

16	Annealed Microstructure Rating Number	NADCA Annealed Microstructure Reference Chart, AS1...AS18, magnification 500x	NADCA Annealed Microstructure Reference Chart, AS1...AS18, magnification 500x		-	-
17	Microbanding Designation Levels	NADCA Banding Segregation Reference Chart, magnification 50x	NADCA Banding Segregation Reference Chart, magnification 50x	NADCA Banding Segregation Reference Chart, magnification 50x, 100x, and ASTM E3	-	-
18	Impact Capability test Result	Annealed Steel Capability, Class 1 Hardened Steel, ASTM E23 or ISO 148/R442	AVG 13,5 J, min. 10,8 J	Mandatory for input material quality and for real parts, the samples must be quenched and triple tempered	ISO 148/1	Relevant for all grades where specified in the following sections, Charpy V-notch test
19	Melt Practice	VAR, ESR	ESR, VAR	ESR, VAR	-	-
20	Heat check resistance	-	-	Dunker-test, no cracking after 15 000 cycles	-	-
21	Spheroidization and distribution of carbides	-	-	-	defined by specification for +AC and +AC+C, according to SEP 1520 or ASTM A892	-
22	Structure of ferrite-pearlite	-	-	-	for +FP, max. 10% of bainite	-
23	Distribution of carbides	-	large primary carbides will be cause for rejection	in order to to evaluate the compliance to the recommended austenitizing temperature, this specification requires a micro examination of a test coupon removed from production work piece after heat treatment to analyze whether all of the primary and most of secondary carbides have gone to solution, large primary carbides will be cause for rejection	The carbides shall be distributed as agreed upon in accordance with ISO 5949	-
24	Surface quality	-	-	-	According to enquiry and order, non or +HW (Hor work), +PI (Pickled), +BC (Blasted and cleaned), +RMP (Rough machined), +MA (Machined), +SH (Peeled/turned), +G (Ground), +C (Cold drown), +CP (Cold pilgered), +CR (Cold rolled)	according to enquiry or order
25	Special dimensional inspection	-	-	max. thickness of the parent block shall never be larger than 20" (508 mm)	An agreed number of product shall be inspected for their shape and dimensions	according to enquiry or order
26	Hardenability	-	-	-	+H, +HH, +HL, if applicable, ISO 642, the hardness values shall be determined in accordance with ISO 6508-1, Scale C	-
27	Surface hardness	-	-	-	after flame of induction hardening, ISO 6508-1, Scale C	-
28	Machinability	-	-	-	All steels are machineable in the condition "soft annealed"	-
29	Cold shearability	-	-	-	All steels are shearable in the condition "soft annealed"	-
30	Decarburization	-	-	-	According to enquiry and order, evaluated by ISO 3887	-
31	Testing procedure certificate	by Part/Die number	by GM serial number	by Part/Die number	ISO 10474 or EN 10204 or JIS G 0415, by Cast number	Declaration of conformance: by naming the steel as BCA, COD, RCU, RBB, RCW grade on the certificate, the manufacturer declare conformance with the qualified specification
32	Tensile test	-	-	-	ISO 6892-1, upper yield strength R_{eH} or $R_{0,2}$	Required for all grades in accordance with the requirements of the relevant section (R_m , min, R_{eH} or $R_{0,2}$, elongation A5 min, reduction of area Z min (%))
33	Reduction and deformation ratio	5:1	5:1	5:1	4:1	Between from 1,5 up 6 : 1 depending of raw product
34	Brittle crack test	-	-	-	-	yes, test specified by specification
35	Hardness	-	-	The tool source has the opportunity to finish machine the insert using high speed milling practices in lieu of EDM cavity machining, to assure uniformity of hardness throughout the entire work piece, triple	The hardness in the usual conditions of delivery. For product in treatment conditions +S, +A, +TH, +AC, +AC+C, +FP, the hardness shall be measured in accordance to ISO 6506-1	For forgings which have been batch tested, at least 10% of the forgings to be tested for hardness
36	Visual survey	-	-	-	-	Forgings for which certification by the Society is required shall be presented to the surveyor for visual survey. The surveyor may require areas to be etched for the purpose of investigating weld repair
37	Equipment for heat treatment	AMS 2750 F	10 bar/N2 furnace, min.cooling rate 70 °F/min (21,1 °C/min) based on Ts, load thermocouples dia 3,1 mm, type K, Digital Data Recorder, furnace certified and maintained in accordance with MIL-H-6875, 90 days prior heat treatment at max.	The furnace must be capable of interrupting the quench to maintain max. surface - core difference of 111 C. Min. 2 thermocouples will be placed on the work piece to provide recording data for the surface temprature Ts and core temperature Tc, cooling rate 28 C/min at minimum	-	ASTM A991 or AMS 2750 F or others, with regular intervals of measurement, agreed by the Society
38	Steel material certificate	-	Steel supplier - Certificate of conformance (Heat Designation, Annealed Brinell Hardness, Chemical Analysis, Microcleanliness level, Ultrasonic Testing, Grain Size Number, Microbanding segregation (Pass/Fails), Annealed Microstructure Rating Number, Response to Heat Treatment, Impact Capability Test Result), Frequency 100%	not defined	-	-
39	Heat treatment certification	Nadca certificate "Heat treatment quality Certification of conformance" for each part by Part number	HT101 form, identical with Nadca-207	not defined	yes, if indicated by "T" by each heat-treatment conditions	The supplier shall maintain records of heat treatment indentifying the furnace used, furnace charge, date, temperature, and time at temperature. The records shall be presented to the surveyor on request