

CBIP Examination Paper - Liquid Penetrant Inspection

Level 2 Specific

- 1 The written procedure states that the maximum water pressure allowed during the washing/removal stage is 40 psi. Your gauge reads kPa, and would be:
- A. 40 kPa
 - B. 104 kPa
 - C. 1084 kPa
 - D. 276 kPa
- 2 It is a requirement that the Penetrant be made by the same manufacturer as:
- A. The Emulsifier
 - B. The Developer
 - C. The Precleaner
 - D. The Post cleaner
- 3 Which of the following would have to be included in a level 1 written procedure?A. Penetrant manufacturers nameB. Inspection area ambient light requirementsC. Inspection area ambient temperature requirementsD. Penetrant colour
- 4 Pooled water remaining on the part after the water wash stage can be removed by:
- A. Blotting with a clean lint free towel
 - B. Using air with a minimum pressure of 170 kPa
 - C. Using a hot air dryer
 - D. All of the above
- 5 Small round indications in the middle of a weld bead are more likely caused by:
- A. Slag inclusions
 - B. Porosity
 - C. Undercut
 - D. Crater Cracks
- 6 Type 2 (II) Method A penetrants are:
- A. Fluorescent PE (Hydrophilic) penetrants that produce a yellow/green indication on a white background
 - B. Fluorescent PE (Hydrophilic) penetrants
 - C. Visible water wash penetrants
 - D. Visible PE penetrants

- 7 Penetrant residues may become entrapped under spines, fasteners, rivets, etc. Which of the following could result from not removing such a residue?
- A. Fatigue cracking
 - B. This is not a problem
 - C. Corrosion
 - D. Paint deterioration
- 8 The customer specifies that the acceptance criteria is to be as per AS2062 Appendix B, class 3. The welded plate you are inspecting is 4 mm thick, which of the following would be unacceptable? A. 1 rounded indication 0.9 mm in dia B. 2 rounded indications, both 0.5 mm in dia C. 2 linear indications, each 1.0 mm long separated by 1.5mm D. All of the above
- 9 When carrying out a "system performance test" as per AS 2062, which of the following is true?
- A. The results from the defect standard shall be compared to the indications obtained from unused samples of the same material
 - B. This test applies to penetrant in aerosol containers
 - C. Both A and B are correct
 - D. Neither A or B are correct
- 10 When spraying a hydrophilic emulsifier onto the part during the removal stage, the maximum concentration and time shall be:
- A. 5% and 90 seconds
 - B. 10% and 3 minutes
 - C. 20% and 120 seconds
 - D. 5% and 2 minutes
- 11 Describe two (2) techniques that could assist with the interpretation of suspected cracking in an aluminium casting that exhibits a high background during the inspection stage
- 12 List four (4) types of defects associated with "T" fillet weld, that would be detectable with the penetrant method
- 13 Explain the reason why AS 2062 recommends increasing the penetrant dwell time from 10 to 20 min, when inspecting stainless steels
- 14 You have been asked by a customer to inspect a set of weld repaired hydro turbine blades using a fluorescent penetrant. The blades have been previously inspected using a visible penetrant then sand blasted. Discuss the problems associated with this request and suggest a solution