



RADIOGRAPHIC TESTING (RT)

This method is based on the same principle as medical radiography in a hospital. A piece of radiographic film is placed on the remote side of the material under inspection and radiation is then transmitted through from one side of the material to the remote side where the radiographic film is placed.

The radiographic film detects the radiation and measures the various quantities of radiation received over the entire surface of the film. This film is then processed under dark room conditions and the various degrees of radiation received by the film are imaged by the display of different degrees of black and white, this is termed the film density and is viewed on a special light emitting device.

Discontinuities in the material affect the amount of radiation being received by the film through that particular plane of the material. Qualified inspectors can interpret the resultant images and record the location and type of defect present in the material. Radiography can be used on most materials and product forms, e.g. welds, castings, composites etc.

Radiographic testing provides a permanent record in the form of a radiograph and provides a highly sensitive image of the internal structure of the material. Radiography is split into two main categories

- Radiographic Testing
- Radiographic Interpretation

The radiographic testing course is for NDT personnel who execute the practical inspection using radioactive material or radiation emitting devices. The radiographic interpretation course is designed purely for the interpretation of the resultant radiographic image. However, to understand the principles of image formation, sensitivity and correct techniques the general theory syllabus is the same for both courses.

The two sectors of the Radiographic Testing examination that are NOT required for the Radiographic Interpretation examination are

- Basic Radiation Safety (BRS)
- Practical Examination of the Specimens

RADIOGRAPHIC TESTING (RT)

PCN MINIMUM WORK EXPERIENCE AND TRAINING HOURS' REQUIREMENTS FOR RT EXAMINATIONS

LEVEL 1

- 40 hours Training
- 3 months Work Experience

LEVEL 2

- 80 hours Training (additional to the 40 hours for Level 1)
- 9 months Work Experience (additional to the 3 months for Level 1)

If a candidate wishes to go direct to Level 2 without first taking the Level 1 route, the minimum requirements are the total accumulative requirements of both Level 1 and 2.

We can provide Radiographic Testing and Interpretation training courses and examinations suitable for any of the following certification schemes

- PCN / EN 473 / ISO 9712 Level 1, 2, and 3
- SNT-TC-1A in accordance with your company written practice

We can also provide

- Preparation training for ASNT Level 3

An example of the syllabus that is used for Radiographic training courses is shown below for Level 1 and 2. SGS can tailor make the syllabus to satisfy the requirements of an individuals company specific written practice if requested.

RADIOGRAPHIC TESTING

Radiographic Testing is split into specific product sectors for certification at Level 1 and 2, this is

- Welds
- Castings

Each of these categories is further split into sub groups

- Light Metal X-ray
- Dense Metal X-ray (and/or Gamma ray)
- Light and Dense Metal, both X-ray and Gamma ray

LEVEL 1

GENERAL THEORY

- Properties and Production of X-ray and Gamma ray
- The Formation of a Latent Image
- Radiographic Film
- Development / Processing
- Practical Exercises
- Radiographic Quality
- Image Quality
- Radiographic Techniques
- Density Monitoring

SPECIFIC THEORY

Application of the Method and use of Codes, Specifications and Procedures, applicable to the company, including the relevant control checks.

PRACTICAL EXAMINATION

Follow written instructions and process the inspection test pieces, record and report defects from known datum markers, carry out pre-test calibration checks and post-test procedures.

LEVEL 2

GENERAL THEORY

(in addition to the Level 1 Syllabus above)

- The properties of X-ray and Gamma rays
- Personnel Protection and Safety
- Procedures
- Atomic Structures
- Generation of X-rays
- Natural and Artificial Gamma Radiation Sources
- Gamma ray Equipment
- Radiographic Film
- Intensifying Screens
- Exposure Charts
- Characteristic Curves
- Diagnostic Film Lengths
- Exposure Calculations
- Techniques for Weld Radiography
- Darkroom Procedures
- Radiographic Quality
- Introduction to the Interpretation of Radiographs
- Specifications and Procedures

SPECIFIC THEORY

Application of the Method to the specific requirements of the company, in particular making reference to those Codes, Specifications and Procedures used by the company, including the relevant control checks. Product technology of the products for the relevant sector, i.e. welds, castings, forgings, this includes, manufacturing processes, defect formation and detection.

PRACTICAL EXAMINATION

Production of written instruction, determine the best inspection techniques for the individual parts, process the inspection test pieces, record and report defects from known datum markers, carry out pre-test calibration checks and post-test procedures.

CONTACT US

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