



Examinations for the Level 3

1. Central Certification L3 Exams

a. *ASNT NDT Level 3*

The American Society for NDT (ASNT) leads the field by a long way in the establishment of an NDT Level 3 programme. Set up in 1976 it quickly evolved into an internationally recognised demonstration of excellence in the NDT world. Today it continues to attract candidates at examination locations around the world; and in the UK these are available annually through the North Atlantic Section of ASNT.

b. *PCN/EN473 ISO9712 – Level 3*

The British Institute of NDT (BINDT) offers central certification of NDT Level 3 through its Personnel Certification for NDT (PCN) Scheme which is developed under the European Standard for NDT Operator Qualification EN473 and ISO9712. This programme has been in place since the early 1980s and is now a well-recognised programme of quality of Level 3 achievement.

The ASNT programme currently has around 3000 Level 3s with an average of four methods each – ASNT offers Level 3 exams in 11 methods. Around 25% of the 3000 Level 3s are outside the USA. PCN has around 350 Level 3s holding 850 certificates in up to seven methods but within some methods there is further categorisation, for example ASNT simply issues an Ultrasonic Method Level 3; whereas PCN issues the UT Method – with product specific endorsements – such as castings, wrought products, welds or axle testing. PCN examinations are available on demand at any appropriately approved Authorised Qualifying Body (AQB).

Eligibility

Generally speaking, for either system the best eligibility is six years plus of experience working at the Level 2 in the appropriate method. Alternative eligibility parameters come into play, depending on your educational achievements but we recommend that your starting point is good practical NDT experience over a number of years within various methods.

The Level 3 Examination

ASNT examinations are fairly straightforward to explain:

- You must pass the Basic ASNT Examination and
- You must pass a Method Examination

PCN requires that:

- You must pass the Basic PCN Examination and
- You must pass a Method Examination, plus...

For PCN you must hold the relevant Level 2 Certificate at the time of the examination – or pass the Level 2 practical within the Method exam.

Basic Examination

Both systems follow the same pattern – all questions are multiple choice and cover:

- Questions on the certification system (for example SNT-TC-1A/CP 189 or PCN Gen).
- Product technology.
- Other NDT methods at Level 2.

Variation:

- i) PCN questions on its General document allow use of the document; ASNT questions do not.
- ii) PCN only asks questions on four methods at Level 2 including the method being examined (and if you hold a PCN Level 2 you are exempt those questions relating to the Method held). ASNT, however, asks questions on 11 NDT methods at Level 2 and no exemptions are allowed.

For the ASNT Basic exams you will be given about 135 multi-choice questions to be answered in 4 hours; for PCN there is a maximum of 100 multi-choice questions to be answered in 3 hours.

Method Exam

ASNT covers all the following at Level 3:

Ultrasonic Testing*	Visual Testing*
Radiographic Testing*	Neutron Radiography Testing
Liquid Penetrant Testing*	Thermography/Infrared Testing
Magnetic Testing*	Leak Testing
Eddy Current Testing*	Vibration Analysis
Acoustic Emission	

*PCN currently covers those methods identified with an asterisk, plus Time-of-Flight-Diffraction (TOFD) and, most recently, Alternating Current Field Method (ACFM). Additionally, any PCN Method exams may be broken down into sectors which may be examined separately to Level 3. For example, as stated earlier, ASNT only examines in UT whereas PCN L3 UT would be castings, welds, wrought products, or axle testing.

Further, PCN requires a Specific test and a Practical test (the writing of a procedure) which are not required by the ASNT Level 3 programme. The ASNT method paper has 90 questions for MT, PT and VT and 130 questions for the other Methods; the PCN Method paper is divided into general – 30 questions, Specific 20 questions and the drafting of at least one procedure (plus the L2 practical exam if not already held).

2. Employer-based Level 3 exams

ASNT publishes a Recommended Practice SNT-TC-1A for the Employer to establish a Company Written Practice as to how the Company trains, examines and certifies its NDT Personnel. The current issue is 2001, although it is not unusual for a Company to quote the '96 or '92 version. Employer-based certification is only valid through the requirements of the Written Practice and provides certification to Level 1, 2 and 3 to the specific products and Procedures of the Employer. Please note that the Company Level 3 to a Written Practice based on SNT-TC-1A is not to be confused with ASNT NDT Level 3 already described under Central Certification.

SNT-TC-1A

A Company Level 3 exam will follow the requirements of the Written Practice, which will be based on SNT-TC-1A as follows:

Basic Examination (required only once when more than one method examination is taken)

- 15 questions relating to understanding the SNT-TC-1A document.
- 20 questions relating to applicable materials, fabrication and product technology.
- 20 questions that are similar to published Level 2 questions for other appropriate NDT methods.

Method Examination (for each method)

- 30 questions relating to fundamentals and principles that are similar to published ASNT Level 3 question for each method, and
- 15 questions relating to application and establishment of techniques and procedures that are similar to the published ASNT Level 3 questions for each method, and
- 20 questions relating to capability for interpreting codes, standards and specifications relating to the method.

Specific Examination (for each method)

- 20 questions relating to specifications, equipment, techniques and procedures applicable to the employer's products(s) and methods employed and to the administration of the employer's written practice.
- The employer may delete the specific examination if the candidate has a valid ASNT Level 3 certificate in the method and if documented evidence of experience exists, including the preparation of procedures to codes, standards, or specifications and the evaluation of test results.
- Note there is no practical exam here or indeed a requirement to hold a Level 2 practical.

Role of the Level 3

The Level 3 in NDT is a highly responsible one – it is only necessary to look at the level of qualification as defined in SNT-TC-1A (2001) to appreciate this: An NDT Level 3 individual should be capable of developing, qualifying, and approving procedures, establishing and approving techniques, interpreting codes, standards, specifications and procedures; and designating the particular NDT methods, techniques and procedures to be used. The NDT Level 3 should be responsible for the NDT operations for which qualified and assigned and should be capable of interpreting and evaluation results in terms of existing codes, standards and specifications. The NDT Level 3 should have sufficient practical background in applicable materials, fabrication and product technology to establish techniques and to assist in establishing acceptance criteria when non are otherwise available. The NDT Level 3 should have general familiarity with other appropriate NDT methods, as demonstrated by an ASNT Level 3 Basic examination or other means. The NDT Level 3, in the methods in which certified, should be capable of training and examining NDT Level 1 and 2 personnel for certification in those methods.

Certificates of Examination

1. ASNT provides a certificate which used to have endorsement stickers for each Method passed with the date of exam and date of expiry: (Month and Year only). It also had a file number usually with 2 letters and 3 or 4 numbers e.g. D. H. LAVENDER LM903 (example 1). This is being changed for newly issued certificates and those successfully passing the 5 year renewal procedure. The certificate notes all Methods on a single list and has a Certificate Number which appears to be the same as the Membership Number. This means for the next 5 years or so 2 different types of ASNT. NDT Level 3 certificates will be in circulation. (example 2)
2. PCN – The Level 3 certification will simply be added onto the PCN Record of Certification along with all the PCN certificates at all Levels. (example 3)
3. Employer Based Level 3 Certificates of Examination will be produced by the body authorised by the Employer in the Written Practice to provide its service.

Please note that these Certificates and NOT the authorisation to work – this can only be applied by the Employer.

Summary

Those candidates wishing to progress to Level 3 must be prepared to put in considerable effort to pass the exams as described above. There are a wide range of texts prepared by eminent NDT technologists from around the world which can be used as resource material as well as an increasing number of trainers accredited to provide training at Level 3. Once successfully through the Level 3 examination the same over riding principal applies to the Level 3 no matter which route he has obtained his certification – he must be authorised to work by the Employer – and this authority to work is best confirmed within a written document – the Company Written Practice.