



## LIQUID PENETRANT INSPECTION (PT)

This involves applying a liquid dye to the surface of a material and leaving the dye to “dwell” on the surface for a pre-determined period of time. The liquid can be either a colour that is easily visible under normal lighting conditions or a yellow/green fluorescent colour that requires special lighting conditions to be seen effectively.

This liquid dye enters into discontinuities that are open to the surface of the material through a phenomenon called “capillary action”. This capillary action takes place throughout the dwell time and the discontinuity retains this dye when the excess dye is cleaned from the surface. A type of developer is then

applied to the surface of the material and the dye that is trapped inside the surface discontinuities is blotted back out on to the surface and forms an indication. This indication is then interpreted by a qualified interpreter.

The PT method is suitable on most non absorbent materials.

We can provide Liquid Penetrant (PT) training courses and examinations suitable for the following certification schemes at Level 1, 2 and 3

- PCN / EN 473 / ISO 9712
- 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 Liquid Penetrant 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.

An example of the syllabus that is used for ultrasonic examination 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.

# LIQUID PENETRANT INSPECTION (PT)

## LEVEL 1

### GENERAL THEORY

- Basic Principles of Liquid Penetrant Inspection
- Safety Precautions
- Surface Preparation of Materials for Inspection
- Materials and Equipment used
- Assessment and Implementation of Control Tests
- Suitable Testing Technique
- Post Test Procedures

### 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, post-test procedures.

## LEVEL 2

### GENERAL THEORY

(in addition to the Level 1 Syllabus above)

- Safety Precautions
- Testing Procedures
- Detectability of Defects
- Interpretation and Reporting
- Post Test Procedures
- Selection of Appropriate Techniques

### 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 instructions, 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

SGS NDT Training & Examination Centre  
2F Building 8, No. 69, 1159, East Kangqiao Road, Pudong District  
Shanghai 201319, P. R. China  
T +86 21 6818 3905  
F +86 21 6818 3265  
ndt.training@sgs.com  
www.sgs.com/ndt-training