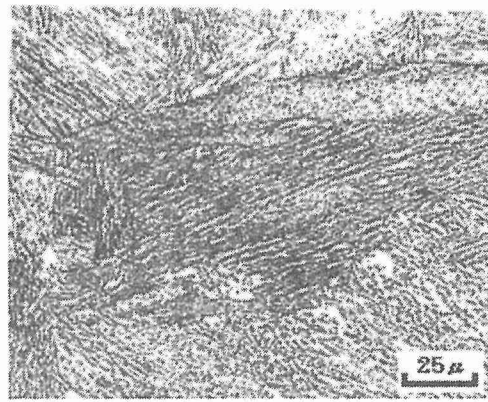
Base

Hv 278



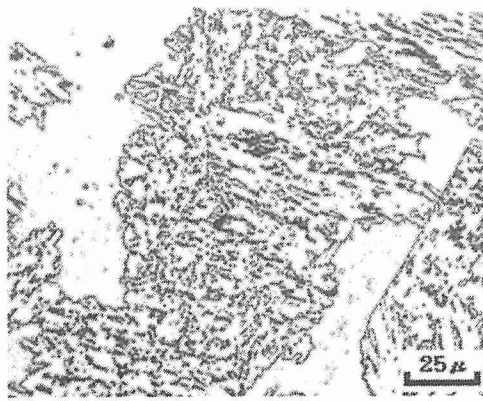
Time 3.5sec

Hv 422



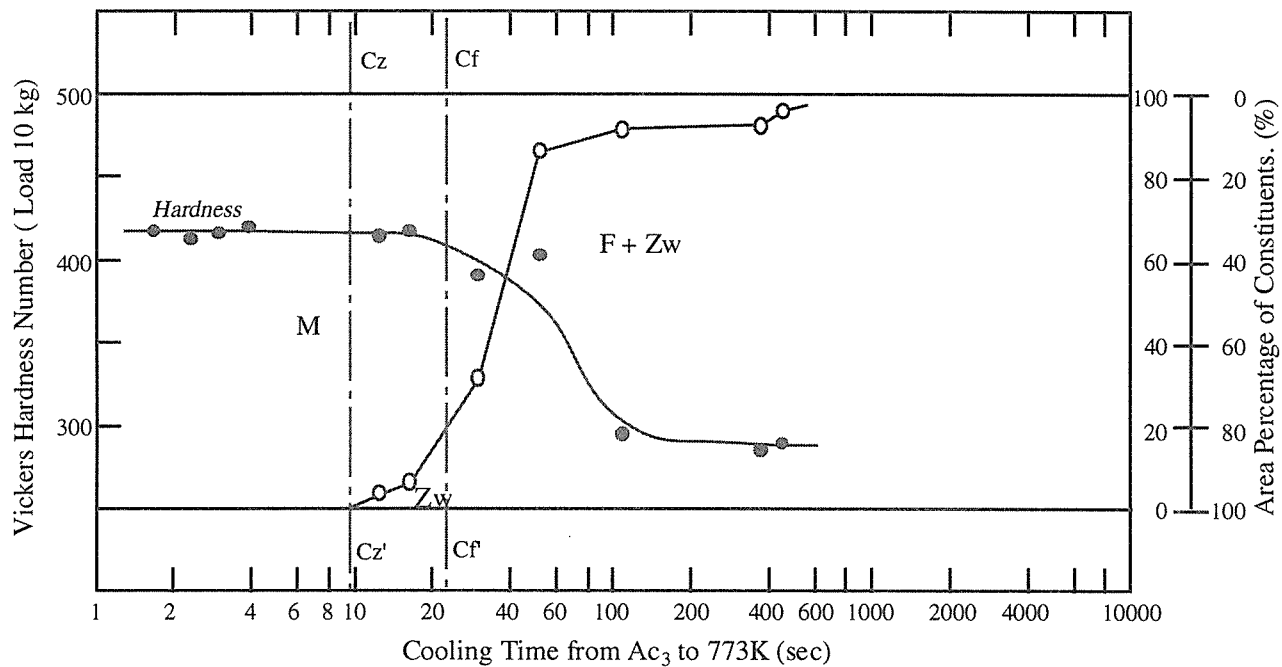
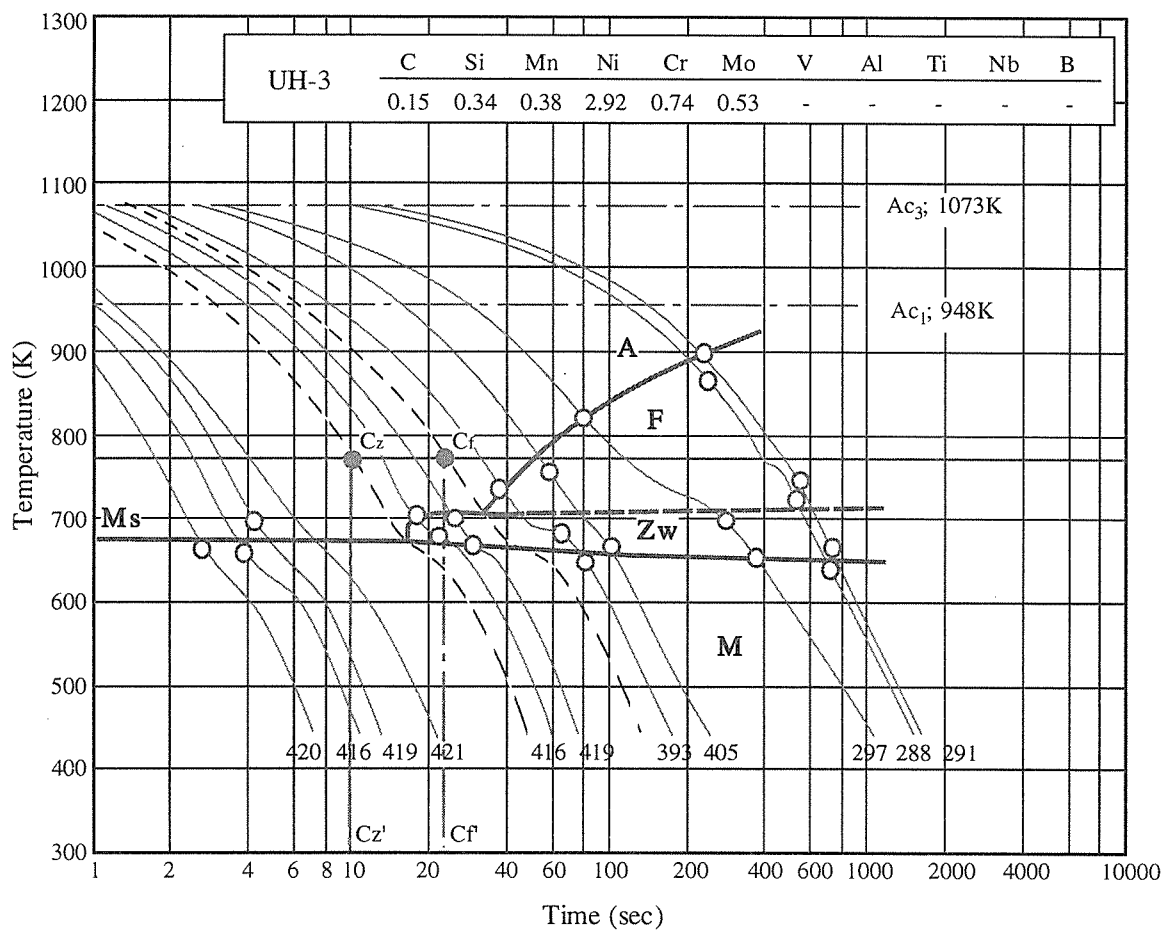
Time 20sec

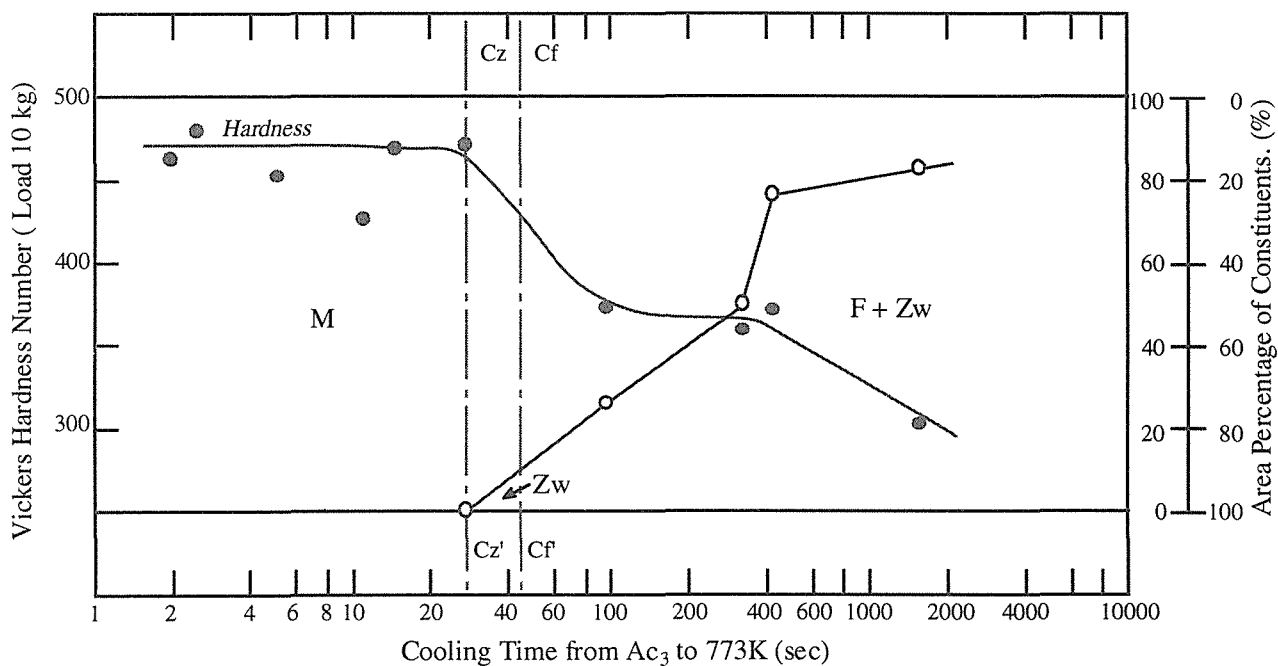
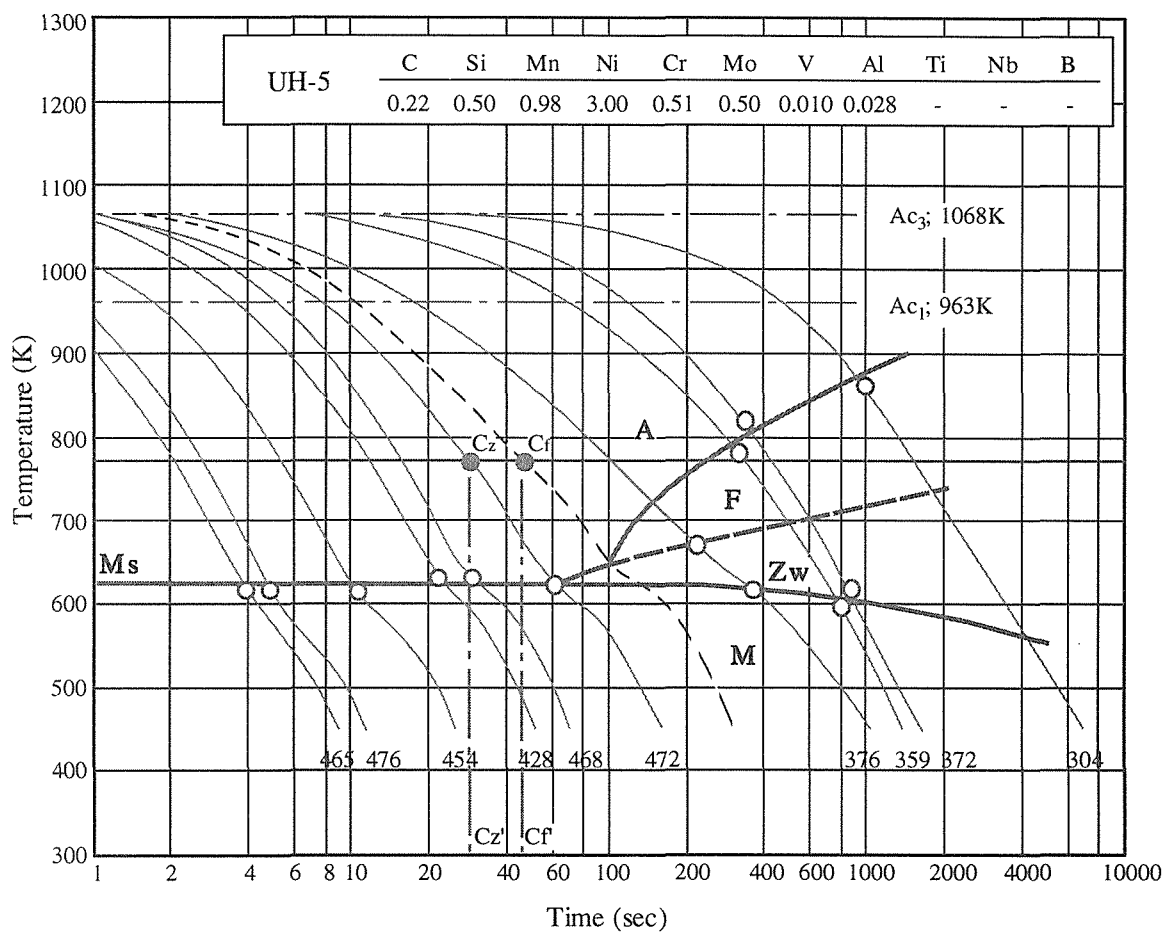
Hv 382



Time 400sec

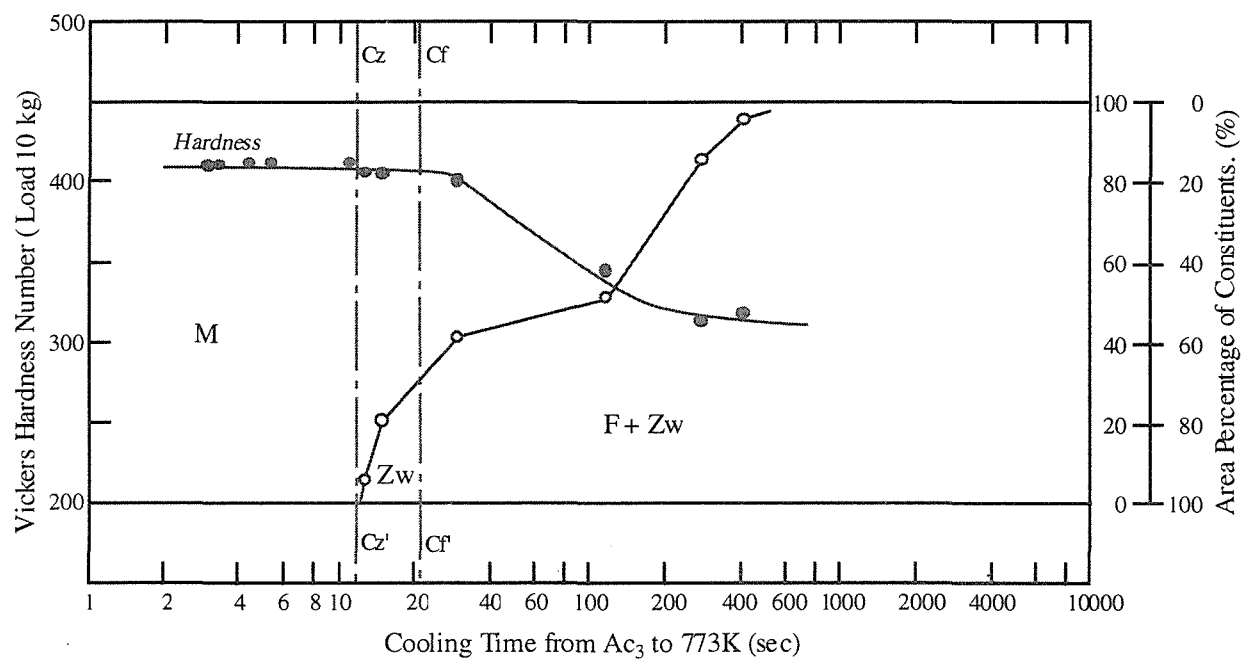
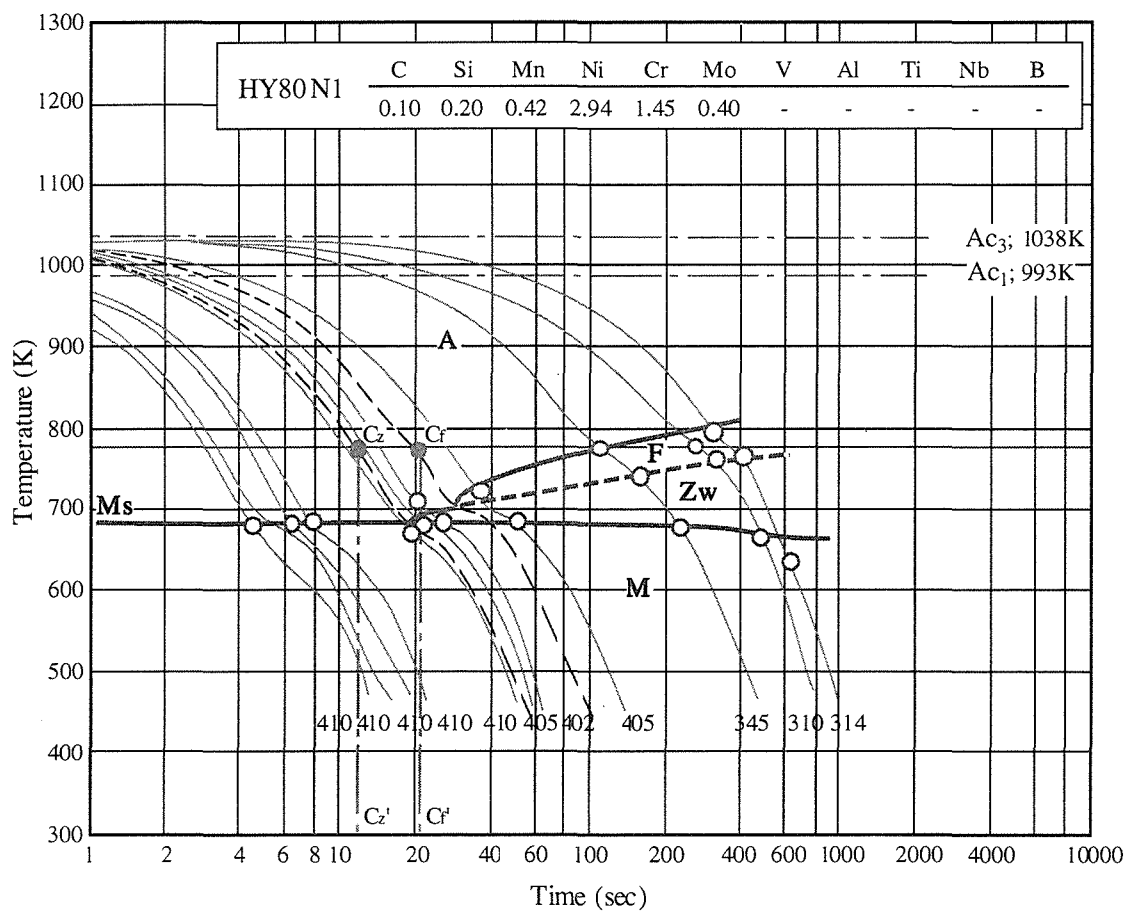
Hv 235

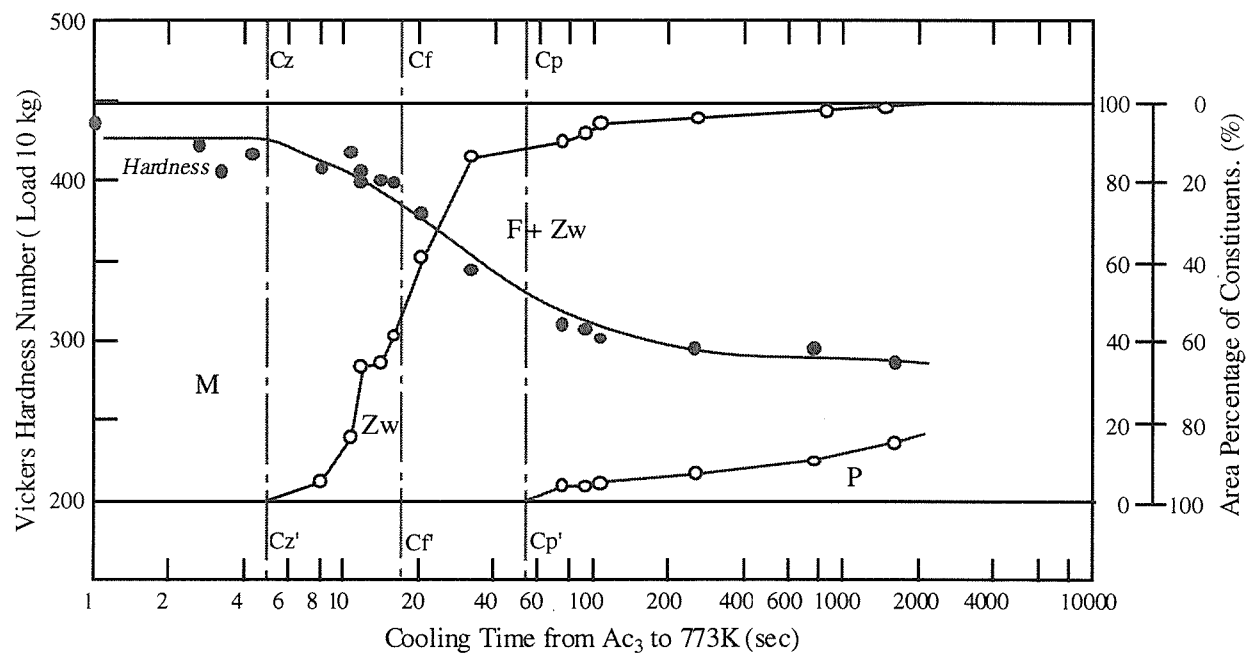
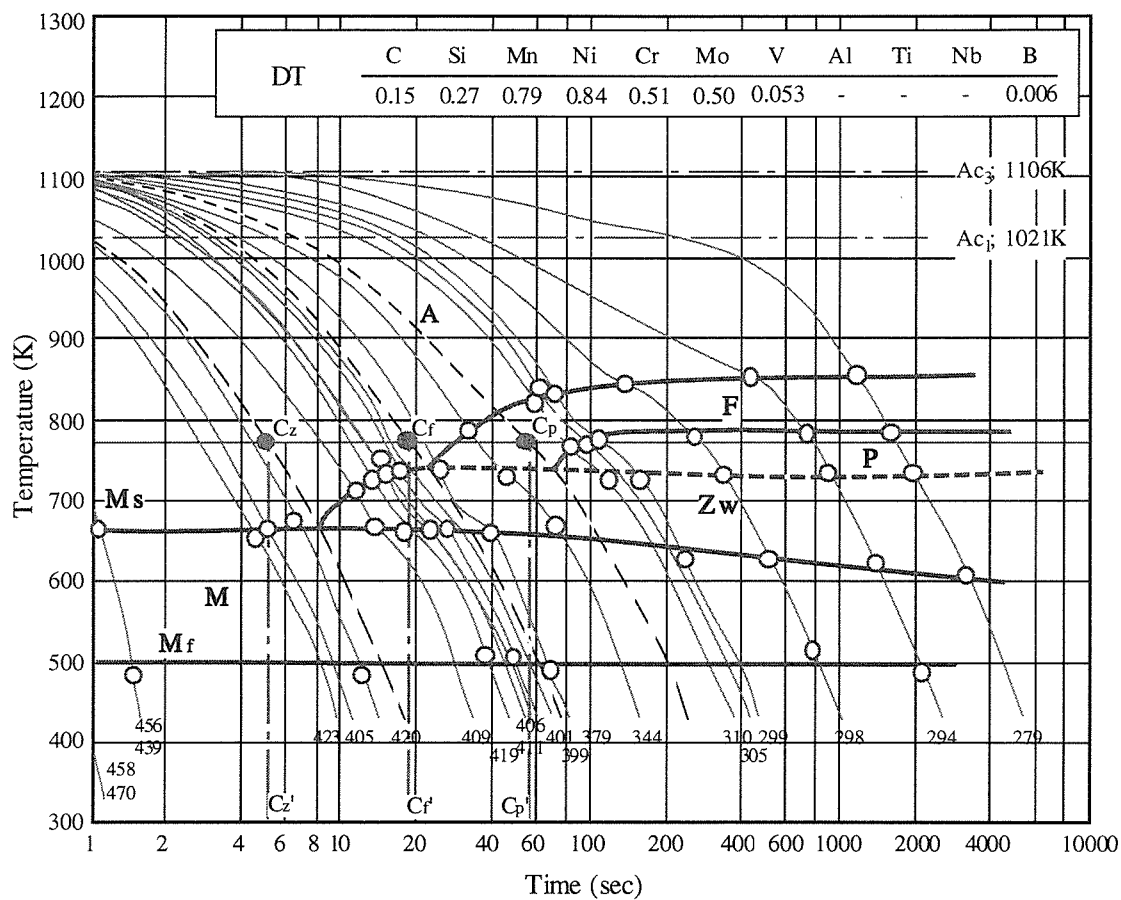


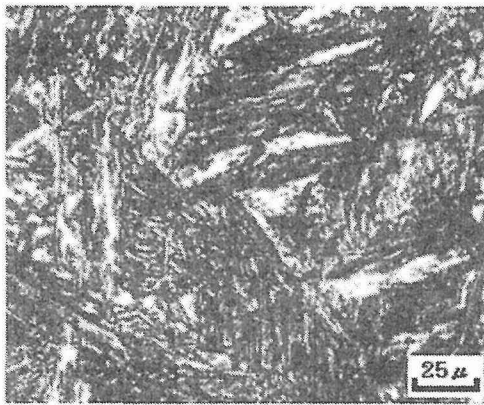


HT-100kg/mm² Class

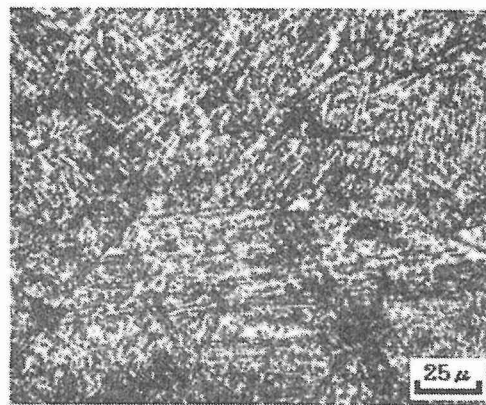
Steel	Chemical Composition (mass%)														Page	Ref.
	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V	Ti	Nb	Al	B		
HY80 N1	0.1	0.2	0.42	-	-	2.94	1.45	-	0.4	-	-	-	0.013	-	302	P
DT	0.15	0.27	0.79	0.016	0.013	0.84	0.51	0.21	0.5	0.053	-	-	-	0.006	304	7
100B2	0.18	0.35	0.83	-	-	0.76	0.63	-	0.55	0.06	-	-	0.043	0.003	306	P
100C2	0.16	0.23	1.16	-	-	1.54	0.5	-	0.42	0.026	-	0.056	0.035	-	308	P
UH-6	0.3	0.26	0.44	0.015	0.01	3.41	1	0.12	0.3	-	-	-	-	0.0012	310	P
100A2	0.16	0.23	0.82	-	-	2	0.78	-	0.49	0.07	-	-	0.023	-	312	P
NS 80	0.07	0.25	0.67	-	-	3.96	0.62	-	0.46	0.06	-	-	-	-	314	P



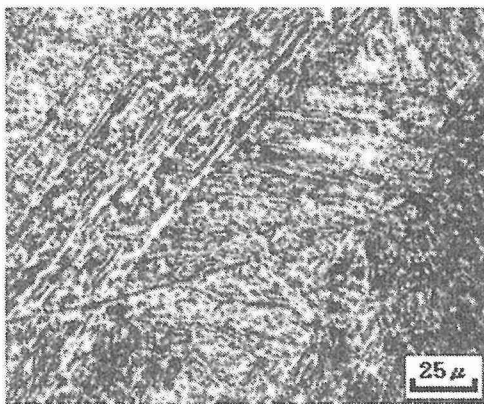




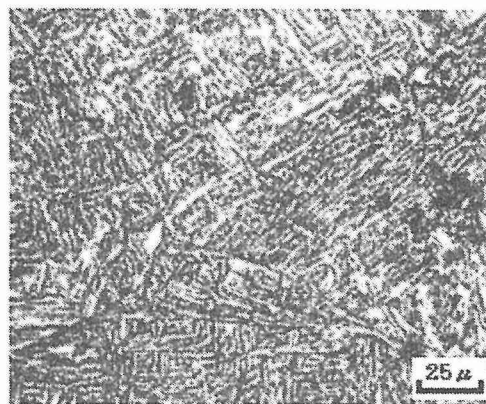
Time - Hv 439



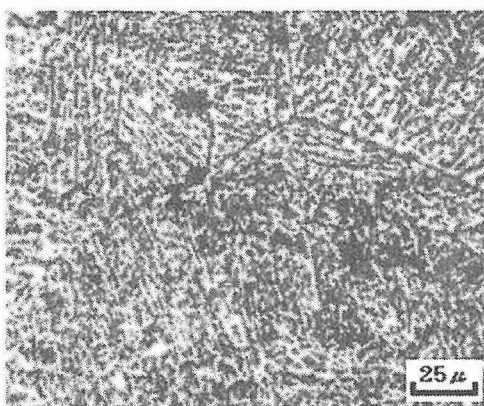
Time 12sec Hv 419



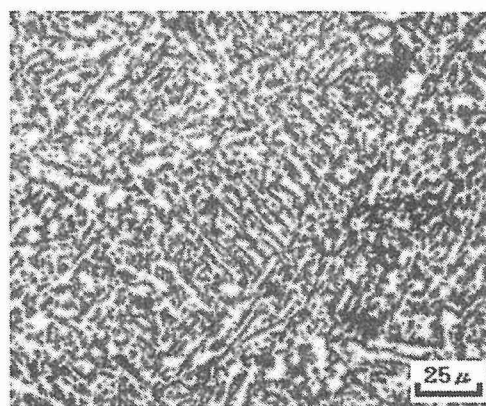
Time 14sec Hv 411



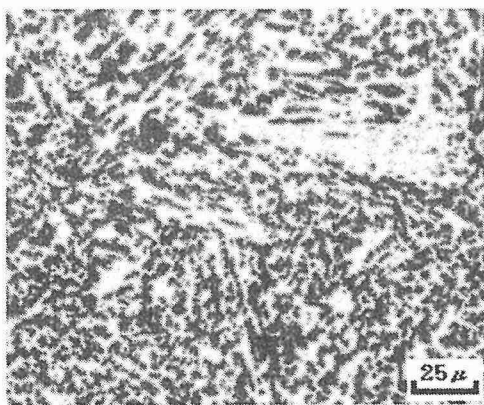
Time 22sec Hv 379



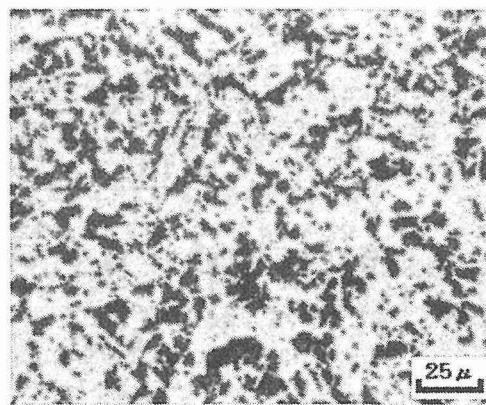
Time 35sec Hv 344



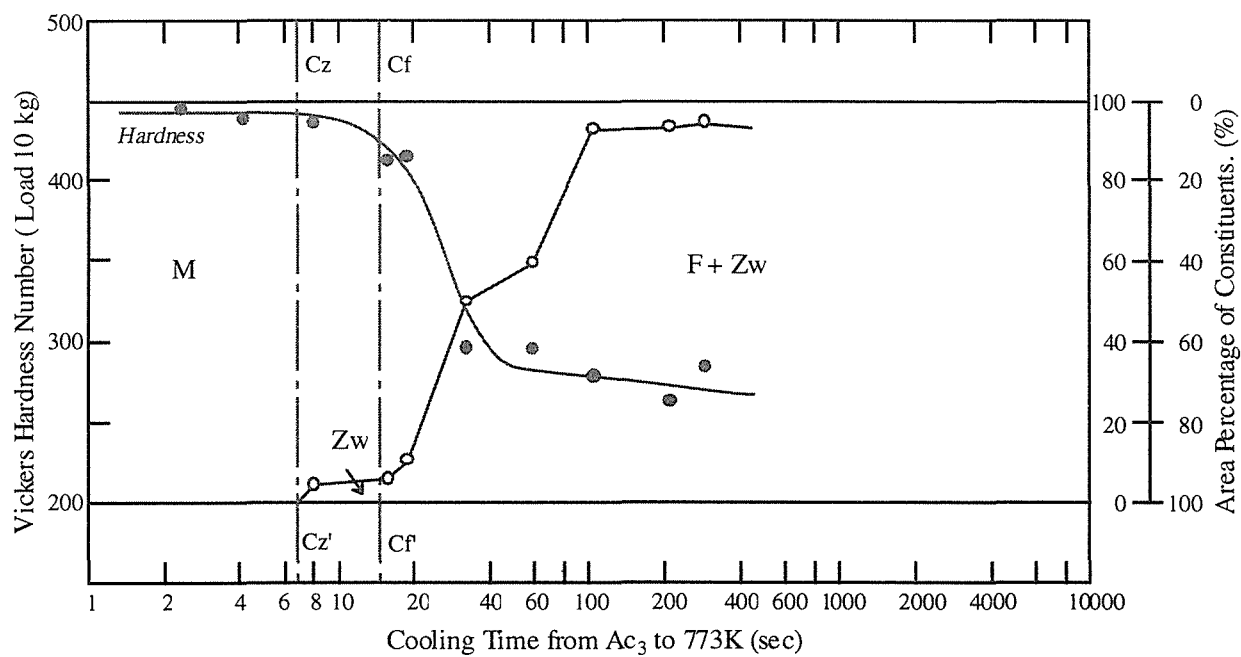
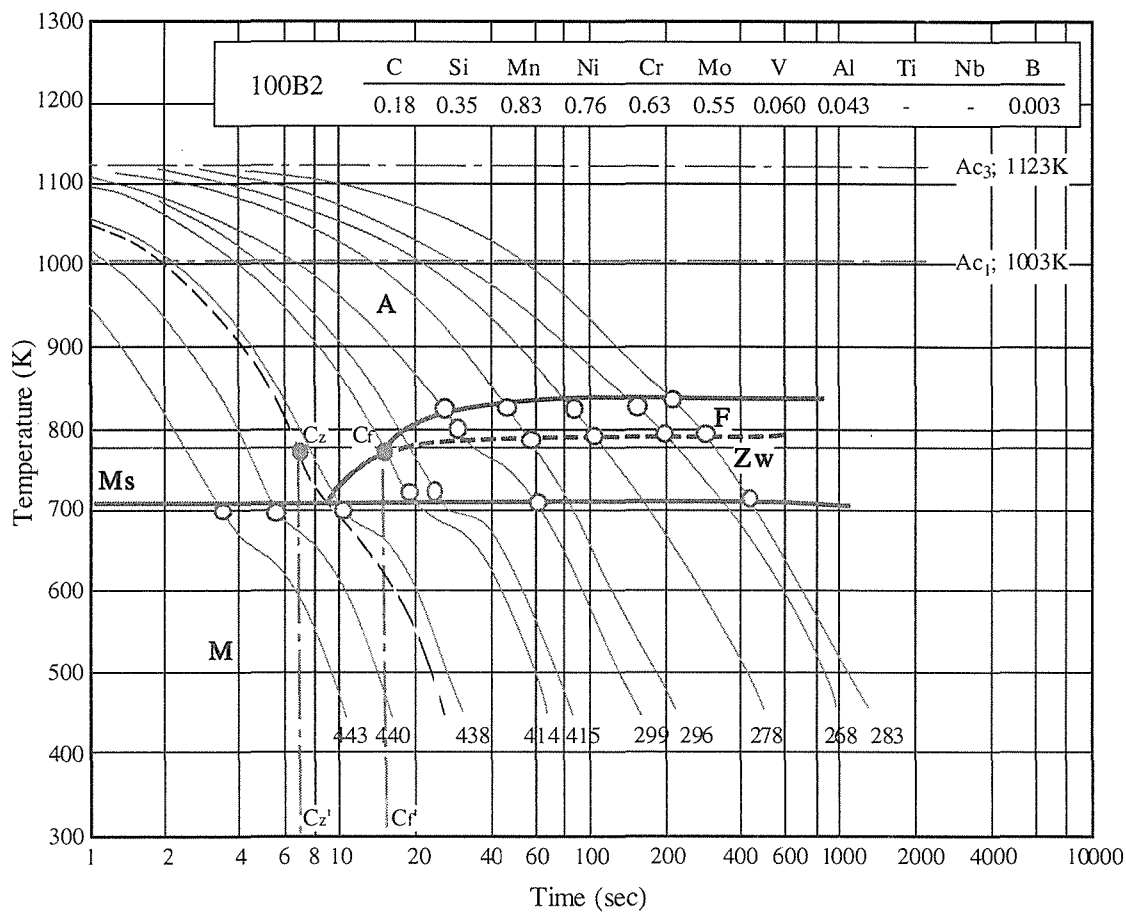
Time 100sec Hv 305

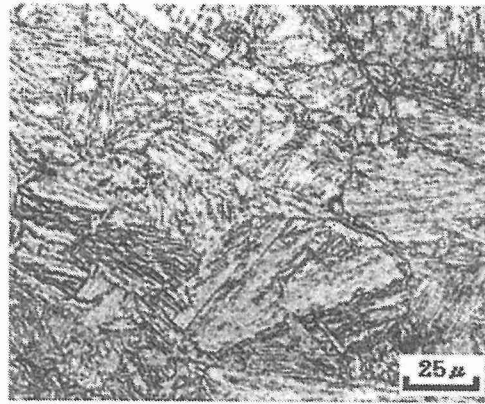


Time 750sec Hv 294



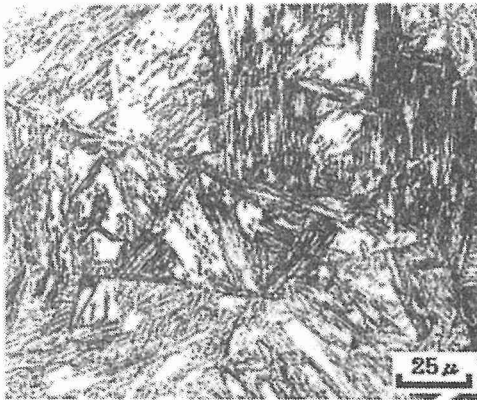
Time 1700sec Hv 279





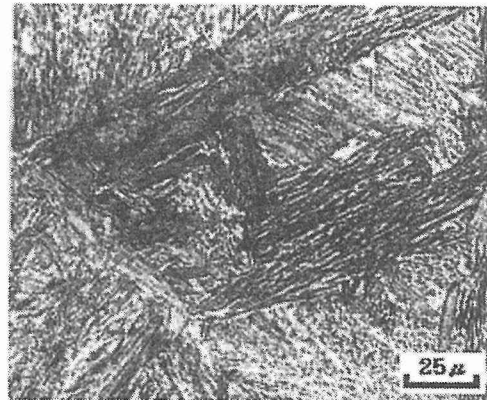
Base

Hv 338



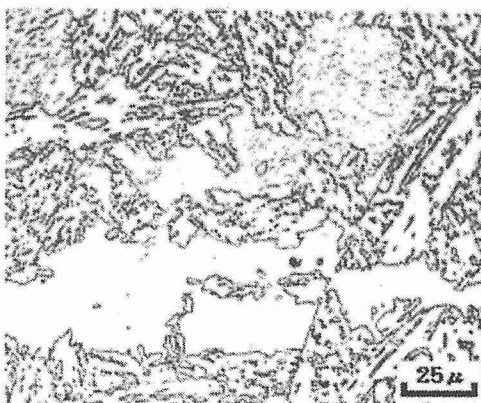
Time 2.5sec

Hv 443



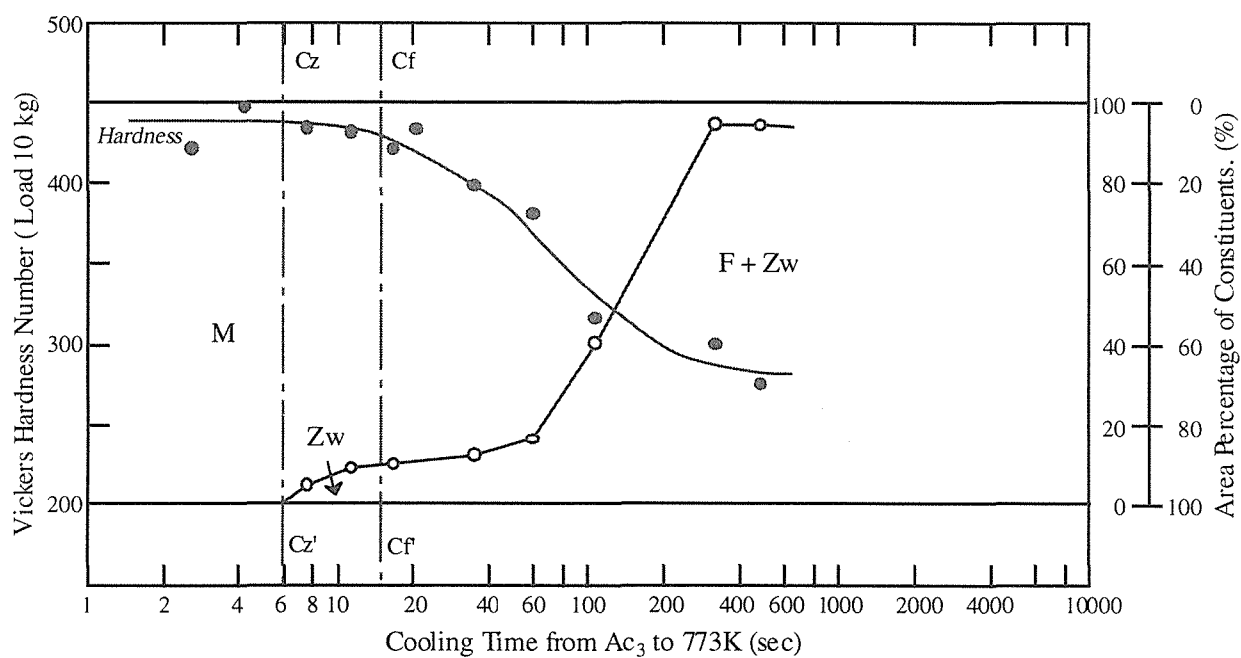
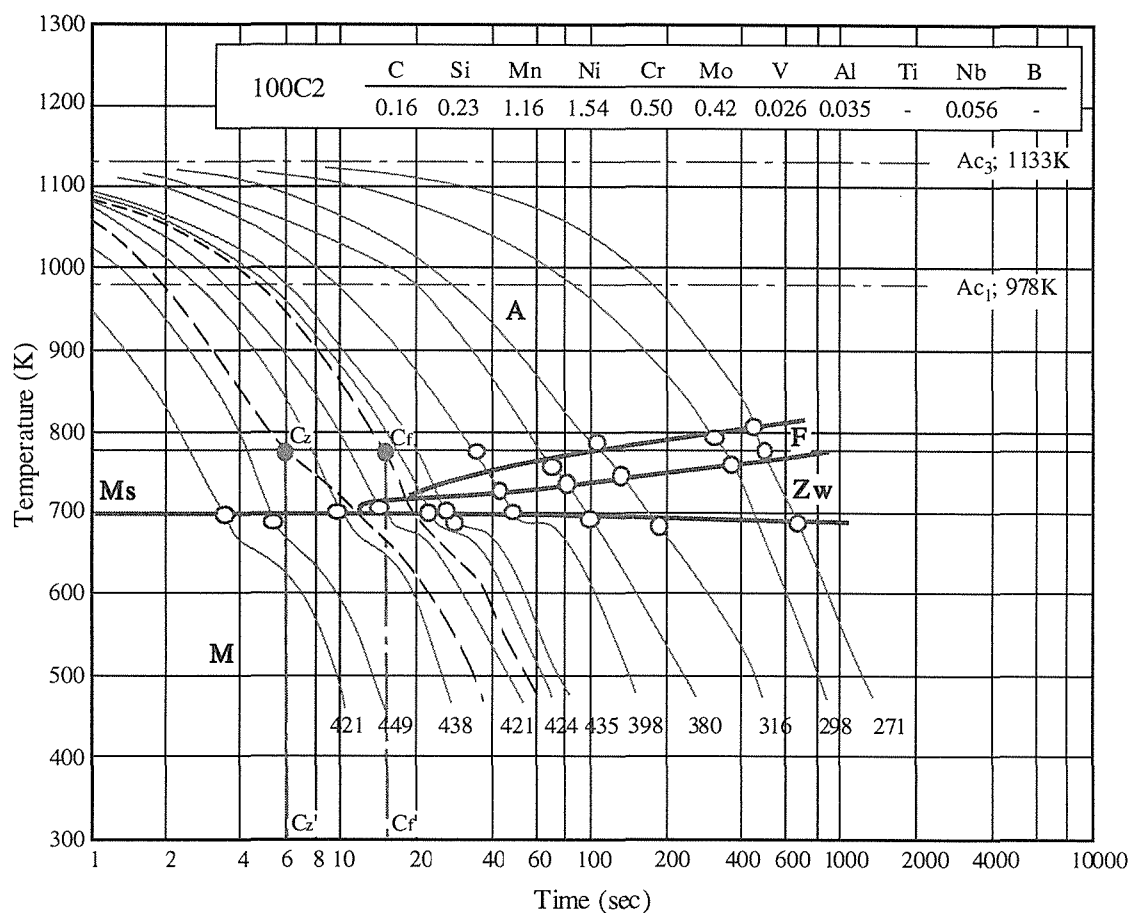
Time 19sec

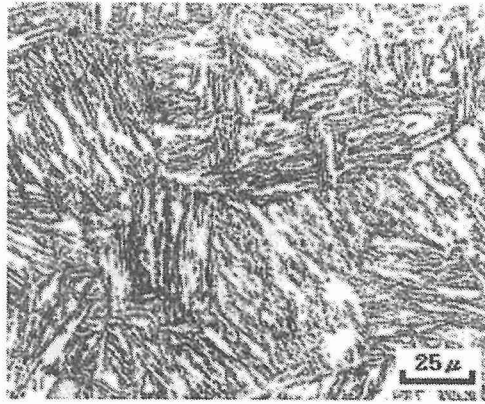
Hv 415



Time 320sec

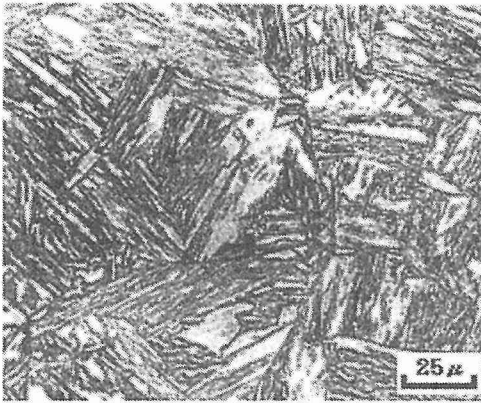
Hv 283





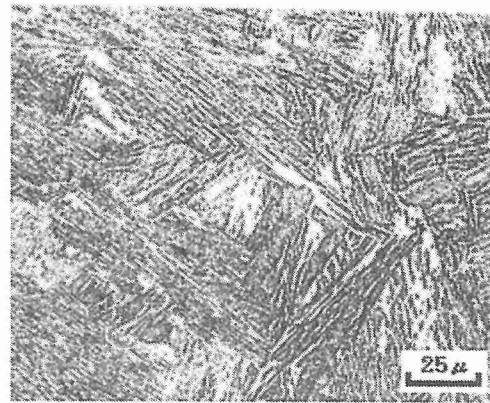
Base

Hv 344



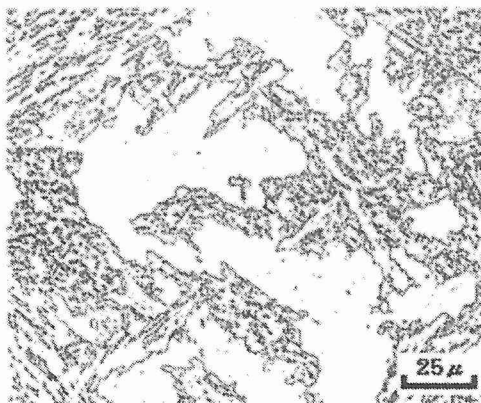
Time 2.6sec

Hv 421



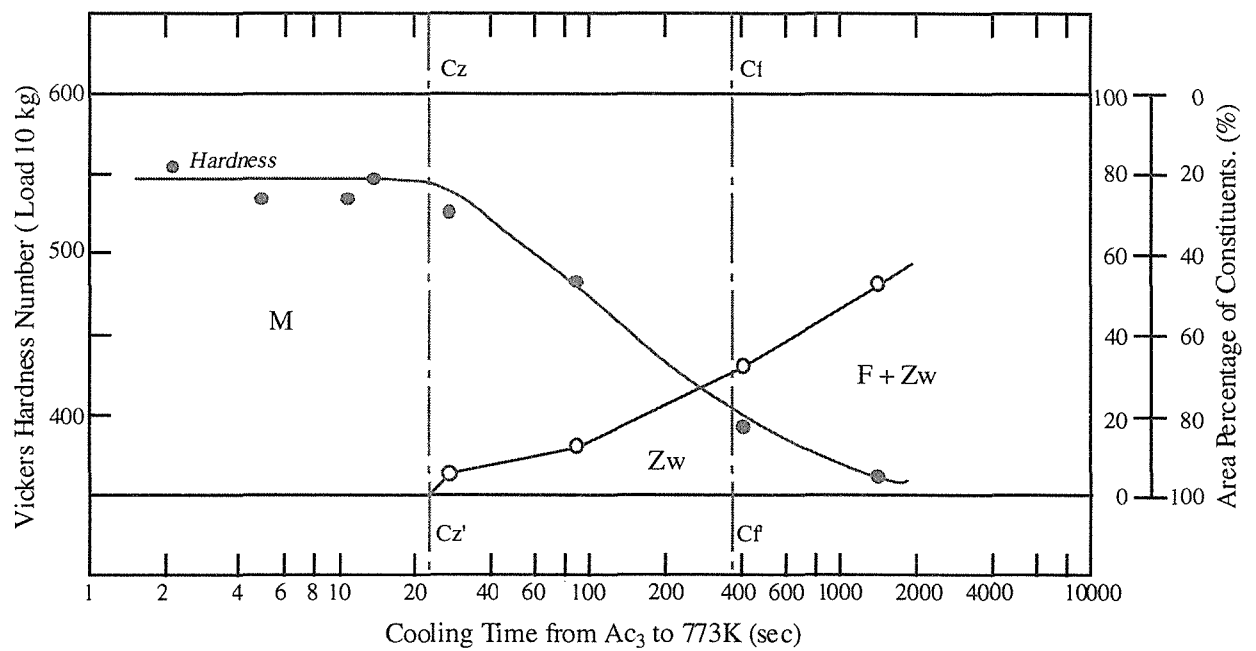
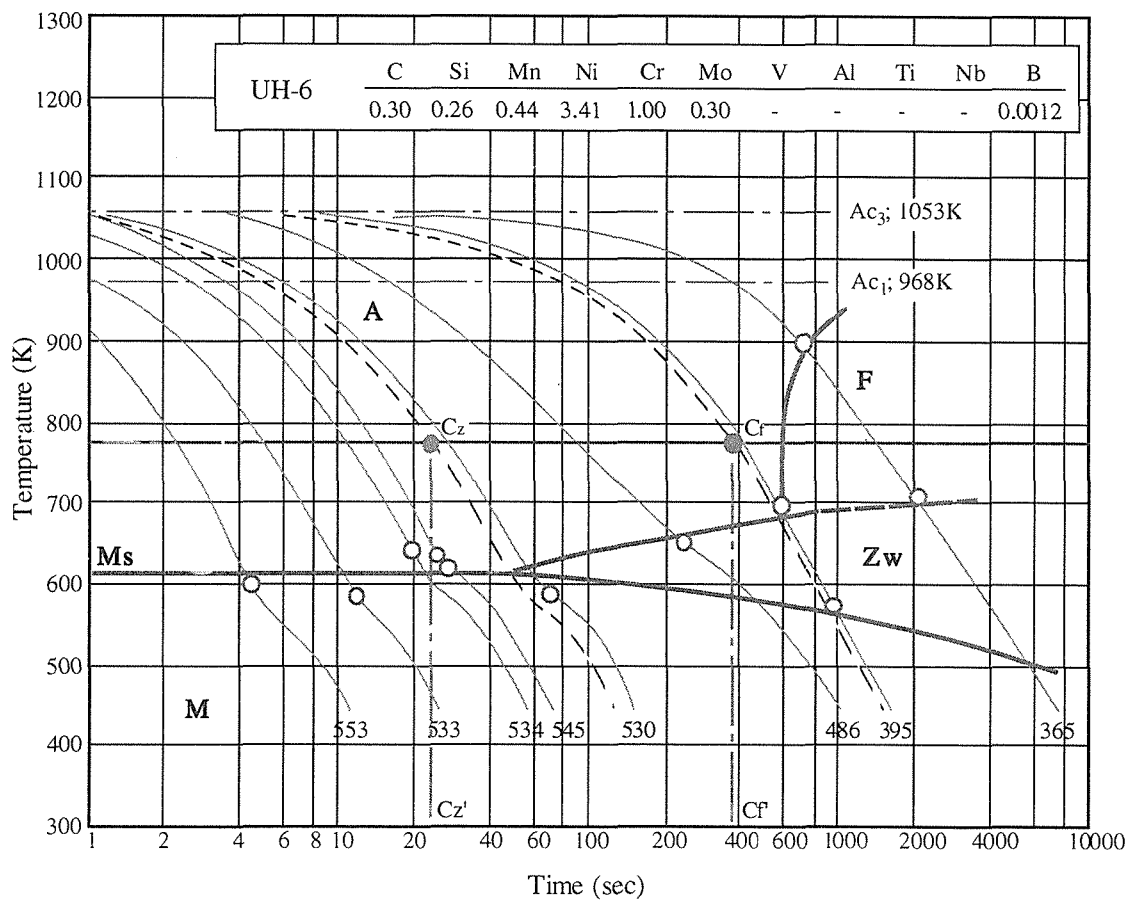
Time 35sec

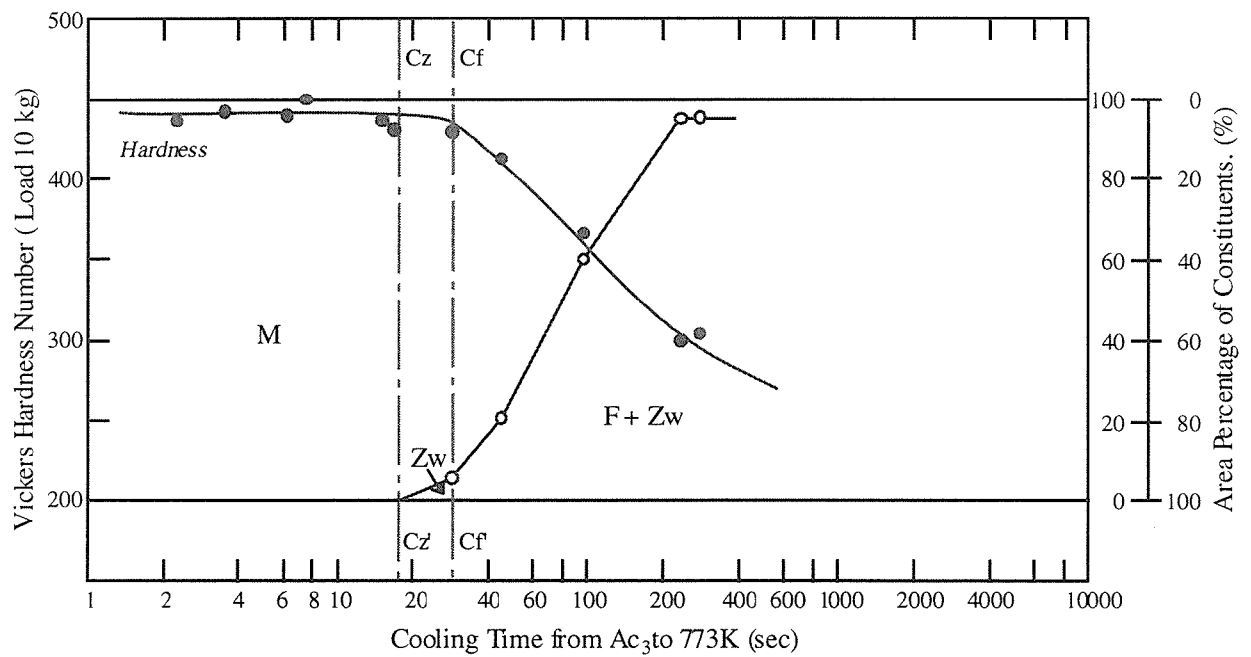
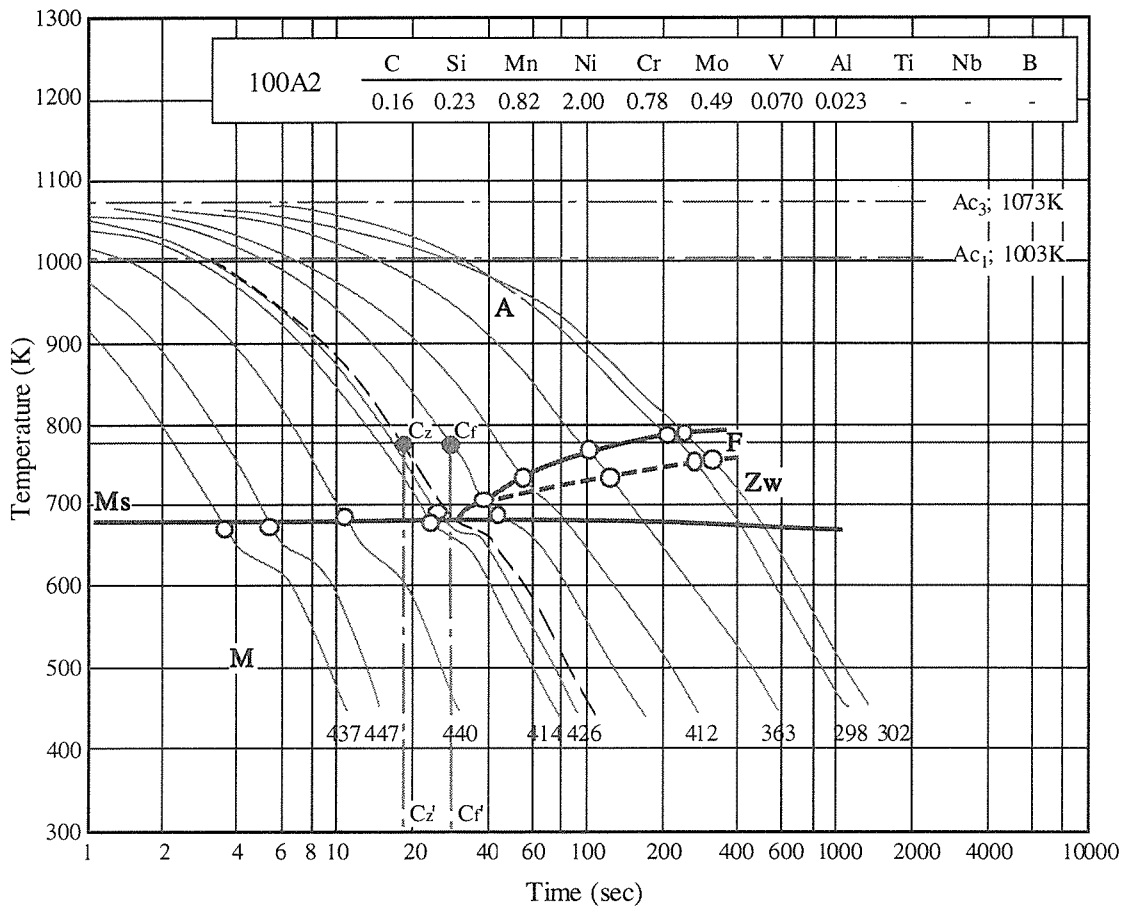
Hv 398

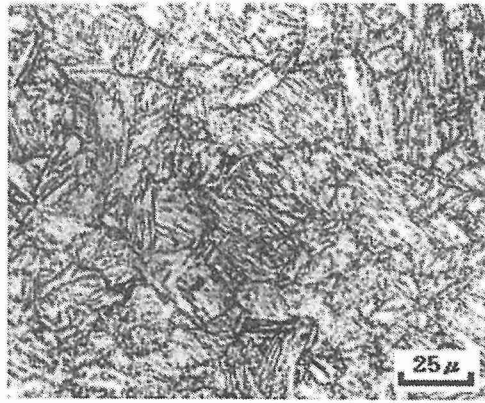


Time 500sec

Hv 271

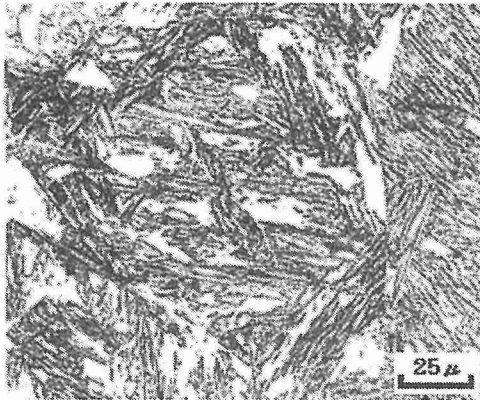






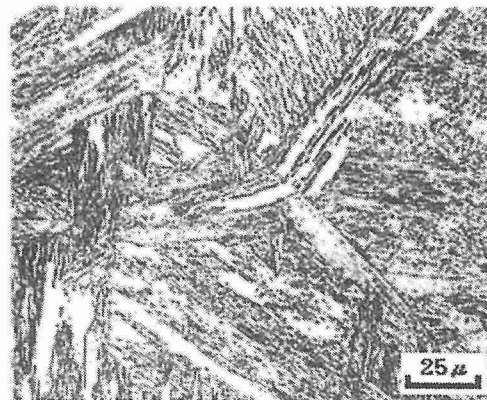
Base

Hv 355



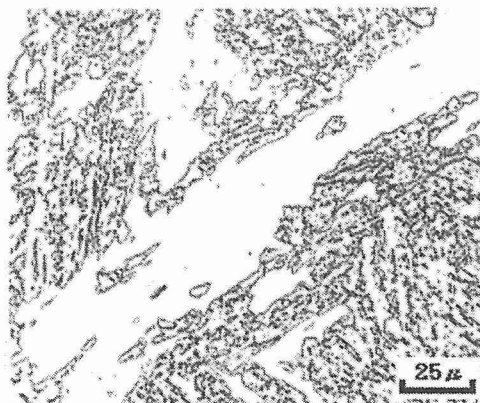
Time 2.3sec

Hv 437



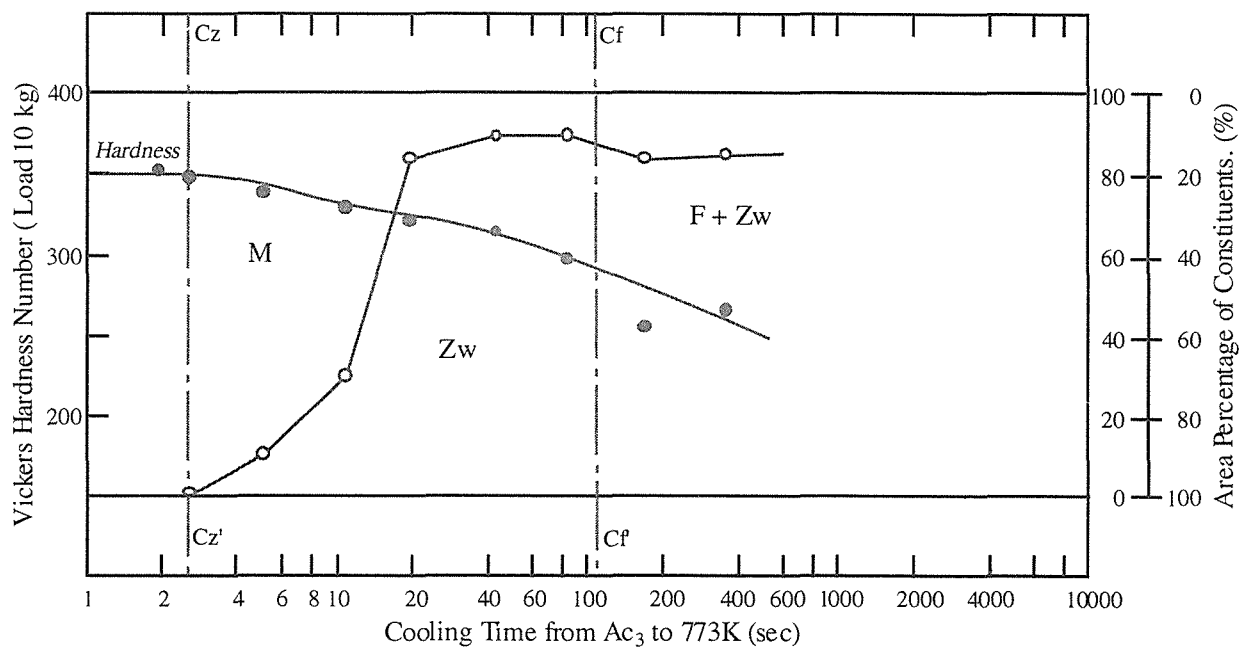
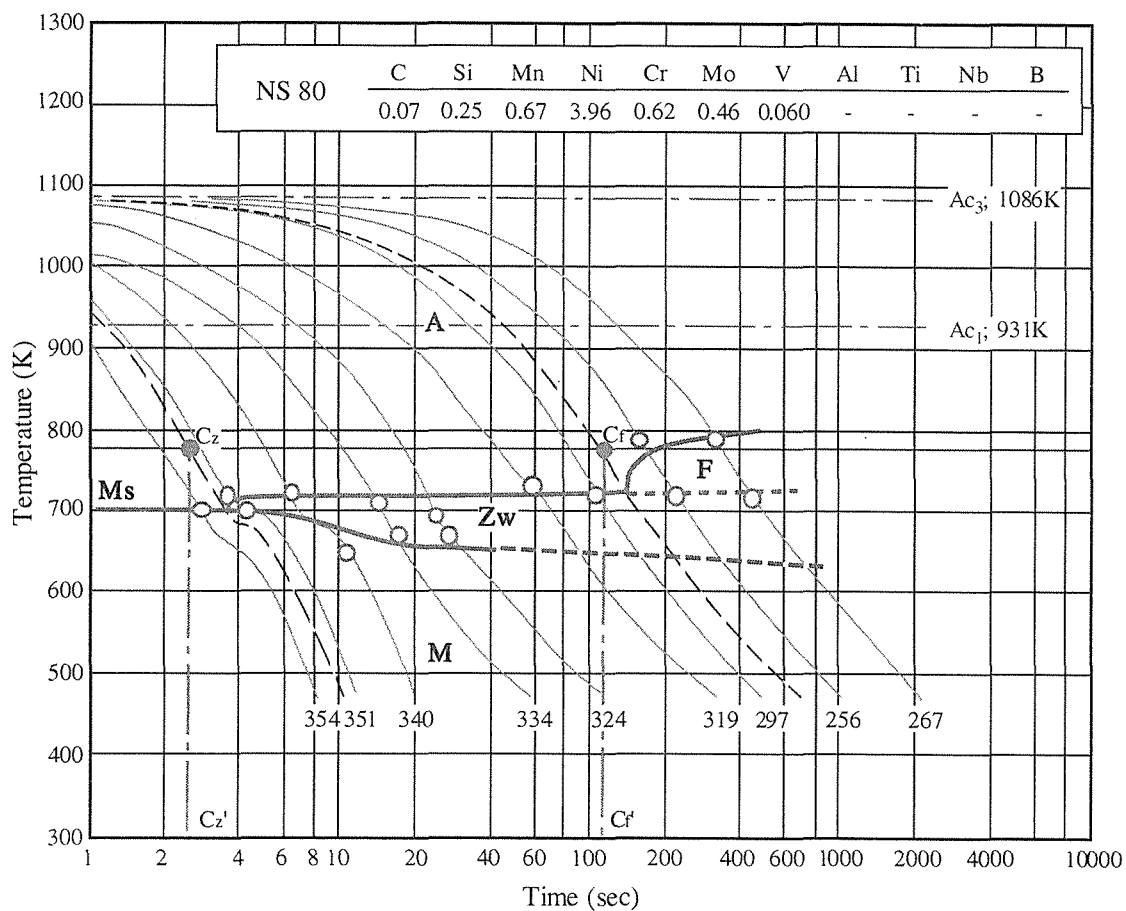
Time 30sec

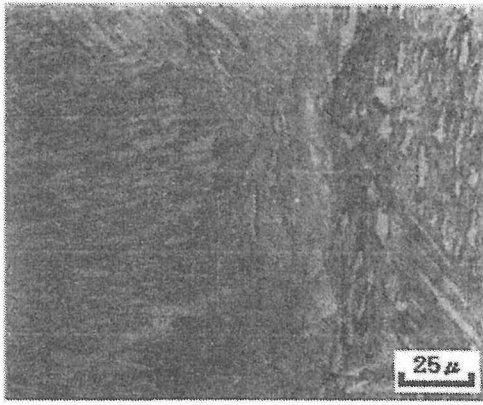
Hv 426



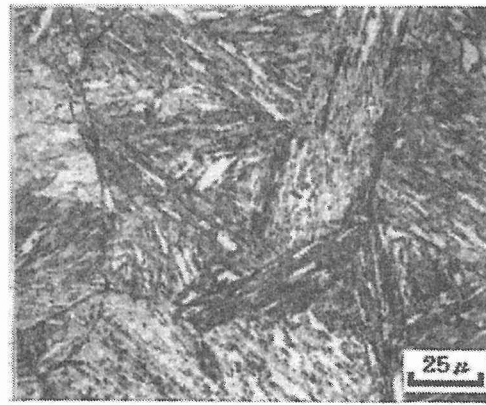
Time 300sec

Hv 302

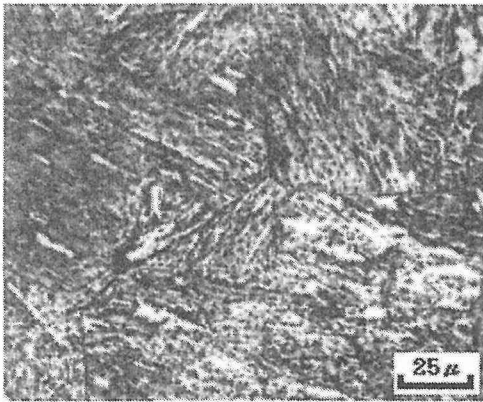




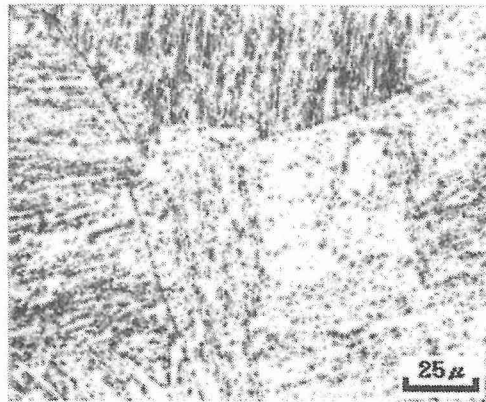
Time 2sec Hv 354



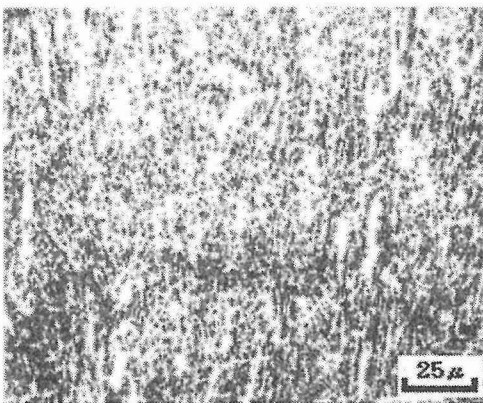
Time 3sec Hv 351



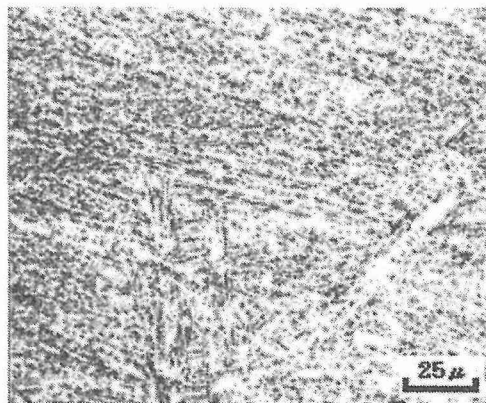
Time 5sec Hv 340



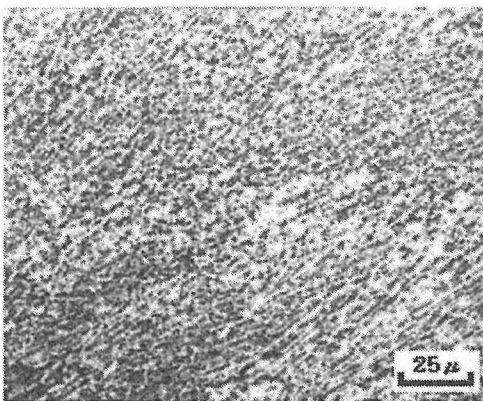
Time 10sec Hv 334



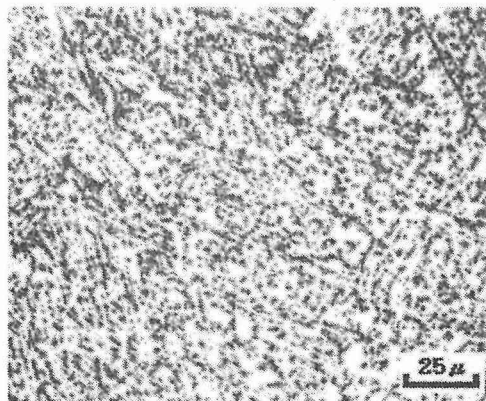
Time 18sec Hv 324



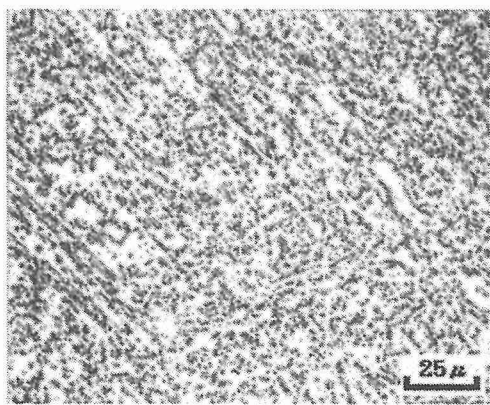
Time 43sec Hv 319



Time 85sec Hv 297



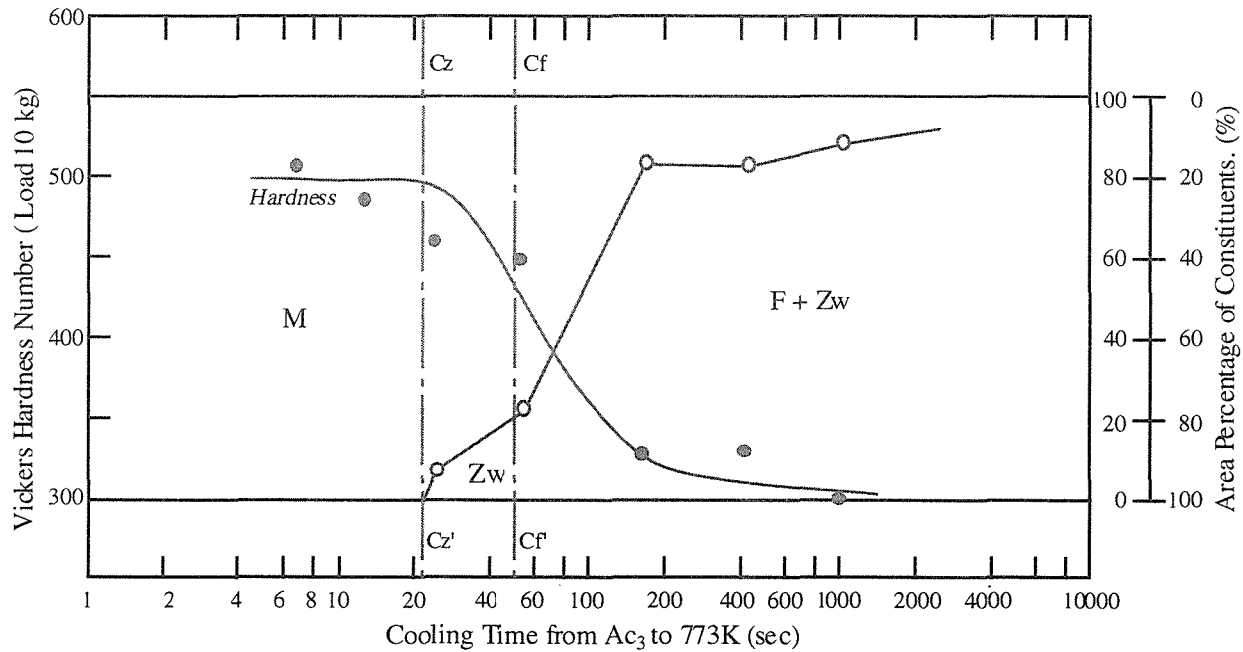
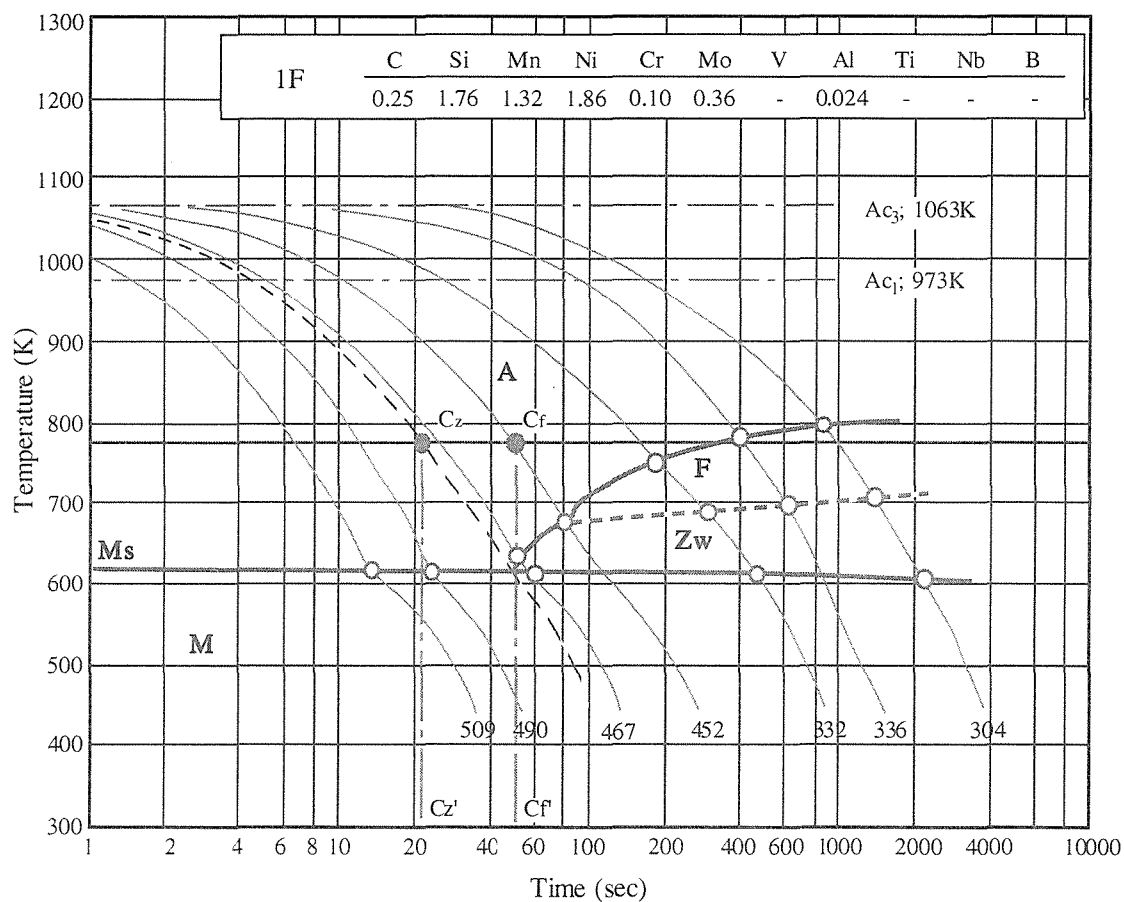
Time 170sec Hv 256

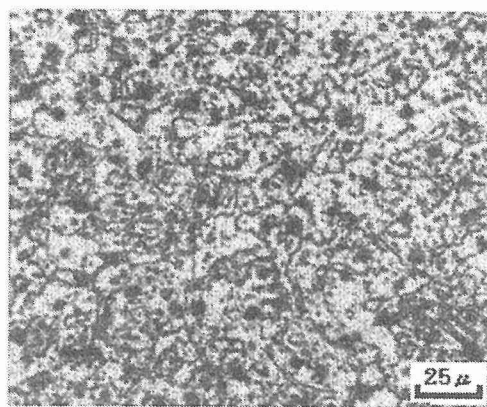


Time 350sec Hv 267

Ultra High Tensile Strength Steel

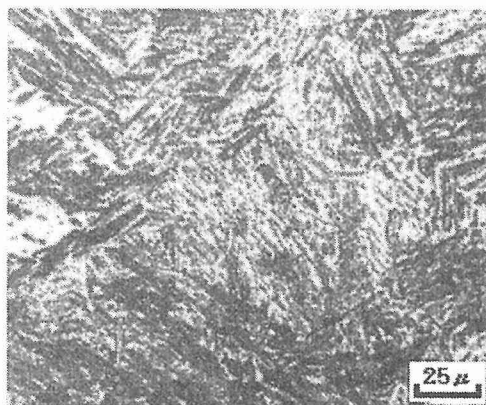
Steel	Chemical Composition (mass%)														Page	Ref.
	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V	Ti	Nb	Al	B		
1F	0.25	1.76	1.32	-	-	1.86	0.1	-	0.36	-	-	-	0.024	-	318	P
1M	0.25	1.45	1.36	-	-	1.74	0.1	-	0.4	-	-	-	-	-	320	P
1K	0.23	1.5	0.97	-	-	1.86	0.91	-	0.39	-	-	-	-	-	322	P
3U	0.24	1.49	0.97	-	-	1.86	0.99	-	0.38	-	-	-	0.08	-	324	P
1N	0.3	1.51	0.75	-	-	1.84	0.84	-	0.45	-	-	-	0.01	-	326	P
2M	0.4	0.88	0.36	-	-	0.12	4.75	-	1.24	0.56	-	-	-	-	328	13





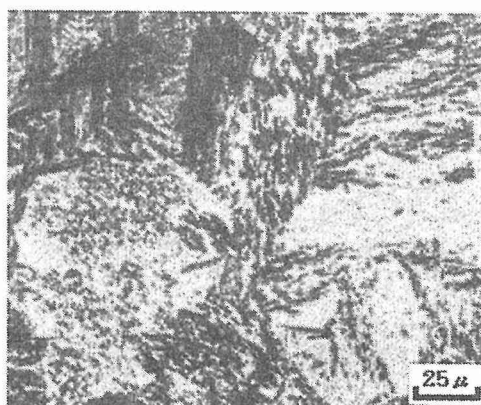
Base

Hv 233



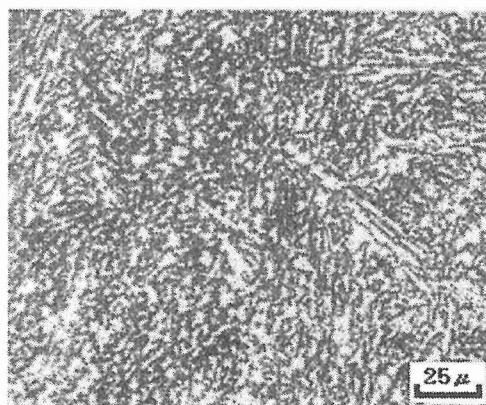
Time 7sec

Hv 509



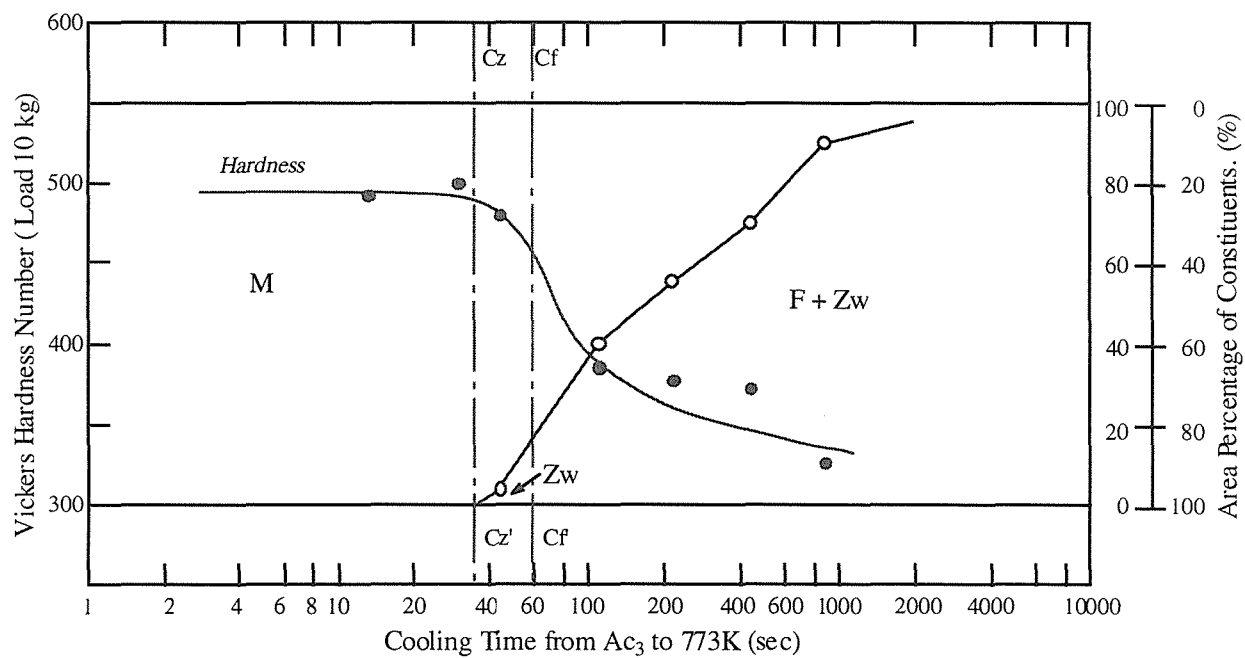
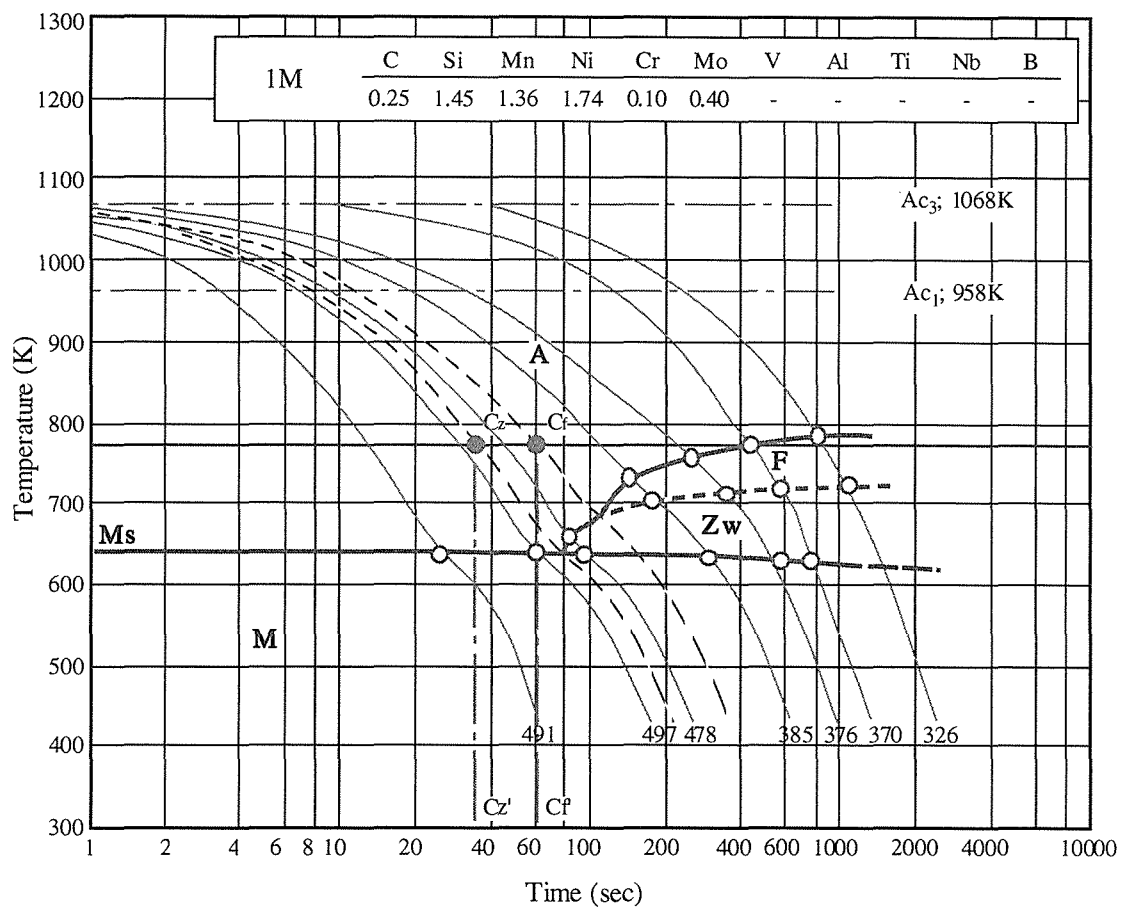
Time 51sec

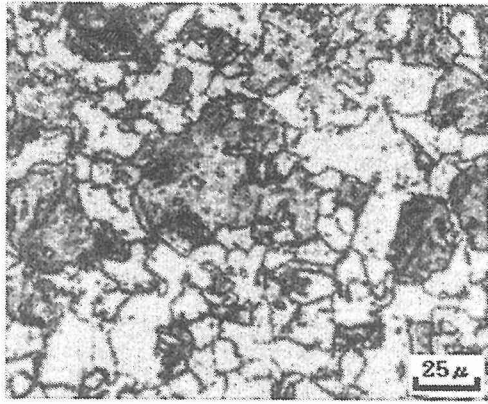
Hv 452



Time 1000sec

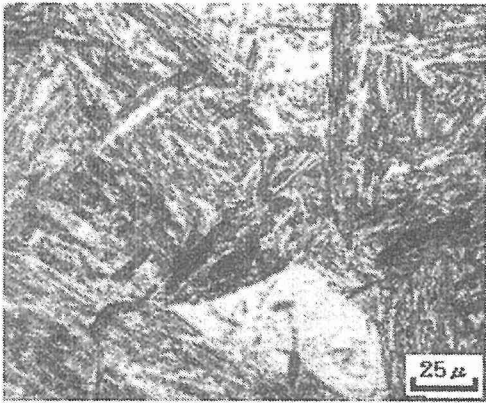
Hv 304





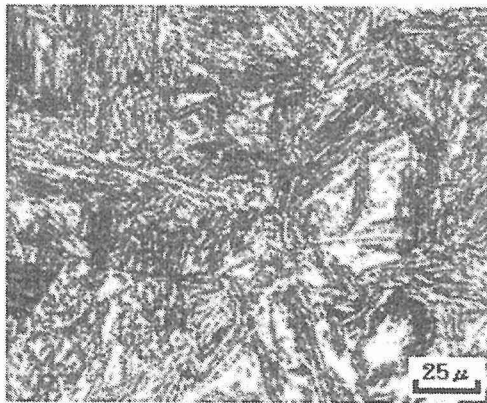
Base

Hv 324



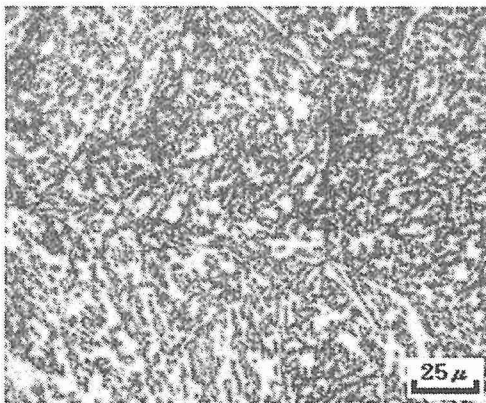
Time 14sec

Hv 491



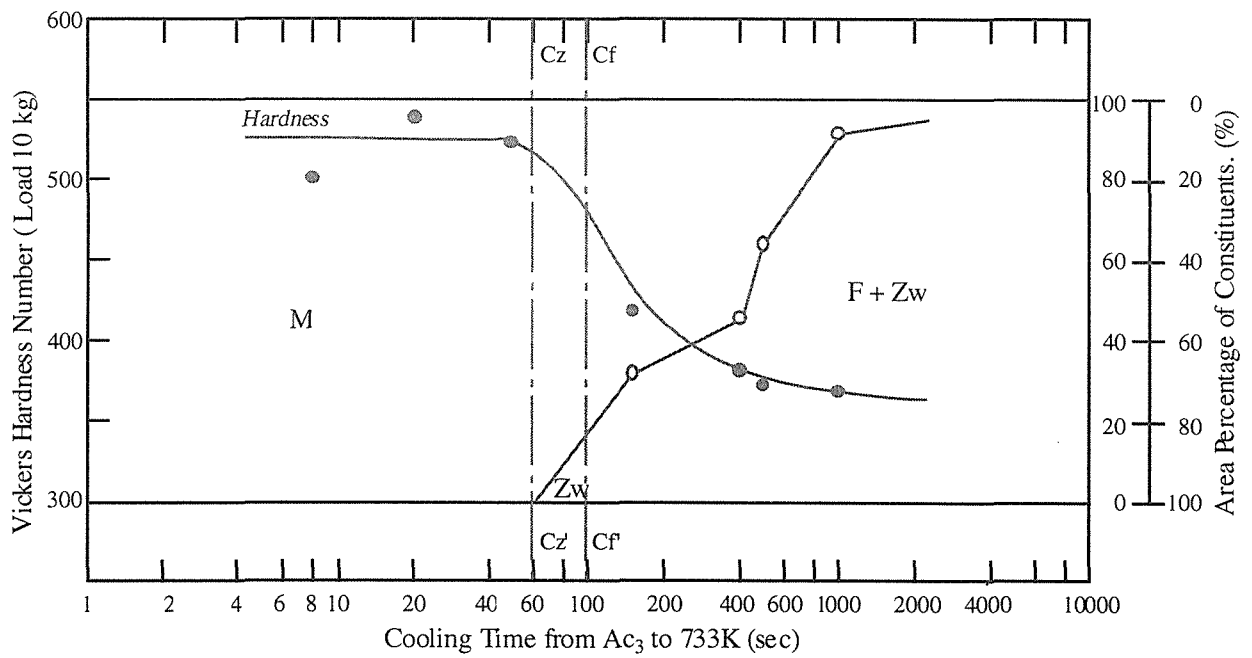
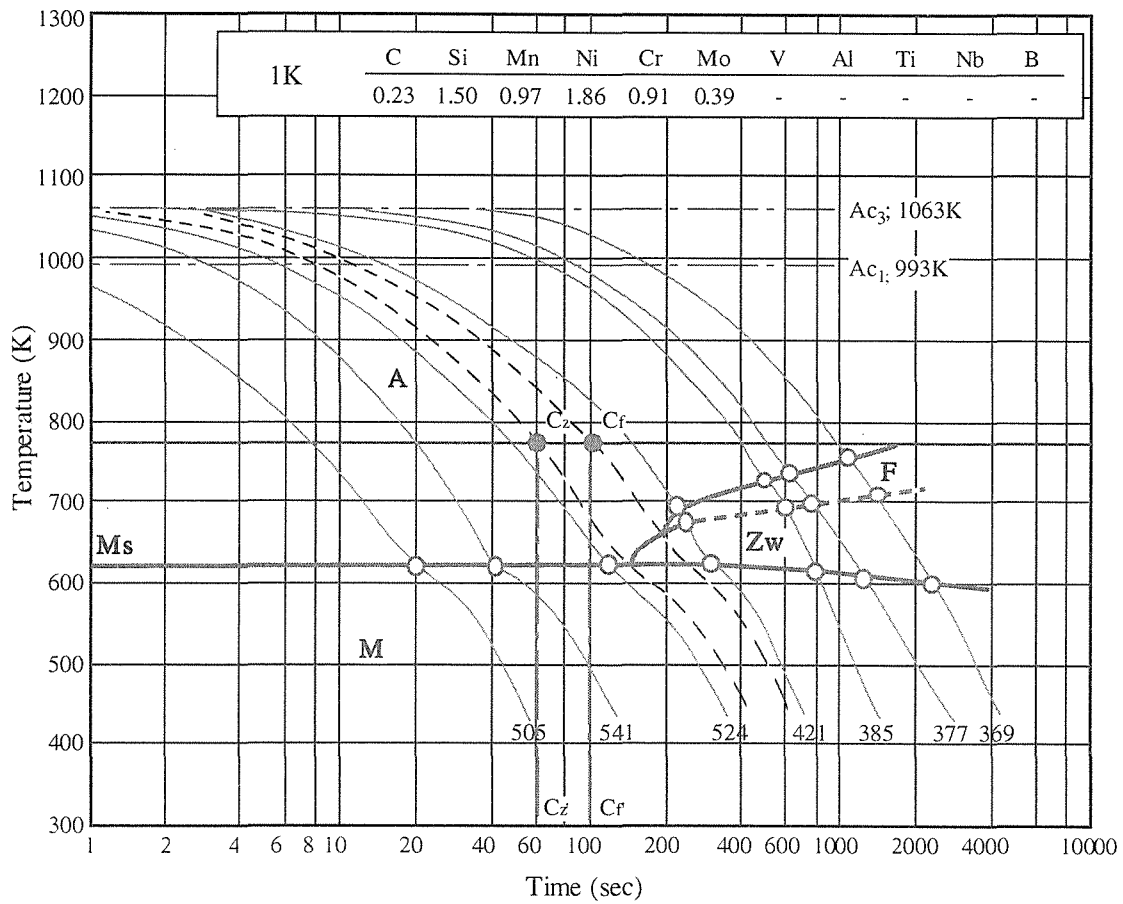
Time 230sec

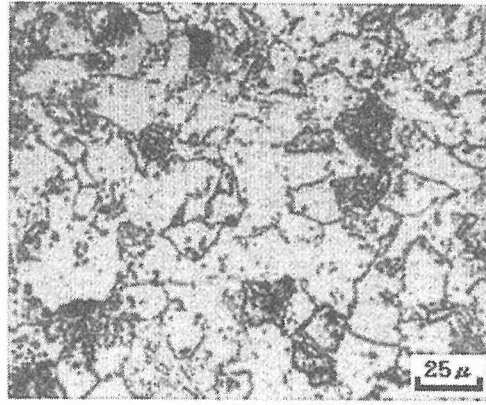
Hv 376



Time 880sec

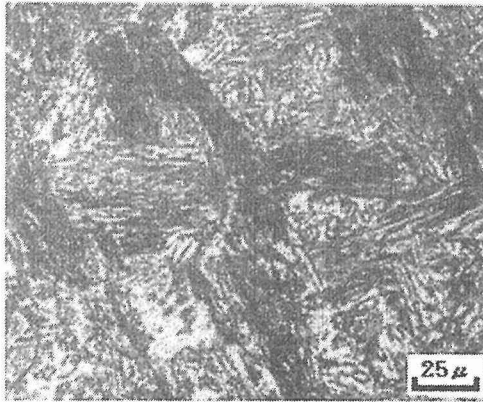
Hv 326





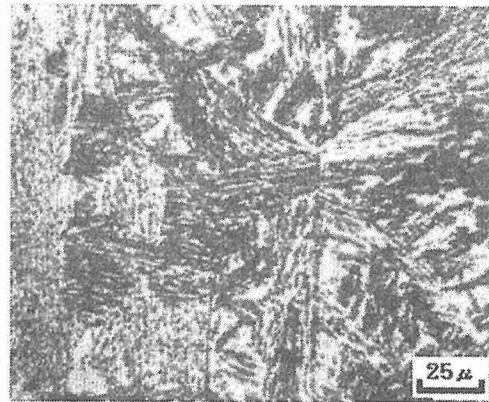
Base

Hv 234



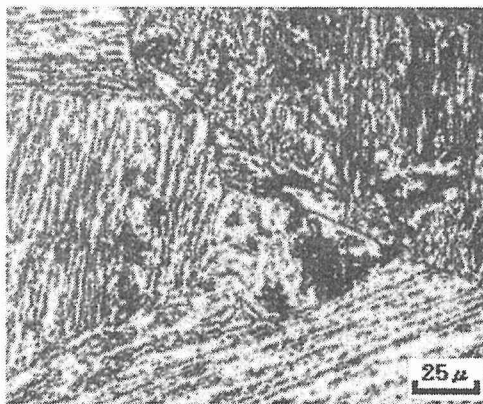
Time 7.8sec

Hv 505



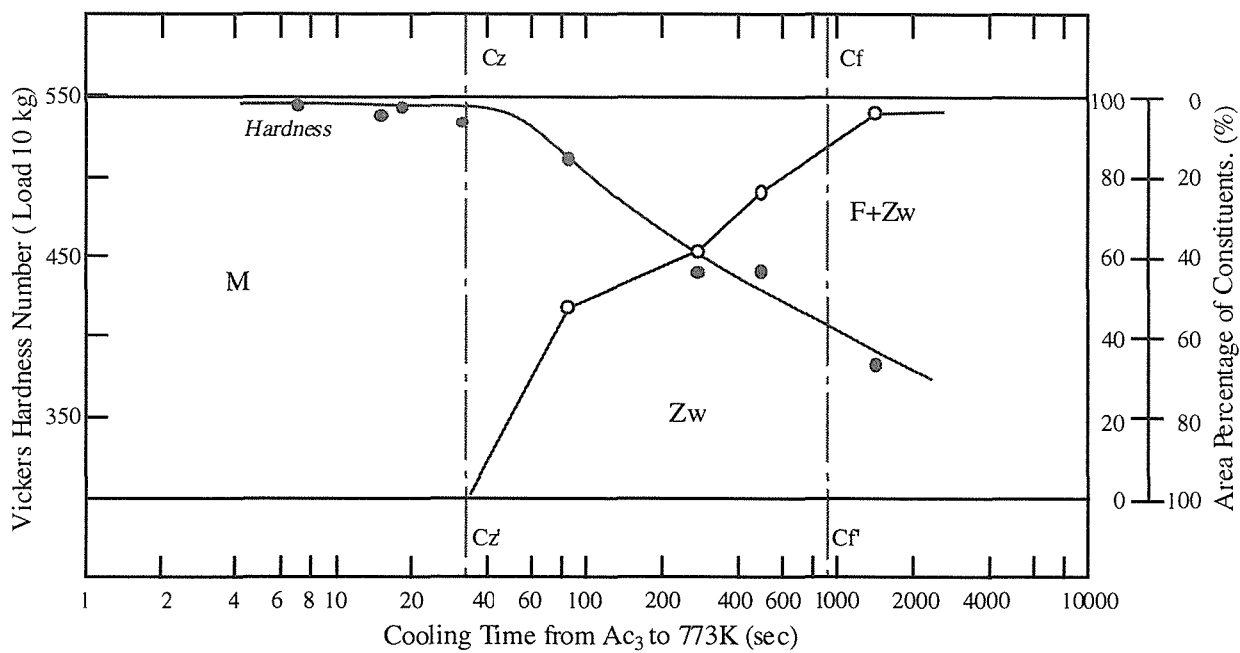
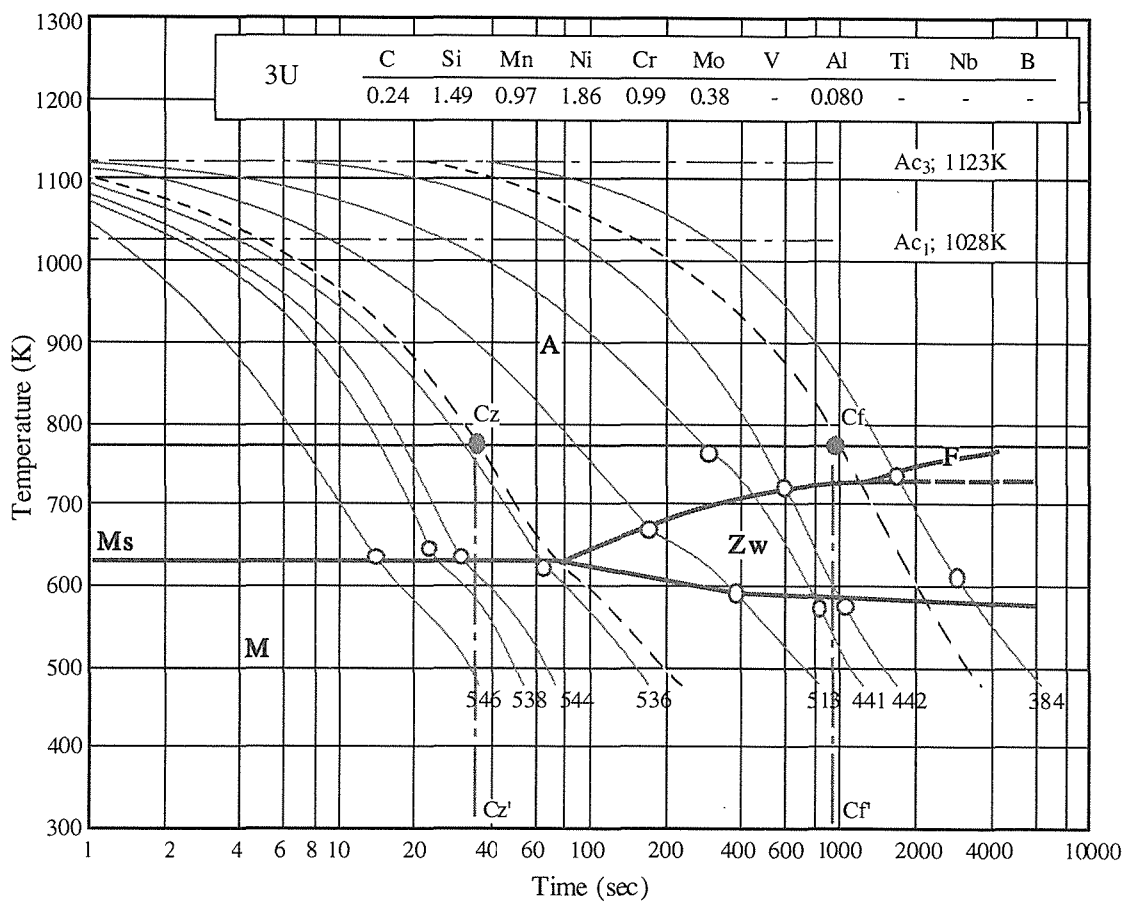
Time 150sec

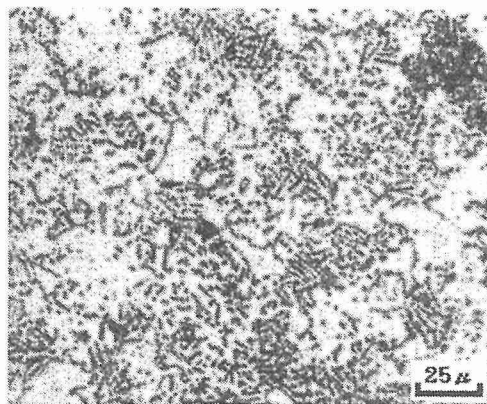
Hv 421



Time 1000sec

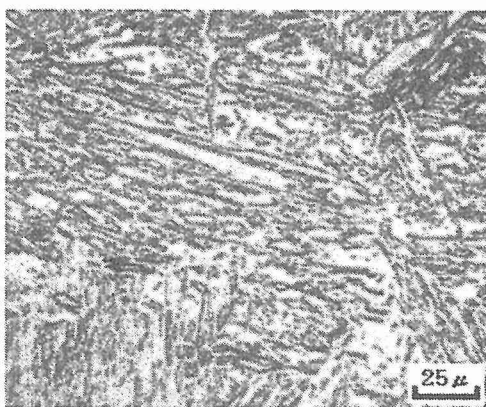
Hv 369





Base

Hv 226



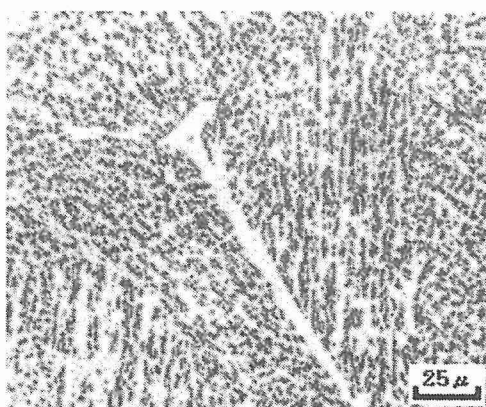
Time 7sec

Hv 546



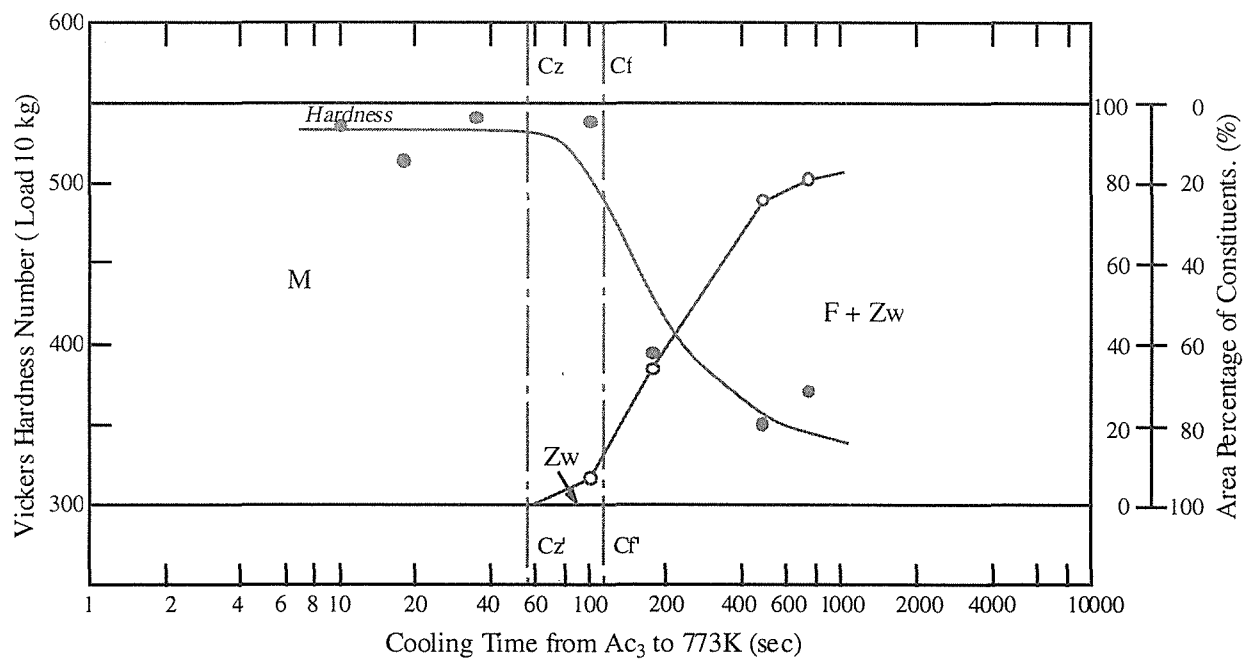
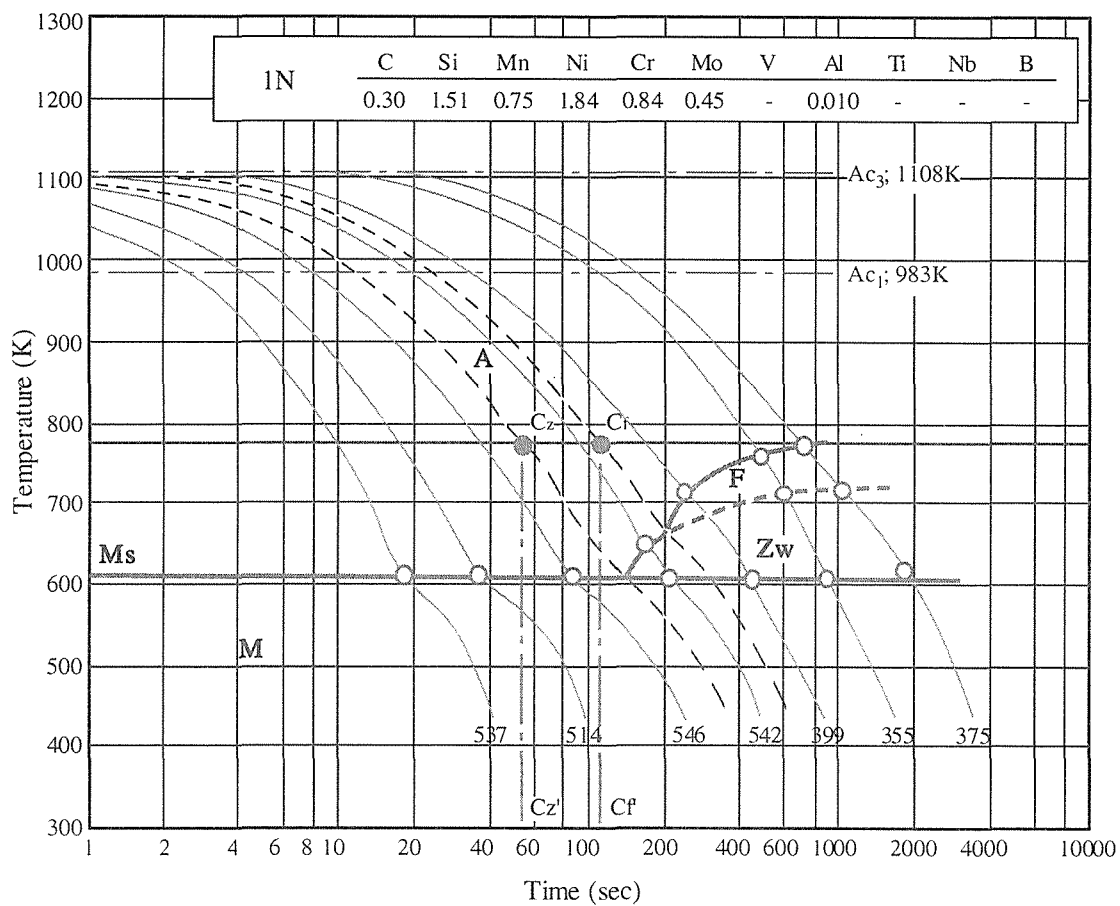
Time 90sec

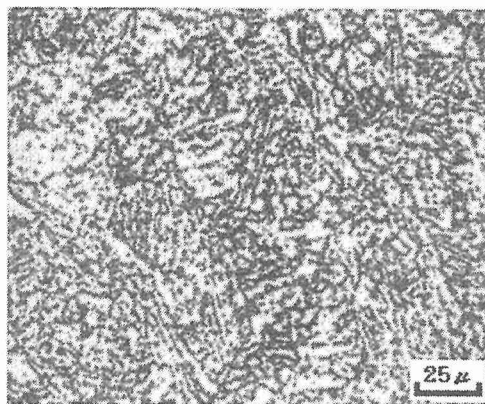
Hv 513



Time 1400sec

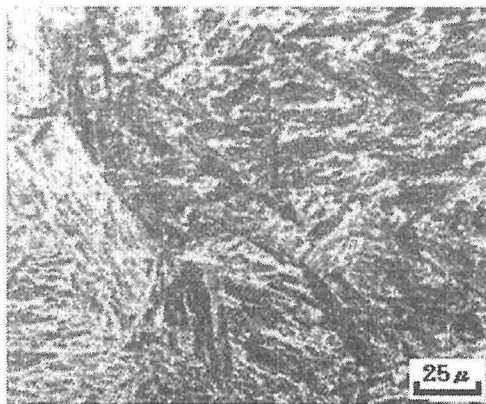
Hv 384





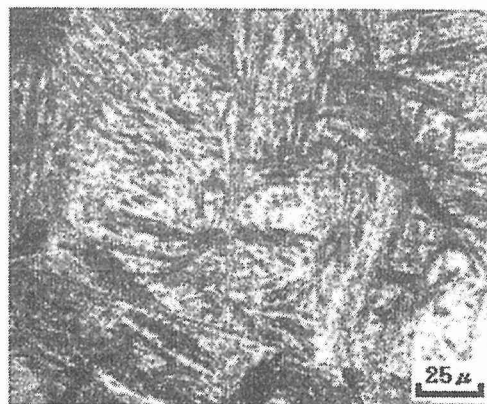
Base

Hv 263



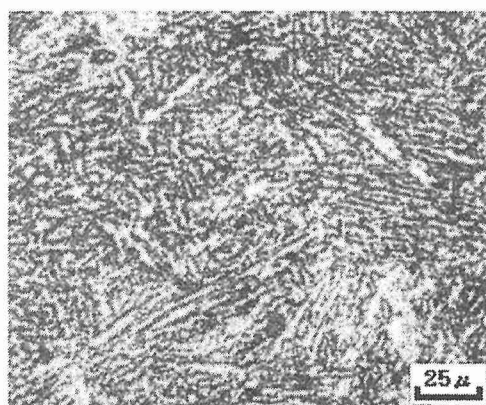
Time 10sec

Hv 537



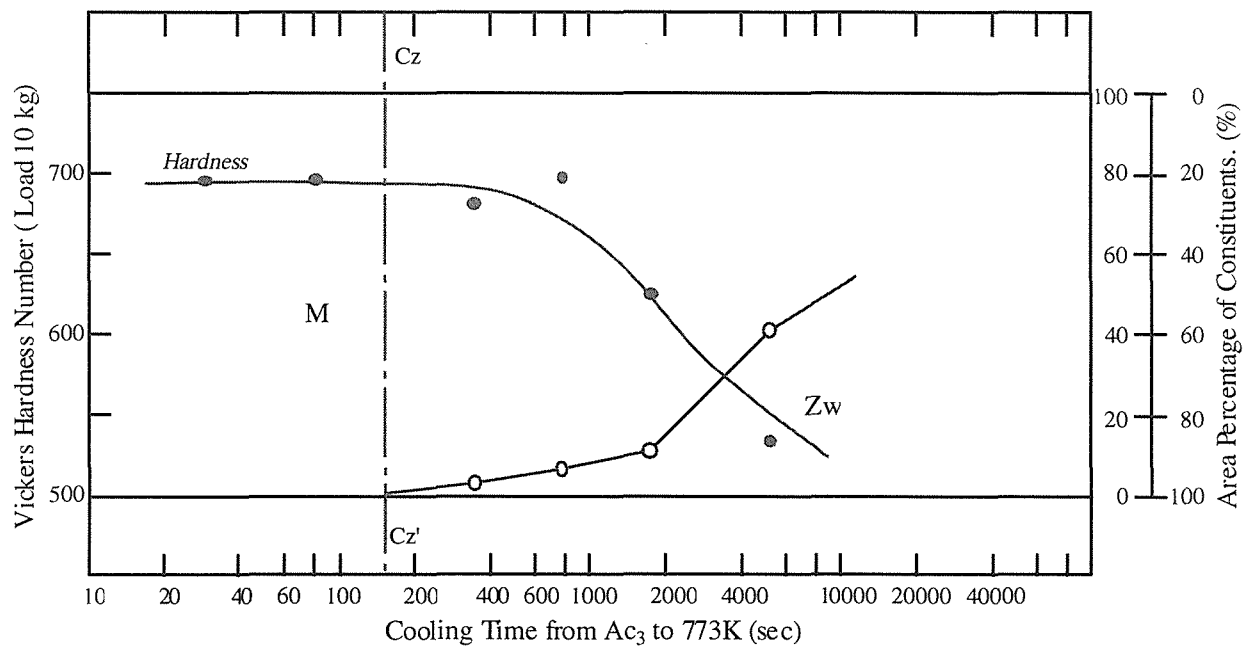
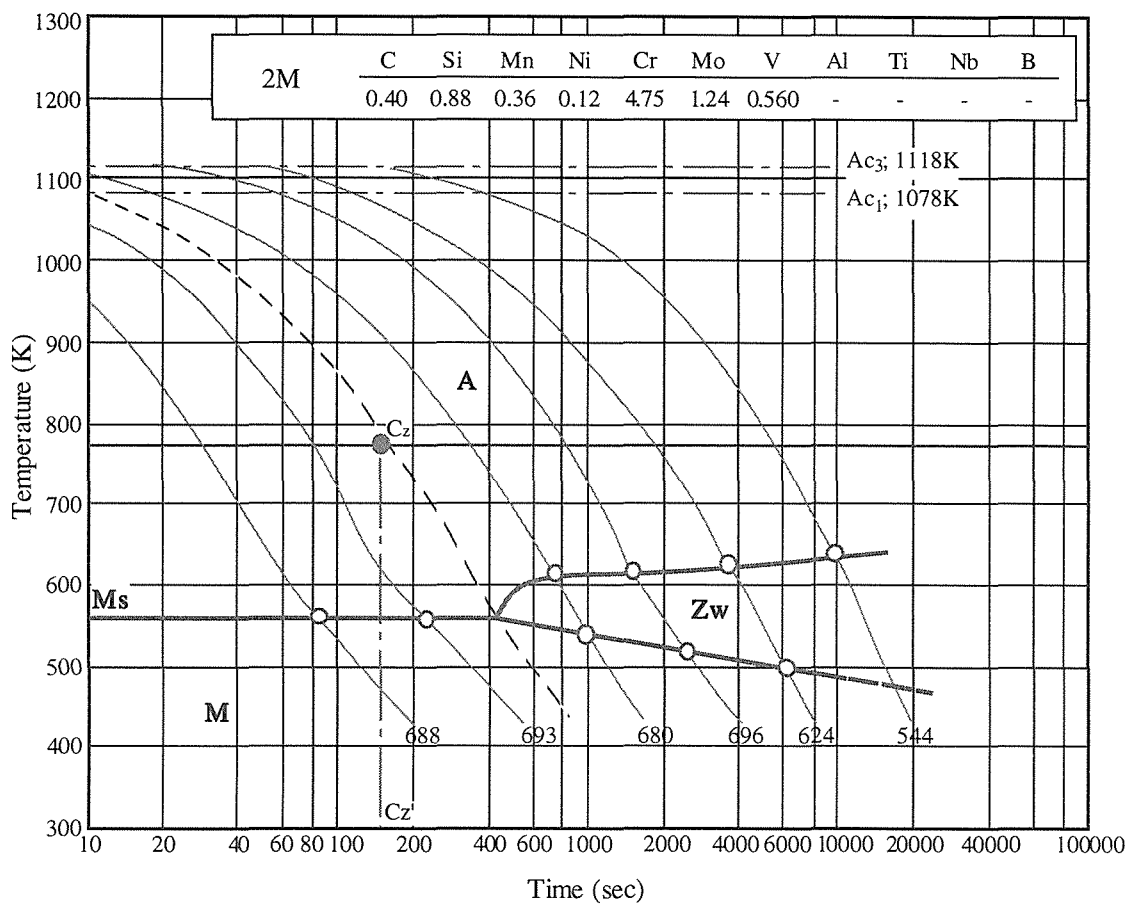
Time 89sec

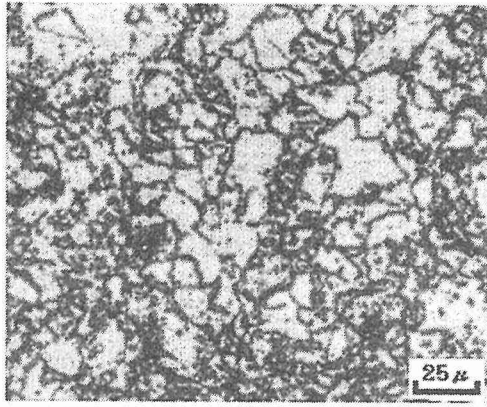
Hv 542



Time 900sec

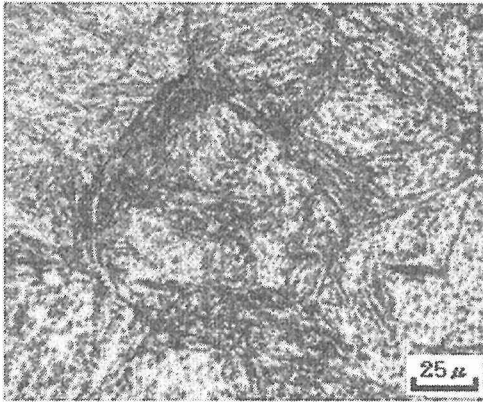
Hv 375





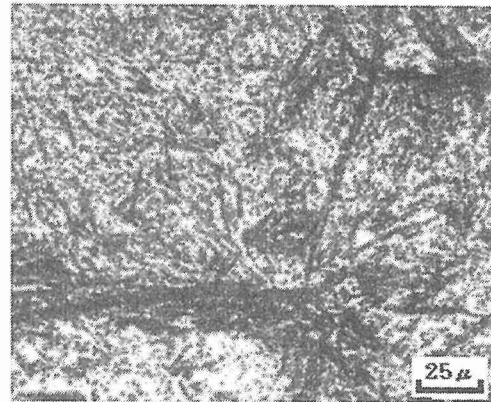
Base

Hv 198



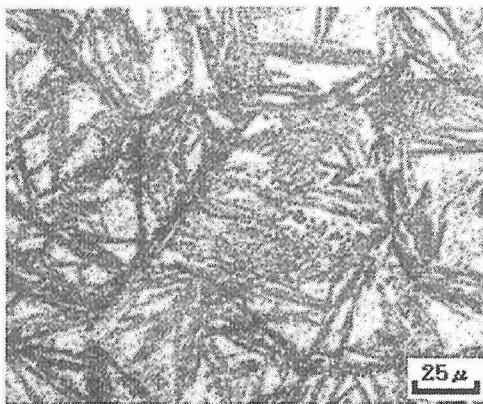
Time 30sec

Hv 688



Time 350sec

Hv 680

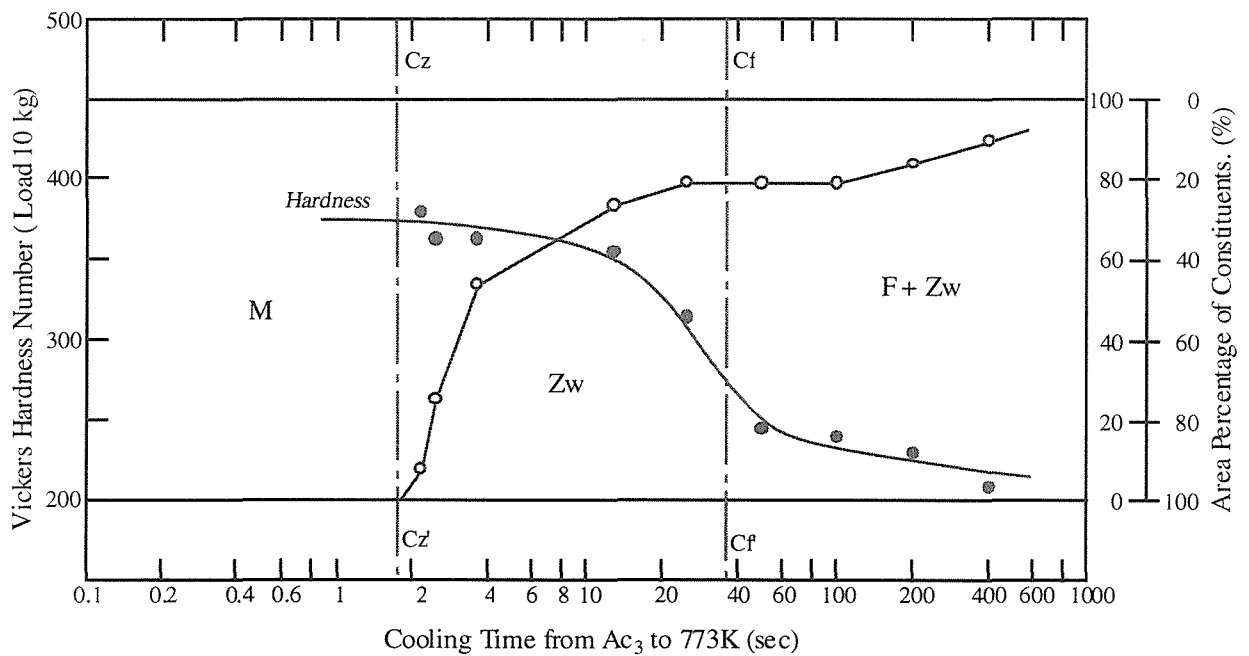
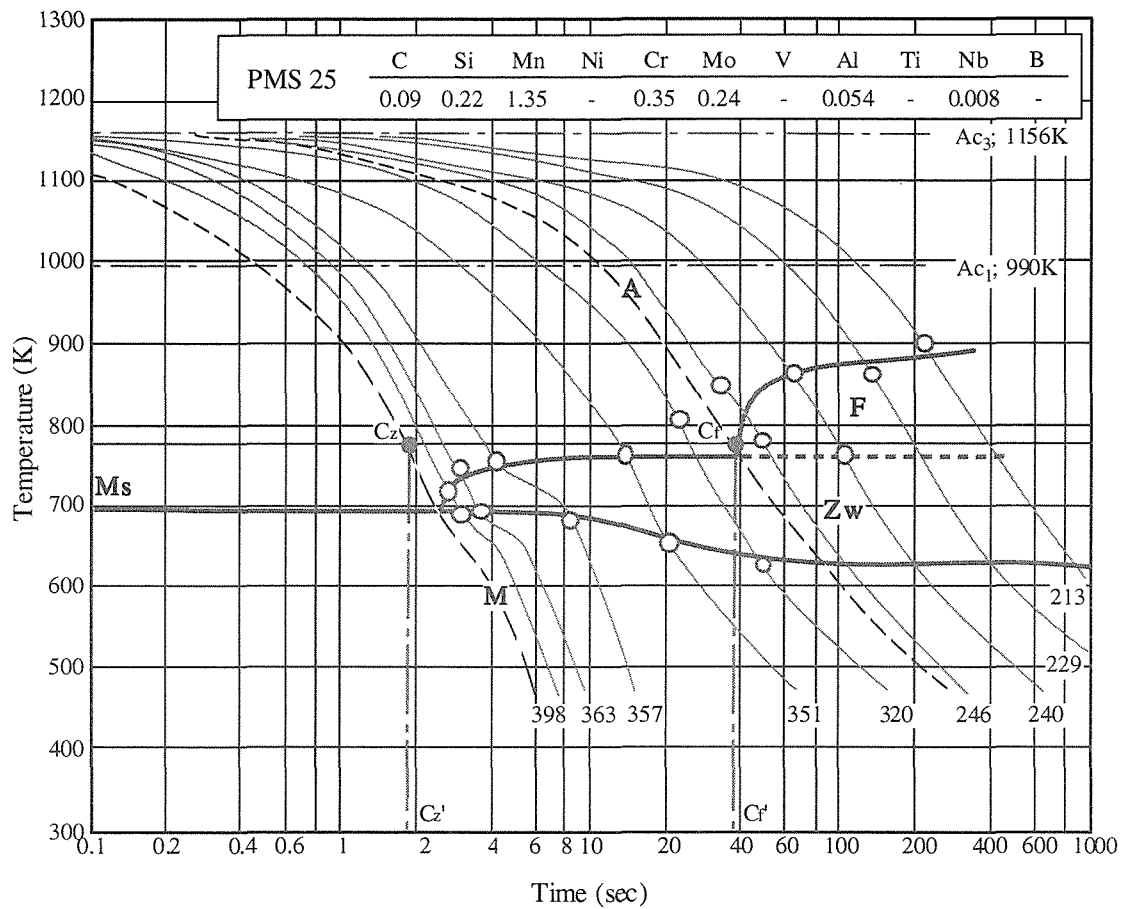


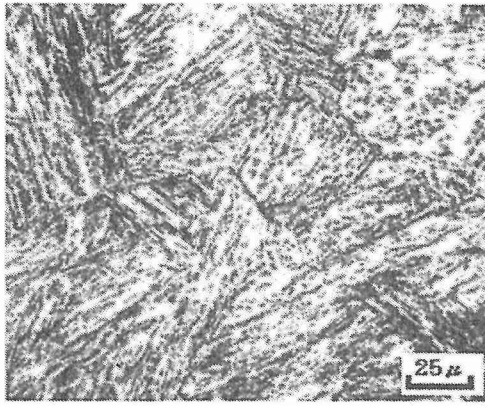
Time 5500sec

Hv 544

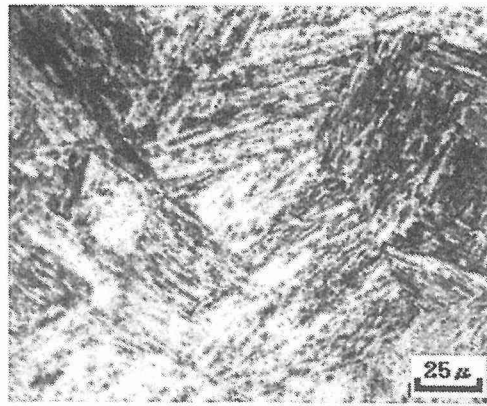
Pressure Vessel Steel

Steel	Chemical Composition (mass%)														Page	Ref.
	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V	Ti	Nb	Al	B		
PMS 25	0.09	0.22	1.35	-	-	-	0.35	-	0.24	-	-	0.008	0.054	-	332	P
PMS 35	0.09	0.28	0.83	-	-	2.65	-	-	0.01	-	-	-	0.033	-	336	P

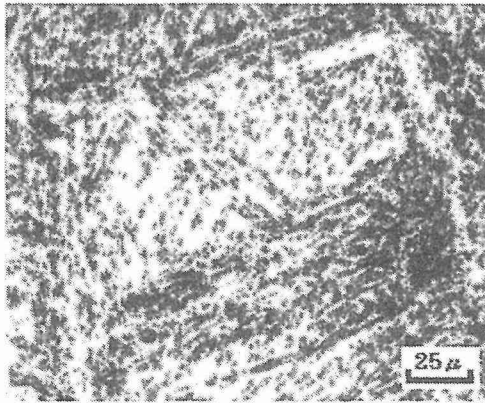




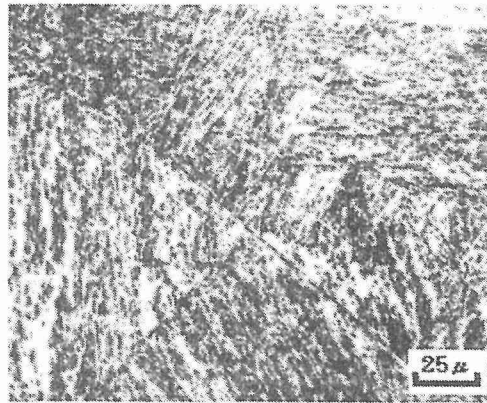
Time 2.2sec Hv 398



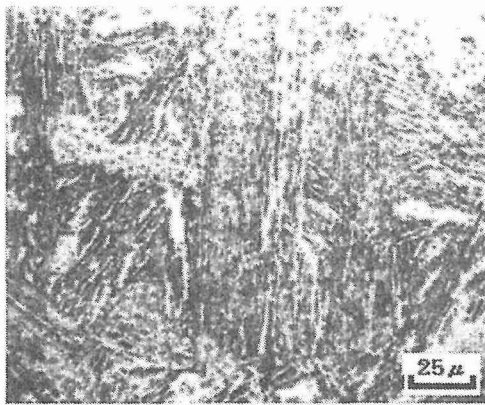
Time 2.8sec Hv 363



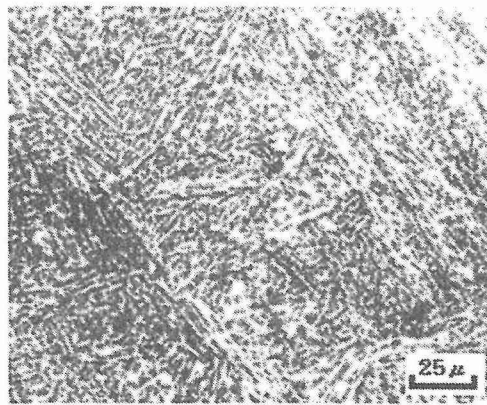
Time 3.9sec Hv 357



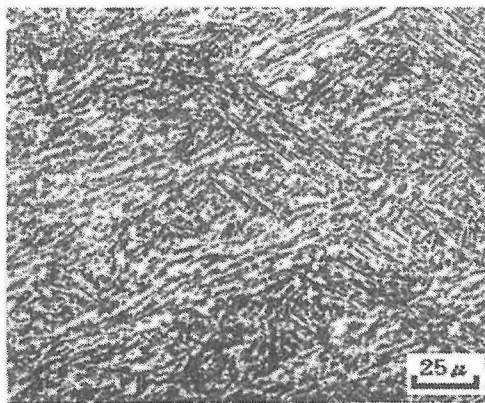
Time 14sec Hv 351



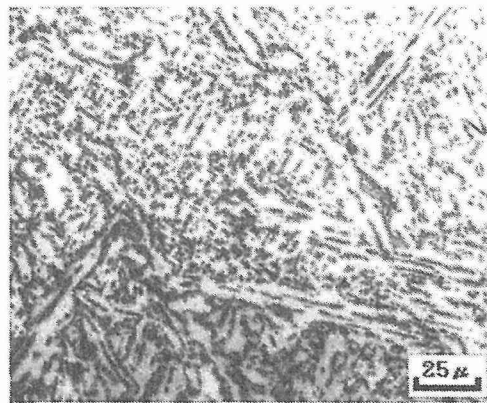
Time 27sec Hv 320



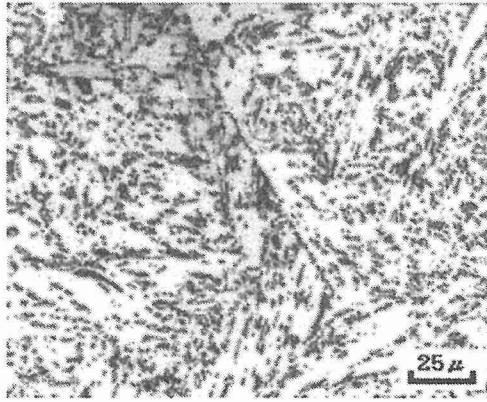
Time 50sec Hv 246



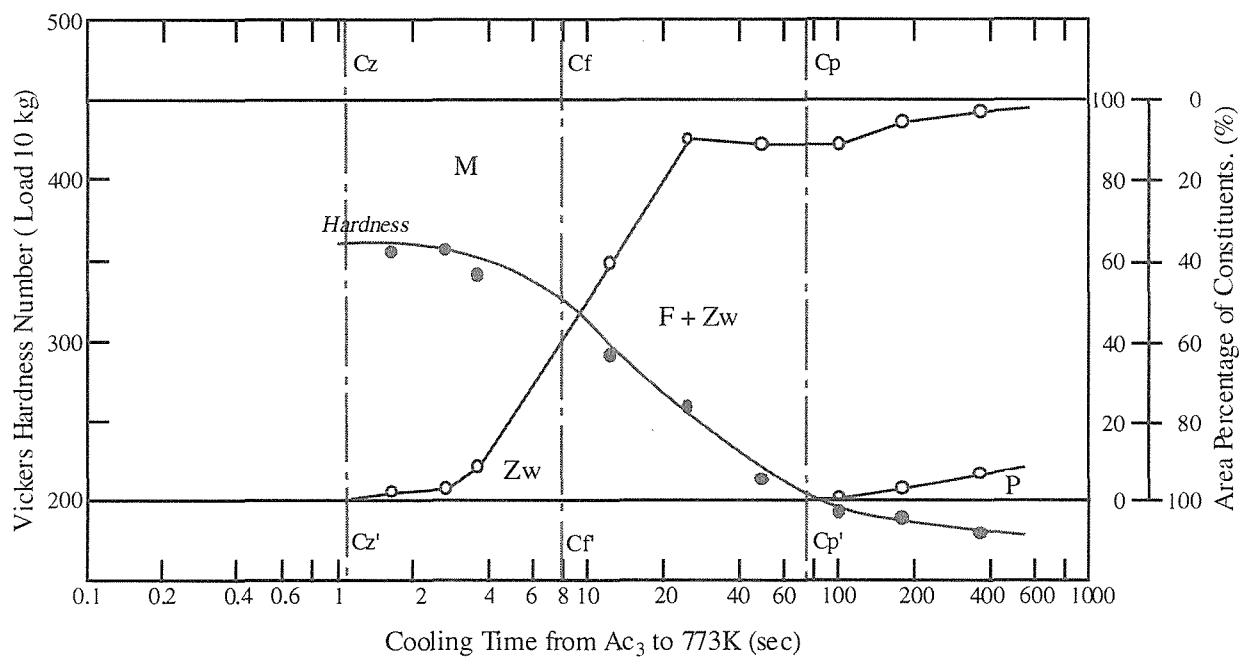
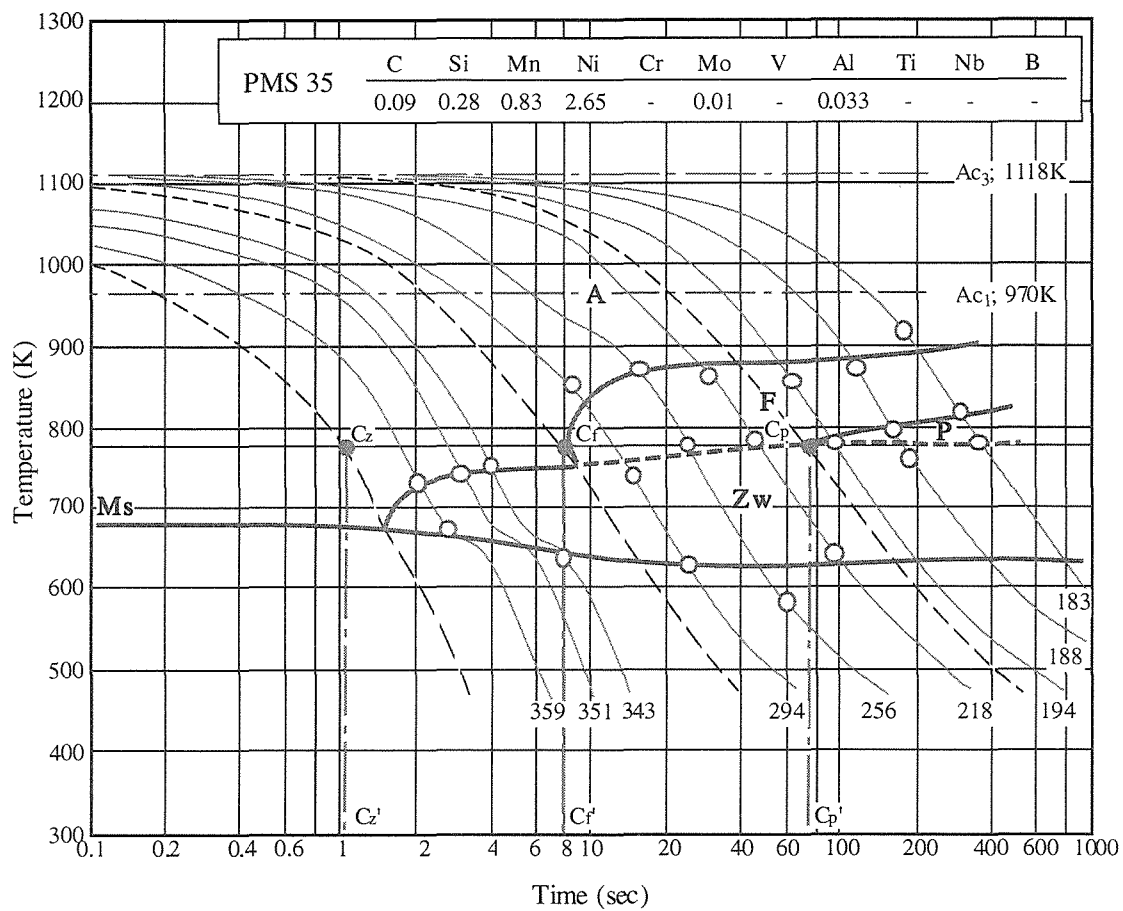
Time 100sec Hv 240

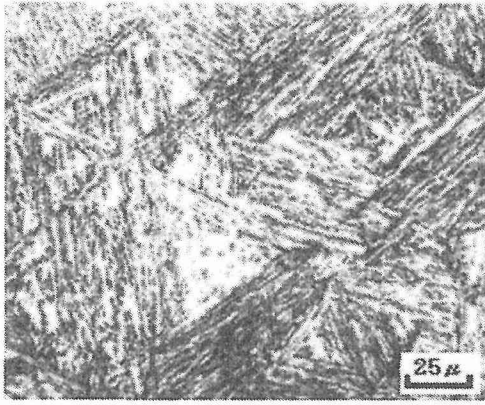


Time 200sec Hv 229

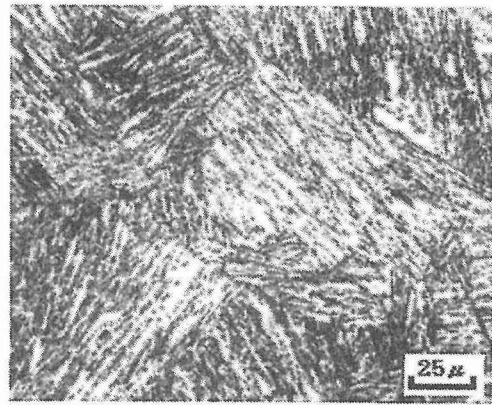


Time 400sec Hv 213

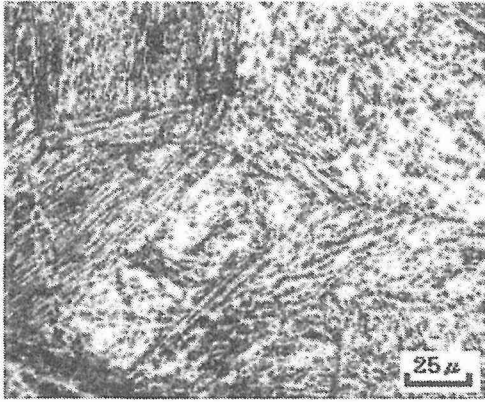




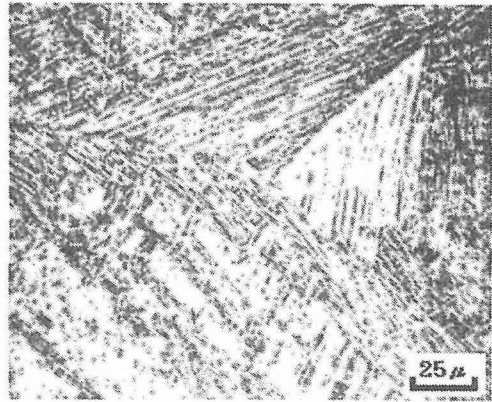
Time 1.8sec Hv 359



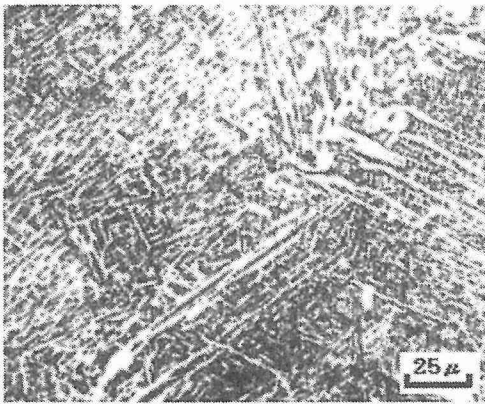
Time 2.8sec Hv 351



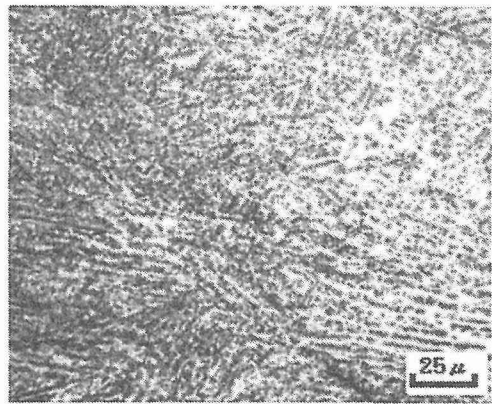
Time 3.8sec Hv 343



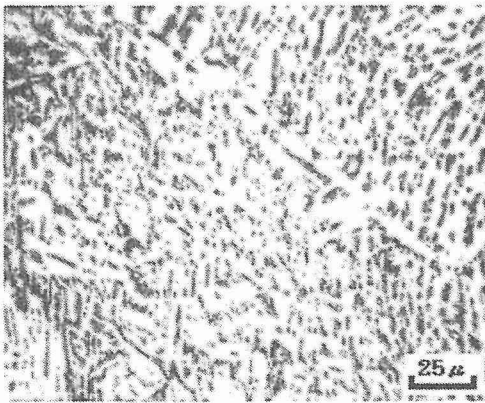
Time 13sec Hv 294



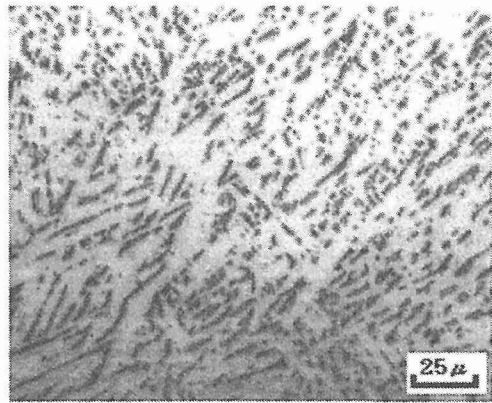
Time 25sec Hv 256



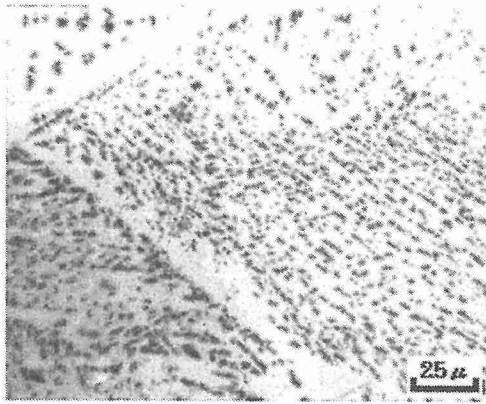
Time 50sec Hv 218



Time 100sec Hv 194



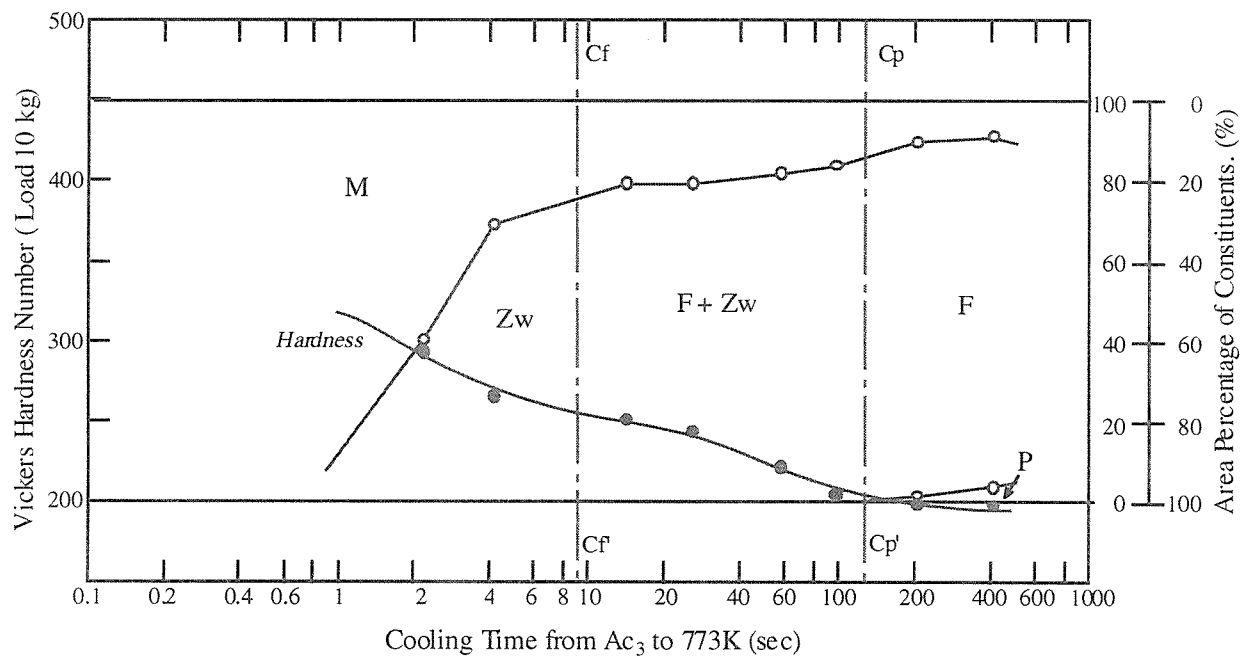
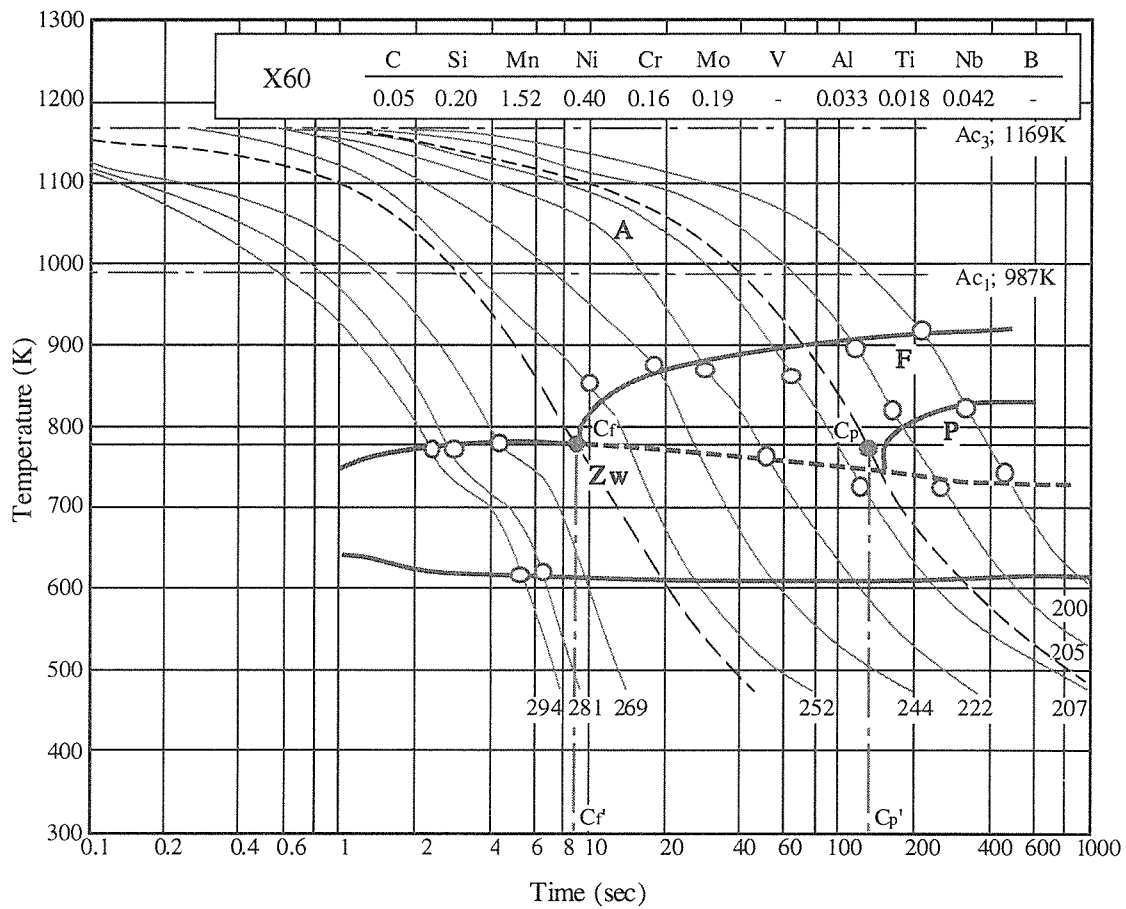
Time 180sec Hv 188

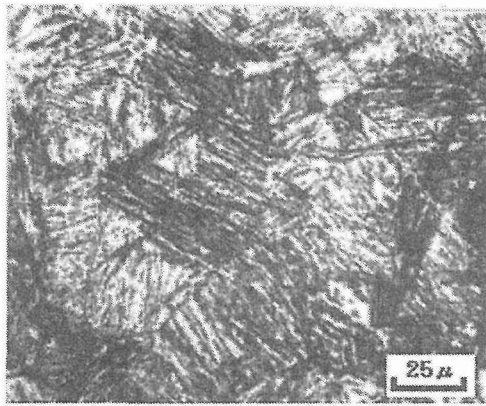


Time 380sec Hv 183

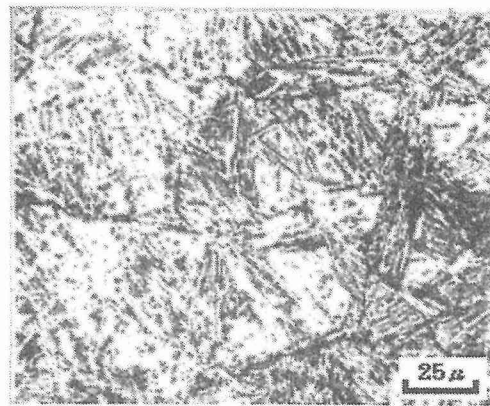
Line-Pipe Steel

Steel	Chemical Composition (mass%)														Page	Ref.
	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V	Ti	Nb	Al	B		
X 60	0.05	0.2	1.52	-	-	0.4	0.16	-	0.19	-	0.018	0.042	0.033	-	340	P
X 70	0.04	0.3	1.5	-	-	0.01	0.02	-	0.01	0.041	0.012	0.035	0.035	-	343	P

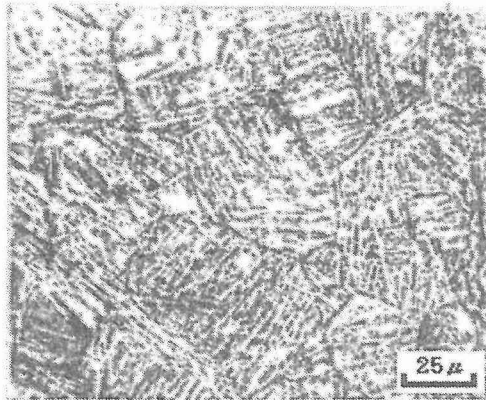




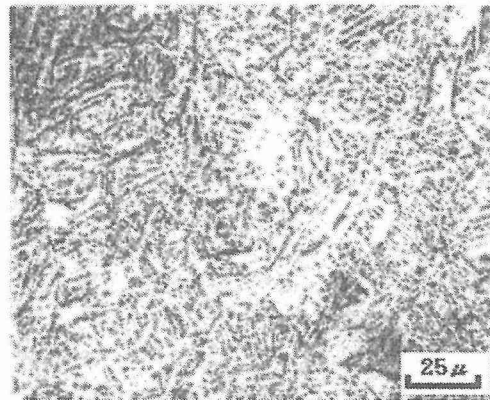
Time 2.5sec Hv 294



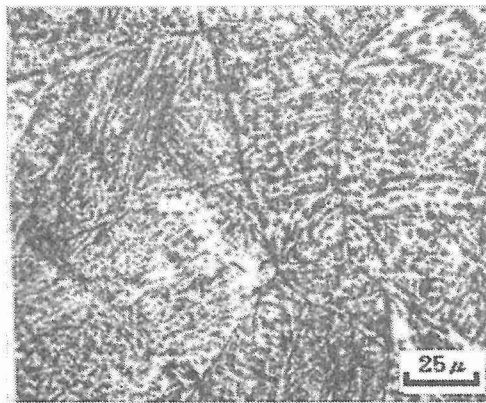
Time 2.8sec Hv 281



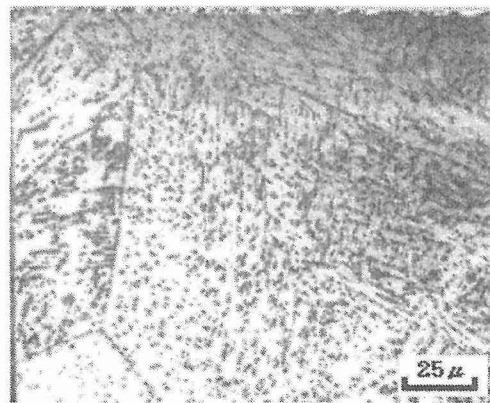
Time 8sec Hv 269



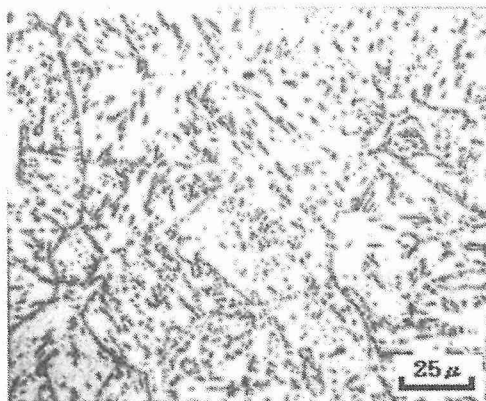
Time 15sec Hv 252



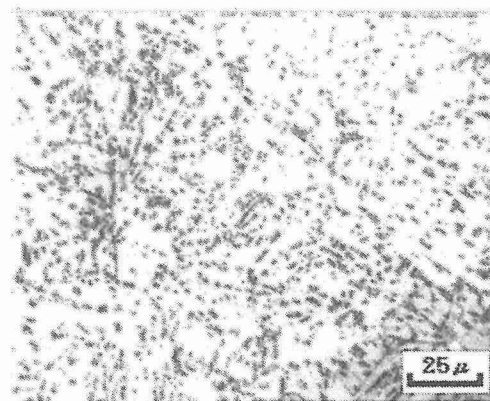
Time 23sec Hv 244



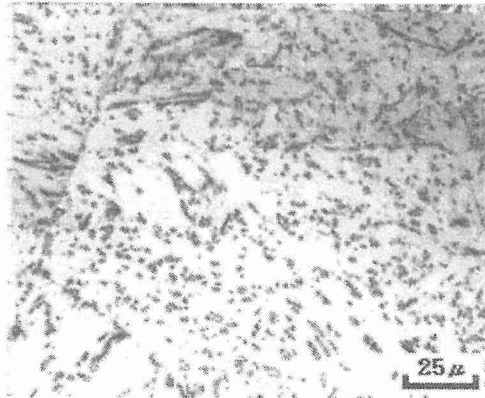
Time 48sec Hv 222



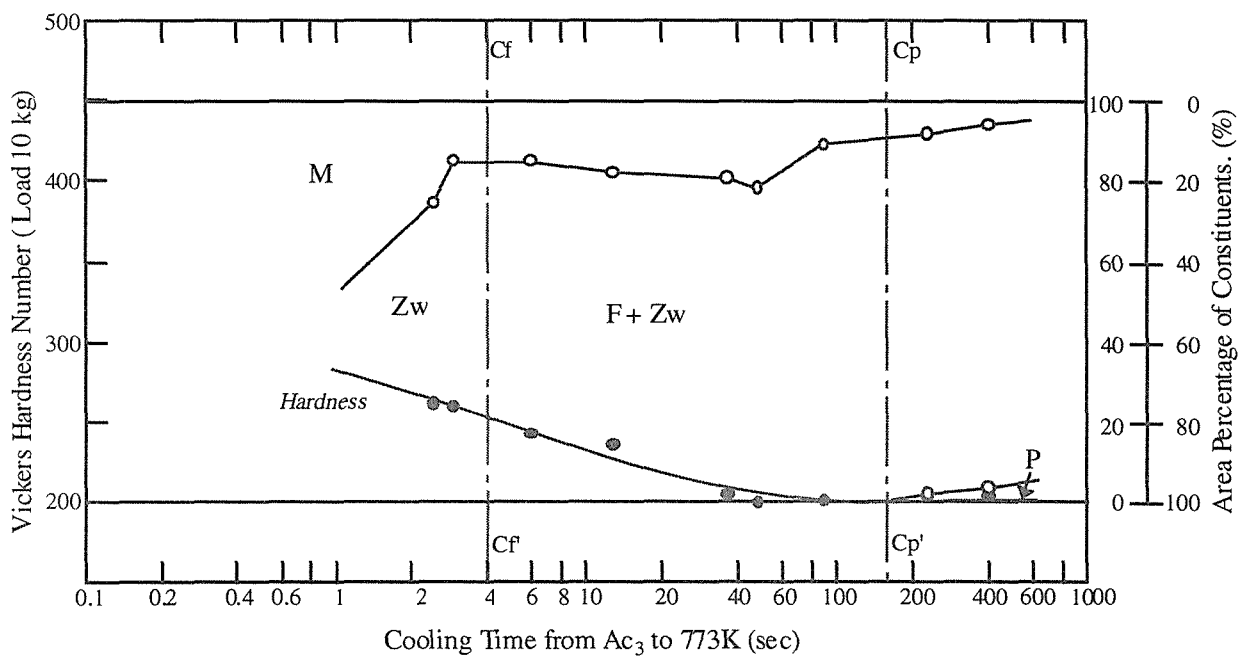
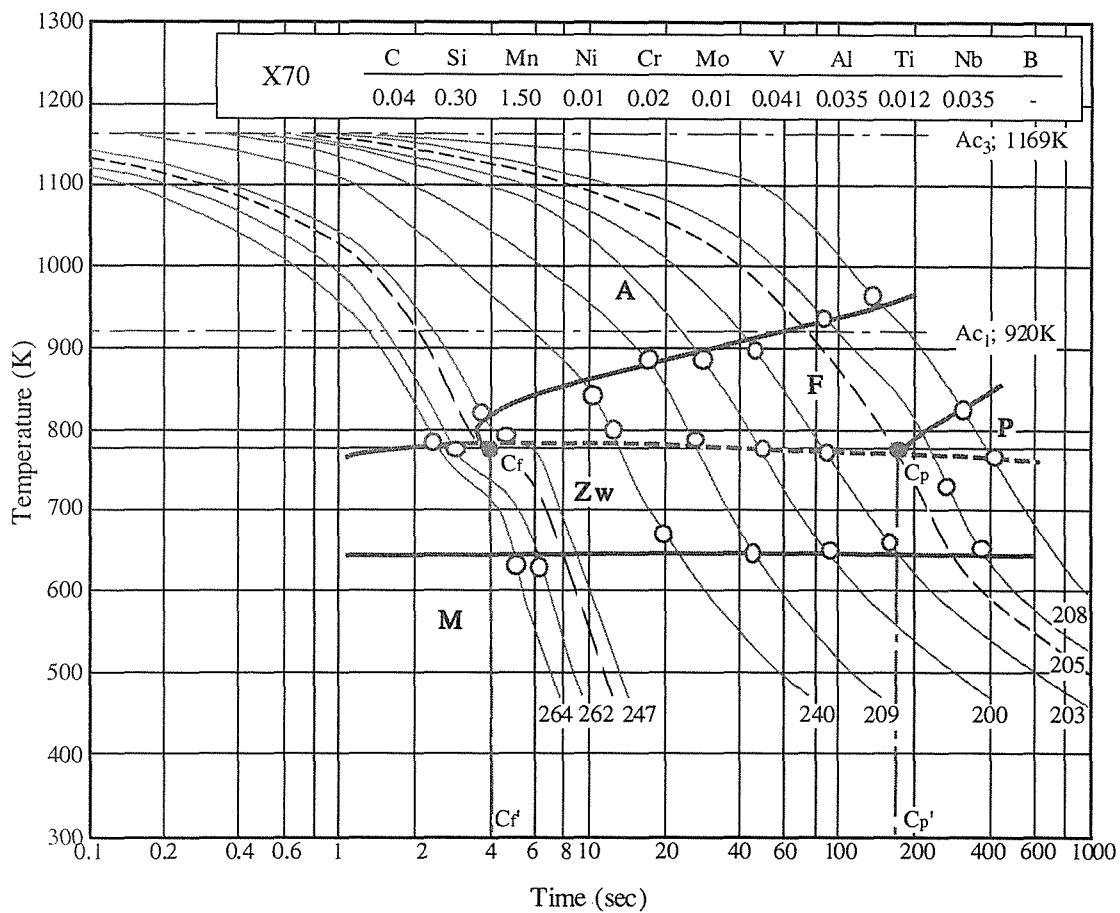
Time 100sec Hv 207

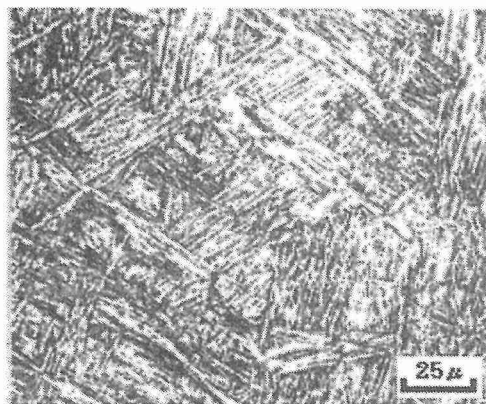


Time 200sec Hv 205

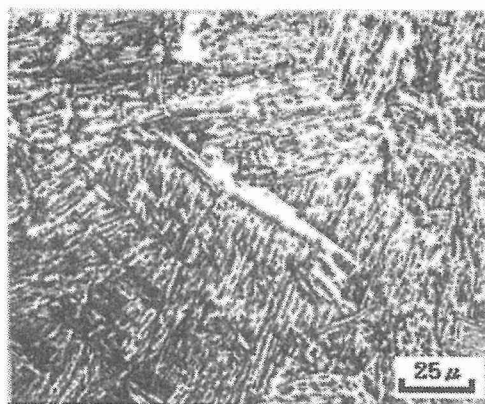


Time 400sec Hv 200

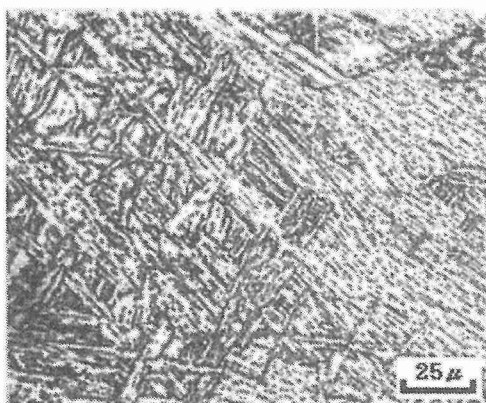




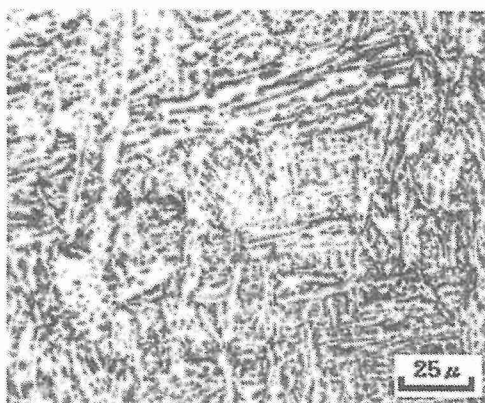
Time 2.5sec Hv 264



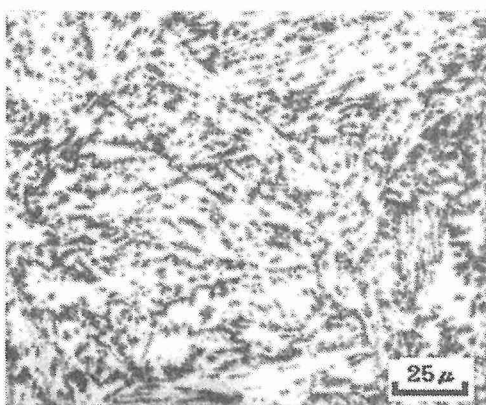
Time 3sec Hv 262



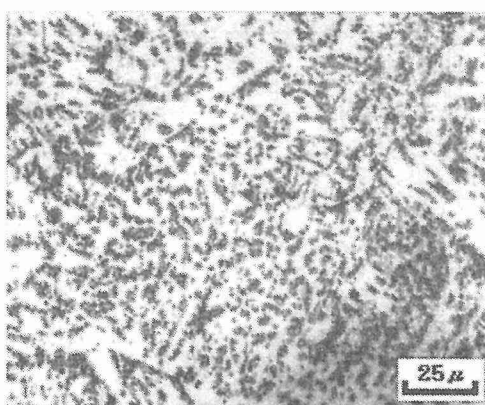
Time 6sec Hv 247



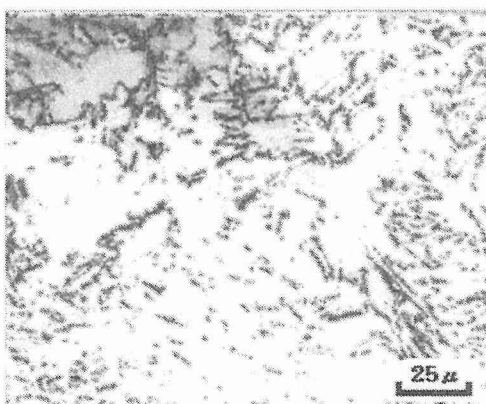
Time 14sec Hv 240



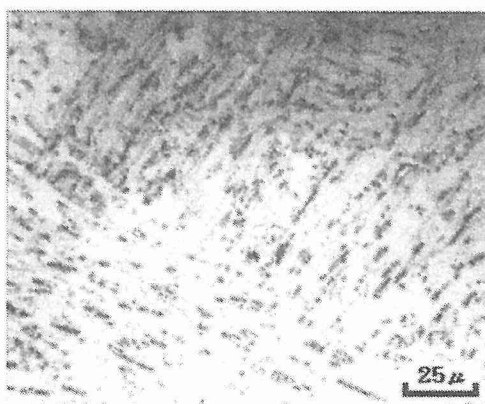
Time 28sec Hv 209



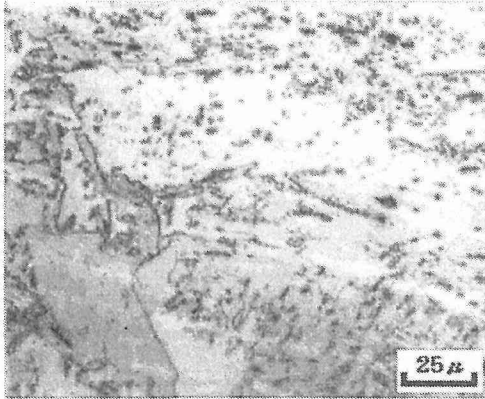
Time 50sec Hv 200



Time 90sec Hv 203



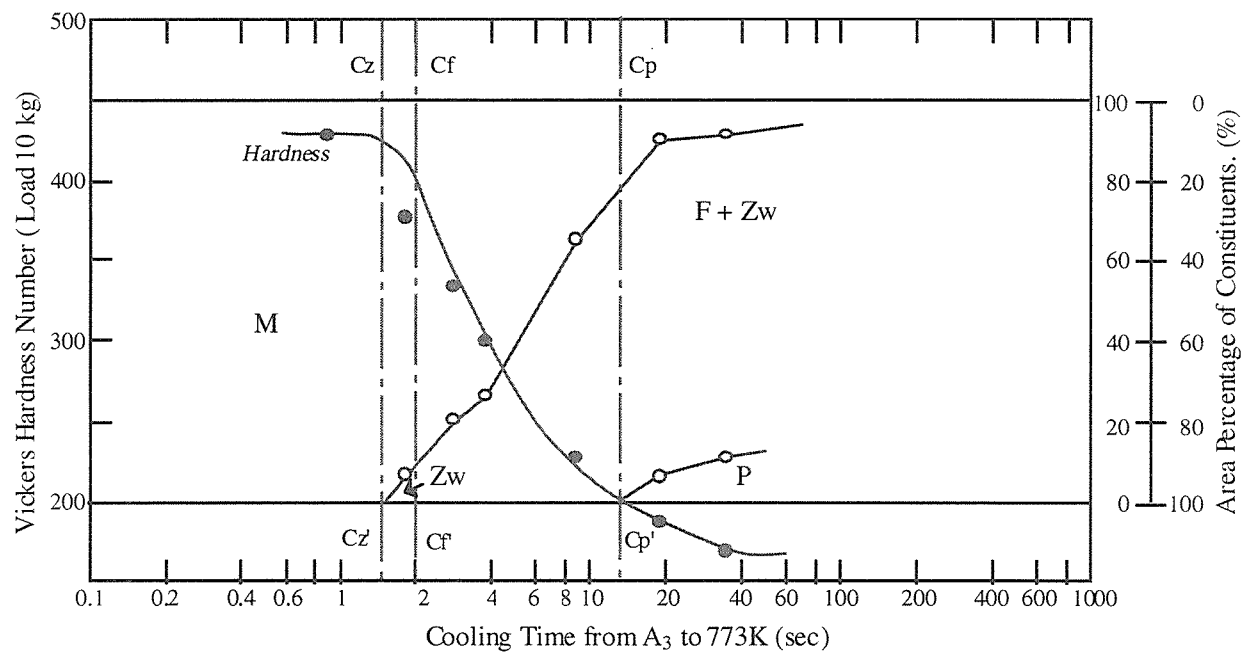
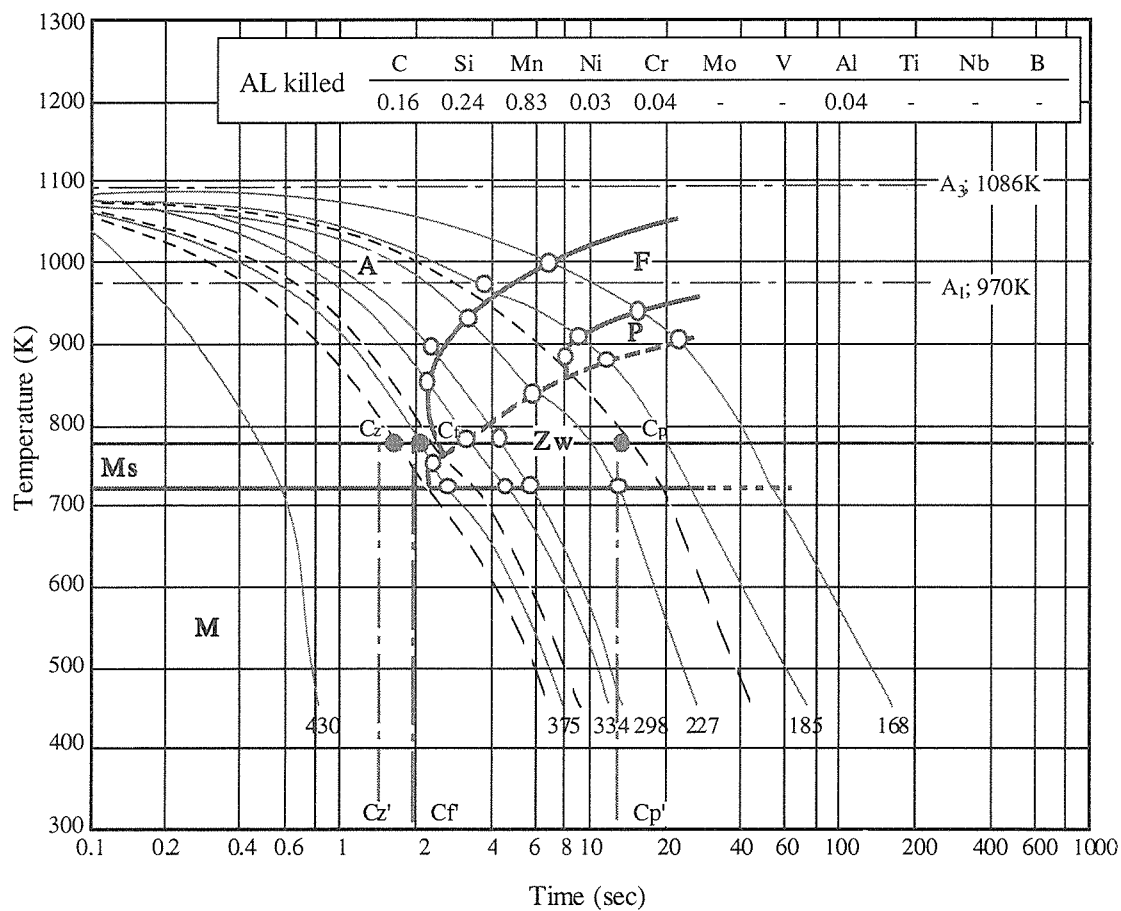
Time 250sec Hv 205

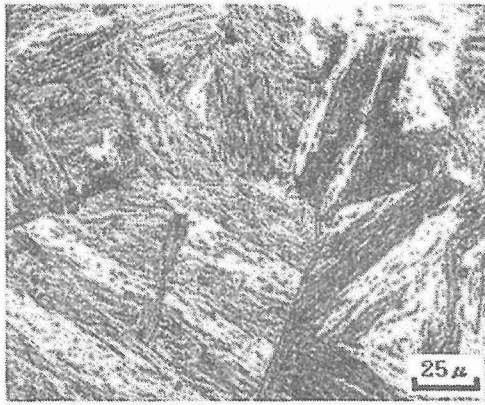


Time 400sec Hv 208

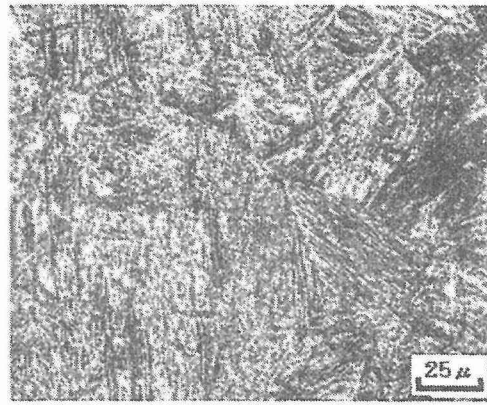
Low Temperature Steel

Steel	Chemical Composition (mass%)														Page	Ref.
	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V	Ti	Nb	Al	B		
AL killed	0.16	0.24	0.83	0.036	0.022	0.03	0.04	-	-	-	-	-	0.04	-	348	10
N-TuF33	0.07	0.28	1.25	-	-	-	-	-	-	-	-	-	-	-	350	P
N-TuFCR130	0.1	0.24	0.6	-	-	3.51	-	-	-	-	-	-	-	-	353	P
N-TuFCR196	0.06	0.24	1.12	-	-	5.75	0.58	-	0.19	-	-	-	-	-	356	P
9Ni	0.07	0.24	0.42	-	-	9.33	-	-	-	-	-	-	0.055	-	359	P

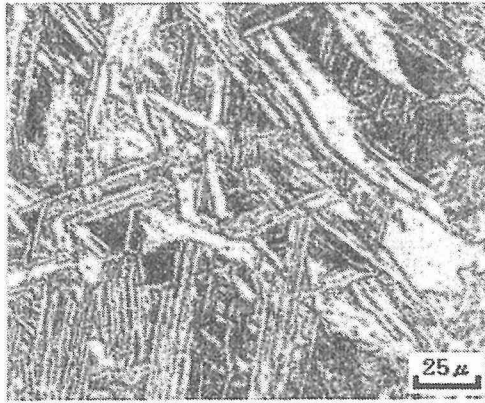




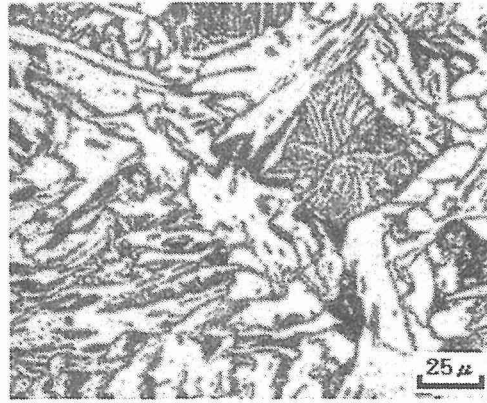
Time 0.5sec Hv 430



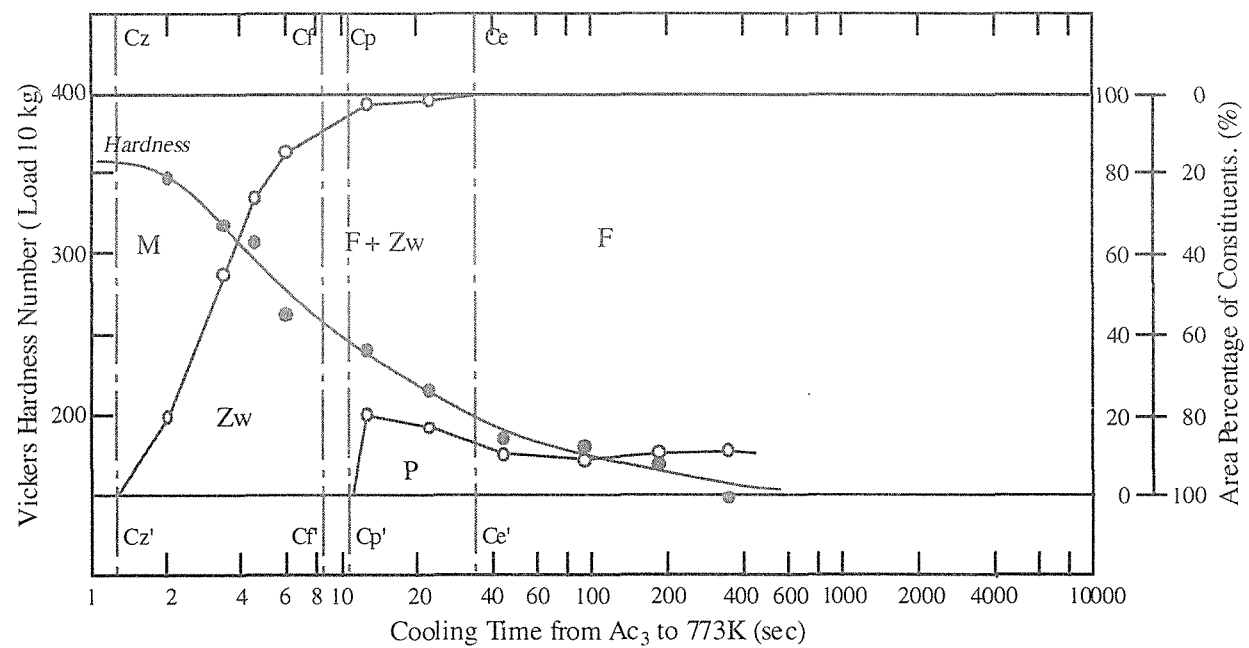
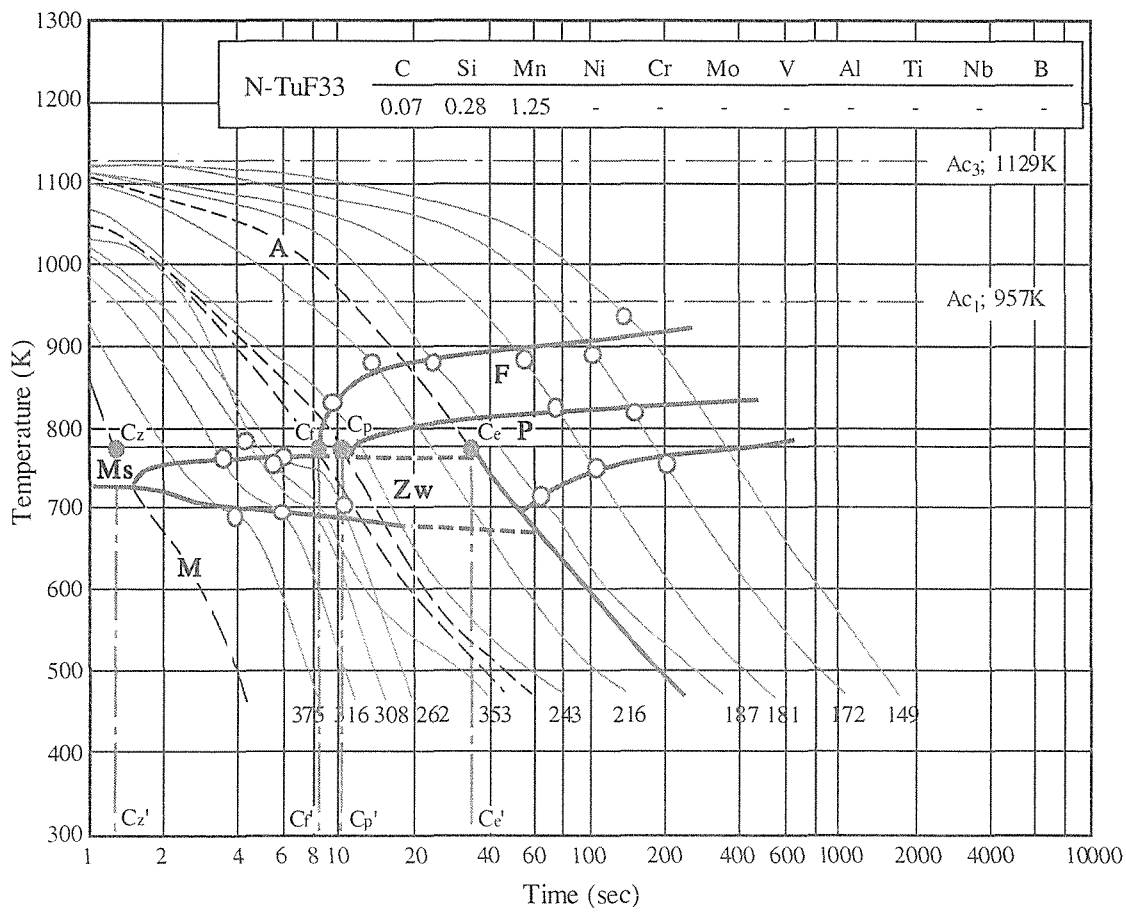
Time 2.1sec Hv 375

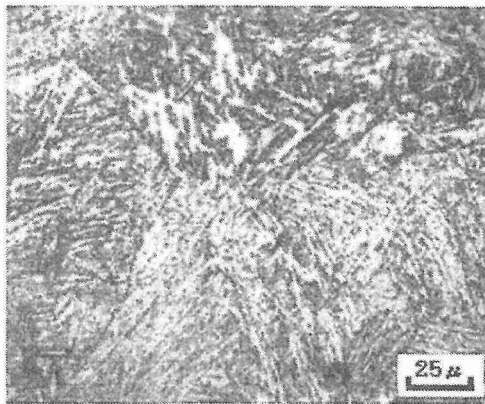


Time 10sec Hv 227

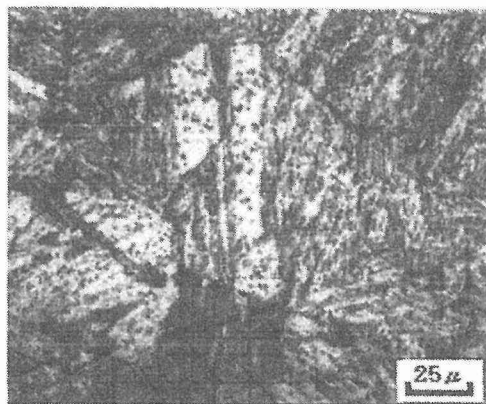


Time 42sec Hv 168

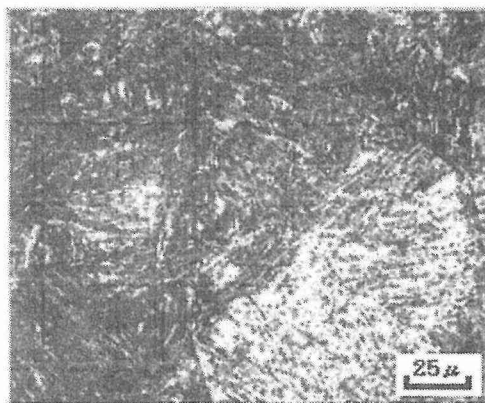




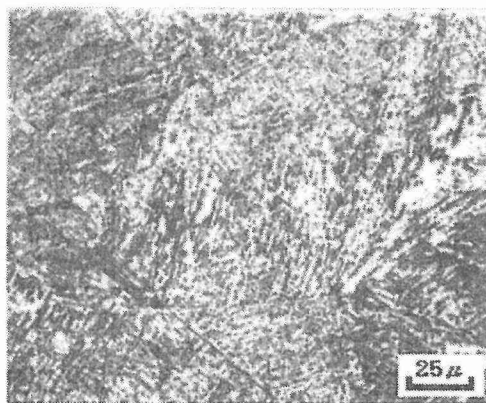
Time 2.1sec Hv 357



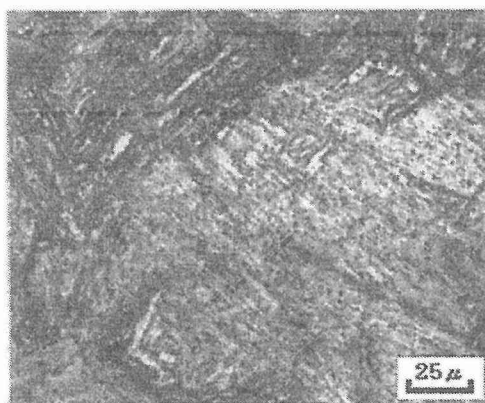
Time 3.2sec Hv 316



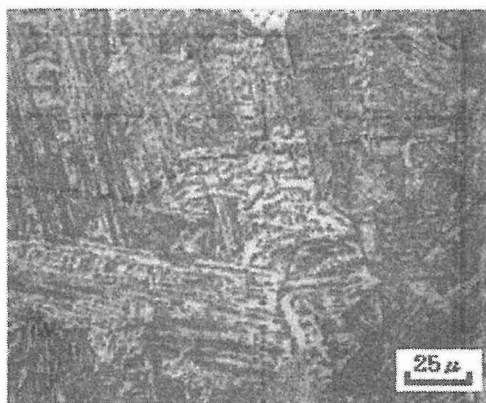
Time 4.5sec Hv 308



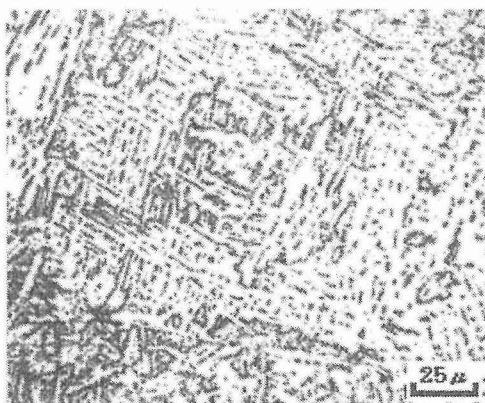
Time 5.5sec Hv 262



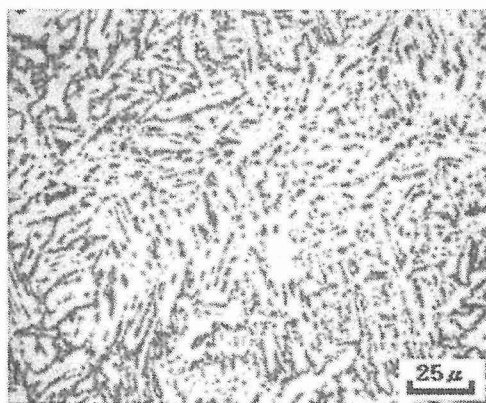
Time 5sec Hv 353



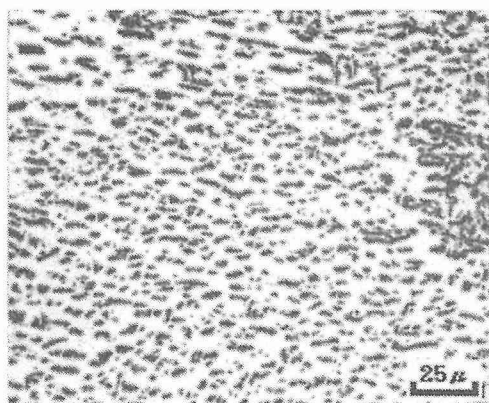
Time 13sec Hv 243



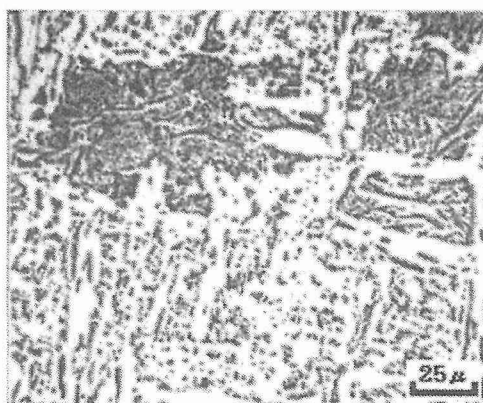
Time 25sec Hv 216



Time 46sec Hv 187Time



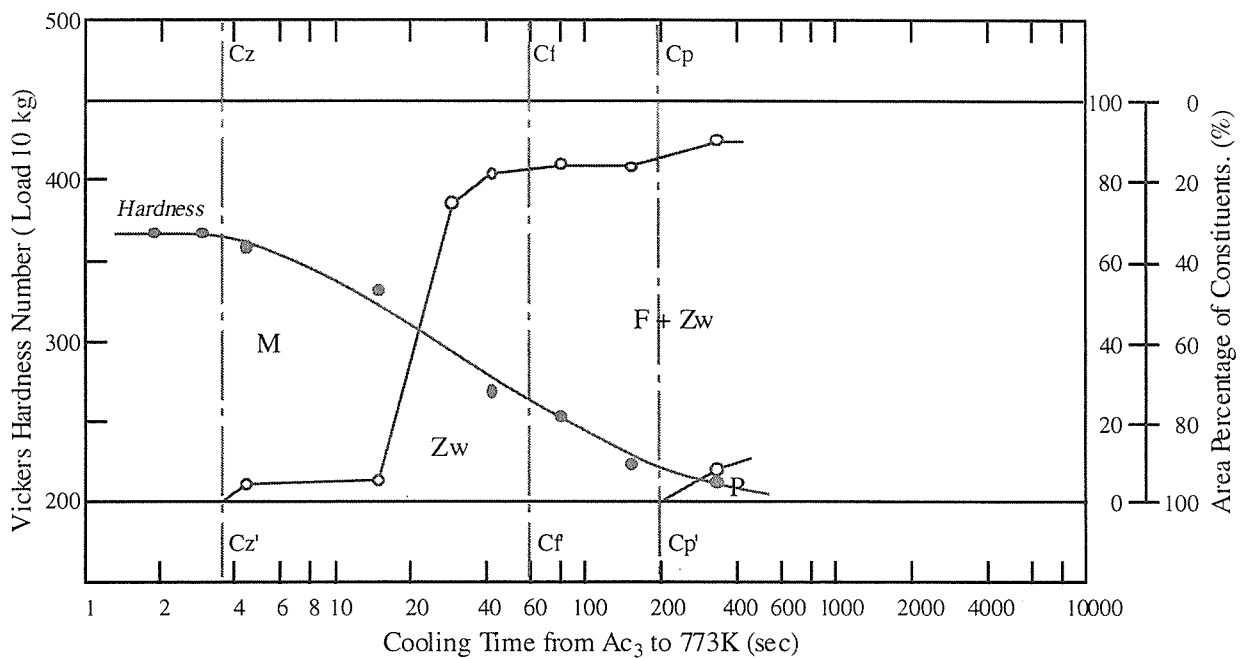
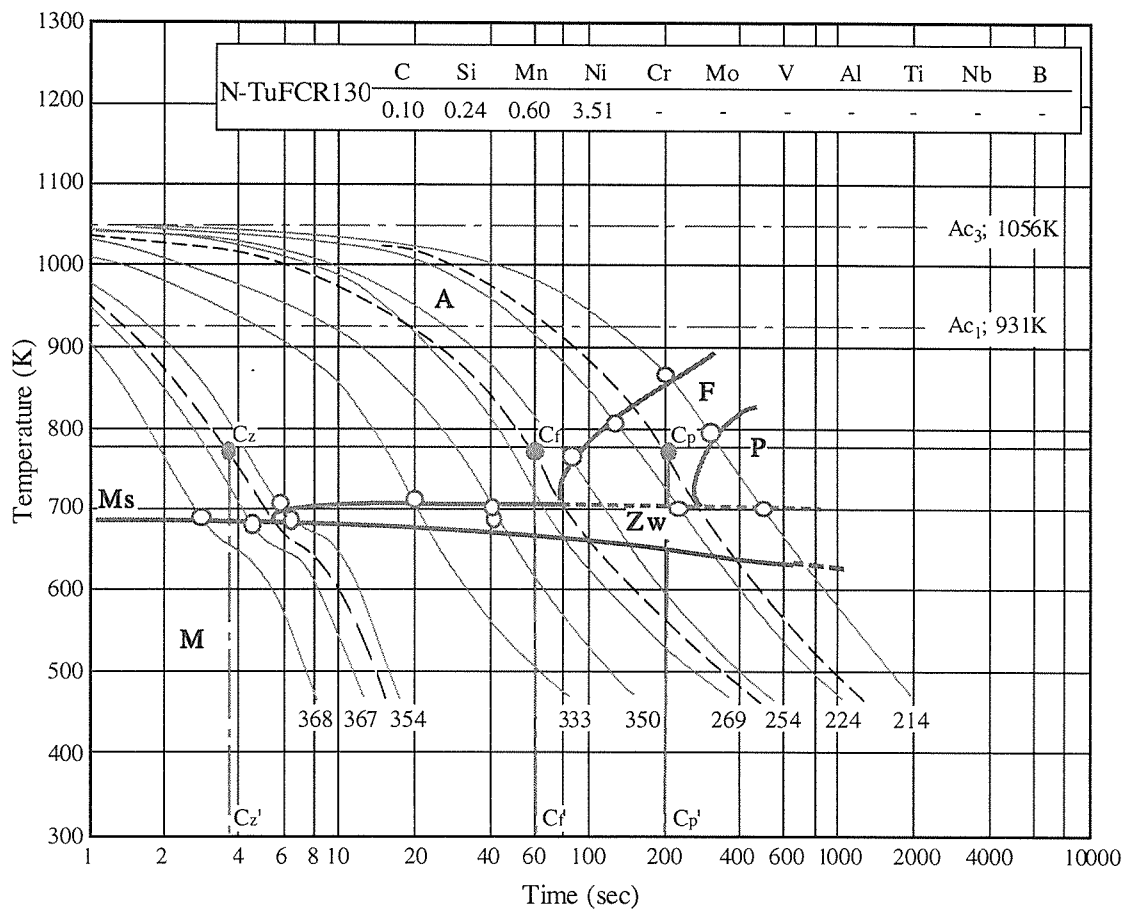
Time 90sec Hv 181

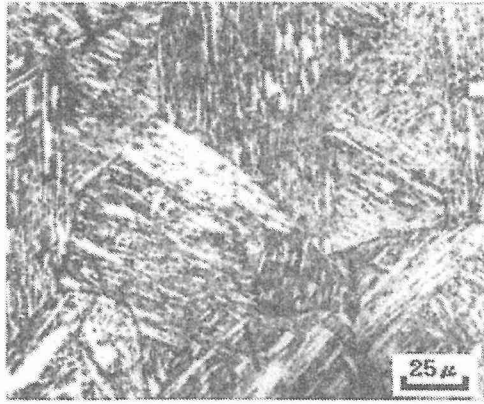


Time 180sec Hv 172

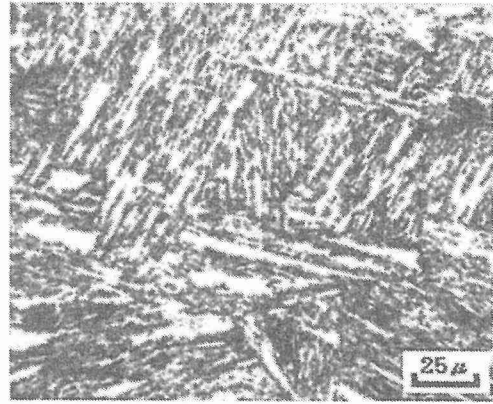


Time 360sec Hv 149

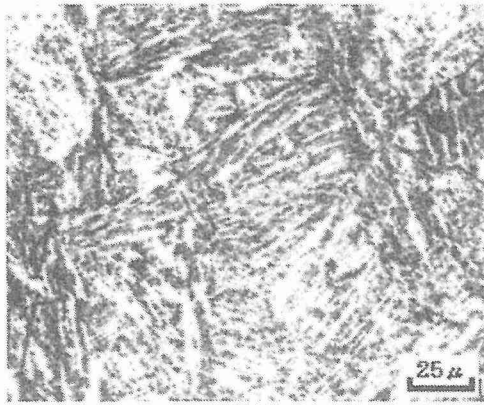




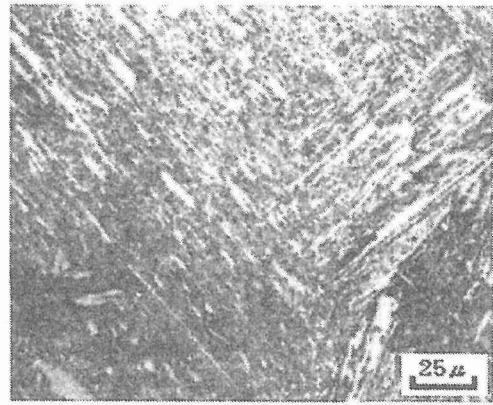
Time 2sec Hv 368



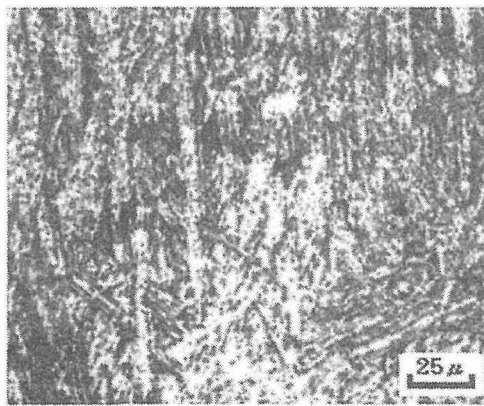
Time 3sec Hv 367



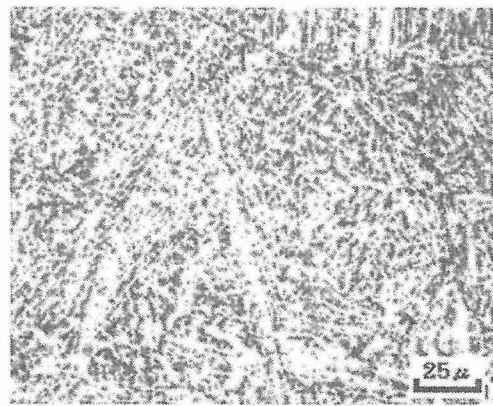
Time 4sec Hv 354



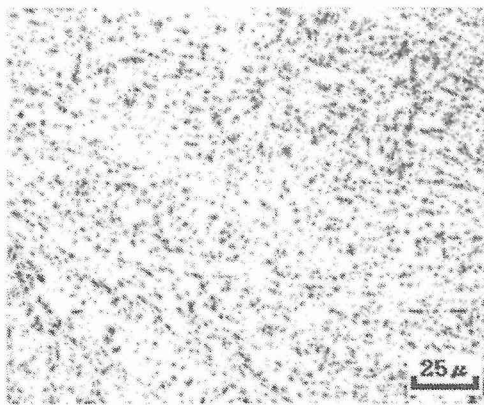
Time 15sec Hv 333



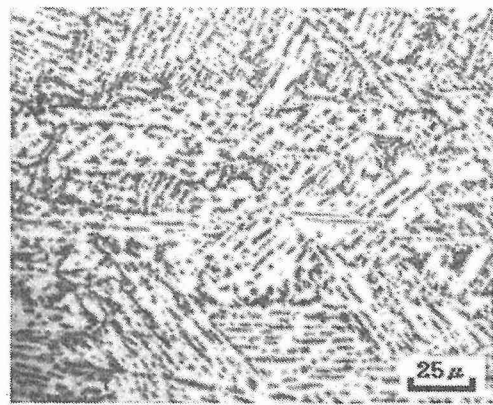
Time 30sec Hv 350



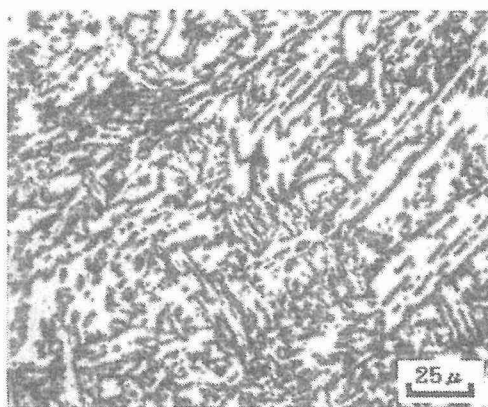
Time 50sec Hv 269



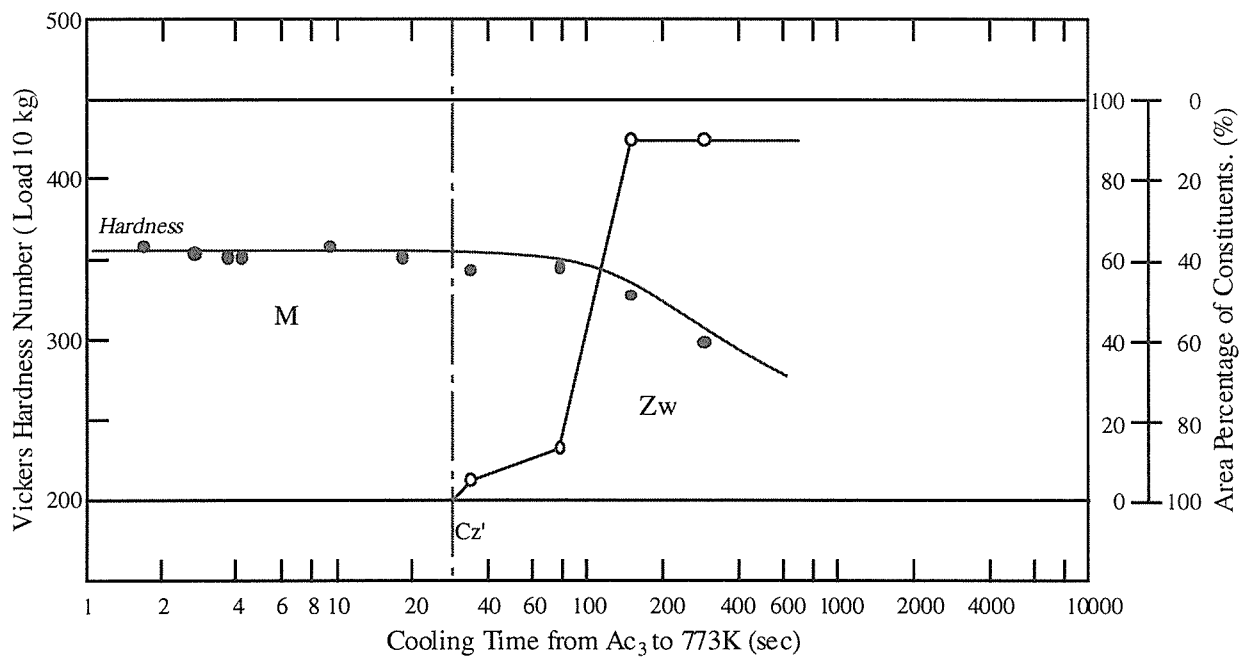
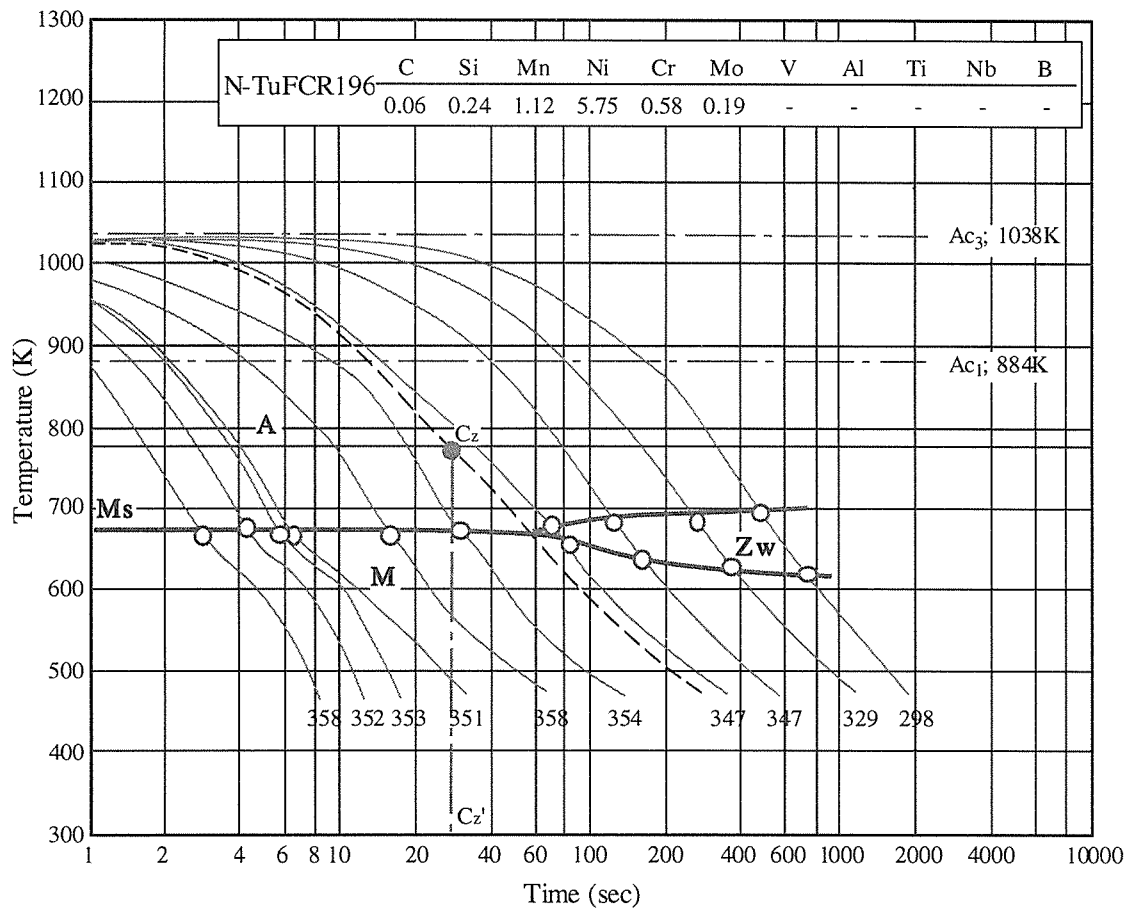
Time 80sec Hv 254

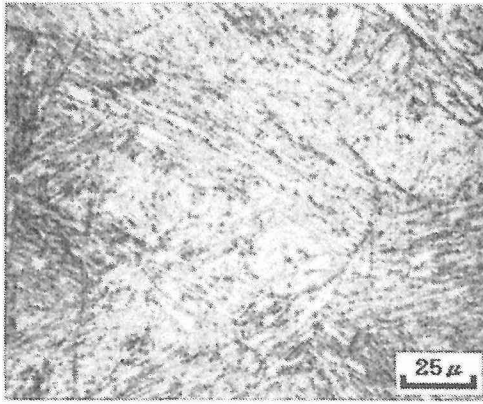


Time 150sec Hv 224

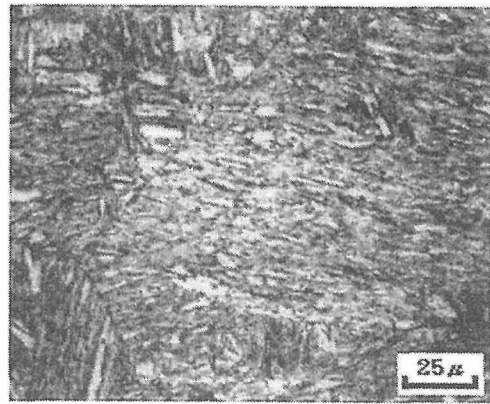


Time 340sec Hv 214

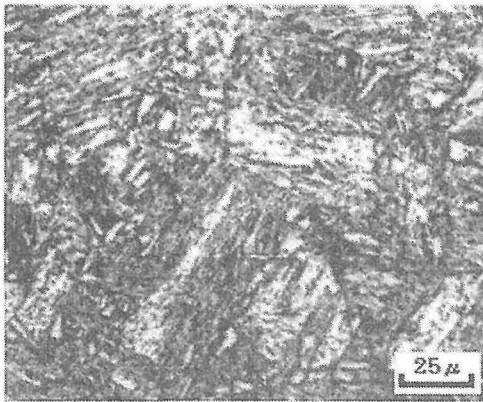




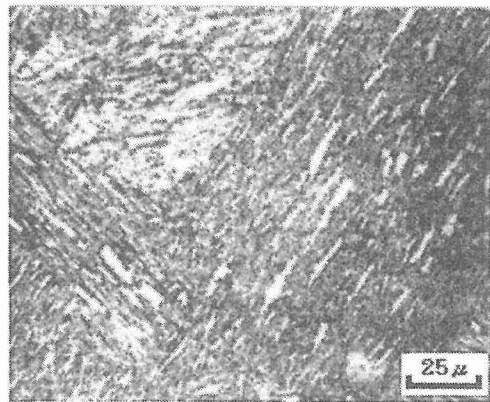
Time 1.7sec Hv 358



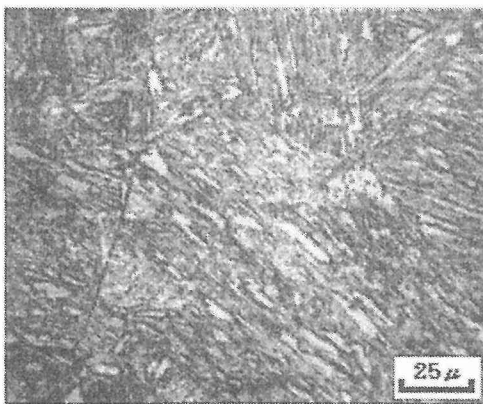
Time 2.8sec Hv 352



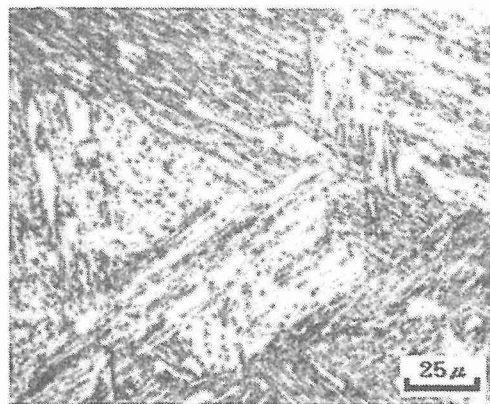
Time 3.8sec Hv 353



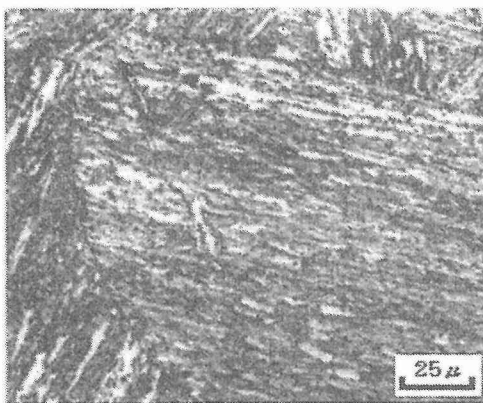
Time 4sec Hv 351



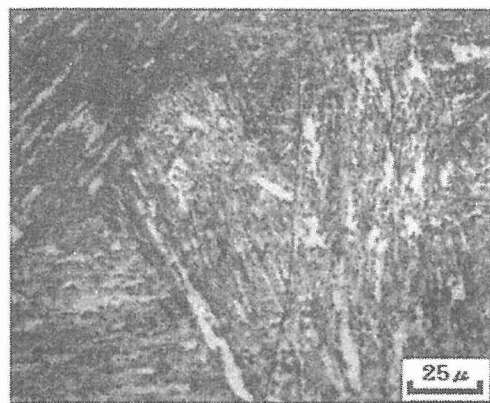
Time 10sec Hv 358



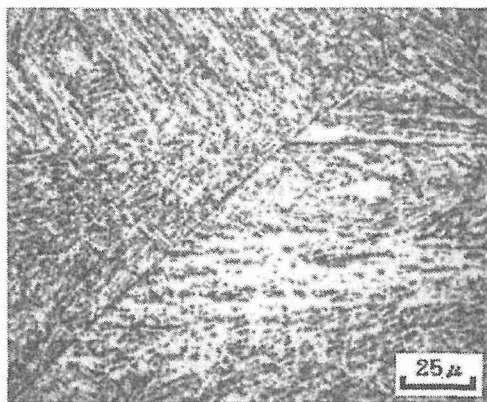
Time 26sec Hv 354



Time 57sec Hv 347

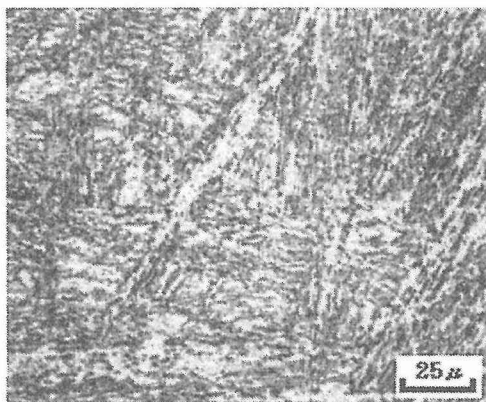


Time 80sec Hv 347



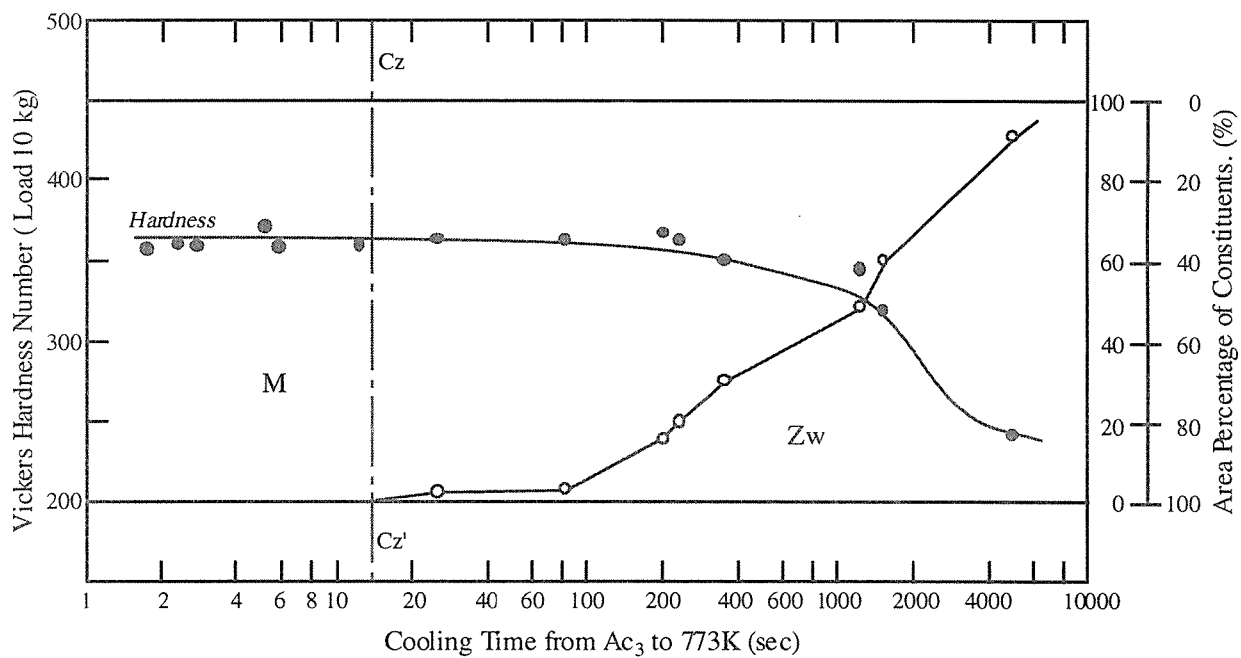
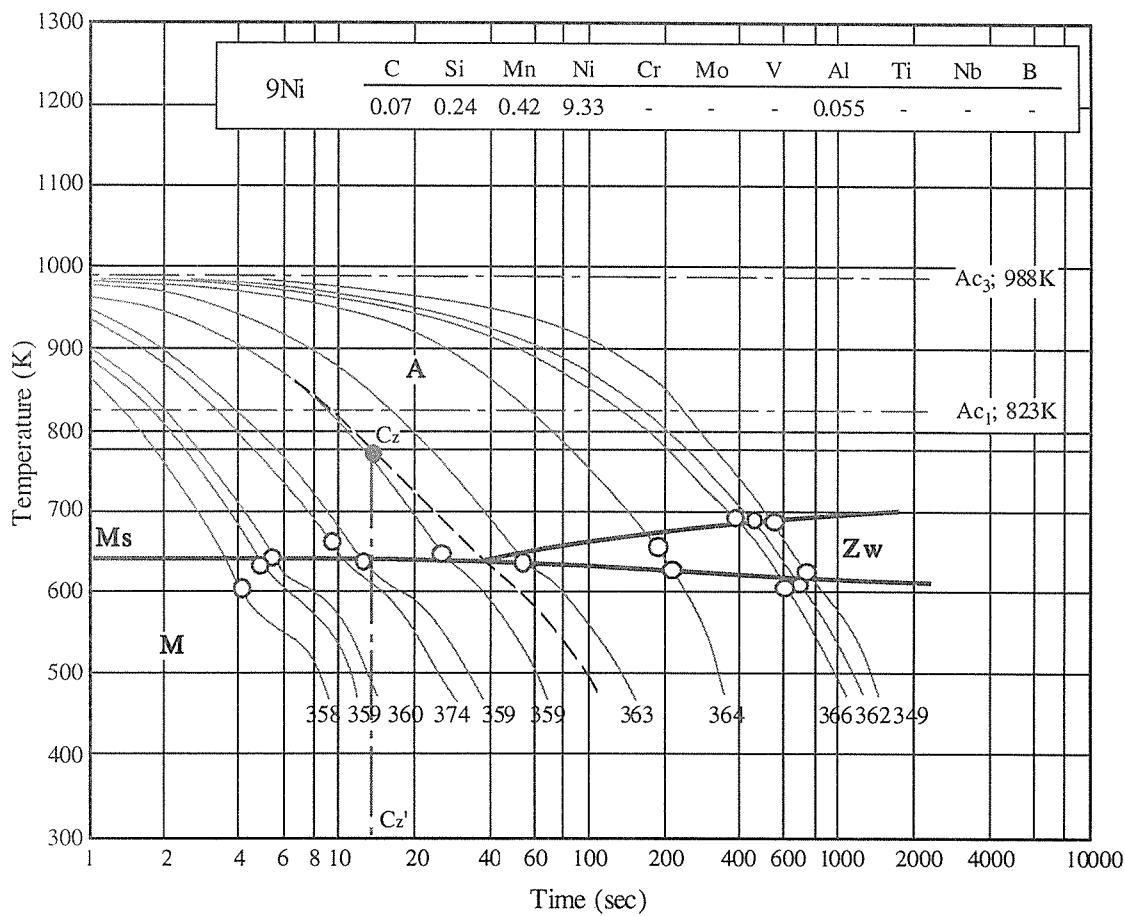
Time 160sec

Hv 329



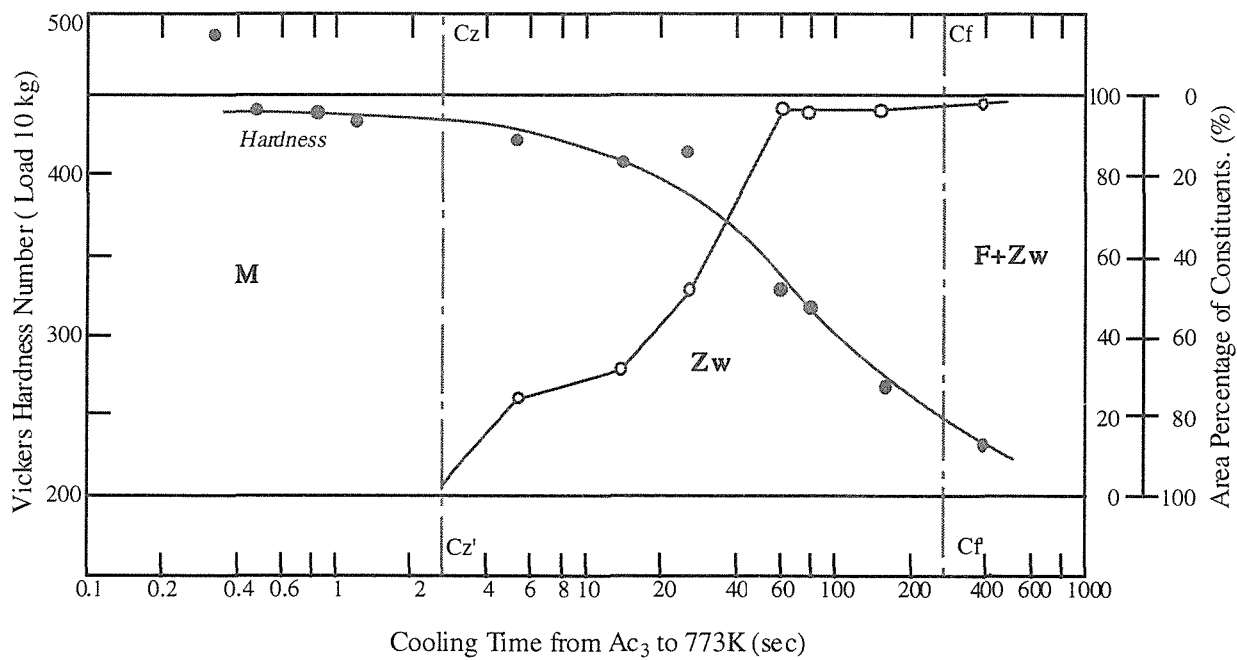
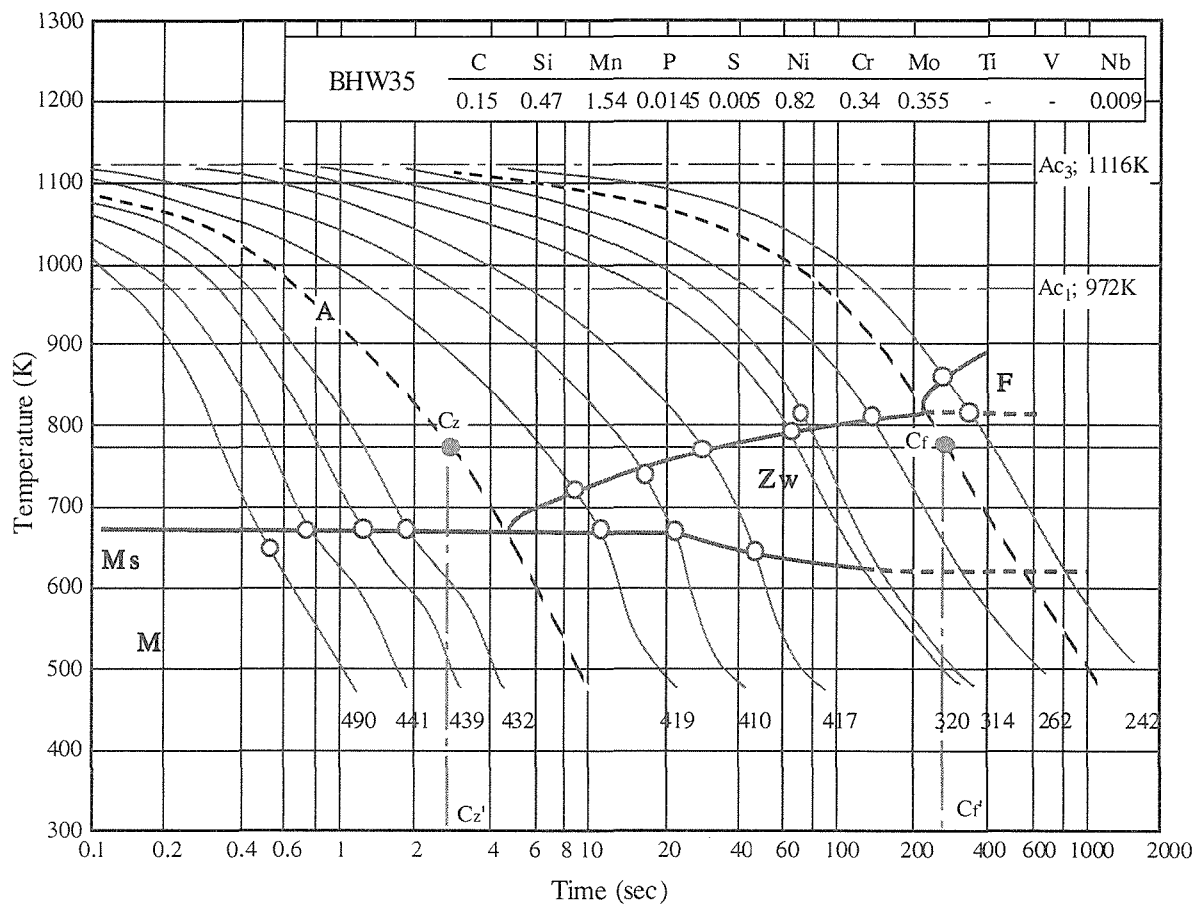
Time 330sec

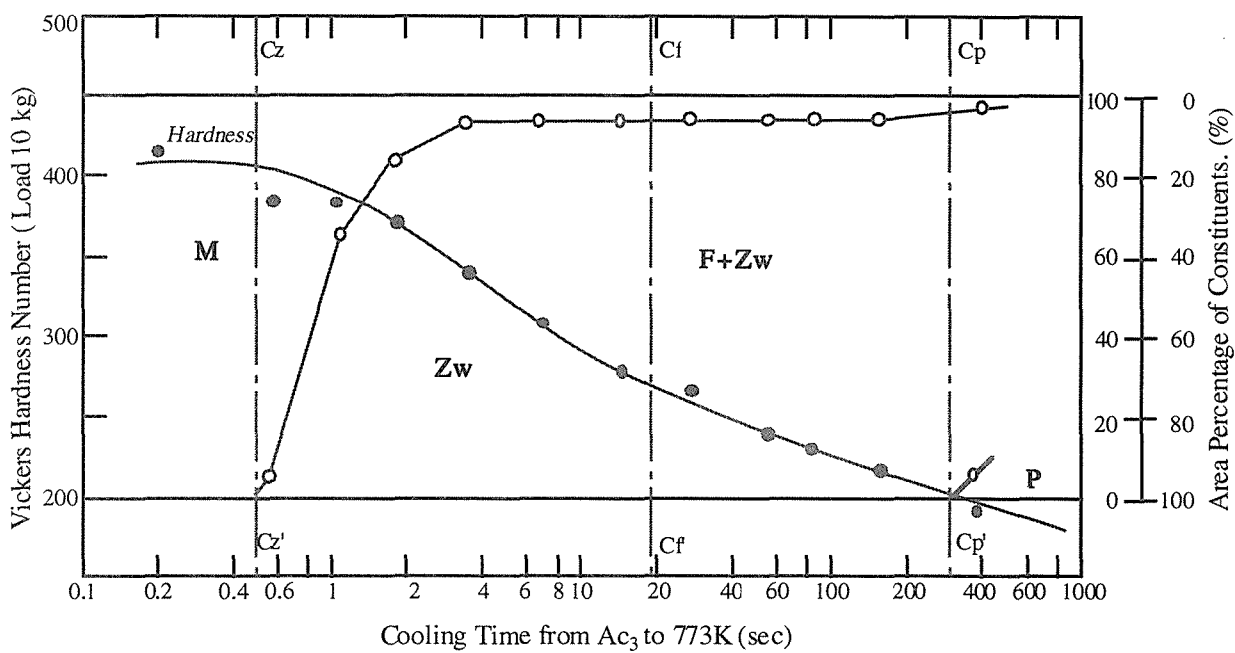
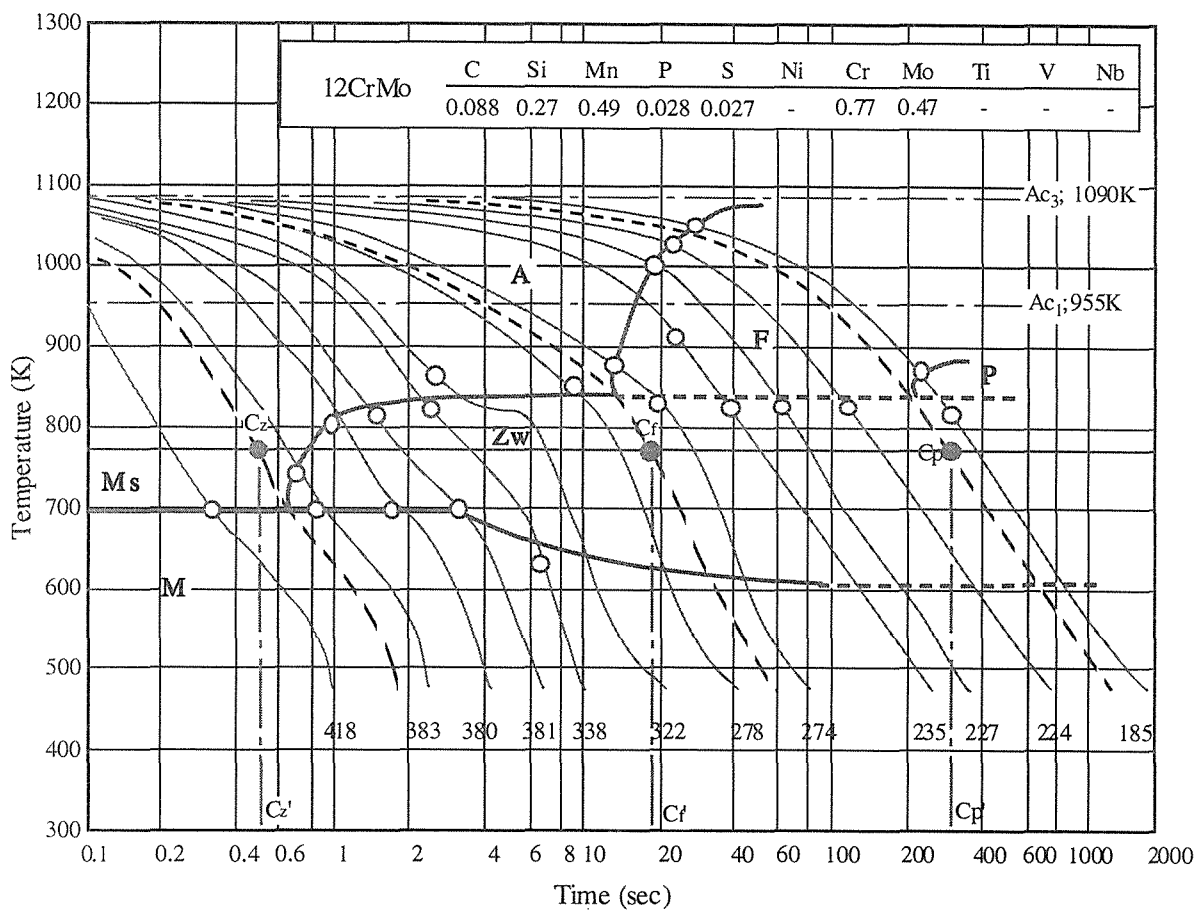
Hv 298

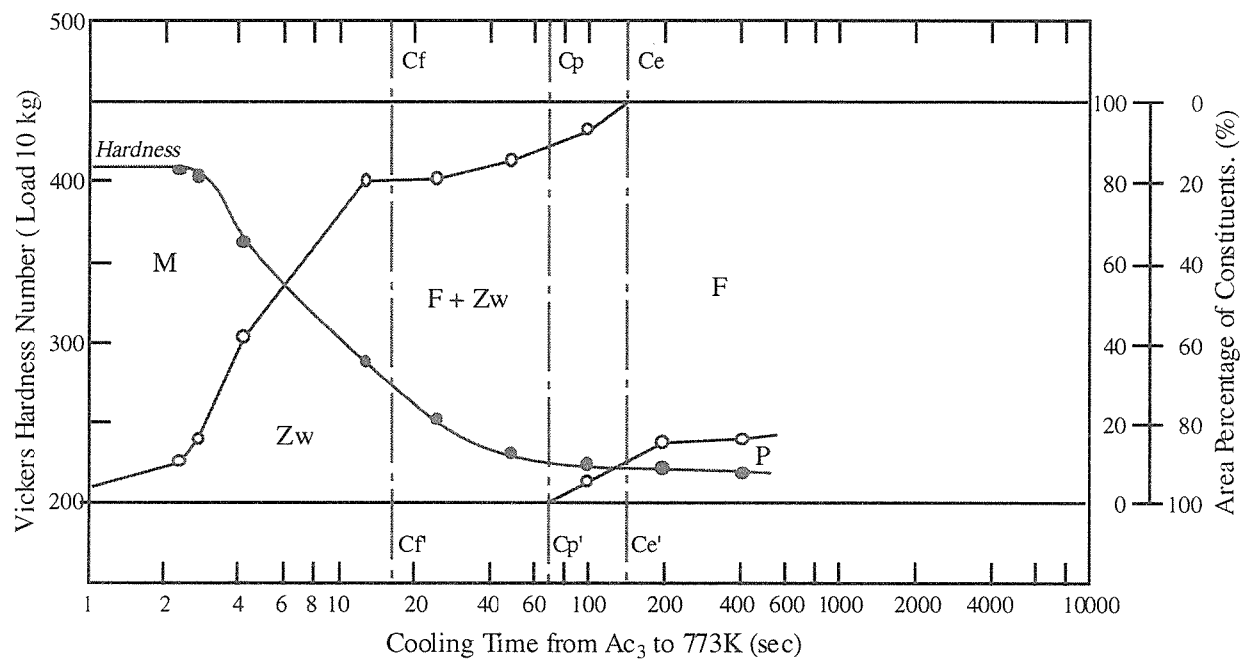
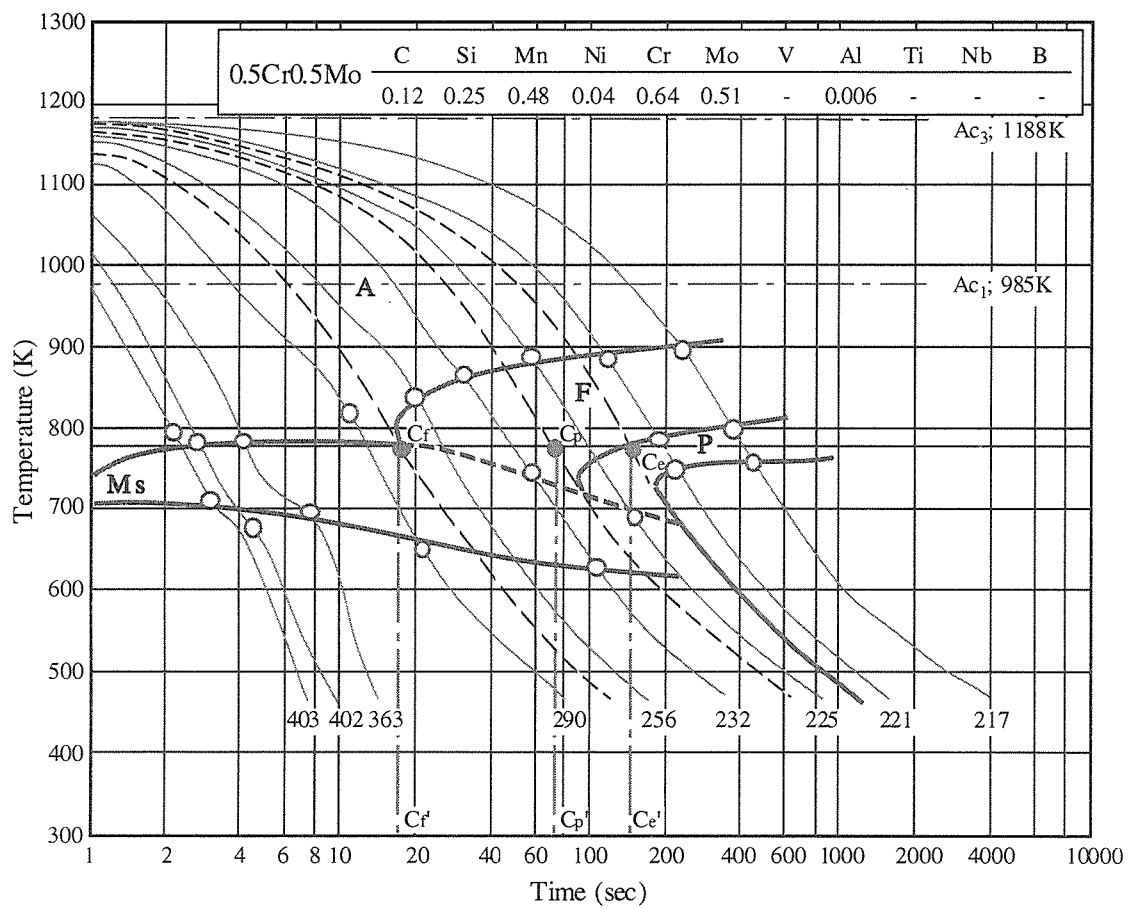


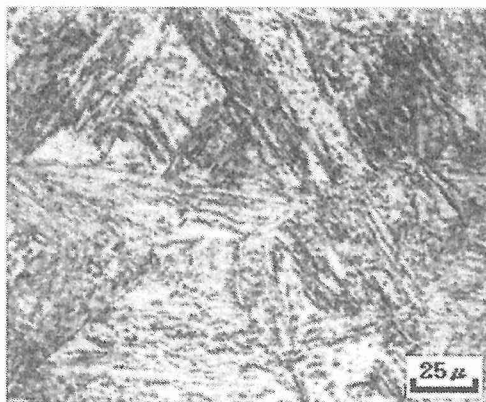
Heat Resistance Low Alloy Steel

Steel	Chemical Composition (mass%)														Page	Ref.
	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V	Ti	Nb	Al	B		
BHW35	0.15	0.47	1.54	0.0145	0.005	0.82	0.34	-	0.355	-	-	0.009	-	-	362	P
12CrMo	0.088	0.27	0.49	0.028	0.027	-	0.77	-	0.47	-	-	-	-	-	363	P
0.5Cr0.5Mo	0.12	0.25	0.48	-	-	0.04	0.64	-	0.51	-	-	-	0.006	-	364	P
13CrMo44	0.11	0.29	0.53	0.01	0.01	-	1.09	-	0.44	-	-	-	-	-	367	P
12Cr1MoV	0.12	0.28	0.59	0.019	0.012	-	1.08	-	0.31	0.23	-	-	-	-	368	P
15CrMo	0.16	0.36	0.58	0.016	0.011	-	1.05	-	0.42	-	-	-	-	-	369	P
1Cr0.5Mo	0.12	0.36	0.52	-	-	0.09	0.97	-	0.61	-	-	-	0.003	-	370	P
1.25Cr0.5Mo	0.12	0.65	0.55	-	-	0.06	1.42	-	0.54	-	-	-	0.019	-	373	P
2.25Cr1Mo	0.12	0.26	0.48	-	-	0.08	2	-	0.96	0.08	-	-	0.014	-	376	P
2.25Cr1Mo	0.12	0.23	0.36	-	-	-	1.94	-	1.32	-	-	-	-	-	379	P
2 1/4Cr-Mo	0.13	0.25	0.52	0.009	0.007	-	2.21	-	1.02	-	-	-	-	-	380	P
5Cr0.5Mo	0.12	0.36	0.45	-	-	0.05	4.61	-	0.5	-	-	-	0.007	-	382	P

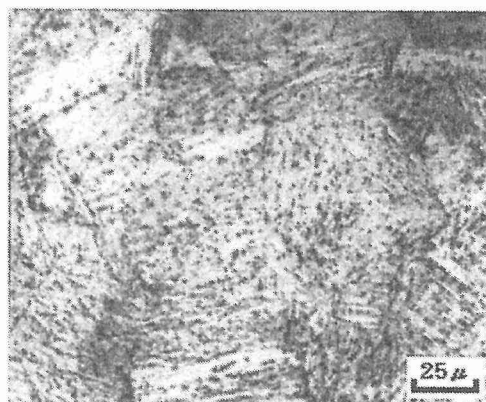




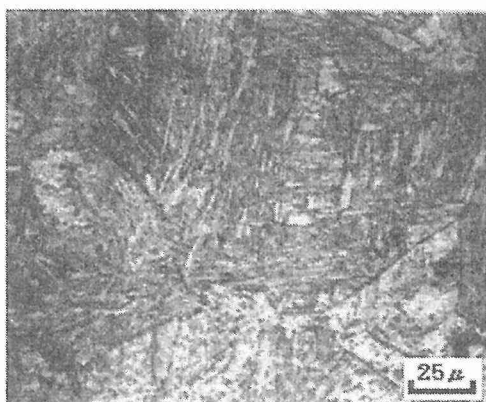




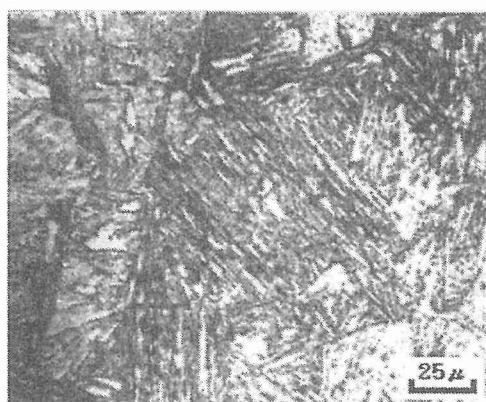
Time 2.5sec Hv 403



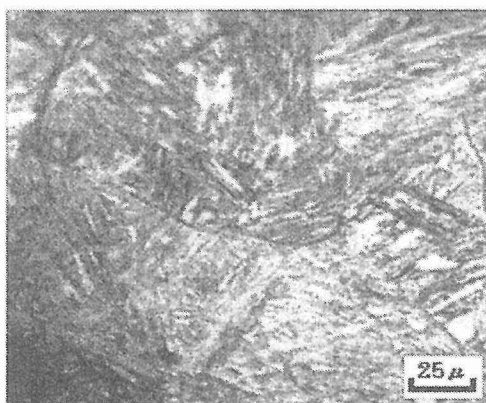
Time 3sec Hv 402



Time 4.1sec Hv 363



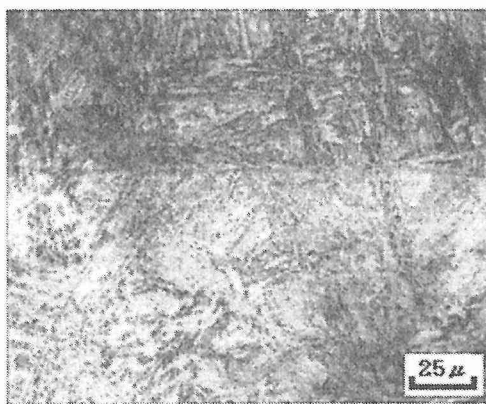
Time 14sec Hv 290



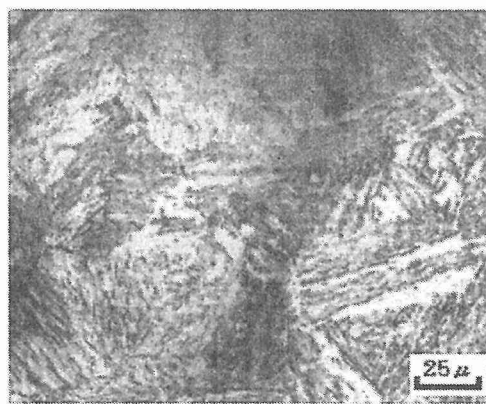
Time 28sec Hv 256



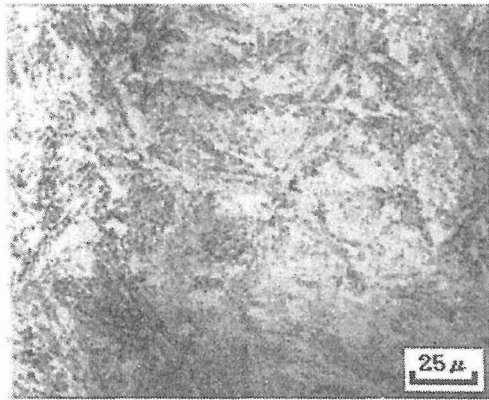
Time 50sec Hv 232



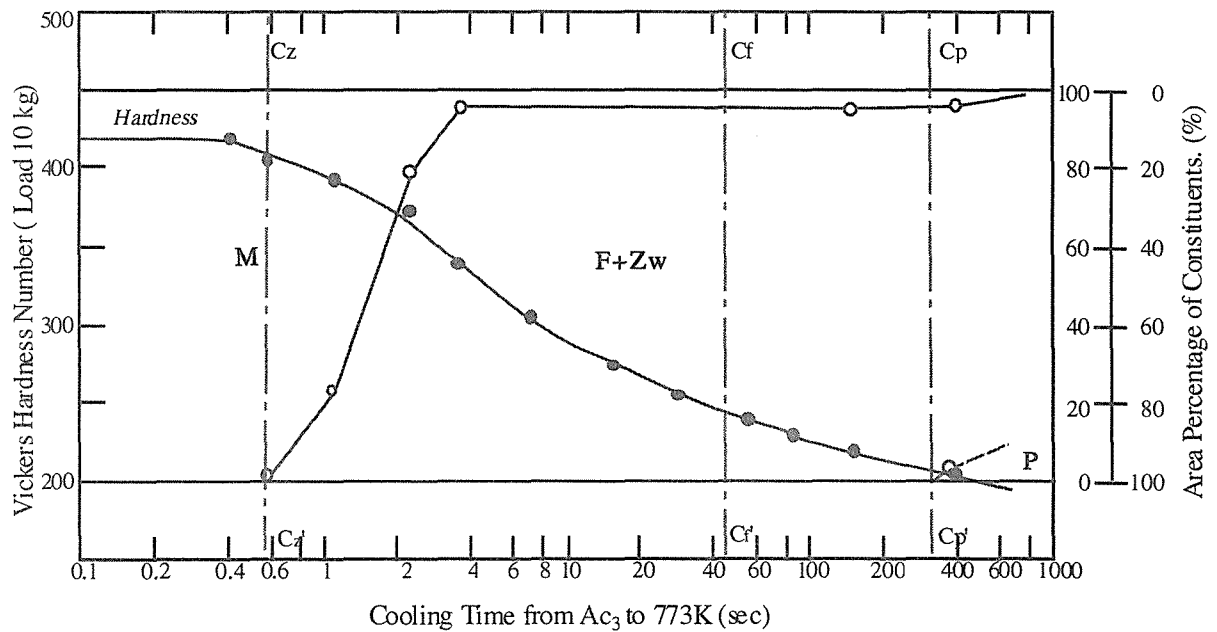
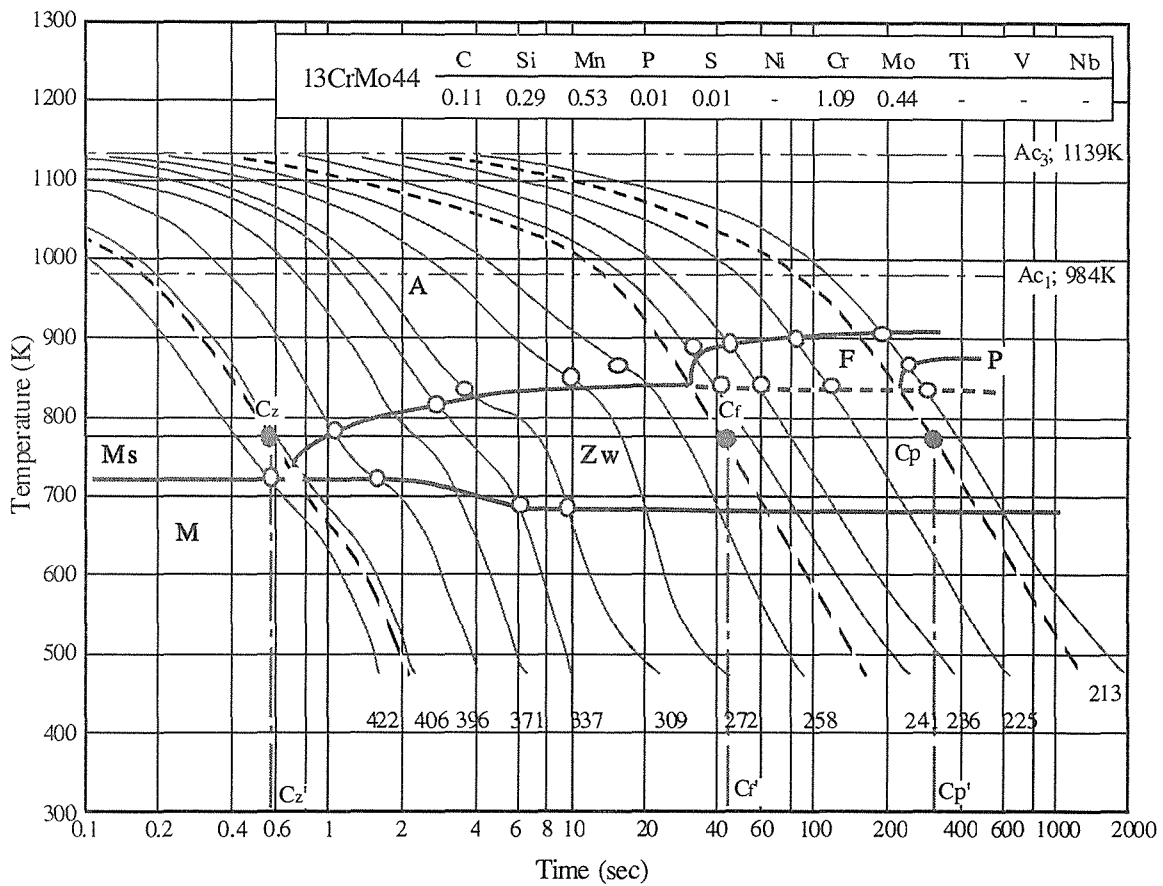
Time 100sec Hv 225

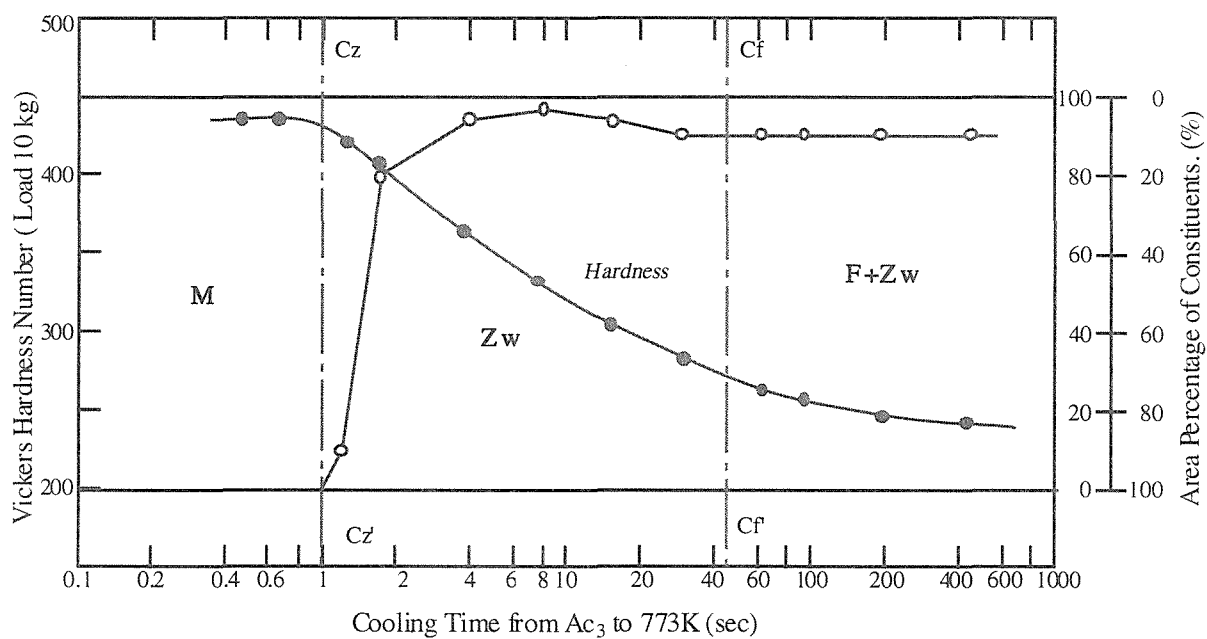
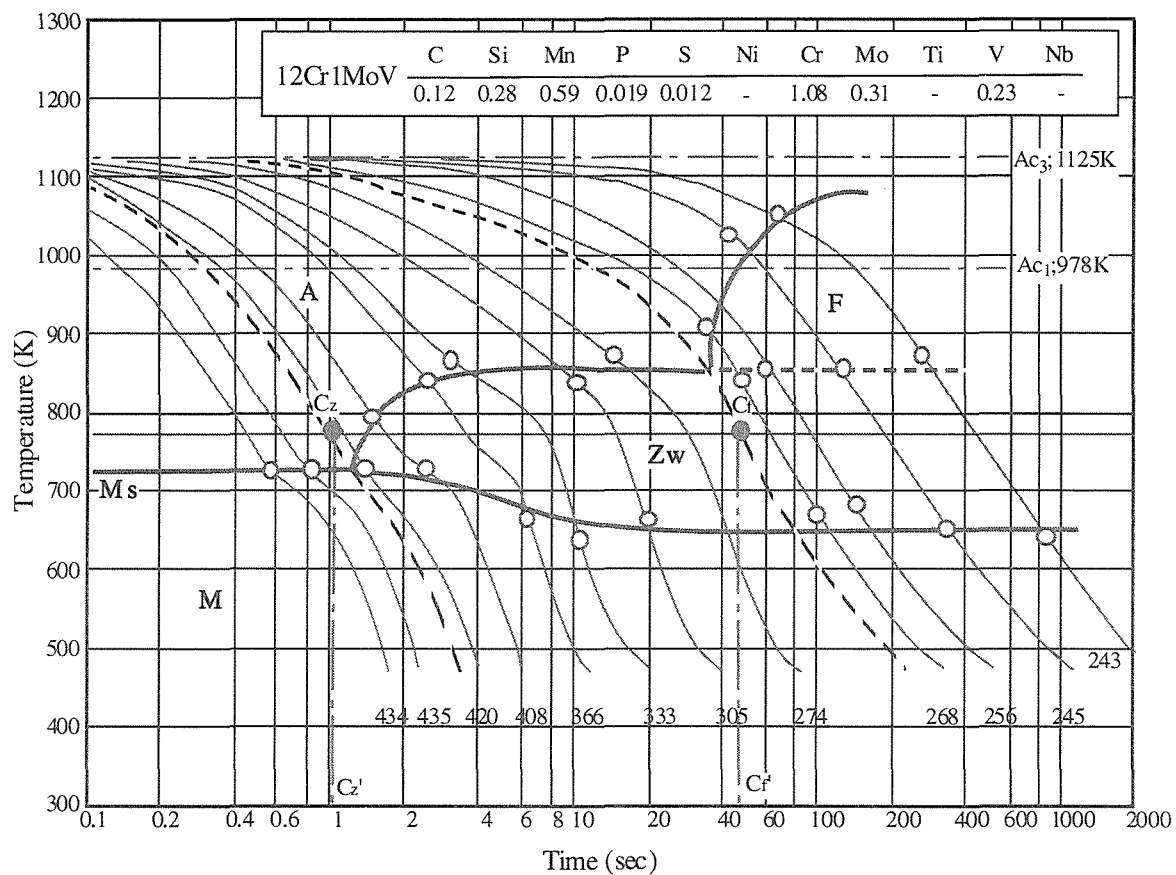


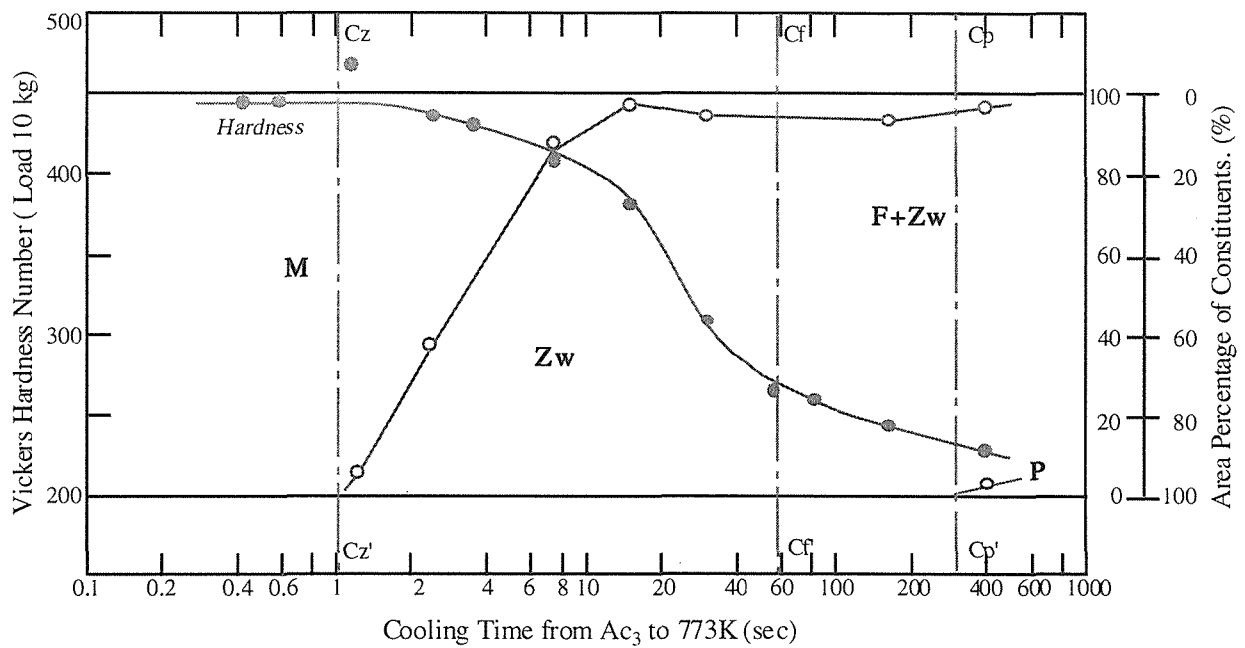
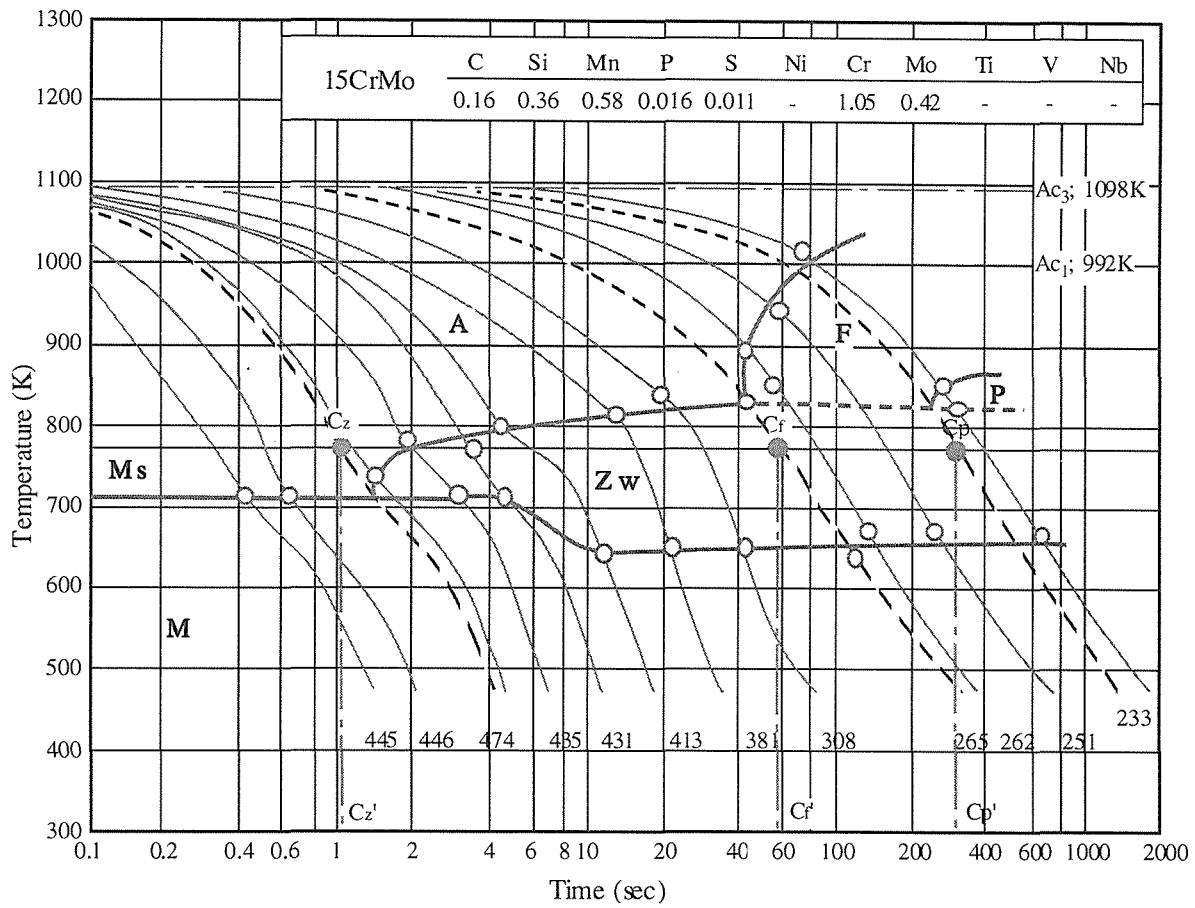
Time 200sec Hv 221

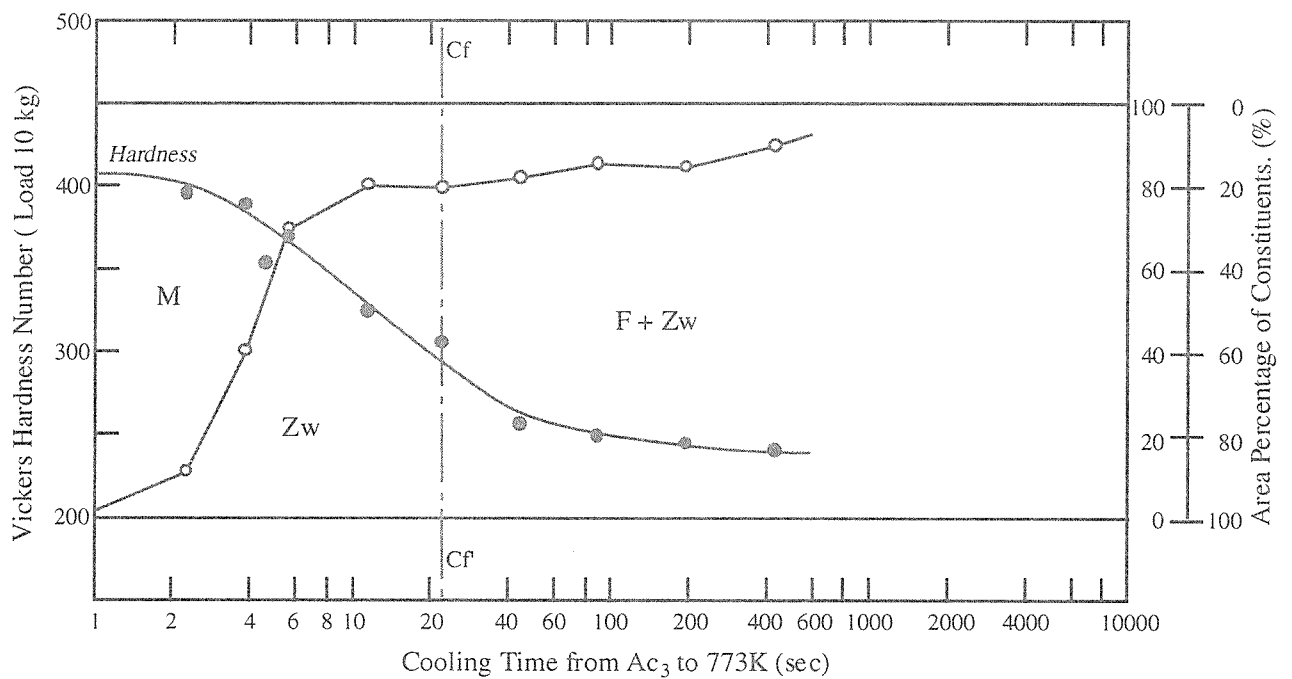
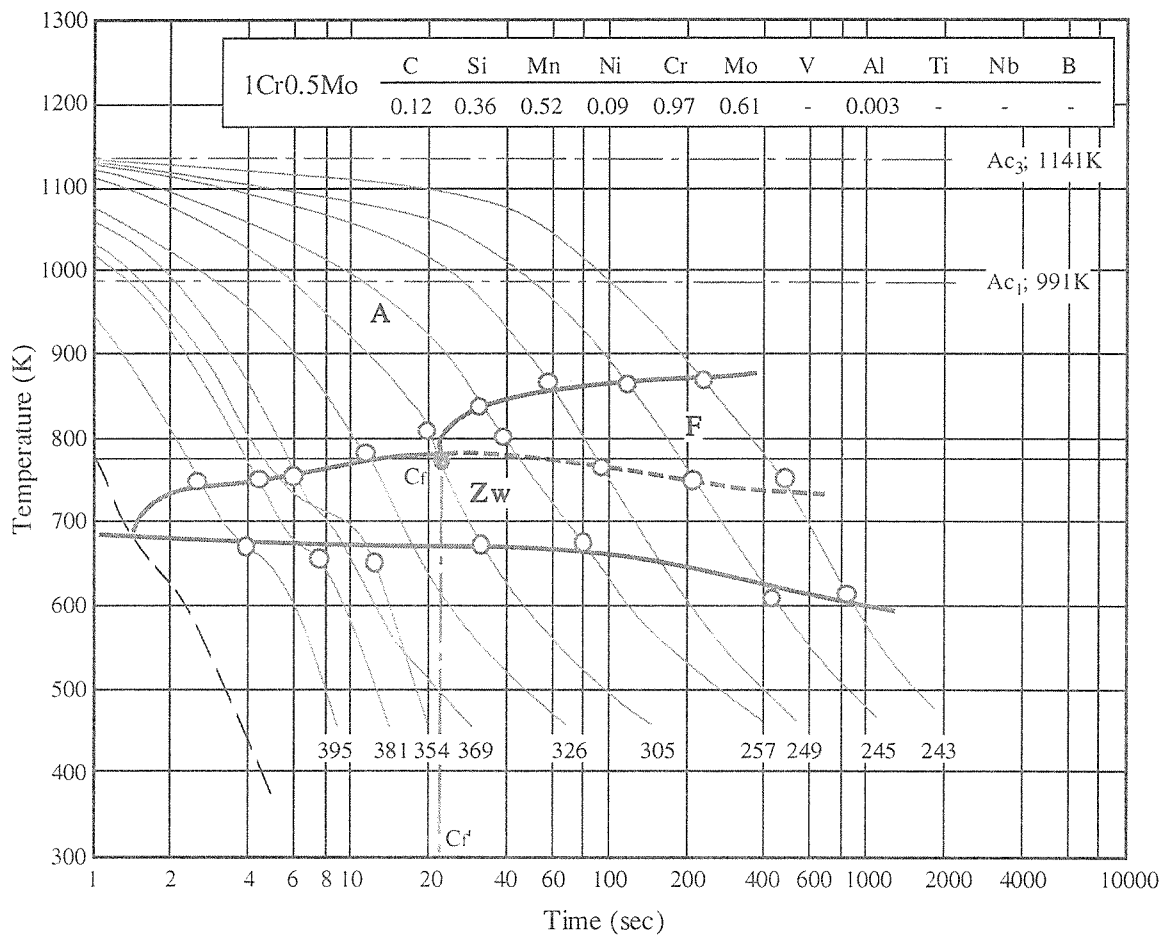


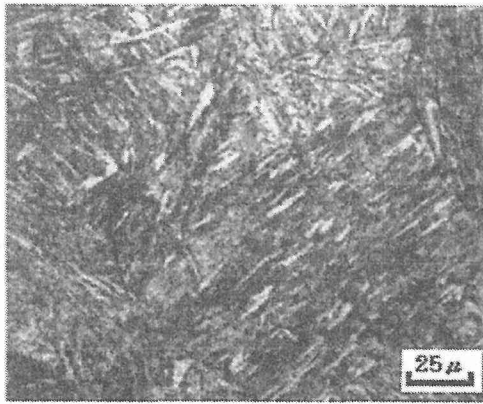
Time 410sec Hv 217



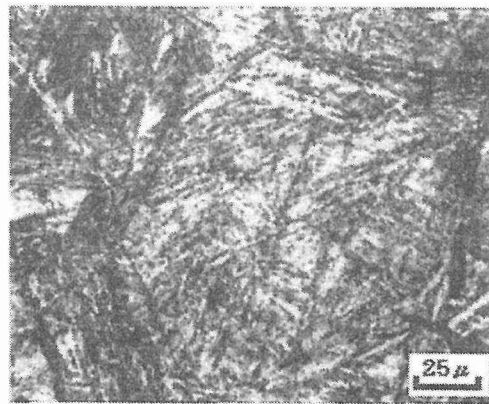




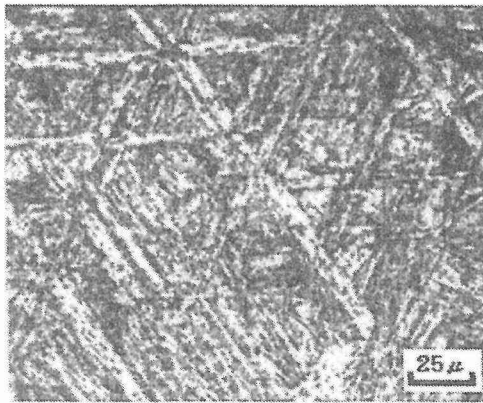




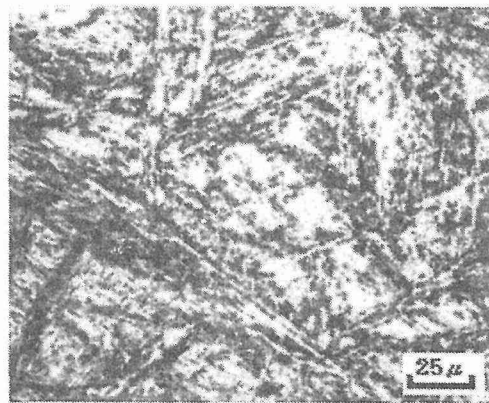
Time 2.4sec Hv 395



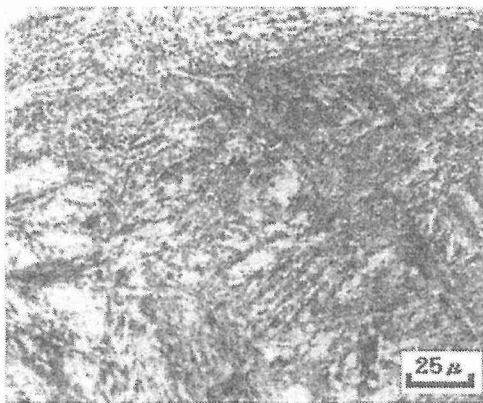
Time 3.9sec Hv 381



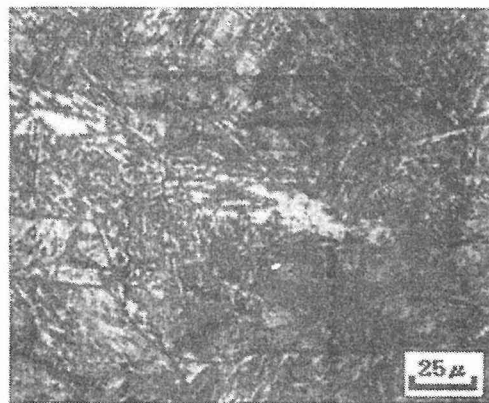
Time 4.8sec Hv 354



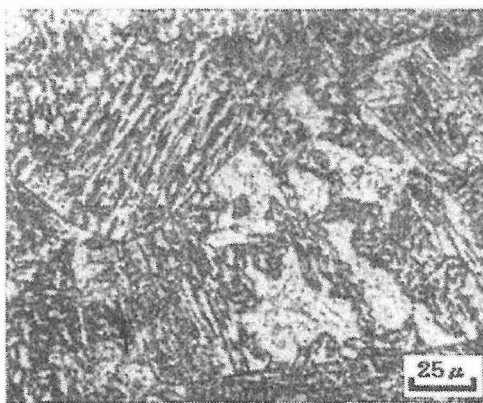
Time 5.8sec Hv 369



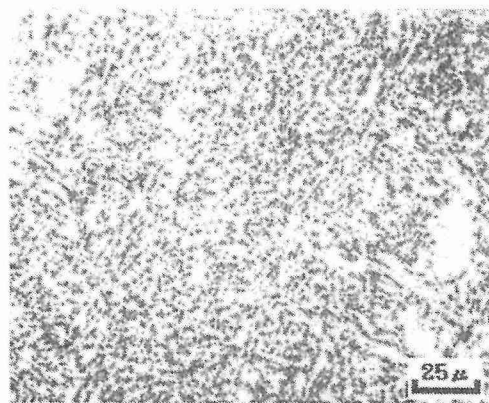
Time 13sec Hv 326



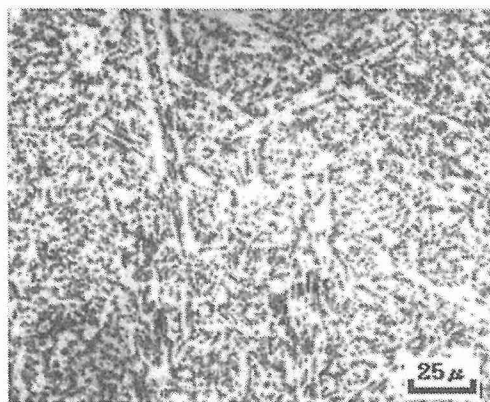
Time 24sec Hv 305



Time 44sec Hv 257

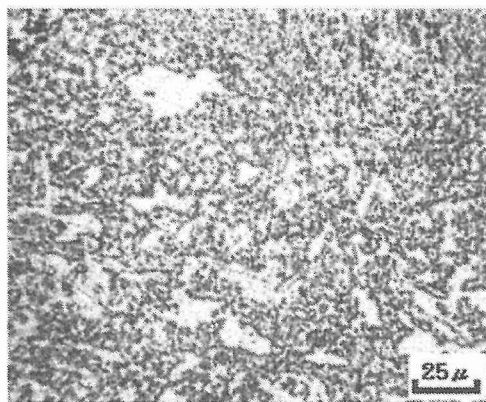


Time 90sec Hv 249



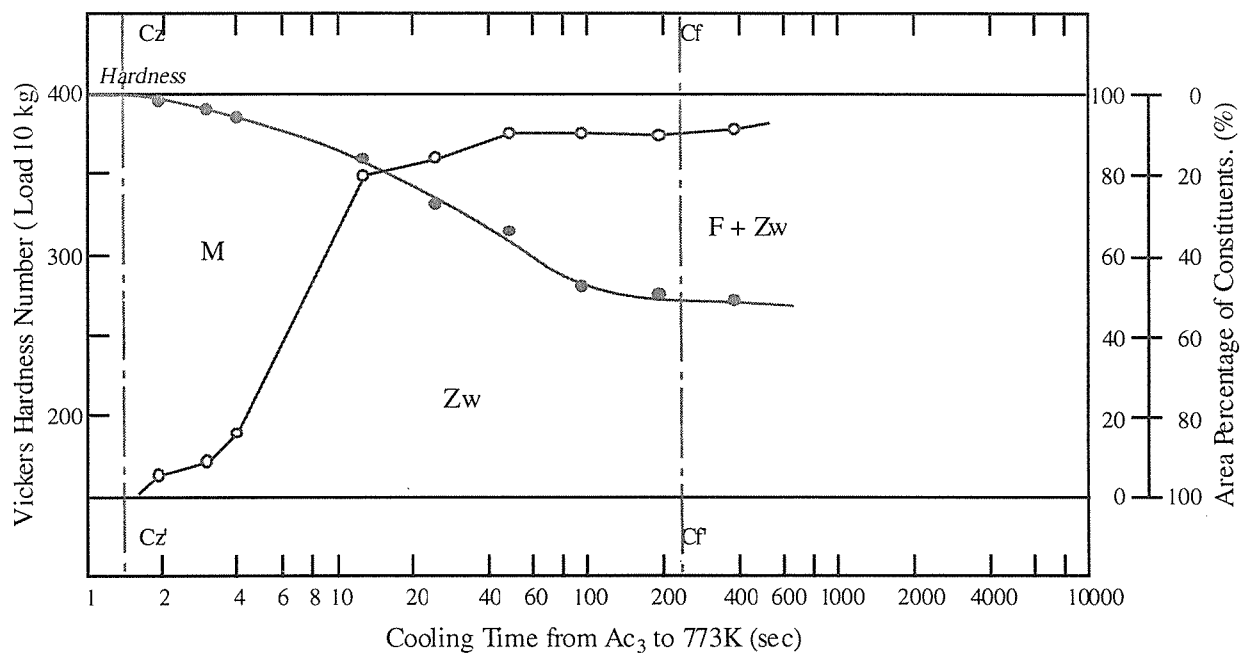
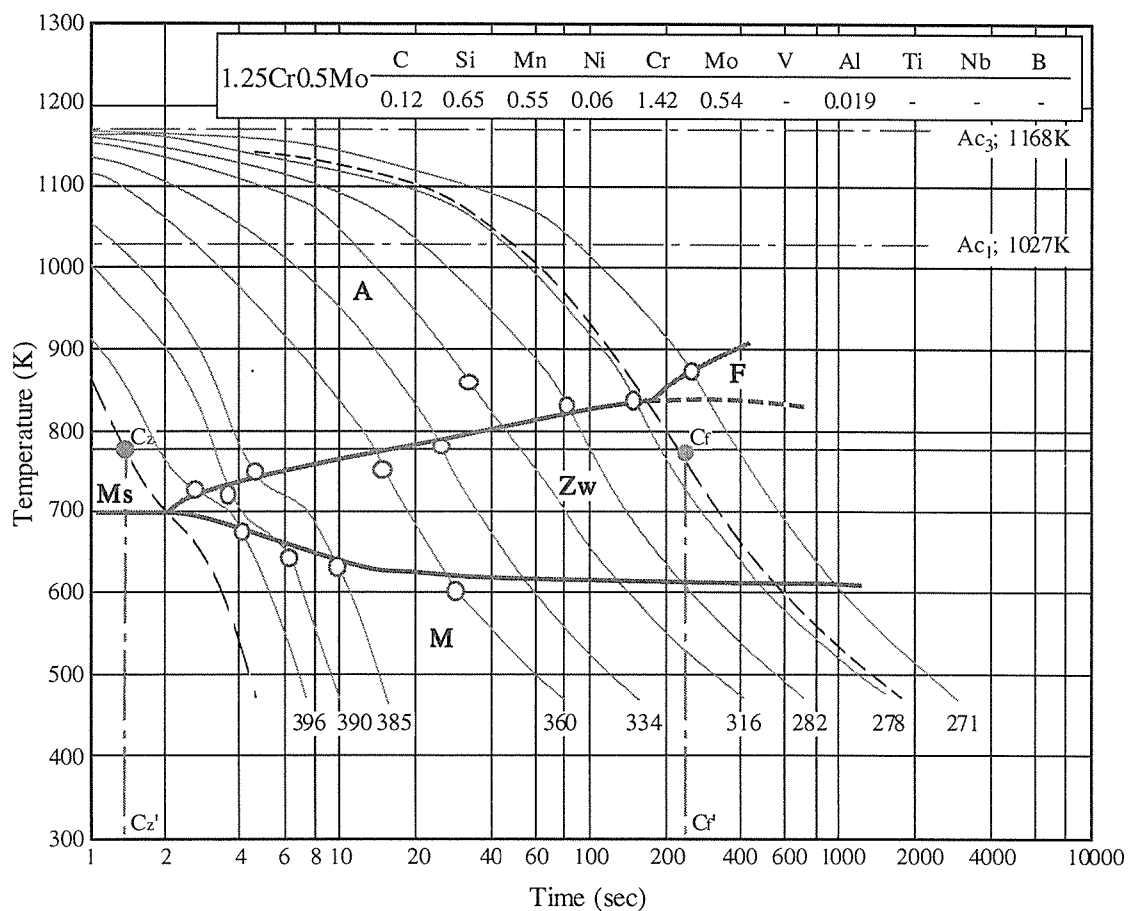
Time 180sec

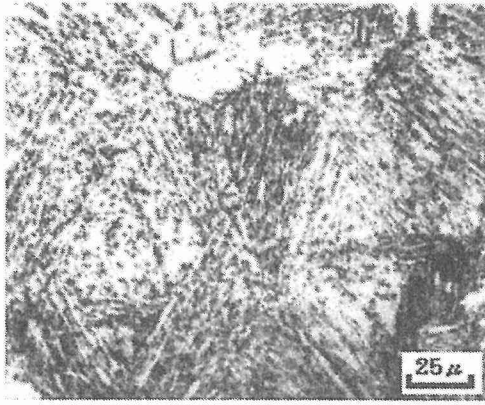
Hv 245



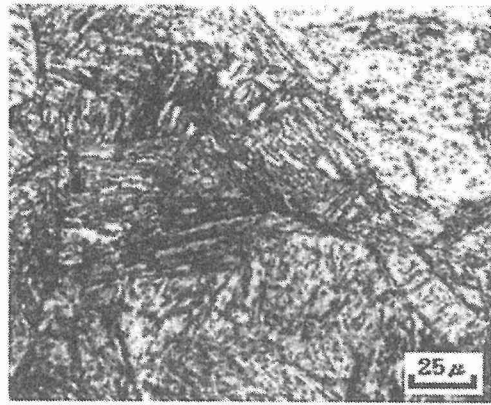
Time 400sec

Hv 243

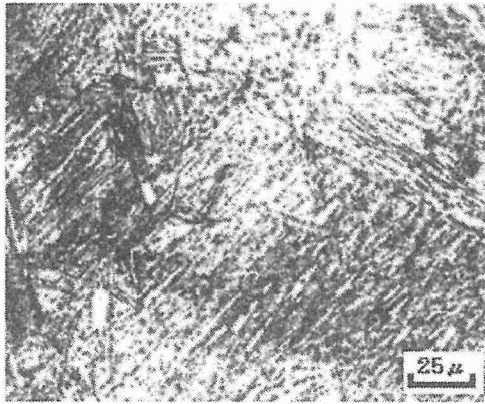




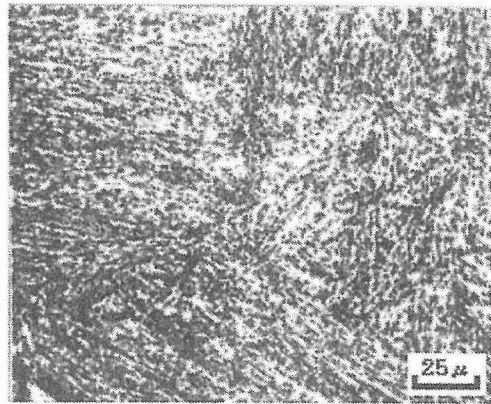
Time 1.7sec Hv 396



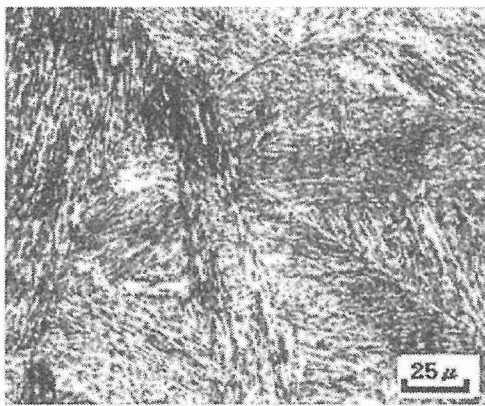
Time 3.2sec Hv 390



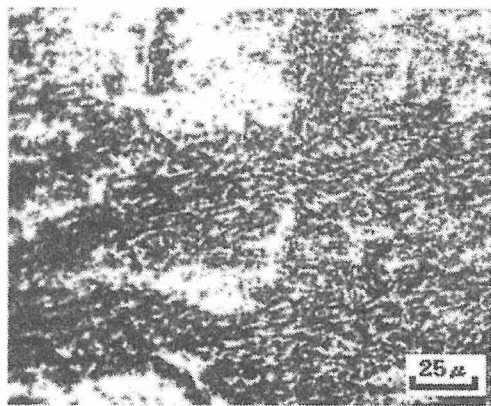
Time 4sec Hv 385



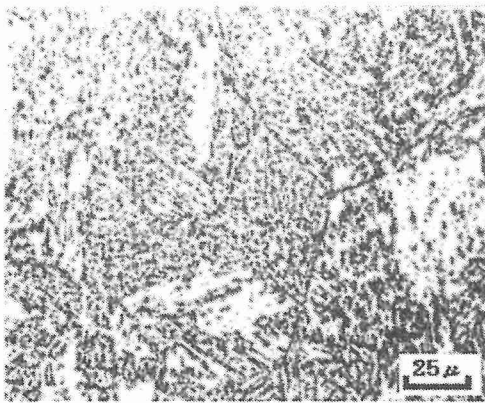
Time 15sec Hv 360



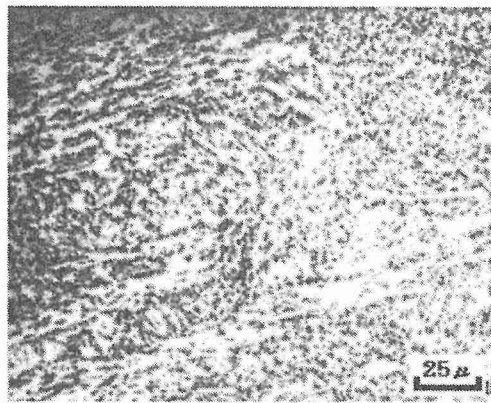
Time 26sec Hv 334



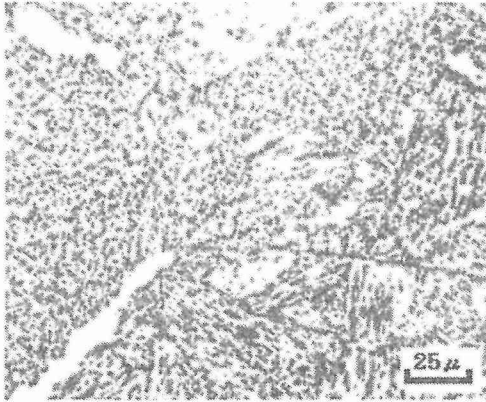
Time 50sec Hv 316



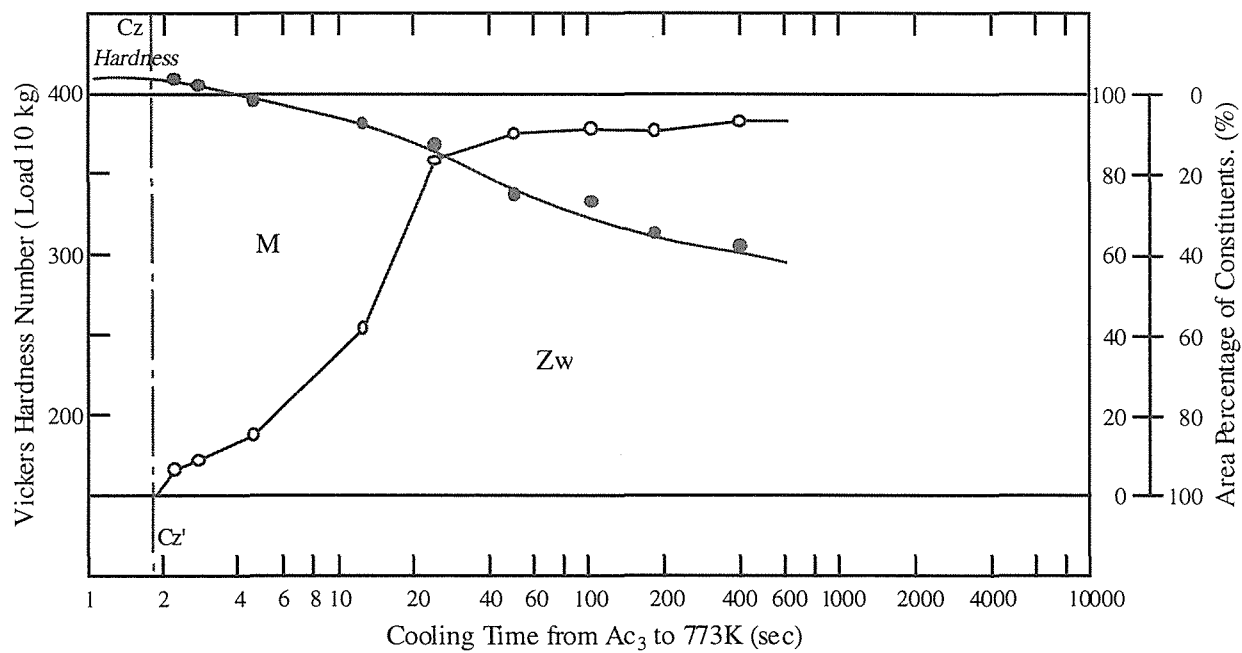
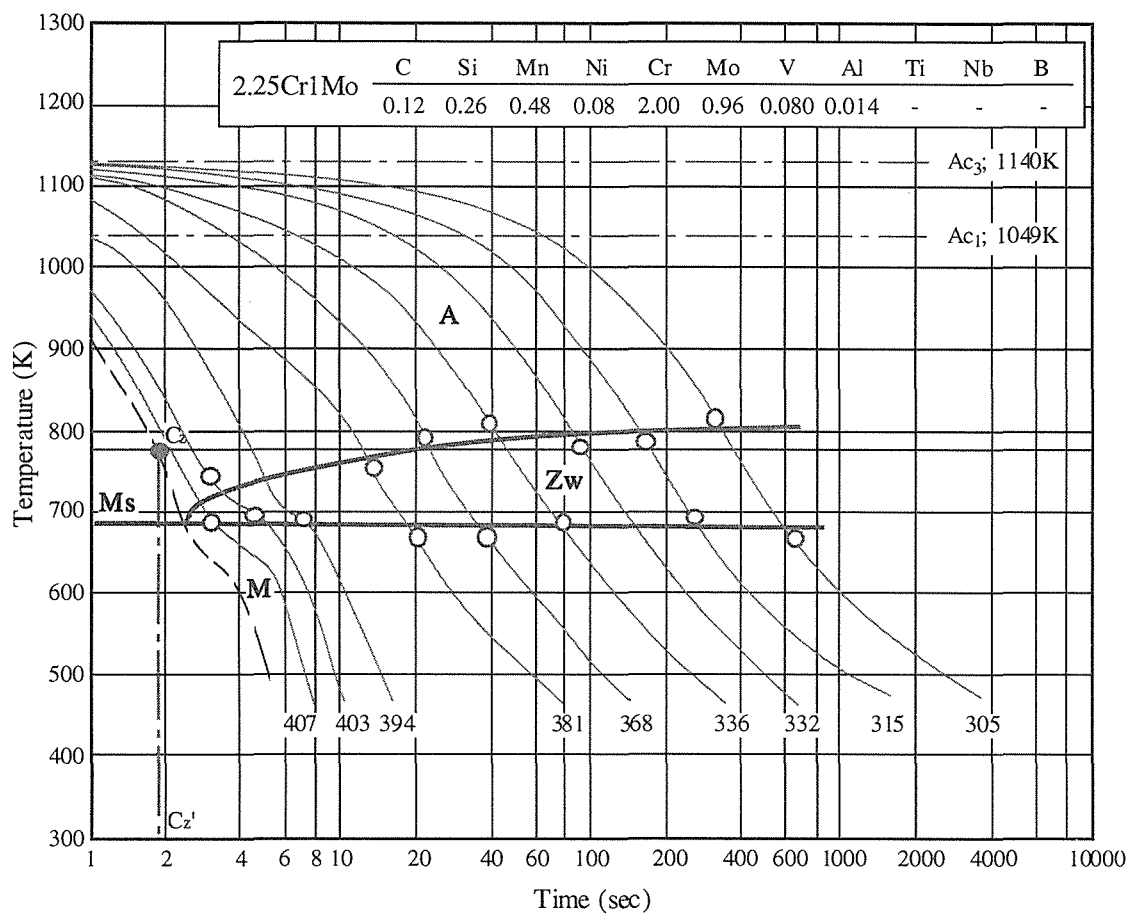
Time 100sec Hv 282

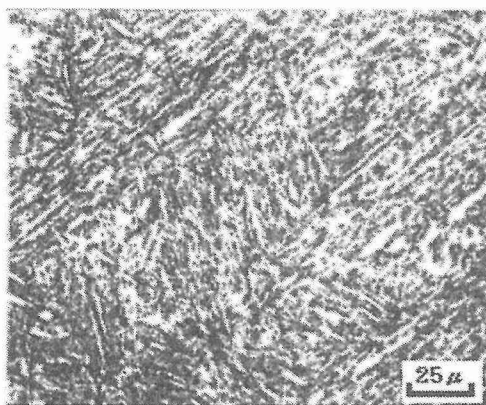


Time 190sec Hv 278

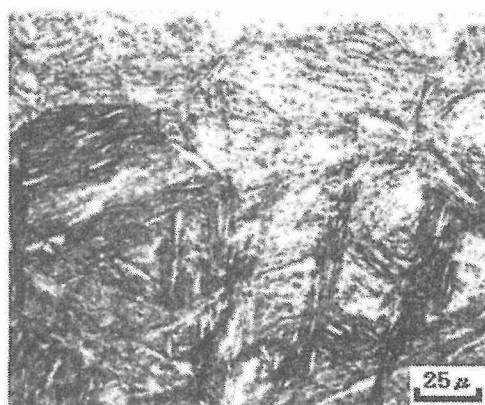


Time 400sec Hv 271

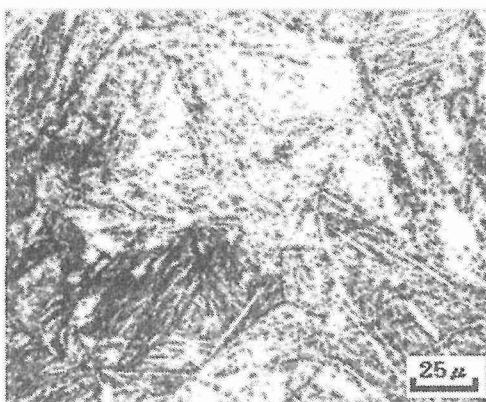




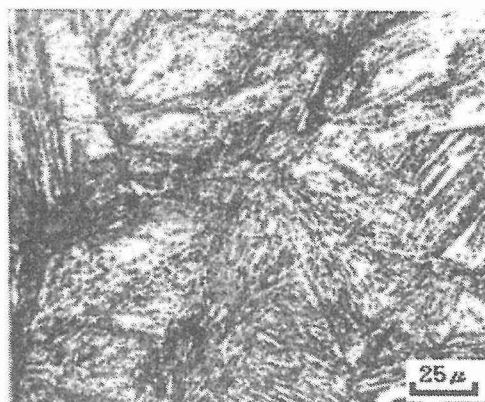
Time 2.2sec Hv 407



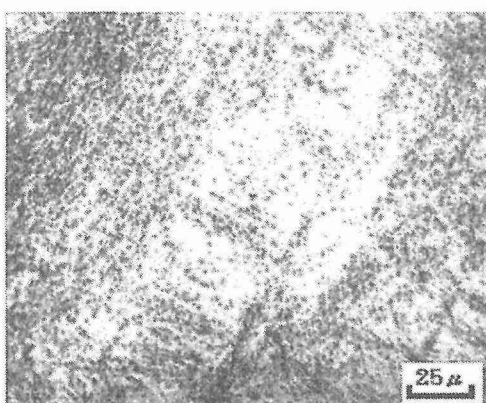
Time 2.8sec Hv 403



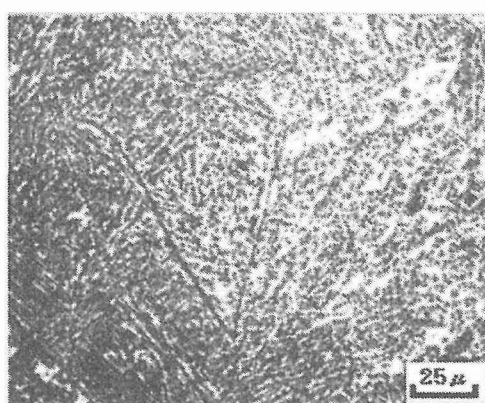
Time 4.5sec Hv 394



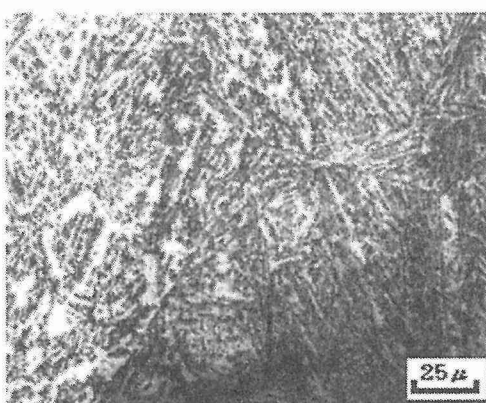
Time 13sec Hv 381



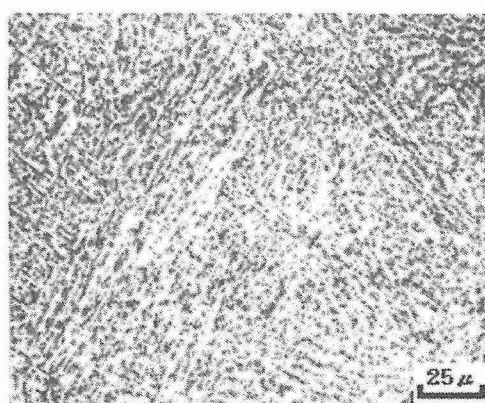
Time 24sec Hv 368



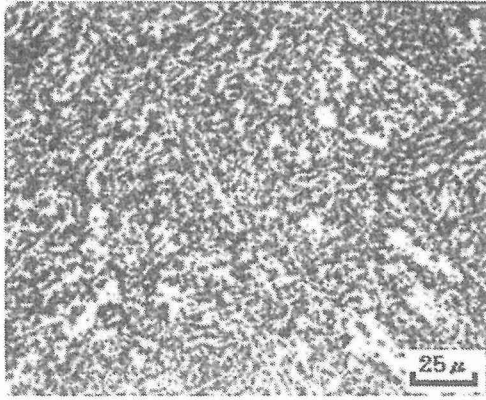
Time 48sec Hv 336



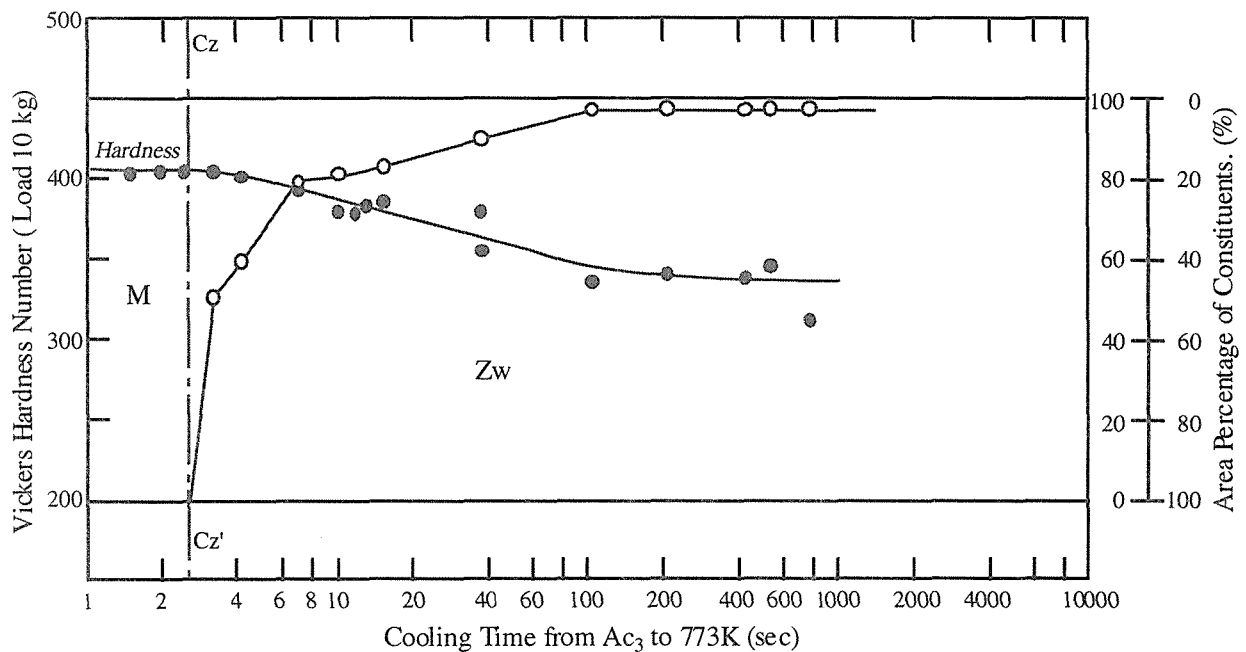
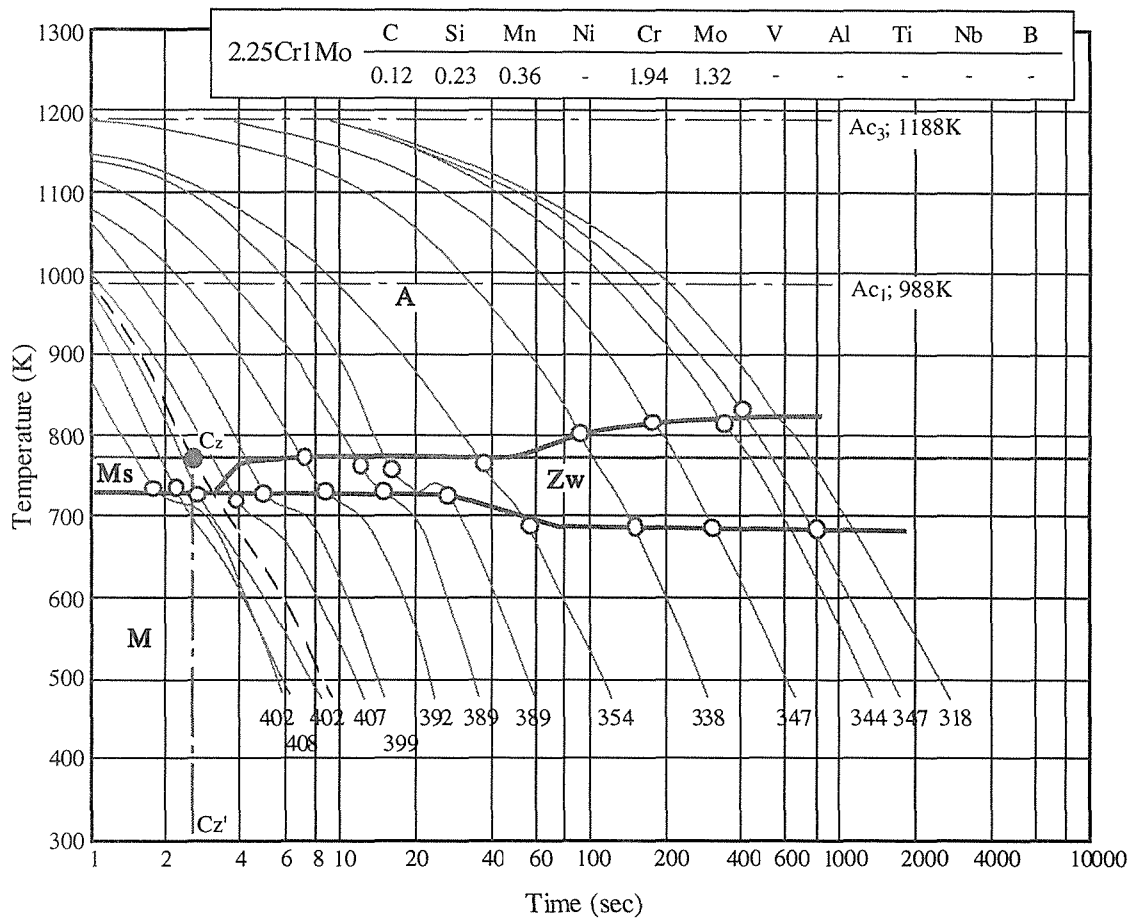
Time 90sec Hv 332

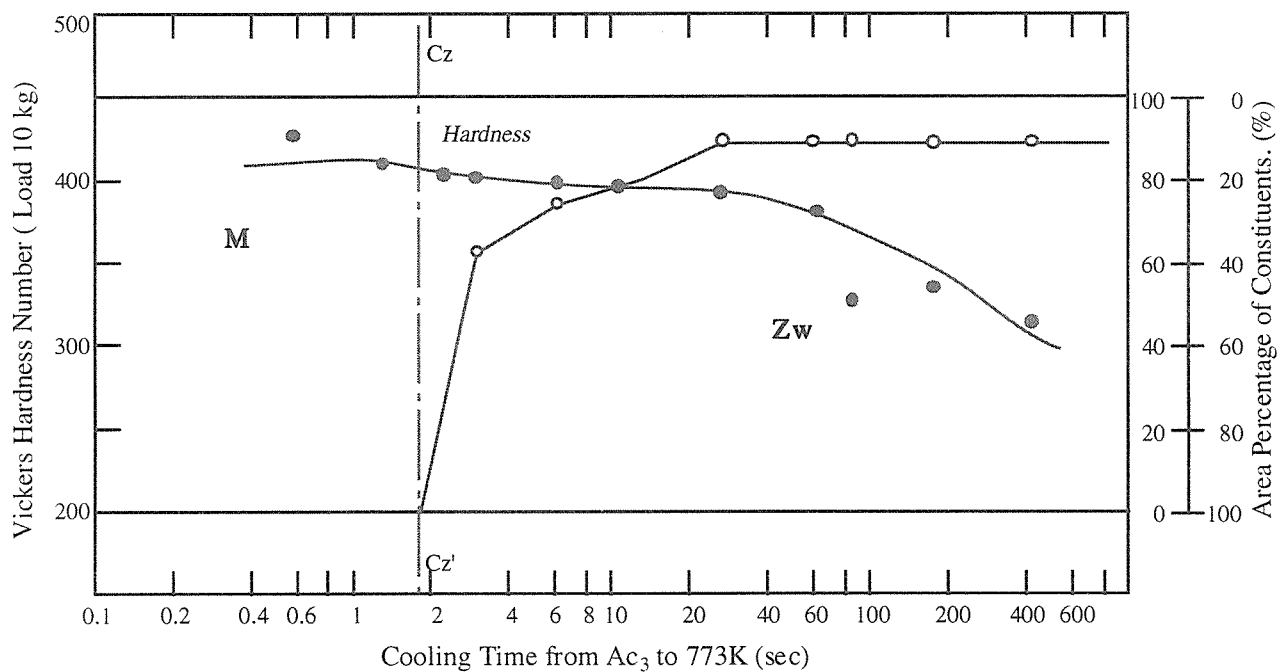
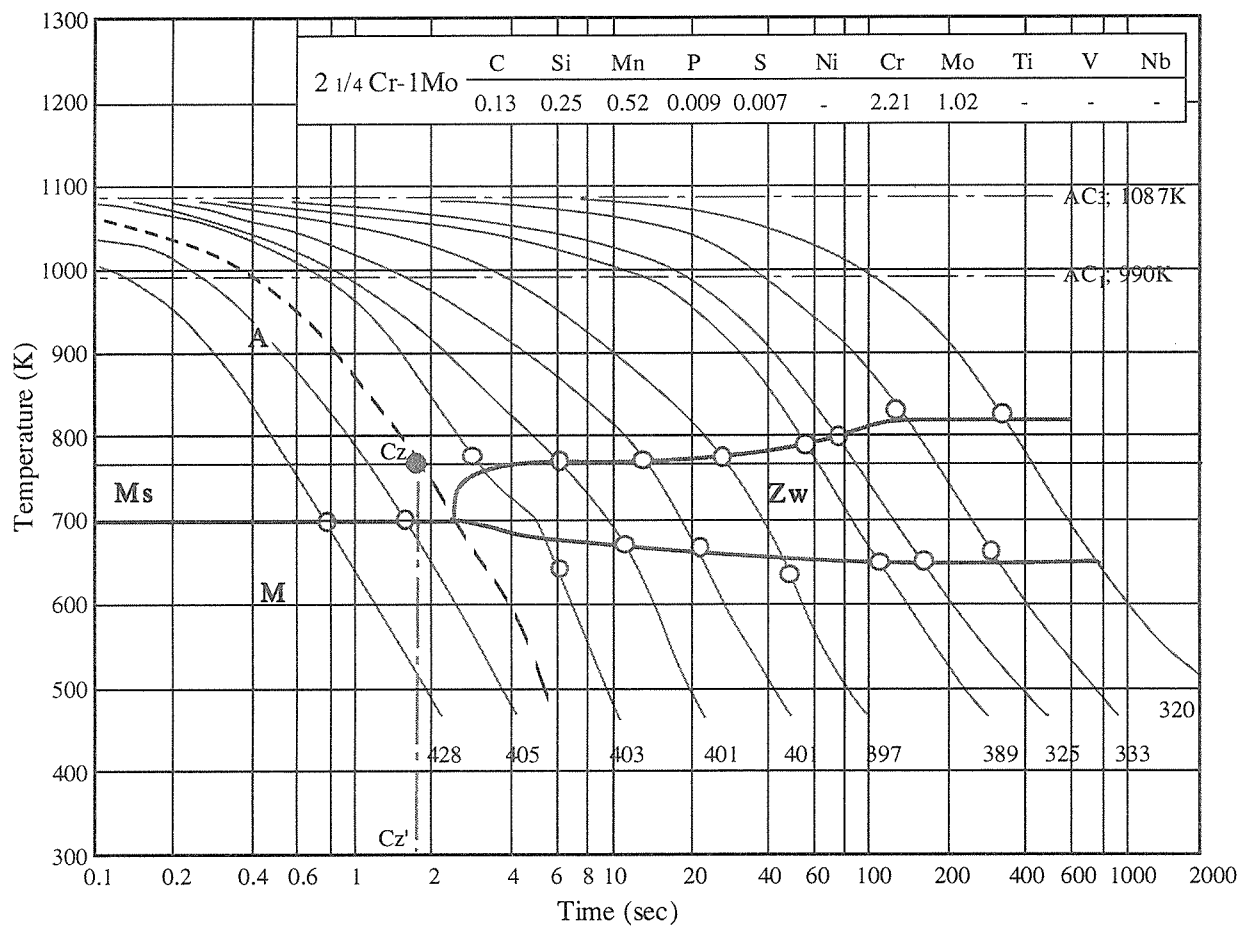


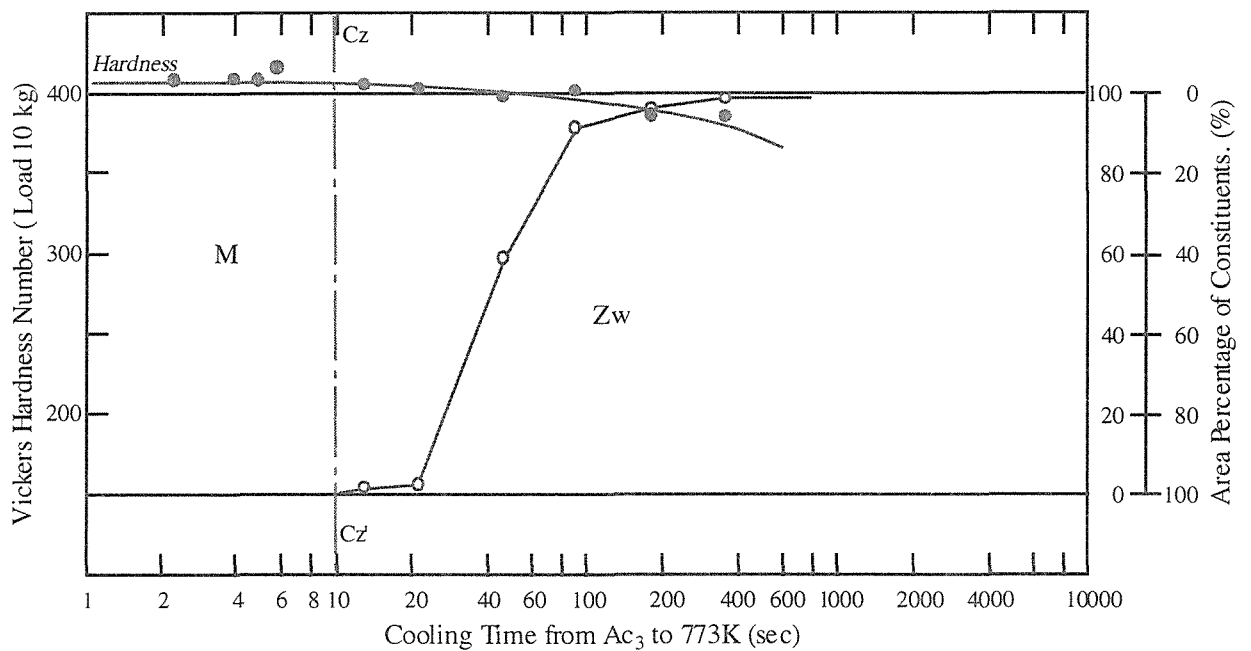
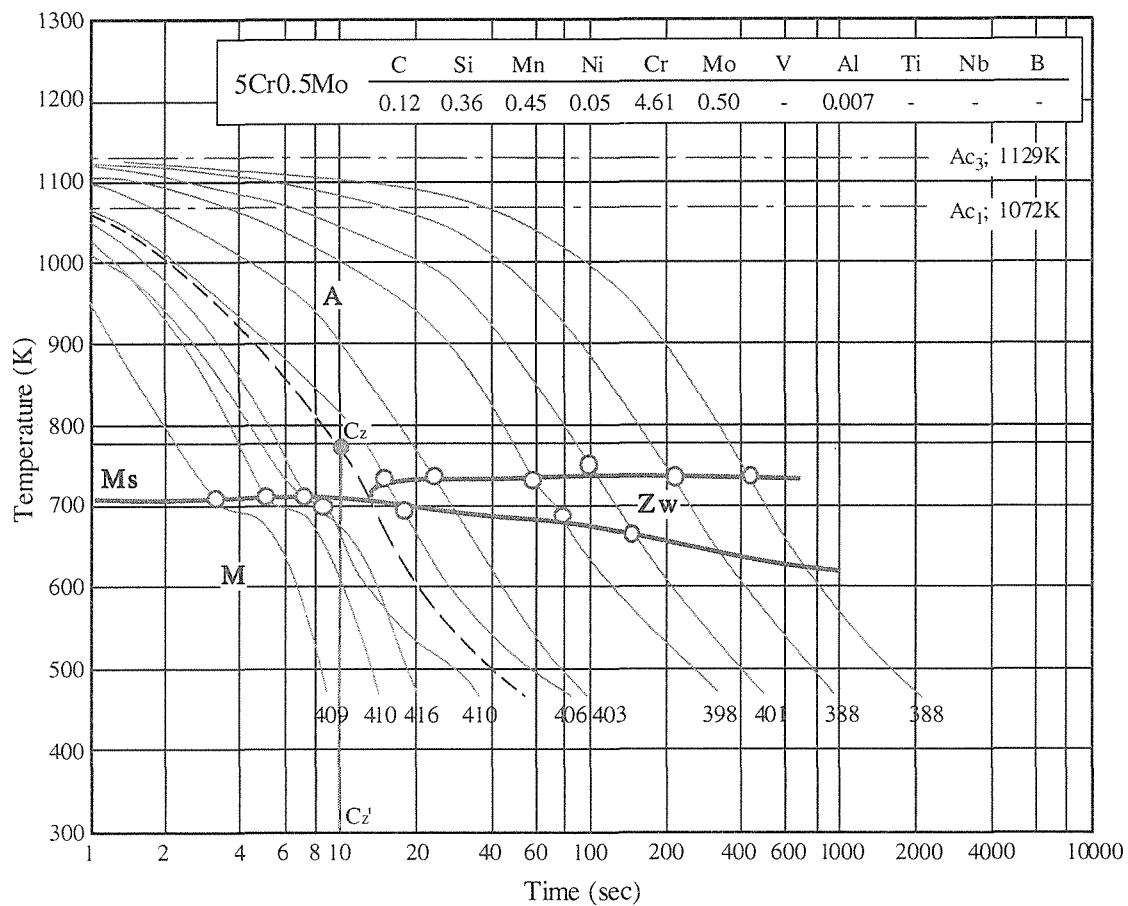
Time 180sec Hv 315

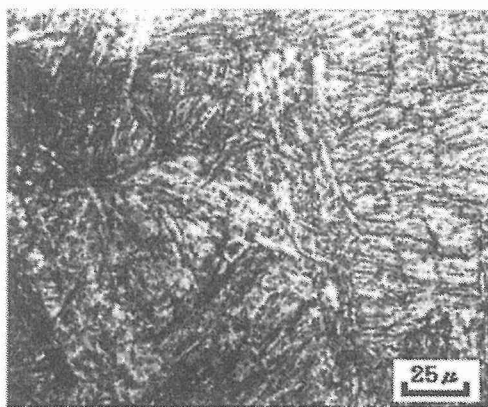


Time 380sec Hv 305

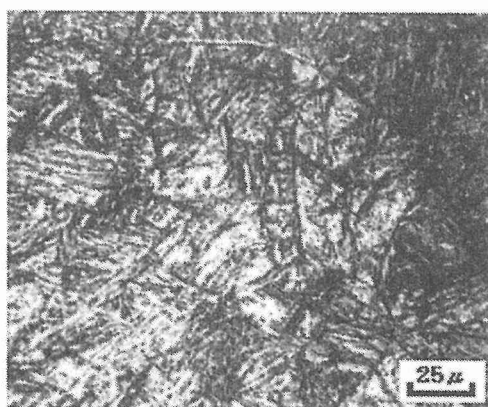




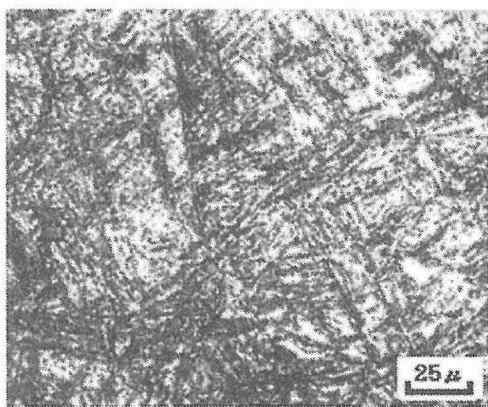




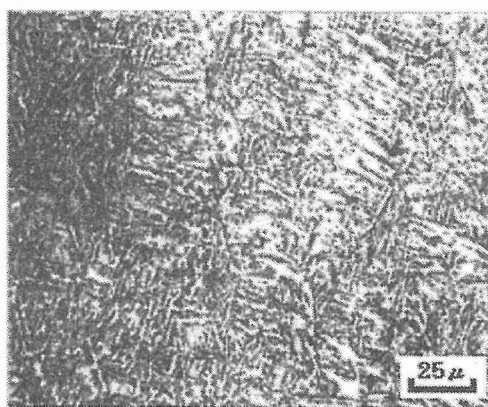
Time 2.3sec Hv 409



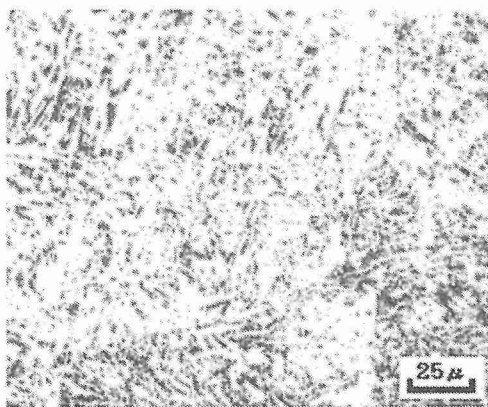
Time 4sec Hv 410



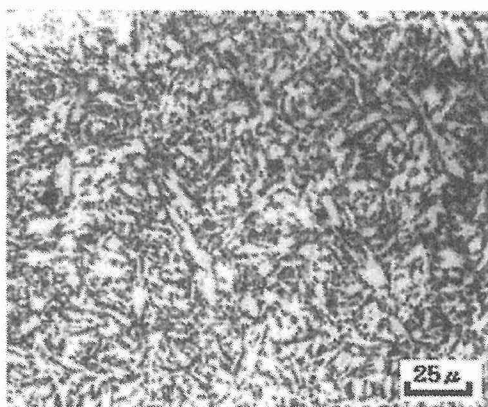
Time 5sec Hv 416



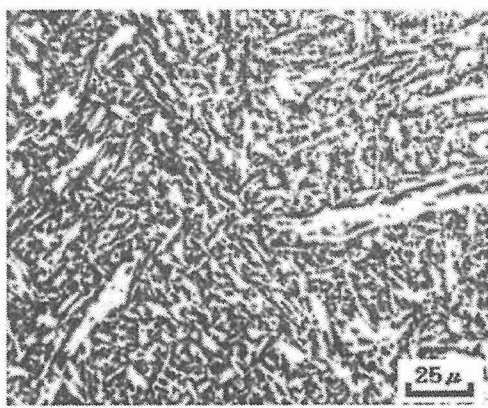
Time 13sec Hv 406



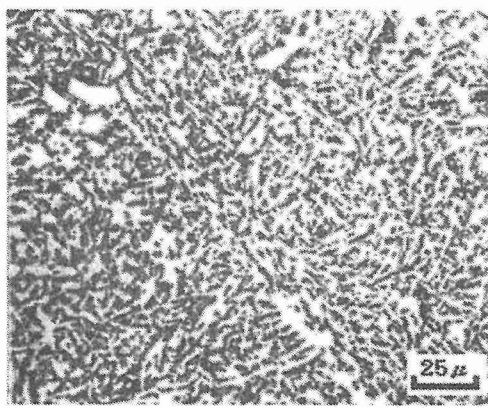
Time 20sec Hv 403



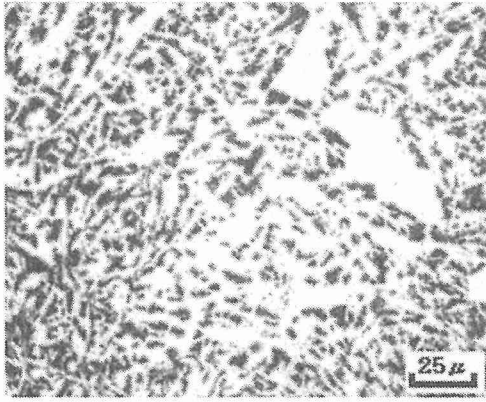
Time 50sec Hv 398



Time 90sec Hv 401



Time 180sec Hv 388



Time 370sec Hv 388

Reference

- 1) Michio Inagaki and Takayoshi Kasugai: Effect of C on CCT Diagrams for Welding in Simple Fe-C-X Alloys, Trans. of NRIM, Vol.1 (1971), No.3, P34-47 (in Japanese).
- 2) Takayoshi Kasugai, Michio Inagaki: Effect of Si on Transformation Behavior of Synthetic Weld Heart-Affect Zone of Steel, Trans of NRIM, Vol.23, No.1(1981), P44-57.
- 3) Takayoshi Kasugai, Michio Inagaki: Effect of Mn on Transformation Behavior of Synthetic Weld Heart-Affect Zone of Steel, Trans. of NRIM, Vol.22, No.4(1980), P74-85.
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