

**C.A.S.E.**  
**AIR CARRIER SECTION**  
**Guidance Checklists**

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**Non-Destructive Testing**  
**Guidance Checklist**

Audit Date: \_\_\_\_\_ Vendor Allocation #: \_\_\_\_\_

C.A.S.E. Member #: \_\_\_\_\_ Auditor: \_\_\_\_\_

Vendor Name: \_\_\_\_\_

U.S./Canadian Certificate #: \_\_\_\_\_ EASA Certificate #: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Address Line 1: \_\_\_\_\_

Address Line 2: \_\_\_\_\_

City: \_\_\_\_\_ State/Province: \_\_\_\_\_

Country: \_\_\_\_\_ Zip code: \_\_\_\_\_

Website: \_\_\_\_\_

Accountable Manager: \_\_\_\_\_

Personnel Contact:

Name

Title

1. \_\_\_\_\_

2. \_\_\_\_\_

Phone #: 1. \_\_\_\_\_ Phone #: 2. \_\_\_\_\_

E-mail: 1. \_\_\_\_\_

E-mail: 2. \_\_\_\_\_

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**NOTE:** Sections of this supplement that are not applicable to the specific facility audited shall be marked as N/A.

The following technical data was used to update this checklist and is current as of 12/2024.

1. ANSI/ASNT CP-105: 2024
2. SNT-TC-1A (2024)
3. NAS410, Revision 5, September 30, 2020
4. ATA Spec 105; Revision 2022.1
5. ASTM E543-21; Standard Specifications for Agencies Performing NDT
6. ASTM E1212-17; Quality Management Systems for NDT
7. ASTM E1417-21e1; Standard Practice for Liquid Penetrant Testing
8. AMS 2644J; Fluorescent Penetrant Inspection Aircraft Engine Component Maintenance
9. ASTM E1444-22a; Standard Guide for Magnetic Particle Testing
10. ASTM E1001-21; Standard Guide for Detection and Evaluation of Discontinuities by the Immersed Pulse-Echo Ultrasonic Method Using Longitudinal Waves
11. ASTM E1254-13(2018); Standard Guide for Storage of Radiographs and Unexposed Industrial Radiographic Films
12. ASTM E1742/E1742M-18 (2024); Standard Guide for Radiographic Examinations
13. AMS 2647G; Fluorescent Penetrant Inspection Aircraft Structures and Engine Component Maintenance
14. 14 CFR Parts 43, 145

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General	<u>YES</u>	<u>NO</u>	<u>N/A</u>
1. Does the Agency have a current procedures manual such as a Quality Control, Quality Assurance, or Non-Destructive Testing manual outlining requirements of the disciplines and methods employed? [ASTM E543-21]	_____	_____	_____
2. Are current non-destructive testing policies and procedures (as applicable) available to inspection personnel? [ASTM E543-21; 14 CFR 43.13]	_____	_____	_____
3. Are the NDT facilities instructions and specifications adequate to perform the type of work proposed? [ASTM E121-17; NAS410, Rev. 5; 14 CFR 43.13; 145.103, 145.109]	_____	_____	_____
4. Does the agency ensure that it and its inspectors only perform examinations for which it is adequately equipped, staffed, and qualified? [ASTM E543-21; 14 CFR 43, 145.5]	_____	_____	_____
5. Are the number of qualified Level II & III inspection personnel adequate for the work proposed? [ASTM E543-21; NAS410, Rev. 5; 14 CFR 145.151, 145.155]	_____	_____	_____
6. Is segregation and part identification maintained throughout the NDT process? [ASTM E543-21; 14 CFR 43.13, 145.109]	_____	_____	_____
7. Are procedures established which require identification and control of nonconforming material? [ASTM E543-21; 14 CFR 43.13, 145.109]	_____	_____	_____
8. Is the inspection area free of contamination and materials that may interfere with the inspection process? [E1417/E1417M-21e1; 14 CFR 43.13, 145.103, 145.109]	_____	_____	_____
9. Are adequate procedures in effect to control the maintenance, calibration and use of NDT equipment, including applicable tools, gauges, standards, and instruments? [ASTM E543-21; 14 CFR 43.13, 145.109]	_____	_____	_____

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#### Training and Qualification of Personnel

YES   NO   N/A

10. Is compliant, documented evidence of training work experience and initial certification of NDT personnel available for review? [ATA 105, 2017.1; NAS410, Rev. 5; ASTM E543-21] \_\_\_\_\_
11. Is compliant, documented evidence supporting recertification of NDT personnel, at the prescribed intervals, available for review? [ASTM E543-21; NAS410, Rev. 5; ATA 105, 2017.1] \_\_\_\_\_
12. If the Agency allows Level III certified inspectors to be recertified using a credit system (no written exam), does the training package: [ASTM E543-21; NAS410, Rev. 5; ATA 105, 2017.1] \_\_\_\_\_
- a. Reflect minimum requirements of 24 credits? \_\_\_\_\_
- b. Validate inspector has been employed in a Level III capacity for 36 months (12 of which in the last 24) within the past 5 years? \_\_\_\_\_
13. Are visual acuity and color perception examination performed, recorded, and current for all NDT personnel? [ASTM E543-21; NAS410, Rev 5; ATA 105, 2017.1] \_\_\_\_\_

#### Formal Training Minimums Requirements (Hours)

Method	NAS 410			ATA 105		
	Level 1	Level 2 with Previous Level 1 Certificate	Level 2 w/o Previous Level 1 Certification	Level 1	Level 2 with Previous Level 1 Certificate	Level 2 w/o Previous Level 1 Certificate
Penetrant	16	16	32	16	8	24
Magnetic	16	16	32	16	8	24
Eddy Current	40	40	80	40	40	80
Ultrasonic	40	40	80	40	40	80
Radiography Film OR Non-Film	40	40	80	40	40	80
RT Film AND Non-Film	60	60	120	60	80	120

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<b>Additional Formal Training Required to Film AND Non-Film Radiography</b>			
Standard	Current Level 1	Current Level 2	Current Level 1 to Level 2 Film & Non-Film
NAS410	20	40	80
ATA 105	20	40	Not Specified

Method	<b>NAS 410</b>			<b>ATA 105</b>		
	Level 1 (Trainee)	Level 2 with Previous Level 1 Certificate	Level 2 w/o Previous Level 1 Certification	Level 1	Level 2 with Previous Level 1 Certificate	Level 2 w/o Previous Level 1 Certificate
Penetrant	130	270	400	70	140	210
Magnetic	130	400	530	70	210	280
Eddy Current	200	600	800	200	600	800
Ultrasonic	200	600	800	200	600	800
Radiography Film OR Non-Film	200	600	800	200	600	800
RT Film AND Non-Film	220	780	1000	220	800	1020

<b>Additional Minimum Experience Required to Film AND Non-Film Radiography</b>			
Standard	Current Level 1	Current Level 2	Current Level 1 to Level 2 Film & Non-Film
NAS410	20	200	800
ATA 105	20	200	Not Specified

<b>Recertification Requirements</b>				
Standard	<b>Levels</b>			
	Level 1 Special/Limited	Level 1	Level II	Level III
ATA 105	3 Years	3 Years	3 Years	5 Years
NAS410	1 Year	5 Years	5 Years	5 Years
SNT-TC-1A	N/A	5 Years	5 Years	5 Years

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Vision Testing Requirements		
Standard	Vision (Acuity)	Color Perception
NAS410	3 Years	5 Years
ATA 105	1 Year	Initial Eye Exam

**Note:** All references to Level I (1), II (2), and III (3) in this checklist are made in the context of industry Recognized and Certified individuals. Independent agencies may adapt variations of these standards with understanding that all NDT training and qualification programs shall be conducted under the supervision and approval of an Industry (ASTM) Level III.

### PT – Fluorescent Penetrant Inspection

#### Which items are predominately used?

Type	Method	Sensitivity (Type 1 Only)	Developer	Solvent Remover
Type 1: Fluorescent Dye	A: Water Washable	½: Ultra Low	a: Dry Powder	Class 1: Halogenated
	B: Post-emulsifiable, Lipophilic	1: Low	b: Water-Soluble	
		2: Medium	c: Water-Suspendable	
Type 2: Visible Dye	C: Solvent Removable	3: High	d: Nonaqueous for Type 1	Class 2: Nonhalogenated
	D: Post-emulsifiable, Hydrophilic	4: Ultra High	e: Nonaqueous for Type II	
			f: Specific Application	

- |  | <u>YES</u> | <u>NO</u> | <u>N/A</u> |
|--|------------|-----------|------------|
| 14. Are equipment and facilities arranged to permit a safe, uniform, and controlled operation? [ASTM E1417-21e1, 6.6; AMS 2647G] | _____      | _____     | _____      |
| 15. Are viewing and inspection areas clean and organized? [ASTM E1417-21e1, 6.6.1; AMS 2647G]                                    | _____      | _____     | _____      |

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- |   |   | <u>YES</u> | <u>NO</u> | <u>N/A</u> |
|---|---|------------|-----------|------------|
| 16.   | For Type I (Fluorescent Dye) applications:<br>[ASTM E1417-21e1; AMS2647G]   | _____      | _____     | _____      |
| a.  | Does ambient visible light measure 2 fc (21.5 lx) or less at the examination area? [ASTM E1417-21e1, 7.8.4.5]   | _____      | _____     | _____      |
| b.  | Do all handheld black lights in use provide a minimum of 1000 uW/cm <sup>2</sup> (10 W/m <sup>2</sup> ) at 15 inches (38.1 cm) from the front of the filter to the face of the sensor? [ASTM E1417-21e1, 7.8.4.1]   | _____      | _____     | _____      |
| c.  | Does UV intensity of Special Lighting (pencil lamps, light guides, boroscopes, or remote inspection equipment) provide at least 1000 uW/cm <sup>2</sup> (10 W/m <sup>2</sup> ) to the examination area at the expected working distance? [ASTM E1417-21e1, 7.8.4.2] | _____      | _____     | _____      |
| <p><b>NOTE:</b> Type II (Visible Dye) penetrant SHALL NOT be used for final acceptance examination of aerospace products. In addition, Type II examination SHALL NOT be used prior to a Type I penetrant examination of the same surface. This is not intended to eliminate the use of in-process Type II examination where subsequent fabrication/forming operations remove the surfaces inspected. [ASTM E1417-21e1, 6.9.2]</p> |   |            |           |            |
| 17.   | Where drying ovens are used:<br>[ASTM E1417-21e1, 6.6.2; AMS 2647G]   | _____      | _____     | _____      |
| a.  | Is the oven a forced-air recirculating type?  | _____      | _____     | _____      |
| b.  | Is the temperature controlled by a calibrated thermostat at +/- 10° F (5.6° C) of actual oven temperature?  | _____      | _____     | _____      |
| c.  | Is the temperature maintained at +/- 15° F (8.3° C) from setting?   | _____      | _____     | _____      |
| d.  | Under maximum allowable temperature of 160° F (71° C)?  | _____      | _____     | _____      |
| 18.   | Are written procedures established that:<br>[ASTM E1417-21e1, 6.7]  | _____      | _____     | _____      |
| a.  | Contain details of pre-cleaning and etching processes?  | _____      | _____     | _____      |
| b.  | Include classification of the penetrant materials required IAW ASTM E1417 Section 5?  | _____      | _____     | _____      |

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	<u>YES</u>	<u>NO</u>	<u>N/A</u>
c. Contain processing parameters for penetrant examination material including application method, dwell times, drying times/temp, and controls to prevent over drying of penetrant or overheating of component?	_____	_____	_____
d. Describe examination/evaluation requirements including accept/reject criteria?	_____	_____	_____
e. Describe that post-cleaning procedures?	_____	_____	_____
19. If parts are subject to vapor blasting, deburring, sanding, buffing, abrasive blasting, lapping or peening, is etching included in the pre-cleaning process? (unless otherwise agreed upon between the cognizant Engineering organization and NDT facility) [ASTM E1417-21e1, 6.8.1, 7.1.1]	_____	_____	_____
<p><b>NOTE:</b> Grit blasting without etching may be an acceptable cleaning method if it can be demonstrated that a sufficiently fine abrasive (150 grit or finer) will not cause peening and can be removed by a detergent or alkaline cleaner. [ASTM E1417-21e1, 7.1.4]</p>			
20. Are all surface coatings and other surface conditions, such as paint, plating, corrosion, etc. removed prior to penetrant examination? [ASTM E1417-21e1, 6.8.2; AMS 2647G]	_____	_____	_____
21. Are Known Defect Standards (TAM Panels) processed, cleaned, and stored per requirements? [ASTM E1417-21e1, 7.8.3.1; AMS 2647G]	_____	_____	_____
22. Are the Known Defect Standards (TAM Panels) approved by the cognizant engineering organization? [ASTM E1417-21e1, 7.8.3.1; AMS 2647G]	_____	_____	_____
23. Are component, penetrant, and ambient temperatures between 40° F and 125° F (4° C and 52° C) when penetrant is applied? [ASTM E1417-21e1, 7.2; AMS 2647G]	_____	_____	_____
24. Is a dwell time of at least 10 minutes adhered to? (minimum of 20 minutes if temperature is between 40° F and 50° F (4.4° C and 10° C) [ASTM 1417-21e1, 7.2.1; AMS 2647G]	_____	_____	_____
25. If allowed to dry longer than 2 hours, is penetrant re-applied? [ASTM E1417-21e1, 7.2.1; AMS 2647G]	_____	_____	_____

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- |  | <u>YES</u> | <u>NO</u> | <u>N/A</u> |
|--|------------|-----------|------------|
| 26. When automated or manual rise technique of penetrant's and emulsifiers (Method A, B, and D) are used, are the following parameters adhered to? [ASTM E1417-21e1, 7.3; AMS 2647G]   | _____      | _____     | _____      |
| a. Water pressure maintained below 40 psi (275 kPa)?   | _____      | _____     | _____      |
| b. Is water temperature between 50° F and 100° F (10° C and 38° C)?  | _____      | _____     | _____      |
| c. If hydro-air nozzles are used, is air pressure maintained below 25 psi (172 kPa)?   | _____      | _____     | _____      |
| d. If shop air (filtered) is used to remove excess penetrant and prevent pooling, is air pressure maintained below 25 psi (172 kPa)?   | _____      | _____     | _____      |
| 27. Are minimum and maximum bleed-out times (elapsed time between penetrant removal and developer application) of 10 minutes and 2 hours adhered to? [ASTM E1417-21e1, 7.5; AMS 2647G] | _____      | _____     | _____      |

**NOTE:** When a developer is used, components that are not inspected before maximum bleed-out time shall be cleaned and reprocessed. When developer is not used, components not inspected before maximum bleed-out shall be reprocessed.

- |   |       |       |       |
|---|-------|-------|-------|
| 28. Are inspectors adapting their vision to darkness for a minimum of 1 minute prior to examining components? (Type 1 – Fluorescent Dye Inspections) [ASTM E1417-21e1, 7.6.1.2] | _____ | _____ | _____ |
| 29. Are process controls and system performance checks being properly performed and documented in accordance with requirements? (Reference Table 3.1) [ASTM E1417-21e1, 7.8]    | _____ | _____ | _____ |

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**Table 3.1 – Process Controls and Calibrations**

*Need not be recorded **The maximum time between verifications or checks may be extended when substantiated by tech data and approved by the Cognizant Engineering Organization. ***Not required for Method C examinations.	Daily	Weekly	Monthly	Quarterly	Semi-Annually	Annually	Start of Each Shift	Reference
Penetrant Contamination*	X							7.8.2.1
Penetrant Brightness					X			7.8.2.2
Water Content- Water Based Penetrant (Method A)		X						7.8.2.3
Water Content- Non-Water Based Penetrant (Method A)			X					7.8.2.4
Lipophilic Emulsifier Water Content**			X					7.8.2.5
Hydrophilic Emulsifier Immersion, Spray, or Flowing Concentration**		X						7.8.2.6
Dryer Developer Condition**	X							7.8.2.7
Aqueous Developer Contamination-Soluble and Suspendable*	X							7.8.2.8
Aqueous Developer Concentration-Soluble and Suspendable		X						7.8.2.9
Penetrant System Performance***	X							7.8.3
UV-A Lamp Intensity**	X							7.8.4.1
UV-A Lamp Integrity*	X							7.8.4.1
Special UV Lighting	X							7.8.4.2
Battery Powered UV-A Lights	Prior to and after use							6.7.4.1, 7.8.4.2
Visible Light Intensity		X						7.8.4.3
UV-A Radiometer and Photometer					X			7.8.4.4
Examination Area Cleanliness*	X							7.8.4.5
Exam Area Ambient Light Intensity				X				7.8.4.5
Water Wash Pressure Check*							X	7.8.4.6
Water Pressure Gauge Calibration**						X		7.8.4.6
Water Wash Temp Check							X	7.8.4.6
Water Temp Gauge Calibration**						X		7.8.4.6
Drying Oven Verification					X			7.8.4.7
Air Pressure Gauge Check							X	7.8.4.9
Air Pressure Gauge Calibration**					X			7.8.4.9

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#### MT – Magnetic Particle Inspection

YES   NO   N/A

30. Are written procedures, established by an ASTM Certified Level III or approved by the Cognizant Engineering Organization, available to inspectors that include, directly or by reference to the applicable documents, the following:  
[ASTM E1444-22a, 5.3]
- a. Identification of test parts used for system performance verification? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
  - b. Areas of the part to be examined? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
  - c. Part preparation? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
  - d. Type of magnetizing current, and equipment to be used? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
  - e. Post-examination demagnetization and cleaning requirements? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
31. Is visible light in the working area measured at a minimum of 100 fc (1076 lx) or more at the surface of that part undergoing examination?  
[ASTM E1444-22a, 7.3.1.1] \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_

**NOTE:** Applicable when using non-fluorescent particles and for interpretation of indications found with fluorescent particles.

32. Is ambient visible light in the darkened examination area measured at 2 fc (21.5 lx) or less at the surface of the part undergoing examination?  
[ASTM E1444-22a, 7.3.1.2] \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
33. Do black lights (portable, hand-held, permanently mounted or fixed) measure a minimum intensity of 1000  $\mu\text{W}/\text{cm}^2$  (10  $\mu\text{W}/\text{m}^2$ ), at 15 in (38.1 cm) from the filter to the face of the sensor? [ASTM E1444-22a, 7.4.5] \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
34. When performing Wet Magnetic Particle Application – Continuous Method: [ASTM E1444-22a, 6.4.1]
- a. Is vehicle stream containing magnetic particles (suspension) diverted from the part simultaneously with, or slightly before inducing the final current application (shot)? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_

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YES   NO   N/A

- b. Is current applied for 0.5 seconds for each shot? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
- c. Are a minimum of two shots, in rapid succession used? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_

**NOTE:** The wet/continuous application is the most commonly used method in aerospace.

- 35. Are parts appropriately demagnetized after examination and verified by use of a calibrated magnetic field indicator (gauss meter)? [ASTM E1444-22a, 6.7.1] \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_

**NOTE:** Detected field intensity shall not exceed an absolute value of 3 G ( $3 \times 10^{-4} \text{T}$ ).

- 36. Does Use of Test Parts with Discontinuities have verification from the manufacturer that verify conformance to material and dimensional requirements of Annex A3 and Appendix X1 of E1444? [ASTM E1444-22a, 7.1.1, 7.1.2] (See Table 4.2) \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
- 37. Are all test parts with known discontinuities (defects), whether locally fabricated or commercially obtained: [ASTM E1444-22a, 7.1.1]
  - a. Demagnetized and cleaned thoroughly after examination? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
  - b. Checked under UV-A or visible light to ensure residual indications do not remain? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
  - c. Stored in a manner that prevents deterioration? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
- 38. When sampling suspension vehicle for particle concentration: [ASTM E1444-22a, 7.2.1.1]
  - a. Suspension bath agitated a minimum of 30 minutes (to ensure uniform particle distribution) prior to obtaining 100 mL? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
  - b. Sample demagnetized prior to settling period? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_
  - c. Allowed to settle for 60 minutes (petroleum distillate suspension) or 30 minutes (conditioned water suspension)? \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_

**NOTE:** 100 mL sample shall be placed in a pear-shaped centrifuge tube with a stem graduated in 0.05 mL increments for fluorescent particles. If centrifuge is graduated in 0.1 mL increments, it is designed for use with nonfluorescent particles.

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- |  | <u>YES</u> | <u>NO</u> | <u>N/A</u> |
|--|------------|-----------|------------|
| 39. Does measured volume of particles, after settling time, fall between 0.1 and 0.4 mL in the 100 mL (fluorescent) bath sample? Or 1.2 to 2.4 mL (non-fluorescent)? [ASTM E1444-22a, 5.5.4] |            |           |            |
| 40. Can inspector performing weekly wet particle contamination check explain acceptable and unacceptable criteria for determining bath/particle acceptability? [ASTM E1444-22a]              |            |           |            |

**NOTE:** Under both black light and visible light check particle accumulation for striations or bands, different in color or appearance, which can be an indication of contamination. If total volume exceeds 30% of the volume of magnetic, the bath must be adjusted or replaced.

- |  |  |  |  |
|--|--|--|--|
| 41. Are process controls and system checks being properly performed and documented in accordance with requirements? (Reference Table 4.1) [ASTM E1444-22a] |  |  |  |
|--|--|--|--|

**Table 4.1 Required Magnetic Particle Inspection Line Process Control Tests**  
[ASTM E1444-22a, Table 1]

	Daily	Weekly	Every 6 Months	Reference
<small>*or each shift. **The maximum time between verification may be reduced or extended when substantiated by actual technical/reliability data. ***Need not be recorded.</small>				
Visible Light Intensity**		X		7.3.1.1
Ambient Light Intensity (Background Visible Light)**		X		7.3.1.2
UV-A Lamp Intensity**	X			7.3.2, 7.4.5
Battery Powered UV-A Lamp Intensity Check**	Prior to and after each use			7.4.5.2
UV-A Lamp Integrity***	X			
System Performance**	X			7.1, 7.1.1, 7.1.2
Wet Particle Concentration*	8 hours, or every shift change			7.2.1.1
Wet Particle Contamination**		X		7.2.1.2
Water Break Test	X			7.2.2
Ammeter Accuracy**			X	7.4.1
Timer Control**			X	7.4.2
Quick Break**			X	7.4.3
Yoke Dead Weight** (ref Table 4.3)			X	7.4.4
UV-A Radiometer and Photometer**			X	7.4.7
Gauss Meter**			X	7.4.6

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**Table 4.2 Amperage and Hole Indication Requirements for AS5282 Rings**  
**[ASTM E1444-22a, Table A3.1]**

Type of Suspension	Amperage FW or HW Rectified	Min. Number of Holes Indicated
Fluorescent Oxide (Wet)	500	3
	1000	5
	1500	6
	2500	7
	3500	9

**NOTE:** All amperage values have a maximum tolerance of +/-50A or per procedures.

**Table 4.3 Dead Weight Check Requirements**  
**[ASTM E1444-22a, 7.4.4]**

Measured Distance between Legs (Poles)	AC & Permanent Magnets	DC
2in-6in (50mm-150mm)	10 lbs. (4.5 kg)	Not Specified
2in-4in (50mm-100mm)	Not Specified	30 lbs. (13.5 kg)
4in-6in (100mm-150mm)	Not Specified	50 lbs. (22.5 kg)

**UT/ET Ultrasonic and Eddy Current Inspection**  
**[ASTM E1001-21; 14 CFR 43.13; 145.205; OEM Process Specifications as applicable]**

**YES   NO   N/A**

- |   |                       |
|---|-----------------------|
| 42. Are instrument set-up procedures followed per applicable process standard or manual?  | _____   _____   _____ |
| 43. Are procedures in place that ensures correct reference procedures are used for equipment set-up?  | _____   _____   _____ |
| 44. Are appropriate transducers and couplants, and probes available?  | _____   _____   _____ |
| 45. Where Immersed Pulse Echo ultrasonic method is performed, is fluid in tank checked for corrosion inhibitor and wetting agent levels each 90 days? [ASTM E1001-21] | _____   _____   _____ |

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- |  | <u>YES</u> | <u>NO</u> | <u>N/A</u> |
|--|------------|-----------|------------|
| 46. Is certification available for known defect standards used in verifying equipment set-up and functionality?            | _____      | _____     | _____      |
| 47. Are ET test instruments calibrated/certified annually and traceable to standard acceptable to the FAA/NAA (i.e. NIST)? | _____      | _____     | _____      |

#### RT – Radiographic Inspection

[ASTM E1742/E1742M-18, ASTM E1254-13(2018)]

- |  |       |       |       |
|--|-------|-------|-------|
| 48. Is a list of radiographic equipment maintained onsite (X-Ray and Gamma Ray) that indicates operating specifications/limitations?                           | _____ | _____ | _____ |
| 49. Is Gamma (Isotope) equipment appropriately licensed and/or registered by state and federal agencies?   | _____ | _____ | _____ |
| 50. Does film viewer: [ASTM E1742/E1742M-18]   |       |       |       |
| a. Provide a uniform brightness level over the entire viewing screen?  | _____ | _____ | _____ |
| b. Incorporate a suitable fan, blower, or other means to provide a stable temperature at the viewing port to prevent damaging radiographic film while viewing? | _____ | _____ | _____ |
| c. Incorporate a set of opaque masks, an iris-type aperture, or other method to reduce the viewing area to suit the size of the area of interest?              | _____ | _____ | _____ |
| 51. Are Image Quality Indicators (IQI's) supported by certification from the manufacturer verifying alloy and dimensions? [ASTM E1742/E1742M-18]               | _____ | _____ | _____ |
| 52. Is Densitometer: [ASTM E1742/E1742M-18]  |       |       |       |
| a. Verified accurate each shift using a calibrated step-wedge?   | _____ | _____ | _____ |
| b. Calibration of step-wedge film verified by comparison to a NIST-serialized step-tablet?   | _____ | _____ | _____ |

# C.A.S.E.

## AIR CARRIER SECTION

### Guidance Checklists

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	<u>YES</u>	<u>NO</u>	<u>N/A</u>
c. Step-wedge calibrated annually?	_____	_____	_____
53. Are the following process controls imposed on automated film processing equipment: [ASTM E1742/E1742M-18]			
a. Performance check accomplished daily?	_____	_____	_____
b. Replenishing rates for developer and fixer maintained within the manufacturers' recommendations?	_____	_____	_____
c. Temperature of developer checked at use and during preventative maintenance using a calibrated thermometer?	_____	_____	_____

**NOTE:** Performance check is determined by processing a control of film IAW ASTM.

54. Is unexposed film stored: [ASTM E1254-13(2018)]			
a. At temperature between 40° F (4.44° C) and 75° F (23.88° C)	_____	_____	_____
b. At a relative humidity range of 30% - 60%?	_____	_____	_____