

NAV23

NOTE – ALL QUESTIONS ON THIS AUDITOR’S PROCESS GUIDE IS CONSIDERED TO BE PRIORITY CODE “A”

1. Identify types of heat treatment performed at your facility being audited:

- | | | |
|--|--|--|
| <input type="checkbox"/> Homogenize | <input type="checkbox"/> Stress Relief | <input type="checkbox"/> Normalize |
| <input type="checkbox"/> Heat Soak | <input type="checkbox"/> Anneal | <input type="checkbox"/> Tempering/Quenching |
| <input type="checkbox"/> Age Hardening | <input type="checkbox"/> Other | |
- (Specify):

b. Is heat treating performed to written procedures? yes no n/a

c. Is it readily available to the operator? yes no n/a

2. Are the heat treatment operations performed by a continuous process or individual furnace loads? Continuous Individual Furnace Load n/a

3. If a continuous process is used, describe fully, using specific equipment identifications (e.g. model numbers): n/a

a. Identify heat source type:

b. Location:

c. Controls:

d. Placement of temperature monitoring equipment (i.e. thermocouples):

4. If individual furnace loads are heat treated, describe: n/a

a. Furnace type (e.g. car bottom, front load or side load). Include make or model number if possible:

b. Burner controls, including method of on/off switching:

c. Placement of temperature sensors (thermocouples):

- In oven

- On Product

d. Method of loading furnace/s:

NAV23

e. Method of unloading furnace/s:

f. Method of cooling, including transport to cooling location:

g. Does the furnace have sufficient temperature sensing devices to insure uniform furnace temperature? yes no n/a

6. Does supplier's procedures address fuel source's requirements? yes no n/a

7. a. Do supplier's equipment contain mercury? yes no n/a

b. Is it identified? yes no n/a

c. Are necessary controls in place to prevent contamination of the part? yes no n/a

8. Do the procedures contain parameters which meet applicable specifications (e.g. MIL-H-6875, MIL-STD-1684) for time and temperature? yes no n/a

9. Is a traveler or equivalent work process control document utilized? yes no n/a

10. Does the work process control document contain requirements for time, temperature, cooling methods and documentation requirements? yes no n/a

11. a. Are time at temperature charts produced? If not, describe alternative control/s used: yes no n/a

b. Are the at-temperature charts traceable to the material? yes no n/a

12. a. What is the method utilized to confirm successful heat treat to specific required mechanical properties (hardness, tensile testing, etc.). n/a

b. Does this method meet the specified requirement? yes no n/a

c. Does the procedure ensure test coupons are heat treated together with the material? yes no n/a

13. Does the procedure document the process for resolving nonconformances on heat treated material? yes no n/a

14. Does the supplier have a system for calibration of the temperature control equipment? (e.g. controller, thermocouple, lead wire): yes no n/a

15. Are heat treating equipment and test equipment (including hardness testing) identified in a manner to reflect (ISO 4.11.1)

a. Personnel responsible for performing calibration/inspection? yes no n/a

b. Personnel responsible for calibration/inspection yes no n/a

c. Item identity or serial number yes no n/a

d. Is calibration current? yes no n/a

f. If calibration is subcontracted, are sufficient subcontractor controls in place? yes no n/a

HEAT TREAT OVEN SURVEY (MIL-STD-1684) yes no n/a

16. Does the supplier have a system for heat treat oven/furnace survey? yes no n/a

17. Has the survey been performed at the correct time interval? yes no n/a

18. Has it been done at the correct temperature? yes no n/a

WITNESS HEAT TREAT WORK IN PROCESS AND RESPOND TO THE FOLLOWING:

Not Observed sat unsat n/a

Record number of samples reviewed _____

19. Is/Are the furnaces and controllers calibrated? sat unsat n/a

20. Is the temperature correct? sat unsat n/a

21. Is the correct cooling method/medium being utilized? sat unsat n/a
22. Are personnel cognizant of parameters (time, temperature, cooling method) required by procedure/s and work instructions? sat unsat n/a
23. Are results being properly documented (furnace charts)? sat unsat n/a
24. Are heat treat procedures/work control documents readily available to operators? sat unsat n/a
25. Is traceability being maintained and is the material being heat treated identified by heat number, batch number, serial number or equivalent to assure material control and prevent material mix up? sat unsat n/a
26. Are test coupons being heat treated together with the material? sat unsat n/a

Concerns/Comments: