

(c) The airplane must provide each occupant with air at a breathable pressure, free of hazardous concentrations of gases, vapors, and smoke during normal operations and likely failures.

(d) If a pressurization system is installed in the airplane, it must be designed to protect against—

(1) Decompression to an unsafe level; and

(2) Excessive differential pressure.

(e) If an oxygen system is installed in the airplane, it must—

(1) Effectively provide oxygen to each user to prevent the effects of hypoxia; and

(2) Be free from hazards in itself, in its method of operation, and its effect upon other components.

FIRE AND HIGH ENERGY PROTECTION

§ 23.2325 Fire protection.

(a) The following materials must be self-extinguishing—

(1) Insulation on electrical wire and electrical cable;

(2) For levels 1, 2, and 3 airplanes, materials in the baggage and cargo compartments inaccessible in flight; and

(3) For level 4 airplanes, materials in the cockpit, cabin, baggage, and cargo compartments.

(b) The following materials must be flame resistant—

(1) For levels 1, 2 and 3 airplanes, materials in each compartment accessible in flight; and

(2) Any equipment associated with any electrical cable installation and that would overheat in the event of circuit overload or fault.

(c) Thermal/acoustic materials in the fuselage, if installed, must not be a flame propagation hazard.

(d) Sources of heat within each baggage and cargo compartment that are capable of igniting adjacent objects must be shielded and insulated to prevent such ignition.

(e) For level 4 airplanes, each baggage and cargo compartment must—

(1) Be located where a fire would be visible to the pilots, or equipped with a fire detection system and warning system; and

(2) Be accessible for the manual extinguishing of a fire, have a built-in

fire extinguishing system, or be constructed and sealed to contain any fire within the compartment.

(f) There must be a means to extinguish any fire in the cabin such that—

(1) The pilot, while seated, can easily access the fire extinguishing means; and

(2) For levels 3 and 4 airplanes, passengers have a fire extinguishing means available within the passenger compartment.

(g) Each area where flammable fluids or vapors might escape by leakage of a fluid system must—

(1) Be defined; and

(2) Have a means to minimize the probability of fluid and vapor ignition, and the resultant hazard, if ignition occurs.

(h) Combustion heater installations must be protected from uncontained fire.

§ 23.2330 Fire protection in designated fire zones and adjacent areas.

(a) Flight controls, engine mounts, and other flight structures within or adjacent to designated fire zones must be capable of withstanding the effects of a fire.

(b) Engines in a designated fire zone must remain attached to the airplane in the event of a fire.

(c) In designated fire zones, terminals, equipment, and electrical cables used during emergency procedures must be fire-resistant.

§ 23.2335 Lightning protection.

The airplane must be protected against catastrophic effects from lightning.

Subpart E—Powerplant

§ 23.2400 Powerplant installation.

(a) For the purpose of this subpart, the airplane powerplant installation must include each component necessary for propulsion, which affects propulsion safety, or provides auxiliary power to the airplane.

(b) Each airplane engine and propeller must be type certificated, except for engines and propellers installed on level 1 low-speed airplanes, which may be approved under the airplane type