	DISPOSITION OF PUBLIC COMMENTS AC 25.1360-1X, PROTECTION AGAINST INJURY		
Commenter	**Comment**	**Requested Change**	**Disposition**
Boeing Comment no. 18379-41	Boeing notes that paragraph 4.a(1) states that, where there may be a hazard during maintenance or servicing, airplane panels and equipment carrying voltages of above 50 Vrms should be marked with the voltage. Boeing requests that the FAA clarify whether this guidance applies to the equipment that is not part of the airplane, such as hot cups, coffee makers, etc.	Boeing requests that the FAA clarify whether this guidance applies to the equipment that is not part of the airplane, such as hot cups, coffee makers, etc. **(1) <u>Voltage level warning.</u>** Where there may be a hazard during maintenance or servicing, airplane panels and equipment carrying voltages of above 50 Vrms should be marked with the voltage.	This requirement applies to all equipment with which the possibility of high voltage hazard exits. Therefore, the text remains as proposed in the AC.
Boeing Comment no. 18379-41	Boeing comments that Paragraph 4.a(5) states that electrical component installations, such as wiring in the galley and lavatory area, should be protected and inaccessible to passengers and crew members. Boeing notes that there may be some exposed wires in the galley when one or more inserts are removed; however, the galley is still functional. In this case, passengers or crew members may touch the wires, but it will be intentional and not accidental. We request that the FAA revise the paragraph to indicate that accidental contact with	Boeing requests we revise paragraph 4a(5) to indicate that accidental contact with any exposed wires should be minimized.	The FAA partially agrees with the comment and is revising paragraph 4a(5) to read as follows: **(5)** During normal use, electrical component installations such as wiring in the galley and lavatory area should be protected and inaccessible to passengers and crewmembers.

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	any exposed wires should be minimized.		
AIA/GAMA Comment no. 18379-64	Page 2, Paragraph 4.a(1). The requirement for voltage level warning needs to be clarified for the use of the word "panel." It can be interpreted to include wing or fuselage panels through which some high power equipment may be accessed even though that equipment may have its own cover plate or panel. For example does a wing tank access panel need to be marked with the voltage of a fuel boost pump if that pump is not mounted anywhere close to the access panel? A better phrase would be "Where there may be a hazard during maintenance or servicing, airplane panels and equipment carrying voltages above 50 Vrms should be marked with the voltage on the exterior of the equipment, or alternatively on the panel through which access to the equipment is made." Also, there needs to be some clarification of what is meant by "may be a hazard during maintenance or servicing." Does this include equipment that is normally unpowered (either by automatic means or	AIA/GAMA requests clarification of the following: • Clarify meaning of "panels." • Clarify what is meant by "may be a hazard during maintenance or servicing." • Does this guidance apply to equipment that is not part of the airplane such as hot cups, coffee maker etc.? The commenter requests changing the text in paragraph 4(a)1 from: **4. COMPLIANCE GUIDANCE.** Applicants may show compliance with the requirements § 25.1360(a) and (b) by demonstrating the following: **a. Section 25.1360(a)** **(1) Voltage level warning.** Where there may be a hazard during maintenance or servicing, airplane panels and equipment carrying voltages of above 50 Vrms should be marked with the voltage.	The FAA agrees with the commenter and has changed the text in paragraph 4a(1) to read as follows in the final AC: **4. COMPLIANCE GUIDANCE.** Applicants may show compliance with the requirements § 25.1360(a) and (b) by demonstrating the following: **a. Section 25.1360(a)** **(1) Voltage level warning.** Where there may be a hazard during maintenance or servicing, airplane panels and equipment carrying voltages above 50 Vrms should be marked with the voltage on the exterior of the equipment, or alternatively on the panel through which access to the equipment is made.

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	manual crew selection) during maintenance or servicing or does it require the system to be automatically unpowered? Where there may be a hazard during maintenance or servicing, airplane panels and equipment carrying voltages of above 50 Vrms should be marked with the voltage. AIA/GAMA requests that the FAA clarify whether this guidance applies to the equipment that is not part of the airplane such as hot cups, coffee maker etc.	To read as follows in the final AC: **4. <u>COMPLIANCE GUIDANCE.</u>** Applicants may show compliance with the requirements § 25.1360(a) and (b) by demonstrating the following: **a. <u>Section 25.1360(a)</u>** **(1) <u>Voltage level warning.</u>** Where there may be a hazard during maintenance or servicing, airplane panels and equipment carrying voltages above 50Vrms should be marked with the voltage on the exterior of the equipment, or alternatively on the panel through which access to the equipment is made.	
AIA/GAMA Comment no. 18379-64	Page 2, Paragraph 4.a(2). The term "electrically live parts" would be better described as "normally powered" or "other components grounded to the aircraft structure" (depending on intent).	The commenter suggests changing the text of paragraph 4a(2) which reads as follows: **(2) <u>Electrical outlet marking.</u>** Socket outlets should be labeled with output voltage or voltages and intended use. Examples are outlets for electric razors in lavatories and outlets that are part of	The FAA partially agrees with the commenter and has changed the text in paragraph 4a(2) to read as follows in the final AC: **(2) <u>Electrical outlet marking.</u>** Socket outlets should be labeled with output voltage or voltages and intended use. Examples are outlets for electric razors in

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		a power supply system for portable electronic devices (PSS for PED). When the output voltage exceeds 100 volts DC and/or 50 volts AC RMS, that output should either be electrically isolated from the airplane structure or prevented in some way from making inadvertent contact with the electrically powered parts. To read as either the first or second paragraph, below, in the final AC: **(2) <u>Electrical outlet marking.</u>** Socket outlets should be labeled with output voltage or voltages and intended use. Examples are outlets for electric razors in lavatories and outlets that are part of a power supply system for portable electronic devices (PSS for PED). When the output voltage exceeds 100 volts DC and/or 50 volts AC RMS, that output should either be electrically isolated from the airplane structure or prevented in some way from making inadvertent contact with normally powered parts. Or to read as:	lavatories and outlets that are part of a power supply system for portable electronic devices (PSS for PED). When the output voltage exceeds 100 volts DC and/or 50 volts AC RMS, that output should either be electrically isolated from the airplane structure or prevented in some way from making inadvertent contact with electrically live parts.

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		(2) <u>Electrical outlet marking.</u> Socket outlets should be labeled with output voltage or voltages and intended use. Examples are outlets for electric razors in lavatories and outlets that are part of a power supply system for portable electronic devices (PSS for PED). When the output voltage exceeds 100 volts DC and/or 50 volts AC RMS, that output should either be electrically isolated from the airplane structure or prevented in some way from making inadvertent contact with other components grounded to the aircraft structure.	
AIA/GAMA Comment no. 18379-64	Page 3, Paragraph 4a(5). This requirement requires that all electrical component installations be protected and inaccessible, which is clearly not possible for all components. The requirement should be "Electrical components installations such as wiring in the galley and lavatory area should be protected and or made inaccessible to passengers and crew members." If this change is not made, a change in the punctuation of the	The commenter suggests changing the text of paragraph 4a(5) which reads as follows: **(5)** Electrical component installations such as wiring in the galley and lavatory area should be protected and inaccessible to passengers and crew members. To read as either the first or second	The FAA concurs with the commenter and has changed the text to read as follows: **(5)** During normal use, electrical component installations such as wiring in the galley and lavatory area should be protected and inaccessible to passengers and crewmembers.

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	existing sentence should be made to clarify if this requirement is limited to galley and lavatory areas, i.e., ". . . installations, such as wiring, in the galley and lavatory area should be protected . . ." or ". . .installations, such as wiring in the galley and lavatory area, should be protected. . ." In addition, there may be some exposed wires in the galley when one or more inserts are removed, however the galley is still functional. In this case crew members may intentionally touch the wires to perform certain activities. AIA/GAMA requests that the FAA revise the paragraph to indicate that accidental contact with any exposed wires should be minimized.	paragraph, below, in the final AC: **(5)** Electrical component installations such as wiring in the galley and lavatory area should be protected ~~and~~ or made inaccessible to passengers and crew members so that accidental contact with any exposed wires is minimized. Or to read as: **(5)** Electrical component installations, such as wiring in the galley and lavatory area, should be protected and inaccessible to passengers and crew members so that accidental contact with any exposed wires is minimized.	
AIA/GAMA Comment no. 18379-64	Page 3, Paragraph 4b(1). The regulation does not have a limit on the "other equipment" on which the AC imposes the 100 degrees Celsius limit. This needs to be in the regulation if it is truly a limit. The guidance says that the surface temperature of items handled by crewmembers should not be so hot that	The commenter requests changing the text in paragraph 4(b)1 to read as follows: **(1)** Parts on equipment that may be handled by the flight or cabin crew during normal operation should not exceed a temperature rise on the order	The FAA finds that: 1. The surface temperature of 100 degrees Celsius may not be required by the rule, but it can be used as a safe level for showing compliance to the requirement of the rule. 2. The reflexive prevention is intended for

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	they would cause a dangerous reflexive action. Because the first sentence already imposed a temperature limit of ambient + 25 deg, it is not clear what the point of the "reflexive action" requirement is because "ambient + 25" is more restrictive (meaning it will always be cooler than a temperature that will cause a reflex action).	of 25 degrees Celsius above ambient. For other equipment mounted in parts of the airplane normally accessible to passengers or crew, or which may come into contact with objects such as clothing or paper, surface temperature should not exceed 100 degrees Celsius in an ambient temperature of 20 degrees Celsius**.** The rule states that items handled by the crewmember must not be so hot that they cause dangerous inadvertent movement or injury to the crewmember. This means that the surface temperature of the part being touched should not be so hot as to cause a reflexive action on the part of the crewmember that could cause injury to the crewmember. Nor should it be so hot that it causes burns to the crewmember.	additional clarification. Therefore, for the reasons above, the text remains as proposed in the AC.