

EASA Significant Standards Differences
for pair: CS-25 Amendment 12 vs 14 CFR Part 25 Amendment 136

General Comments and Assumptions:

This following list of SSD regulations that require direct EASA compliance is based on the CS-25/14 CFR Part 25 Amendment pair noted in the header.

1. This SSD list includes only regulations where compliance with the FAR minimum standard would not be accepted by EASA. (NOTE: The SSD list is identified as “EASA-SSD” list to clarify that it is only intended for EASA validations of FAA products).
2. Only regulations that have a regulatory difference will be included in the SSD list. Identical regulations that have differences in guidance/interpretive material will be addressed, if required, as separate Safety Emphasis Items (SEI).
3. The SSD definition is taken from the Technical Implementation Procedures (TIP) Revision 6, Section 3.5.13.2.:

An SSD must be identified in order to meet the minimum standard of the VA relative to that of the CA, the difference requires type design changes, approved manual changes, additional or different demonstrations of compliance, or the imposition of operational limitations.

(a) This impact determination is accomplished by the VA for each VA standard, by comparison to the corresponding CA standards.

(b) Multiple CA standards, taken together may satisfy the objective of a single VA standard; in such cases, an SSD need not be identified.

4. CS-25 does not provide standards for reciprocating-powered airplanes, skiplanes, amphibians, flying boats, or airplanes with standby rocket engines. Differences concerning standards for those airplanes are not reflected in this list.

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CS 25 Paragraph	Sub-Para	Requirement Title	Comments
SUBPART B – FLIGHT			
25.20		Scope	
	25.20(b)	Require operational evaluation	No equivalent requirement in 14 CFR Part 25.
SUBPART C – STRUCTURE			
25.302		Interaction of systems and structures	
	25.302	Interaction of systems and structures	No equivalent requirement in 14 CFR Part 25.
25.307		Proof of structure	
	25.307(a)	Proof of structure	The wording of 14 CFR Part 25 is different from CS-25 and this has resulted in different interpretations on the need for and the extent of static strength testing, including the load level to be achieved.
25.331		Symmetric manoeuvring conditions	
	25.331(c)(2)	Manoeuvring pitching conditions	CS 25.331(c)(2) requires a (stretched) sinusoidal cockpit pitch control input to be considered, whereas 14 CFR Part 25 requires certain minimum pitching accelerations to be considered. CS-25 requires consideration of systems effects.
25.341		Gust and turbulence loads	
	25.341(b)	Continuous Turbulence Design Criteria	The turbulence intensities in CS-25 are different from the ones in 14 CFR Part 25 and potentially more stringent. Mission Analysis is no longer allowed in CS-25 (only Design Envelope). Non-linearities are explicitly addressed in CS-25.
	25.341(c)	Supplementary gust conditions for wing mounted engines	CS 25.341(c) has no equivalent 14 CFR Part 25 requirement.
25.343		Design fuel and oil loads	
	25.343(b)	Structural reserve fuel	By reference to CS 25.341(b).
25.345		High lift devices	

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CS 25 Paragraph	Sub-Para	Requirement Title	Comments
	25.345(c)(2)	En-route conditions	By reference to CS 25.341(b).
25.361		Engine and auxiliary power unit torque	
	25.361 all	Engine and auxiliary power unit torque	CS-25 requires additional analysis in support of the compliance demonstration.
25.362		Engine failure loads	
	25.362 all	Engine failure loads	No equivalent requirement in 14 CFR Part 25.
25.371		Gyroscopic loads	
	25.371	Gyroscopic loads	By reference to CS 25.341(b) and (c).
25.373		Speed control devices	
	25.373 all	Speed control devices	By reference to CS 25.341(b).
25.391		Control surface loads: general	
	25.391 all	Control surface loads: general	By reference to CS 25.341(b).
25.415		Ground gust conditions	
	25.415(a)	Control system limit loads	CS-25 requirement is different from 14 CFR Part 25. Additionally analysis is required by CS-25.
	25.415(b)	Control system, surface loads and hinge moments	CS-25 requirement is different from 14 CFR Part 25. Additionally analysis is required by CS-25.
	25.415(c)	Hinge moment factor	CS-25 requirement is different from 14 CFR Part 25. Additionally analysis is required by CS-25.
	25.415(d)	Limit loads due to ground gusts	No equivalent requirement in 14 CFR Part 25.
	25.415(e)	Transient stresses	No equivalent requirement in 14 CFR Part 25.
	25.415(f)	Control locks engaged	No equivalent requirement in 14 CFR Part 25.
	25.415(g)	Taxying with control locks disengaged	No equivalent requirement in 14 CFR Part 25.
SUBPART D – DESIGN AND CONSTRUCTION			
25.621		Casting factors	

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CS 25 Paragraph	Sub-Para	Requirement Title	Comments
	25.621(a)	General	This subparagraph is an SSD because it includes a reference to CS 25.621(c) and (d).
	25.621(c)	Critical castings	Compared to 14 CFR Part 25, CS-25 defines different (levels of) casting factors, and associated inspection methods and area to be inspected. CS-25 provides criteria for use of a casting factor of 1.0.
	25.621(d)	Non-critical castings	Compared to 14 CFR Part 25, CS-25 defines different (levels of) casting factors, and associated inspection methods and area to be inspected. CS-25 provides criteria for use of a casting factor of 1.0.
25.629		Aeroelastic stability requirements	
	25.629(b)	Aeroelastic stability envelopes	25.629(b)(2)(iii) & (b)(3) have no 14 CFR Part 25 equivalent. CS-25 states that for failure conditions in those systems covered by CS 25.302, the margins defined in Appendix K apply. Note: 14 CFR Part 25 addresses failure condition in those systems under 14 CFR 25.629(b)(2). Depending on the probability of the failure condition, the CS-25 required flutter margin may be higher.
25.631		Bird strike damage	
	25.631	Bird strike damage	Although it is EASA understanding that compliance with the bird strike requirement could be equivalent when considering all related requirements including 14 CFR 25.631, 25.571, 25.1309 and in particular the associated advisory material, this item is retained as an SSD based on the differences at the requirements' level only.
25.683			
	25.683(b)	Under limit manoeuvre loads	No equivalent requirement in 14 CFR Part 25.
	25.683(c)	No hazard from interference	No equivalent requirement in 14 CFR Part 25.
25.703		Take-off warning system	
	25.703(a)	Aural configuration warning	CS-25 is more stringent than the 14 CFR 25. CS-25 requires the parking brake unreleased to be part of the Take-off warning configuration, where the FAA has no equivalent.
	25.703(b)	Aural warning to continue until	CS-25 provides additional requirements regarding TO warning silencing.

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CS 25 Paragraph	Sub-Para	Requirement Title	Comments
25.721		Landing gear – General	
	25.721 all	Landing gear – General	CS-25 is more extensive and stringent than 14 CFR Part 25 in its applicability (seating configuration) and conditions (MLW @ 5 fps, landing gear side load conditions, pylon overload) to be considered.
25.745		Nose-wheel steering	
	25.745 all	Nose-wheel steering	No equivalent requirement in 14 CFR Part 25.
25.783		Fuselage Doors	
	25.783(d)(8)	Fuselage doors, Latching and Locking	No equivalent requirement in 14 CFR Part 25.
25.787		Stowage compartments	
	25.787(a)	Stowage compartments loads	The 14 CFR Part 25 applicability is limited compared with CS-25 in the application of the emergency landing condition to stowage and cargo compartments.
25.811		Emergency exit marking	
	25.811(e)(2)	Emergency exit marking	FAA does not include Type II, III & IV exits in this rule.
25.813		Emergency exit access and ease of operation	
	25.813(a)	Passageways	CS 25.813(a)(2) is more stringent. Type C door for cross aisle requirement is not required by the 14 CFR Part 25.
	25.813(c)	Access to Type III or Type IV exits	EASA has more stringent requirements for the access and ease of operation of Type III and Type IV emergency exits: the passageway minimum width requirements starts at 20 pax (60 for the FAA); the minimum required width of the passageway is 33 cm (13 inches) for interior arrangements in which the adjacent seat rows on the exit side of the aisle contain three seats; the access route bounded by features other than a traditional seats is to be 20"; the placard requirements are also for Type IV exits; there are additional evacuation considerations for seats and stowage provisions; for aeroplanes with a passenger seating configuration of 41 or more, each Type III exit must be designed such that the hatch/door is automatically disposed in the fully open position.

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CS 25 Paragraph	Sub-Para	Requirement Title	Comments
25.851		Fire extinguishers	
	25.851(b)(2)	Built-in fire extinguishers	The text difference between the CS and the FAR drives the compliance requirement on EASA side to be more conservative (“point-to-point concentration must be demonstrated as acceptable
25.853		Compartment interiors	
	25.853(g)	Ashtrays in lavatories	CS requires ashtrays on both sides while 14 CFR Part 25 only outside.
25.855		Cargo and baggage compartments	
	25.855(c)(2)	Protection of systems or equipment	No equivalent requirement in 14 CFR Part 25. No SSD if FAA raised an equivalent issue paper “Protection of Critical Systems from the Effects of a Cargo Fire”.
25.857		Cargo compartment classification	
	25.857(b)(1)	Class B	The EASA definition of Class B compartment definition is more restrictive with respect to the crew member location when using a hand fire extinguisher.
	25.857(f)	Class F	CS introduces Class F cargo or baggage compartment which is not defined by 14 CFR Part 25. The concerned paragraphs are 25.851(a); 25.855(b), (c), (h); and Appendix F Part I (a).
SUBPART E – POWERPLANT			
25.933		Reversing systems	
	25.933(a)	Turbojet reversing systems	If the applicant shows direct compliance with 14 CFR 25.933(a)(1)(ii), there is no need of identifying this paragraph as an SSD. However, if other approaches are used such as ELOSs, this paragraph shall be considered as an SSD
25.963		Fuel tanks: general	
	25.963(d)	Fuel tank – Survivable crash conditions	CS-25 is more extensive and stringent than 14 CFR Part 25 in defining the fuel tank crashworthiness criteria.
25.981		Fuel tank ignition prevention	
	25.981(b)	Fuel tank flammability	In addition to average flammability exposure limitation, CS 25.981(b)(1) features a limit on temperature increase.
25.994		Fuel system components	

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CS 25 Paragraph	Sub-Para	Requirement Title	Comments
	25.994	Fuel system components	CS-25 refers to another requirement (CS 25.721), which is an EASA SSD.
25.1155		Reverse thrust and propeller pitch settings below the flight regime	
	25.1155 all	Reverse thrust and propeller pitch settings below the flight regime	CS-25 requirement addresses inadvertent/unintentional reverse selection or activation in flight, which is not yet addressed by 14 CFR Part 25.
SUBPART F – EQUIPMENT			
25.1302		Installed systems and equipment for use by the flight crew	
	25.1302 all	Installed systems and equipment for use by the flight crew	No equivalent requirement in 14 CFR Part 25. May lead to significant differences in flight deck design.
25.1303		Flight and navigation instruments	
	25.1303(b)	At each pilot station	CS 25.1303(b)(4): The specification “Which is powered from a source independent of the electrical generating system and continues reliable operation for a minimum of 30 minutes after total failure of the electrical generating system” is not included in 14 CFR Part 25.
	25.1303(c)	Speed limitation	CS-25 is more stringent.
25.1305		Powerplant instruments	
	25.1305(a)	Powerplant instruments	CS 25.1305(a)(2) is more stringent. At Amdt. 12, CS-25 introduces a new requirement for fuel system alerts, which has no 14 CFR Part 25 equivalent.
25.1309		Equipment, systems and installations	
	25.1309(b)	Failure conditions	CS 25.1309(b) is more stringent since 14 CFR 25.1309(b) requirement does not include a "no single failure" criterion for the Catastrophic Failure Conditions.
25.1315		Negative acceleration	

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CS 25 Paragraph	Sub-Para	Requirement Title	Comments
	25.1315	Negative acceleration	No equivalent requirements in 14 CFR Part 25 (25.943 is limited to the engine and powerplant associated systems & components).
25.1316		System lightning protection	
	25.1316(c)	Exposure to severe lightning environment	No equivalent requirements in 14 CFR Part 25.
25.1327		Direction Indicator	
	25.1327(c)	Adequate accuracy	No equivalent requirements in 14 CFR Part 25.
25.1329		Flight Guidance System	
	25.1329(g)	Unacceptable loads / Flight path deviations	CS is more stringent – specifies load requirements.
25.1331		Instruments using a power supply	
	25.1331(a)	Warnings	CS is more stringent – provides additional requirement on the failure of one power source.
25.1351		Electrical systems and equipment	
	25.1351(c)	External power	CS requirement is more specific and stringent than the FAA one.
	25.1351(d)	Loss of normal power	The CS requirement is more stringent. CS requires operational without normal electrical power to complete the flight. FAA requires not less than 5 minutes.
25.1436		Pneumatic systems – high pressure	
	25.1436 all	Pneumatic systems – high pressure	No equivalent requirement in 14 CFR Part 25 for pneumatic systems high-pressure.
25.1438		Pressurisation and low pressure pneumatic systems	
	25.1438	Pressurisation and low pressure pneumatic systems	CS-25 and 14 CFR Part 25 requirements are different. 14 CFR Part 25 provides specific testing target values compared with CS 25. There are also other significant differences.

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CS 25 Paragraph	Sub-Para	Requirement Title	Comments
25.1447		Equipment standards for oxygen dispensing units	
	25.1447(c)(3)	Equipment standards for oxygen dispensing units	CS-25 requires at least two oxygen outlets and dispensing units in all work areas.
25.1453		Protection of oxygen equipment from rupture	
	25.1453(a)	Sufficient strength	CS-25 is more stringent and has detailed specifications on system design not provided by 14 CFR Part 25.
	25.1453(c)	Number of parts	No equivalent requirement in 14 CFR Part 25.
	25.1453(d)	Protective devices	No equivalent requirement in 14 CFR Part 25.
	25.1453(e)	Pressure limiting devices	No equivalent requirement in 14 CFR Part 25.
	25.1453(f)	Discharge of devices	No equivalent requirement in 14 CFR Part 25.
SUBPART G – OPERATING LIMITATIONS AND INFORMATION			
25.1501		Operating limitations and information – General	
	25.1501(c)	Supplementary information	No equivalent requirement in 14 CFR Part 25. Additionally, CS 25.1501 refers to CS 25.1591, which is an EASA SSD.
25.1517		Rough air speed, V_{RA}	
	25.1517(a)	Rough air Mach number	CS-25 requires establishment of rough air Mach number (M_{RA}). 14 CFR-25 does not require M_{RA} .
	25.1517(c)	Use of M_{RA}	CS-25 requires establishment of rough air Mach number (M_{RA}). 14 CFR-25 does not require M_{RA} .
25.1583		Operating limitations	
	25.1583(k)	Runway contaminants	CS-25 is more stringent. CS-25 requires a contaminant depth AFM limitation.
25.1591		Performance Information for Operations with Contaminated Runway Surface Conditions	

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CS 25 Paragraph	Sub-Para	Requirement Title	Comments
	25.1591 all	Performance Information for Operations with Contaminated Runway Surface Conditions	No equivalent requirement in 14 CFR Part 25 regarding performance information for operations with contaminated runway.
SUBPART H – ELECTRICAL WIRING INTERCONNETION SYSTEM			
25.1703		Function and Installation; EWIS	
	25.1703(e)	Same standard as original design	No equivalent requirement in 14 CFR Part 25.