

ASNT Update



Administration of ASNT-9712 Certification Program

Achieving Operational Excellence

**ASNT CERTIFICATION
SERVICES LLC.**



20th WCNDT

20th World Conference on Non-Destructive Testing

Songdo Convensia, Incheon, Korea

27-31 May 2024

- Presented by:
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- Vice Chair – CMC
- Chair – USA ISO TC-135 TAG



ASNT 9712 Updates Include...

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- Revamped & new examinations and protocols in accordance with ISO 9712, 2021 edition
 - Transitioned away from our ACCP
 - Global availability
- Seeking Mutual Recognition Agreements





Why ASNT 9712....not ACCP

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- Although ACCP was created to meet the needs of Industry in the USA, where & when 3rd party certification were required, it was based on ISO 9712: 2012 version with adaptation using Reg Guide 21.
- The new ASNT 9712 is fully ISO 9712: 2021 compliant and structured to meet the world's needs for NDT personnel 3rd party certification with enhanced competency examinations to better meet the industries needs for “performance”.





ASNT 9712 Key Elements

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- Performance based certification program designed to assure or improve NDT reliability.
 - Contains computer based written & administered hands-on performance demonstration examinations
 - Provides consistency in testing performance requirements when/where employer-based programs may not.
- Psychometric principals applied to assure integrity and objective measurement of skills and knowledge (statistical evaluation)...this has even been extended to the practical examinations!





ASNT 9712 ACCP Key Elements for Practical Exam

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- **MT practical**

- Yoke
- Bench

- **PT practical**

- Solvent Removable
- Water Washable
- Post-Emulsified

- **VT practical**

- Direct
- Indirect

- **RT practical**

- Gamma – with film interpretation
- X-Ray – with film interpretation
- Combo – with film interpretation
- Film/Image Interpretation only

- **UT practical**

- Straight & Angle Beam (welds)
- Straight & Angle Beam (castings & forgings)
- Phased Array and TOFD (welds)

Note: Additional specific industry qualification (ISQ) exams; i.e., UT Thickness, weld exams, PAUT, TOFD, etc. in the works.

Note: *80% minimum detection criteria....maybe 90% for Level III's?*





ASNT 9712 Key Sector Elements

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- **Pre-Service**

- Intended for personnel working to multiple industry codes, standards & specification for general construction needs

- **Inservice**

- Originally intended to address the needs of the Power Generation and Petro Chemical industries (Vessels & Piping)
- Designed for those work to ASME B&PV Code, B31.1 & B31.3 codes

- **Other Sectors being evaluated on our Roadmap include...**

- Petro-Chemical (PC), Aerospace (AS),the newest one may be Oil & Gas (OG) embracing our Industry Sector Qualification (ISQ) examinations which are 100% “performance based”





Anghoff Values / Ranking for Practical

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Grading Elements to also include:

- Detection; i.e. minimum 80% or 90%?
- Classification; i.e. minimum 70%?
- Positioning; i.e. minimum 70%?
- False Calls; i.e. no more than 10%, 30%, 1, 2,?

Note: this exceeds minimum 70% requirements per industry feedback

Too Easy	Difficulty Level					
Test Piece	Blank	1	2	3	4	AVG
2-1		0.8	0.9	0.9		0.87
2-2	0.9					0.90
1-3		0.7	0.8	0.95		0.82
1-4		0.8	0.9	0.9	0.8	0.85
Flaw Count:	9					0.86

Valid test	Difficulty Level					
Test Piece	Blank	1	2	3	4	AVG
2-1		0.8	0.9	0.9		0.87
2-2	0.7					0.70
2-3		0.8				0.80
2-4		0.4	0.8	0.7	0.5	0.60
Flaw Count:	8					0.74

Too Hard	Difficulty Level					
Test Piece	Blank	1	2	3	4	AVG
1-1		0.4				0.40
1-2		0.3	0.3			0.30
1-3		0.7	0.8	0.9		0.80
1-4		0.8	0.9	0.9	0.8	0.85
Flaw Count:	10					0.59

Specimen **SET** difficulty can be easily adjusted to meet ever changing Industry needs with other testing like ISQ or sectors need to establish higher competency levels without investing in additional specimens or time for validation.





Anghoff Values / Ranking for Practical

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Grading Elements for Film/Image Interpretation to also include:

- Detection; i.e., minimum 80% or 90%?
- Classification; i.e., minimum 70%?
- Artifacts; identifying artifacts that impede proper evaluation

PW-XXX	Flaw	start	stop	length	Comment	A/R	Anghoff
1	IP	0.375	3.813	3.438	0	R	0.9
2	IP	4.000	4.375	0.375	0	R	0.85
3	IP	4.688	5.700	1.013	0	R	0.9
4	IP	5.850	6.180	0.330	0	R	0.8
5	IP	6.375	6.563	0.188	0	R	0.7
6	P	0.500	0.610	0.110	0	A	0.6
7	P	7.230	7.370	0.140	0	R	0.8
Avg:							0.79286

PW-XXX	Flaw	start	stop	length	Comment	A/R	Anghoff	
1	IF (root)	2.125	2.580	0.455		R	0.8	
2	Crack (crater)	5.500	5.750	0.250		R	0.5	
3	P	6.300	6.335	0.035		A	0.5	
4	Hollow Bead	9.250	9.875	0.625	non-relevant	A	0.25	non-scorable
(seen at various locations at marginal density delta)						Avg:	0.51	





Grading Practical Exams

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Primary Grading Elements for Practical exam include:

- Detection, Overalls, Characterization, Positioning (size) & Acc/Rej.

Use this section to score practical from flaw report sheets		Pass	Fail	Incorrect Flaws Reported	Correctly Flaws Reported	Flaws Actual or Considered	%	Possible Points	Actual Points	
Grading Categories for D.1 Item #3										
	a) Detection (80% min.)	1	0	**	7	8	88%	12	10.5	if < 80% - ZERO points are awarded & an automatic FAIL
	b) False Calls (30% max)	1	0	2	****	8	25%	6	4.5	if >30% - ZERO points are awarded however not an auto pass/fail criteria
Measured against correctly reported (detected) flaws only	c) Characterization (70%)	1	0	**	5	7	71%	9	6.4	if < 70% - ZERO points are awarded however, not an auto pass/fail criteria
Measured against correctly reported (detected) flaws only	d) Correct Positioning	0	1	**	4	7	57%	9	0.0	if < 70% - ZERO points are awarded however, not an auto pass/fail criteria
Measured against correctly reported (detected) flaws only	e) Correct Acc/Rej (70%)	0	1	**	3	7	43%	18	0.0	if < 70% - ZERO points are awarded however, not an auto pass/fail criteria
Subtotal:								54	21.4	
Insert TOTAL flaws in Grade Set (based on all samples)			8	Production of Test Report:			8	10	8.0	no minimum assessment in this category
Grand Total:								64	29.4	

Enter Total Here FIRST!!!





Grading Practical Exams

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Grading for the Practical also includes minimum Detection & Overall of 80%

Item 3 – Detection & Evaluation of flaws and reporting	Max	Score	%
a) Detection of mandatory reportable flaws (min. 80%)	12	10.5	88%
b) False Calls or Overcalls (min. 70%); i.e. maximum 30% overcalls	6	4.5	75%
c) Characterization of flaws (min. 70%)	9	6.4	71%
d) Location and Position of flaws (min. 70%)	9	0.0	0%
e) Evaluation against code, standard, specification or procedure criteria (min. 70%)	18	0.0	0%
f) Production of test report	10	8.0	80%
Item #3 Total:	64	29.4	46%

(A minimum of 80% is required) Items 1, 2 & 3 Total Points:	100	61.9	61.9%
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Did the Exam include "Mandatory Reportable Flaws"? *if NO leave blank*
 If so, were the Mandatory Flaws Reported? ←

Satisfied Minimum 80% Flaw Detection Requirements:
 D.1 - Overall Practical Exam Percentile Score:
 When applicable, were "Mandatory Reportable Flaws" Reported:



Grading Practical Exams

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Grading for the Practical also includes detection of Mandatory flaws criteria:

- Detection, Overalls, Characterization, Positioning (size) & Acc/Rej.

Item 3 – Detection & Evaluation of flaws and reporting	Max	Score	%
a) Detection of mandatory reportable flaws (min. 80%)	12	10.5	87.5%
b) False Calls or Overcalls (min. 70%); i.e. maximum 30% overcalls	6	4.5	75.0%
c) Characterization of flaws (min. 70%)	9	7.7	85.7%
d) Location and Position of flaws (min. 70%)	9	7.7	85.7%
e) Evaluation against code, standard, specification or procedure criteria (min. 70%)	18	15.4	85.7%
f) Production of test report	10	8.0	80.0%
Item #3 Total:	64	53.9	84.2%

(A minimum of 80% is required) Items 1, 2 & 3 Total Points:	100	86.3	86.3%
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Did the Exam include "Mandatory Reportable Flaws"? **Yes** if NO leave blank
 If so, were the Mandatory Flaws Reported? **No**

Satisfied Minimum 80% Flaw Detection Requirements: **PASS** 87.5%

D.1 - Overall Practical Exam Percentile Score: **PASS** 86.3%

When applicable, were "Mandatory Reportable Flaws" Reported: **FAIL**





ASNT 9712 Examination Delivery

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- Web-based written examinations at Pearson Vue.
 - Professional computer-based testing centers throughout the world.
 - May also be at AEC's and ASNT testing centers constantly under review to meet industry, owner/user, service providers needs, etc.
 - Currently opened ASNT India and ASNT Houston.
- Authorized Exam Centers (AEC's)
 - To be in key locations throughout the world for practical examinations
 - ASNT will also introduce "AEP" or Authorized Exam Proctors; allowing for easy global distribution of the examinations at remote locations!

**Note: special ASNT course & credential for approved Level III proctors will be required.*





Moving Forward

ASNT...Creating a Safer World!

- ASNT has multiple commitments to personnel certification that are weaved throughout its Strategic Plan
- ASNT established a global footprint and recognition.
- We are open to MRA's between our ASNT 9712 program and other equivalent programs throughout the world once adaption of ISO 9712 2021 by others is observed.
- One of our current MRA's in place is with Japan and JSNDI.





Moving Forward – Con't.

ASNT...Creating a Safer World!

- Multiple Certification Schemes (Sectors) rarely benefit industry! However, we acknowledge that industry will be the driving force.
 - ASNT/CGSB/PCN/CSWIP
 - EPRI (utility and power segment performance exams in USA)
 - ASME/API/AWS; current fast track with Oil & Gas owner/user group!
 - Others
- ASNT is committed to doing ***“whatever it takes”*** to assure excellence in Certification & Credentialing; we have incredible resources (funding, staff & volunteers).





Questions

ASNT...Creating a Safer World!

- Creating a safer world.....it STARTS with each and everyone of us in this room.
- There is too much at stake to get this wrong; Failure is NOT an option (safety)
- Certification & Credentialing are paramount to achieving this.

