Tailhook Case Study

Scenario
In this exercise, you work for a manufacturer of printed circuit boards used in the automotive and military aircraft industry. Your job is to use a heated metal alloy to join metal parts (solder) in the circuit boards.

Your customer requires reliable and high quality circuit boards with soldered joints that meet a specific IPC standard. Using a recognized standards search system (e.g. IHS Standards Expert™), search for and download IPC standard J-STD-001E, Requirements for Soldered Electrical and Electronic Assemblies, which is the preeminent standard for electronics assembly manufacturing. The standard describes materials, methods, and verification criteria for producing high quality soldered interconnections. The standard emphasizes process control and sets industry-consensus requirements for a broad range of electronic products.

Research Questions - IPC Storyboard
Where applicable, select the correct answer and indicate the location in the document.

1. What percentage of solder source side land area shall be covered with wetted solder for a soldered terminal connection on all Product Classes?

   100%

   75%

   50%

   90%

   Page # _____ Clause #_____ Table # _____

2. The minimum lead radius for a component with a lead diameter of 0.8 mm is:

   1 diameter/thickness

   2 diameters/thickness

   3 diameter/thickness

   1.5 diameters/thickness

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3. The minimum-maximum thickness of silicone resin conformal coating material is:

   0.03-0.13 mm

   0.05-0.21 mm

   0.01-0.05 mm

   0.10-0.25 mm

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4. The magnification power requirement for visual inspection aids is:

   based on the overall dimension of the printed wiring board

   determined by the assembly cleanliness designator

   based on the size of the device being inspected

   based on the size of the soldering iron tip being used

   Page # _____ Clause #_____

5. Identify and define the classifications of electrical and electronic assemblies. Who should determine the product class and when should it be done? What classification category does the assembly in this scenario fall into?