

## Training program for penetrant testing (PT)

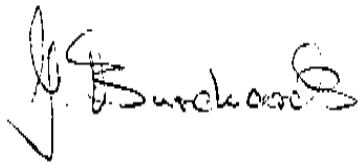
In the NDT training course the following knowledge will be educated.

Subject	Level 1	Level 2	Level 3
<i>Preface</i>	+	+	+
<i>Introduction</i>	+	+	+
<i>Precleaning</i>	+	+	+
<i>Drying</i>	+	+	+
<i>Penetrant application</i>	+	+	+
- Capillarity	+	+	+
- Cohesive and adhesive forces	---	+	+
<i>Intermediate cleaning</i>	+	+	+
- Water-washable method	+	+	+
- Post-emulsifiable method	+	+	+
- Lipophilic systems	+	+	+
- Hydrophilic systems	+	+	+
- Intermediate solvent cleaning (local inspection) – removable with solvent	+	+	+
- Intermediate water cleaning (local inspection) – water-washable penetrants	+	+	+
- Local inspection using a hydrophilic remover	+	+	+
<i>Drying</i>	+	+	+
<i>Developing</i>	+	+	+
- Aqueous wet developer	+	+	+
- Dry developer	+	+	+
- Non-aqueous wet developer	+	+	+
<i>Evaluation</i>	+	+	+
- Types of indications	+	+	+
<i>Inspection instruction</i>	---	+	+
- Company standards and specifications / instructions / internal rules	---	+	+
- Prerequisites for an inspection instruction	---	+	+
- Preparation of an inspection instruction	---	+	+
- Requirements to be met by an inspection instruction	---	+	+
<i>Causes of defects</i>	+	+	+
- Defects caused during the manufacture of the blanks	+	+	+
- Defects occurring in operation	+	+	+
- Manifestation of defects	+	+	+
<i>Types and causes of indications</i>	+	+	+
<i>Defect locations, definitions</i>	---	+	+
<i>Assessment of indications (basic specification)</i>	---	+	+
- Scope and purpose	---	+	+
- General requirements	---	+	+
- Definitions and inspection characteristics	---	+	+
- Acceptance limits	---	+	+
<i>Assessment of indications (component-specific specification)</i>	---	+	+
- Clauses of the specification	---	+	+
- Determination of indication size	---	+	+
- Wipe-off method	---	+	+
- Determination of indication type	---	+	+
<i>Post-cleaning</i>	+	+	+
<i>Preservation</i>	+	+	+

continued

<b>Subject</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
<i>Waste water</i>	---	+	+
- <i>Waste water treatment</i>	---	+	+
<i>Comparison of the penetrant inspection systems</i>	+	+	+
<i>Applications of the individual systems</i>	---	+	+
<i>Sequence of inspection in production</i>	---	+	+
<i>Illumination / irradiation</i>	+	+	+
<i>Verification of the proper functioning of the system</i>	+	+	+
- <i>Checking the overall system</i>	+	+	+
- <i>Checking of hydrophilic removers (emulsifiers)</i>	+	+	+
- <i>Water content of penetrants</i>	+	+	+
- <i>Checking of the electrostatic efficiency</i>	+	+	+
- <i>Checking of dry developers</i>	+	+	+
<i>Calibration</i>	+	+	+
<i>Process parameters</i>	+	+	+
<i>Harmful foreign matter</i>	+	+	+
<i>Tartaric acid/sulphuric acid anodizing (TSA) for Airbus components or boric acid/sulphuric acid anodizing for Boeing components</i>	+	+	+
<i>Standards and specifications</i>	---	+	+
<i>Classification of penetrant systems</i>	+	+	+
<i>Other NDT methods</i>	---	+	+
- <i>Visual inspection</i>	---	+	+
- <i>The human eye</i>	+	+	+
- <i>Magnetic particle inspection</i>	---	+	+
- <i>Eddy-current inspection</i>	---	+	+
- <i>Ultrasonic inspection</i>	---	+	+
- <i>X-ray inspection</i>	---	+	+
- <i>Thermography</i>	---	+	+
<i>Inspection report</i>	---	+	+
<i>Requirements on inspection personnel</i>	+	+	+

+ subitem of the level  
 --- no item of the level



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