

- (c) The means of opening emergency exits must be simple and obvious and may not require exceptional effort; and must be arranged and marked so that it can be readily located and operated, even in darkness. Internal exit opening means involving sequence operations (such as operation of two handles or latches or the release of safety catches) may be used for flight crew emergency exits if it can be reasonably established that these means are simple and obvious to crewmembers trained in their use.
- (d) If a single power-boost or single power-operated system is the primary system for operating more than one exit in an emergency, each exit must be capable of meeting the requirements of sub-paragraph (b) of this paragraph in the event of failure of the primary system. Manual operation of the exit (after failure of the primary system) is acceptable.
- (e) Each emergency exit must be shown by tests, or by a combination of analysis and tests, to meet the requirements of sub-paragraphs (b) and (c) of this paragraph.
- (f) Each door must be located where persons using them will not be endangered by the propellers when appropriate operating procedures are used.
- (g) There must be provisions to minimise the probability of jamming of the emergency exits resulting from fuselage deformation in a minor crash landing.
- (h) [Reserved]
- (i) Each emergency exit must have a means to retain the exit in the open position, once the exit is opened in an emergency. The means must not require separate action to engage when the exit is opened, and must require positive action to disengage.

[Amdt 25/4]

[Amdt 25/12]

[Amdt 25/14]

[Amdt 25/17]

AMC 25.809 Emergency exit arrangement

ED Decision 2020/024/R

The relevant parts of FAA Advisory Circular (AC) 25-17A Change 1, *Transport Airplane Cabin Interiors Crashworthiness Handbook*, dated 24.5.2016, are accepted by the Agency as providing an acceptable means of compliance with [CS 25.809](#).

Note: ‘The relevant parts’ means ‘the parts of AC 25-17A Change 1 that address the applicable FAR/CS-25 paragraph’.

[Amdt 25/12]

[Amdt 25/17]

[Amdt 25/26]

AMC 25.809(a) Emergency exit outside viewing

ED Decision 2015/019/R

The requirement to provide a view of the outside in all ambient lighting conditions suggests the use of externally mounted lighting (although other means may be acceptable). In the landing-gear-collapsed cases, the rolling and pitching effects on the fuselage may redirect a fixed lamp’s beam away from the area illuminated in the all-landing-gears-extended condition. Furthermore, in the case of inflatable escape slides, the toe-end ground contact point will probably move in the opposite direction to that of the lamp beam.

In recognition of these effects, and in order to maintain reasonable demands on the complexity and power of external lighting equipment, the rule does not require the entire viewable area to be visible in all ambient lighting conditions. The only specific illumination requirement is for the likely areas of evkee ground contact, with all landing gears extended, for passenger exits.

However, it is recommended that as large a field of view as is practicable should be provided, taking into account aspects such as fuselage curvature and door/window/hatch location, in order to provide the best chance to identify external evacuation hazards before exits are opened.

In the case of a flight crew emergency exit, a flight deck window as conventionally configured, used in conjunction with a suitably accessible and powerful portable illumination device (e.g. flashlight) will provide an acceptable means for viewing the outside conditions.

Flight deck seats, consoles, etc., as conventionally configured, are not considered to be obstructions in the meaning of this term in [CS 25.809\(a\)\(2\)](#) in the case where flight deck windows are the viewing means and the exit is an overhead hatch. Furthermore, it is considered that the distance between flight deck windows, as conventionally configured, and an overhead hatch is such that the criterion for the viewing means to be adjacent to the exit is satisfied.

[Amdt 25/17]

AMC 25.809(a)(3) Emergency exit arrangement

ED Decision 2012/008/R

A subjective outside viewing test can be conducted to determine if the exterior viewing means and lighting system provide an adequate view/illumination to allow identification of possible hazards in the evkee ground contact area. For this test, the viewing/lighting system will be deemed acceptable if an object (e.g., a traffic cone) placed in the viewing area is visible to the test witness looking through the emergency exit viewing means that is provided.

When a separate lighting system is installed that is only used to meet the requirements of [CS 25.809\(a\)](#), that system should be designed to meet the requirements of [CS 25.812\(k\)](#), for operation after having been subjected to the inertia forces listed in [CS 25.561\(b\)](#), and [CS 25.812\(l\)\(3\)](#), such that at least one exterior light on each side of the airplane remains operative after a single transverse separation.

[Amdt 25/12]

AMC 25.809(c) and (e) Testing of the opening of passenger-operated exits

ED Decision 2020/024/R

For emergency exits intended to be operated by passengers, such as non-floor-level overwing exits (e.g. Type III and IV exits), testing with naïve subjects should be performed in order to demonstrate that opening the emergency exits is simple and obvious and does not require exceptional effort.

The demonstration may be conducted either on the aeroplane or on a representative mock-up, and it should include all the relevant safety markings and exit opening instructions.

The opening of the emergency exit should be demonstrated by a sufficient number of naïve test subjects selected to be representative of the passenger population with respect to gender, age, size and handedness. Meeting the criteria of [paragraph \(h\) of Appendix J to CS-25](#) is an acceptable means to achieve a representative age and gender distribution of the participants in the test.

[Amdt 25/26]

CS 25.810 Emergency egress assisting means and escape routes

ED Decision 2016/010/R

(See [AMC 25.810](#))

- (a) Each non-over-wing Type A, Type B or Type C exit, and any other non-over-wing landplane emergency exit more than 1.8 m (6 feet) from the ground with the aeroplane on the ground and the landing gear extended must have an approved means to assist the occupants in descending to the ground.
- (1) The assisting means for each passenger emergency exit must be a selfsupporting slide or equivalent; and, in the case of a Type A or Type B exits, it must be capable of carrying simultaneously two parallel lines of evacuees. In addition, the assisting means must be designed to meet the following requirements.
- (i) It must be automatically deployed and deployment must begin during the interval between the time the exit opening means is actuated from inside the aeroplane and the time the exit is fully opened. However, each passenger emergency exit which is also a passenger entrance door or a service door must be provided with means to prevent deployment of the assisting means when it is opened from either the inside or the outside under non-emergency conditions for normal use.
 - (ii) Except for assisting means installed at Type C exits, it must be automatically erected within 6 seconds after deployment is begun or within 10 seconds from the time the opening means of the exit is actuated. Assisting means installed at Type C exits must be automatically erected within 10 seconds from the time the opening means of the exit is actuated.
 - (iii) It must be of such length after full deployment that the lower end is selfsupporting on the ground and provides safe evacuation of occupants to the ground after collapse of one or more legs of the landing gear.
 - (iv) It must have the capability, in 46 km/hr (25-knot) winds directed from the most critical angle, simultaneously with any engine(s) running at ground idle, to deploy and, with the assistance of only one person, to remain usable after full deployment to evacuate occupants safely to the ground. (See AMC 25.810(a)(1)(iv))
 - (v) For each system installation (mock-up or aeroplane installed), five consecutive deployment and inflation tests must be conducted (per exit) without failure, and at least three tests of each such five-test series must be conducted using a single representative sample of the device. The sample devices must be deployed and inflated by the system's primary means after being subjected to the inertia forces specified in [CS 25.561\(b\)](#). If any part of the system fails or does not function properly during the required tests, the cause of the failure or malfunction must be corrected by positive means and after that, the full series of five consecutive deployment and inflation tests must be conducted without failure.
- (2) The assisting means for flight crew emergency exits may be a rope or any other means demonstrated to be suitable for the purpose. If the assisting means is a rope, or an approved device equivalent to a rope, it must be—

- (i) Attached to the fuselage structure at or above the top of the emergency exit opening, or, for a device at a pilot's emergency exit window, at another approved location if the stowed device, or its attachment, would reduce the pilot's view in flight.
 - (ii) Able (with its attachment) to withstand a 1779 N (400-lbf) static load.
- (b) Assisting means from the cabin to the wing are required for each Type A or Type B exit located above the wing and having a step-down unless the exit without an assisting means can be shown to have a rate of passenger egress at least equal to that of the same type of non-over-wing exit. If an assisting means is required, it must be automatically deployed and automatically erected, concurrent with the opening of the exit. In the case of assisting means installed at Type C exits, it must be self-supporting within 10 seconds from the time the opening means of the exits is actuated. For all other exit types, it must be self-supporting 6 seconds after deployment has begun.
- (c) An escape route must be established from each over-wing emergency exit, and (except for flap surfaces suitable as slides) covered with a slip resistant surface (See AMC to CS 25.793 and CS 25.810(c)). Except where a means for channelling the flow of evacuees is provided –
- (1) The escape route from each Type A or Type B emergency exit, or any common escape route from two Type III emergency exits, must be at least 1.07 m (42 inches) wide; that from any other passenger emergency exit must be at least 61 cm (24 inches) wide; and
 - (2) The escape route surface must have a reflectance of at least 80%, and must be defined by markings with a surface-to-marking contrast ratio of at least 5:1. (See AMC 25.810(c)(2))
- (d) Assisting means must be provided to enable evacuees to reach the ground for all Type C exits located over the wing and, if the place on the aeroplane structure at which the escape route required in subparagraph (c) of this paragraph terminates, is more than 1.8 m (6 feet) from the ground with the aeroplane on the ground and the landing gear extended, for all other exit types.
- (1) If the escape route is over a flap, the height of the terminal edge must be measured with the flap in the take-off or landing position, whichever is higher from the ground.
 - (2) The assisting means must be usable and self-supporting with one or more landing gear legs collapsed and under a 46 km/hr (25-knot) wind directed from the most critical angle.
 - (3) The assisting means provided for each escape route leading from a Type A or B emergency exit must be capable of carrying simultaneously two parallel lines of evacuees; and, the assisting means leading from any other exit type must be capable of carrying simultaneously as many parallel lines of evacuees as there are required escape routes.
 - (4) The assisting means provided for each escape route leading from a Type C exit must be automatically erected within 10 seconds from the time the opening means of the exit is actuated, and that provided for the escape route leading from any other exit type must be automatically erected within 10 seconds after actuation of the erection system.

- (e) If an integral stair is installed in a passenger entry door that is qualified as a passenger emergency exit, the stair must be designed so that, under the following conditions, the effectiveness of passenger emergency egress will not be impaired:
- (1) The door, integral stair, and operating mechanism have been subjected to the inertia forces specified in [CS 25.561\(b\)\(3\)](#), acting separately relative to the surrounding structure.
 - (2) The aeroplane is in the normal ground attitude and in each of the attitudes corresponding to collapse of one or more legs of the landing gear.

[Amdt 25/4]

[Amdt 25/12]

[Amdt 25/13]

[Amdt 25/17]

[Amdt 25/18]

AMC 25.810 Emergency egress assisting means and escape routes

ED Decision 2020/024/R

The relevant parts of FAA Advisory Circular (AC) 25-17A Change 1, *Transport Airplane Cabin Interiors Crashworthiness Handbook*, dated 24.5.2016, are accepted by the Agency as providing an acceptable means of compliance with [CS 25.810](#).

Note: ‘The relevant parts’ means ‘the parts of AC 25 -17A Change 1 that address the applicable FAR/CS-25 paragraph’.

For emergency assisting means that are installed in non-pressurised compartments, the applicant should take into account the effects of exposure to very low temperature conditions during flight on the performance of the assisting means. The applicant should demonstrate that the assisting means functions properly when the cold soak effects associated with the expected flight durations and altitudes are combined with a 46 km/h (25 kt) wind directed from the most critical angle.

[Amdt 25/17]

[Amdt 25/26]

AMC 25.810(a)(1)(iv) Capability of assisting means in wind conditions

ED Decision 2016/010/R

The applicability of the combined effect of a 46 km/hr (25-knot) wind and the engine(s) running at ground idle should be only to escape slides positioned forward of the engine(s) and in such proximity to the engine air intake(s) that the deployment of the escape slide could be influenced.

[Amdt 25/18]

AMC 25.810(a)(1)(v) Deployment and inflation tests

ED Decision 2020/024/R

For each exit, at least one of the (minimum) five consecutive deployment and inflation tests should be performed with an assisting means installed on the aeroplane.

[Amdt 25/26]

AMC 25.810(c)(2) Emergency Evacuation

ED Decision 2020/024/R

Acceptable methods of measurement of reflectance are given in AC 20-47, published by the Federal Aviation Administration.

[Amdt 25/26]

CS 25.811 Emergency exit marking

ED Decision 2017/015/R

(See [AMC 25.811](#))

- (a) Each passenger emergency exit, its means of access, and its means of opening must be conspicuously marked.
- (b) The identity and location of each passenger emergency exit must be recognisable from a distance equal to the width of the cabin.
- (c) Means must be provided to assist the occupants in locating the exits in conditions of dense smoke.
- (d) The location of each passenger emergency exit must be indicated by a sign visible to occupants approaching along the main passenger aisle (or aisles). There must be See AMC 25.811(d)):
 - (1) A passenger emergency exit locator sign above the aisle (or aisles) near each passenger emergency exit, or at another overhead location if it is more practical because of low headroom, except that one sign may serve more than one exit if each exit can be seen readily from the sign;
 - (2) A passenger emergency exit marking sign next to each passenger emergency exit, except that one sign may serve two such exits if they both can be seen readily from the sign; and
 - (3) A sign on each bulkhead or divider that prevents fore and aft vision along the passenger cabin to indicate emergency exits beyond and obscured by the bulkhead or divider, except that if this is not possible the sign may be placed at another appropriate location.
- (e) The location of the operating handle and instructions for opening exits from the inside of the aeroplane must be shown in the following manner:
 - (1) Each passenger emergency exit must have, on or near the exit, a marking that is readable from a distance of 76 cm (30 inches).
 - (2) Each passenger emergency exit operating handle and the cover removal instructions, if the operating handle is covered, must –
 - (i) Be self-illuminated with an initial brightness of at least 0.51 candela/m² (160 microlamberts), or
 - (ii) Be conspicuously located and well illuminated by the emergency lighting even in conditions of occupant crowding at the exit.
 - (3) Reserved
 - (4) All Type II and larger passenger emergency exits with a locking mechanism released by motion of a handle, must be marked so as to its operation by an arrow with a shaft at least 19 mm (0.75 inches) wide, adjacent to the handle, that indicates the full extent and direction of the unlocking motion required. The word OPEN must be horizontally situated adjacent to the arrowhead and must be in red capital letters at least 25 mm (1 inch) high.

The arrow and word OPEN must be located on a background, which provides adequate contrast. (See [AMC 25.811\(e\)\(4\)](#).)

- (f) Each emergency exit that is required to be openable from the outside, and its means of opening, must be marked on the outside of the aeroplane. In addition, the following apply:
- (1) The outside marking for each passenger emergency exit in the side of the fuselage must include a 51 mm (2 inch) coloured band outlining the exit.
 - (2) Each outside marking including the band must have colour contrast to be readily distinguishable from the surrounding fuselage surface. The contrast must be such that if the reflectance of the darker colour is 15% or less, the reflectance of the lighter colour must be at least 45%. ‘Reflectance’ is the ratio of the luminous flux reflected by a body to the luminous flux it receives. When the reflectance of the darker colour is greater than 15%, at least a 30% difference between its reflectance and the reflectance of the lighter colour must be provided.
 - (3) In the case of exits other than those in the side of the fuselage, such as ventral or tail cone exits, the external means of opening, including instructions if applicable, must be conspicuously marked in red, or bright chrome yellow if the background colour is such that red is inconspicuous. When the opening means is located on only one side of the fuselage, a conspicuous marking to that effect must be provided on the other side.
- (g) Each sign required by sub-paragraph (d) of this paragraph may use the word ‘exit’ in its legend in place of the term ‘emergency exit’ or a universal symbolic exit sign (See [AMC 25.812\(b\)\(1\)](#), [AMC 25.812\(b\)\(2\)](#) and [AMC 25.812\(e\)\(2\)](#)). The design of exit signs must be chosen to provide a consistent set throughout the cabin.

[Amdt 25/3]

[Amdt 25/17]

[Amdt 25/19]

AMC 25.811 Emergency exit marking

ED Decision 2020/024/R

The relevant parts of FAA Advisory Circular (AC) AC 25-17A Change 1, *Transport Airplane Cabin Interiors Crashworthiness Handbook*, dated 24.5.2016, are accepted by the Agency as providing an acceptable means of compliance with [CS 25.811](#).

Note: ‘The relevant parts’ means ‘the parts of AC25-17A Change 1 that address the applicable FAR/CS-25 paragraph’.

[Amdt 25/17]

[Amdt 25/26]

AMC 25.811(d) Sign Combination

ED Decision 2020/024/R

The signs required by [CS 25.811\(d\)\(1\)](#), [\(d\)\(2\)](#) and [\(d\)\(3\)](#) may be combined according to the applicable parts of FAA Advisory Circular (AC) 25-17A Change 1, *Transport Airplane Cabin Interiors Crashworthiness Handbook*, dated 24.5.2016.

[Amdt 25/19]

[Amdt 25/26]

AMC 25.811(e)(4) Emergency exit marking

ED Decision 2017/015/R

The indicating markings for all Type II and larger passenger emergency exit unlocking handle motions should conform to the general shapes and dimensions indicated by Figures 1 and 2.

The indicating markings (arrow and word OPEN) should be consistent with the emergency exit signs chosen, i.e. red if letter emergency exit signs are installed, and green if symbolic emergency exit signs are installed.

NOTE: As far as is practicable the markings should be located to avoid obscuring viewing windows located on or alongside the exits, or coincidence with any other required marking or safety feature.

EXAMPLE MARKING FOR INDICATION OF LINEAR OPENING MOTION

Where practical and unambiguous arrow point and base of arrow shaft to be within ± 25 mm (1 inch) of fully unlocked and fully locked positions respectively

DIMENSIONS

A = 19 mm (0.75") minimum

B = 2 x A

C = B (recommended)

D = Indicative of the full extent of handle travel (each installation to be individually assessed)

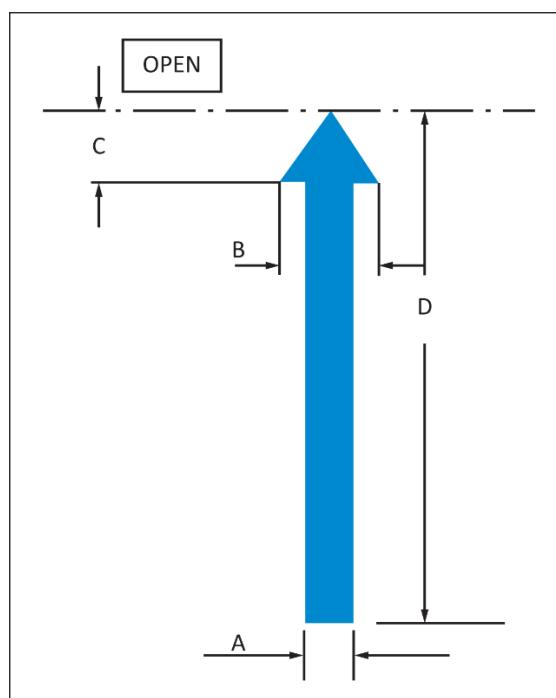


FIGURE 1

EXAMPLE MARKING FOR INDICATION OF ROTARY OPENING MOTION

Arrow point and base of arrow shaft to be within 25 mm (1 inch) of fully unlocked and fully locked positions respectively

DIMENSIONS

- A = 19 mm (0·75") minimum
- B = 2 x A
- C = B (recommended)
- D = Full extent of handle centreline travel
- E = Three quarters of handle length (where practicable)

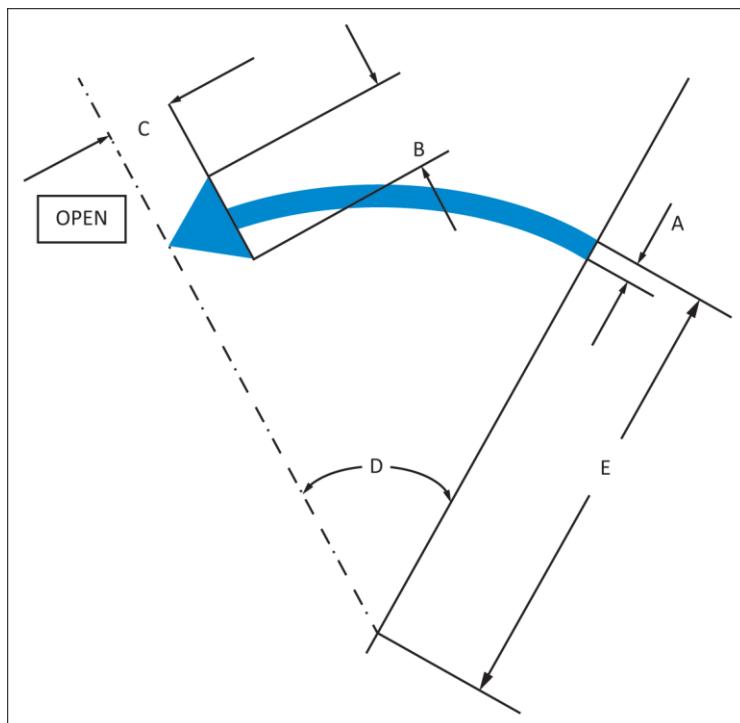


FIGURE 2

[Amdt 25/19]

CS 25.812 Emergency lighting

ED Decision 2017/015/R

(See [AMC 25.812](#))

- (a) An emergency lighting system, independent of the main lighting system, must be installed. However, the sources of general cabin illumination may be common to both the emergency and the main lighting systems if the power supply to the emergency lighting system is independent of the power supply to the main lighting system. The emergency lighting system must include -
 - (1) Illuminated emergency exit marking and locating signs, sources of general cabin illumination, interior lighting in emergency exit areas, and floor proximity escape path marking.
 - (2) Exterior emergency lighting.

- (b) Emergency exit signs –
- (1) For aeroplanes that have a passenger-seating configuration, excluding pilot seats, of 10 seats or more must meet the following requirements:
- (i) Each passenger emergency exit locator sign required by [CS 25.811\(d\)\(1\)](#) and each passenger emergency exit marking sign required by CS 25.811(d)(2) must have red letters on an illuminated white background or a universal symbol, of adequate size (See [AMC 25.812\(b\)\(1\)](#)). These signs must be internally electrically illuminated with the brighter area having a brightness of at least 86 candela/m² (25 foot lamberts) and a high-to-low contrast within the white background of a letter-based sign or green area of a universal symbol no greater than 3:1. These signs must also have a contrast between the brightest and darkest elements of at least 10:1.
- (ii) Each passenger emergency exit sign required by CS 25.811(d)(3) must have red letters on a white background or a universal symbol, of adequate size (See [AMC 25.812\(b\)\(1\)](#)). These signs must be internally electrically illuminated or selfilluminated by other than electrical means and must have an initial brightness of at least 1.27 candela/m² (400 microlamberts). The colours may be reversed in the case of a sign that is self-illuminated by other than electrical means.
- (2) For aeroplanes that have a passenger seating configuration, excluding pilot seats, of 9 seats or less, each sign required by CS 25.811(d)(1), (2), and (3) must have red letters on a white background or a universal symbol, of adequate size (See [AMC 25.812\(b\)\(2\)](#)). These signs may be internally electrically illuminated, or self-illuminated by other than electrical means, with an initial brightness of at least 0.51 candela/m² (160 microlamberts). The colours may be reversed in the case of a sign that is self-illuminated by other than electrical means.
- (c) General illumination in the passenger cabin must be provided so that when measured along the centreline of main passenger aisle(s), and cross aisle(s) between main aisles, at seat armrest height and at 1.02 m (40-inch) intervals, the average illumination is not less than 0.5 lux (0.05 foot candle) and the illumination at each 1.02 m (40-inch) interval is not less than 0.1 lux (0.01 foot candle). A main passenger aisle(s) is considered to extend along the fuselage from the most forward passenger emergency exit or cabin occupant seat, whichever is farther forward, to the most rearward passenger emergency exit or cabin occupant seat, whichever is farther aft.
- (d) The floor of the passageway leading to each floor-level passenger emergency exit, between the main aisles and the exit openings, must be provided with illumination that is not less than 0.2 lux (0.02 foot candle) measured along a line that is within 15 cm (6 inches) of and parallel to the floor and is centred on the passenger evacuation path.
- (e) Floor proximity emergency escape path marking must provide emergency evacuation guidance for passengers when all sources of illumination more than 1.2 m (4 ft) above the cabin aisle floor are totally obscured. In the dark of the night, the floor proximity emergency escape path marking must enable each passenger to:
- (1) After leaving the passenger seat, visually identify the emergency escape path along the cabin aisle floor to the first exits or pair of exits forward and aft of the seat;
- (2) Readily identify each exit from the emergency escape path by reference only to markings and visual features not more than 1.2 m (4 ft) above the cabin floor. (See [AMC 25.812\(e\)\(2\)](#)); and