§ 23.1197 Fire extinguishing systems materials.

For all airplanes with engine(s) embedded in the fuselage or in pylons on the aft fuselage the following applies:
(a) No material in any fire extinguishing system may react chemically with any extinguishing agent so as to create a hazard.
(b) Each system component in an engine compartment must be fireproof.


§ 23.1203 Fire detector system.

(a) There must be means that ensure the prompt detection of a fire in—
(1) An engine compartment of—
(i) Multiengine turbine powered airplanes;
(ii) Multiengine reciprocating engine powered airplanes incorporating turbochargers;
(iii) Airplanes with engine(s) located where they are not readily visible from the cockpit; and

(b) The discharge end of each discharge line from a pressure relief connection must be located so that discharge of the fire extinguishing agent would not damage the airplane. The line must also be located or protected to prevent clogging caused by ice or other foreign matter.

(c) A means must be provided for each fire extinguishing agent container to indicate that the container has discharged or that the charging pressure is below the established minimum necessary for proper functioning.

(d) The temperature of each container must be maintained under intended operating conditions, to prevent the pressure in the container from—
(1) Falling below that necessary to provide an adequate rate of discharge; or
(2) Rising high enough to cause premature discharge.

(e) If a pyrotechnic capsule is used to discharge the extinguishing agent, each container must be installed so that temperature conditions will not cause hazardous deterioration of the pyrotechnic capsule.

(iv) All commuter category air-
planes.

(2) The auxiliary power unit compart-
ment of any airplane incorporating an 
auxiliary power unit.

(b) Each fire detector must be con-
structed and installed to withstand the 
vibration, inertia, and other loads to 
which it may be subjected in operation.

(c) No fire detector may be affected 
by any oil, water, other fluids, or 
fumes that might be present.

(d) There must be means to allow the 
crew to check, in flight, the func-
tioning of each fire detector electric 
circuit.

(e) Wiring and other components of 
each fire detector system in a des-
ignated fire zone must be at least fire 
resistant.

Subpart F—Equipment

GENERAL

§ 23.1301 Function and installation.

Each item of installed equipment 
must—

(a) Be of a kind and design appro-
riate to its intended function.

(b) Be labeled as to its identification, 
function, or operating limitations, or 
any applicable combination of these 
factors; and

(c) Be installed according to limita-
tions specified for that equipment.

§ 23.1303 Flight and navigation instru-
ments.

The following are the minimum re-
quired flight and navigation instru-
ments:

(a) An airspeed indicator.

(b) An altimeter.

(c) A magnetic direction indicator.

(d) For reciprocating engine-powered 
airplanes of more than 6,000 pounds 
maximum weight and turbine engine 
powered airplanes, a free air tempera-
ture indicator or an air-temperature 
indicator which provides indications 
that are convertible to free-air.

(e) A speed warning device for—

(1) Turbine engine powered airplanes; 
and

(2) Other airplanes for which VMO/ 
MMO and Vd/MD are established under 
§§ 23.335(b)(4) and 23.1505(c) if VMO/MMO 
is greater than 0.8 Vd/MD.

The speed warning device must give 
effective aural warning (differing dis-
tinctively from aural warnings used for 
other purposes) to the pilots whenever 
the speed exceeds VMO plus 6 knots or 
MMO+0.01. The upper limit of the pro-
duction tolerance for the warning de-
vice may not exceed the prescribed 
warning speed. The lower limit of the 
warning device must be set to mini-
imize nuisance warning;

(f) When an attitude display is in-
stalled, the instrument design must 
not provide any means, accessible to 
the flightcrew, of adjusting the relative 
positions of the attitude reference sym-
bol and the horizon line beyond that 
necessary for parallax correction.

(g) In addition, for commuter cat-
egory airplanes:

(1) If airspeed limitations vary with 
atitude, the airspeed indicator must 
have a maximum allowable airspeed in-
dicator showing the variation of VMO 
with altitude.

(2) The altimeter must be a sensitive 
type.

(3) Having a passenger seating con-
figuration of 10 or more, excluding the 
pilot’s seats and that are approved for 
IFR operations, a third attitude instru-
ment must be provided that:

(i) Is powered from a source inde-
pendent of the electrical generating 
system;

(ii) Continues reliable operation for a 
minimum of 30 minutes after total fail-
ure of the electrical generating system;

(iii) Operates independently of any 
other attitude indicating system;

(iv) Is operative without selection 
after total failure of the electrical gen-
erating system;

(v) Is located on the instrument 
panel in a position acceptable to the 
Administrator that will make it plain-
ly visible to and usable by any pilot at 
the pilot’s station; and