

Training Outline

Level 1

Introduction to Shot Peening
History, Effect and Benefits

Peening Media
Properties, Types and Selection

Peening Intensity
Definition, Testing Equipment and Determination
Exercises on Simple Saturation Curves

Peening Coverage
Definition, Testing Equipment and Masking

Level 2

Peening Media
Media Inspection, Evaluation and Processing

Peening Intensity
Fixtures, Influences and Verification
Exercises on Special Saturation Curves

Peening Coverage
Process Time, Influences and Topography

Practical Exercises

- Media Inspection
- Intensity Determination and Verification
- Coverage Development
- Process Reliability on a real shot peening machine.

Optional Training Content from the Areas

- Process and Quality Management
- Residual Stresses and X-ray Diffraction
- Technical Innovations and Live Demos

Individual Application-Related Questions

Rotary Flap Peening

Introduction to Shot Peening

Peening Intensity and Saturation Curves

Peening Coverage and Process Time

Equipment with Flaps, Mandrels, Drive and Control

Operator Technique

Application Examples

Practical Education

Level 3

General Content

Refreshing of Level 2 Training Content

Procedure and Processes

- Verification of Intensity at Multiple Strip Locations
- Residual Stress Profiles
- Secondary Processes
- Dual Peening, Stress Peening, Warm Peening
- Coverage Development and Process Time
- Standard Procedure for Shot Peening

Practical Exercises

- Media Inspection
- Intensity Determination and Verification
- Coverage Development
- Process Reliability on a real shot peening machine.

Specific Content (Catalogue of Topics)

Process Management

- Machine, Process and Quality Parameters
- Development/Planning of a Shot Peening Process
- Special Aspects in Process Development
- Specific Peening Nozzles and Lances

Quality Management

- Implementation/Documentation of a Shot Peening Process
- Shaded and Subsize Strips
- Work With Coverage Maps
- Recording and Saving of Process Data

Cold Work and Residual Stress

- Effects and Benefits of Shot Peening
- Ductility, Work Hardening and Induction of Residual Stress
- Energetic Approach to Particle Impact
- X-Ray Diffraction for Determination of Residual Stresses

Process Owners and Quality Managers

- Standards and Specifications for Shot Peening
- Internal Management and Training
- Calibration of Shot Peening Machines
- Nadcap Audit Preparation

Shot Peening in Practice

- Individual Application-Related Questions
- Application Examples
- Alternative Processes
- Technical Innovations and Live Demos