



U.S. Department
of Transportation

**Federal Aviation
Administration**

Advisory Circular

Subject: STANDARDS FOR AIRPORT MARKINGS

Date: March 31, 2008

AC No: 150/5340-1J

Initiated by: AAS-300

Change: 1

1. PURPOSE. This advisory circular (AC) contains the Federal Aviation Administration (FAA) standards for markings used on airport runways, taxiways, and aprons.

2. CANCELLATION. AC 150/5340-1H, *Standards for Airport Markings*, dated August 31, 1999, is canceled. This AC also cancels AC 150/5340-1I, although it is substantially the same document and only changes the AC version letter from I to J.

3. EXPLANATION OF CHANGES. The enhanced taxiway centerline has been adopted as the standard for commercial service airports. For those airports that have 1.5 million or more passenger enplanements in a calendar year, the compliance date for installation is June 30, 2008. For airports with less than 1.5 million annual passenger enplanements but more than 370,000 annual passenger enplanements, the compliance date is 1 year from the effective change of this AC. For all other airports certificated under Title 14 of the Code of Federal Regulations, Chapter I – FAA, DOT, Part 139, Certification of Airports (14 CFR Part 139), these same enhanced taxiway centerline markings will be adopted as part of the taxiway centerline marking standard under 139.311(a)(2), effective 2 years from the effective date of Change 1 of this AC.

In addition, for all Part 139 certificated airports, surface painted holding position signs installed in accordance with paragraph 26 of this AC will become part of the standard signage under 139.311(b)(1)(ii), effective 2 years from the effective date of Change 1 to this AC. Surface painted holding position signs are required at all runway/taxiway holding positions at an airport that has multiple runways either converging, intersecting, or parallel (e.g., Runways 5-23 and 16-34). Surface painted holding position signs are required where the width of the holding position on the taxiway is greater than 200 feet (60 m). If a taxiway centerline is closer than 45 feet from the

edge of the taxiway and the mandatory hold sign is in clear view, the surface painted holding position sign on that side of the taxiway may be eliminated.

Similarly, the extension of the runway holding position markings onto the paved shoulder has been adopted as the only acceptable means of compliance with Part 139 for airports regularly served by aircraft in Aircraft Design Groups 5 and 6, also effective June 30, 2008. The standards for enhanced taxiway centerline, extension of the runway holding position markings, and surface painted holding position signs are optional for all other airports not holding a 14 CFR Part 139 Airport Operating Certificate.

4. METRIC UNITS. To promote an orderly transition to metric units, the text and figures include both English and metric dimensions. The metric conversions are based on operational significance and may not be exact equivalents. The conversion procedure used throughout the AC applies the relationship of 1 foot equals 0.3 meter, except for a few instances where rounding was used in order for linear dimensions to sum correctly. Until there is an official changeover to the metric system, the English dimensions should be used.

5. APPLICATION. The FAA recommends the guidelines and standards contained herein for the marking of airport runways, taxiways, and aprons. These standards are the **only** method of complying with the marking of runways and taxiways at airports certificated under 14 CFR Part 139. These standards are also mandatory for airport projects receiving Federal funds under the Airport Grant Assistance program or funds received from the Passenger Facility Charge program. These standards are to be used on all new projects that are under development and are to be implemented at all Part 139 certificated airports as specified in paragraph 3, Explanation of Changes.

6. CHANGED TEXT. Changed text is indicated by vertical bars in the margins.

PAGE CONTROL CHART

Remove Pages	Dated	Insert Pages	Dated
i-ii	4/29/2005	i-ii	3/31/2008
9-10	4/29/2005	9-10	3/31/2008
		13	3/31/2008
13-14	4/29/2005	14	4/29/2005



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most demanding aircraft, the centerline markings follow the taxiway curve, as shown in Figure 12b, to permit cockpit-over-centerline steering.

(2) At taxiway intersections with runway ends, the taxiway centerline is terminated at the runway edge except that the following applies:

(i) Where there is a displaced threshold the centerline continues into the displaced area of the runway.

(ii) The taxiway centerline continues across the runway when it is a crossing route as designated by the local Air Traffic Facility.

(3) On all other taxiways, the taxiway centerline marking curves onto the runway and extends parallel to the runway centerline marking for a distance of 200 feet (60 m) beyond the point of tangency or terminating at the threshold bar, whichever is less, and three feet from the runway centerline measured near-edge to near-edge. See Figure 11, detail A. This lead-on or lead-off line (the taxiway centerline) is interrupted for all runway markings.

(4) For taxiways crossing a runway, either straight across or offset and normally used as a taxi route, the taxiway centerline marking may continue across the runway but is normally interrupted for any runway markings. For low visibility operations, when the runway visual range is below 1200 feet (360 m), taxiway centerline markings continue across all runway markings with the exception of the runway designation marking.

c. Color. Taxiway centerline markings are yellow.

d. Characteristics.

(1) **Width.** A width of 6 inches (15 cm) to 12 inches (30 cm) is acceptable for a taxiway centerline. However, the width selected must be uniform for the entire length of the taxiway unless:

(i) It involves a surface movement guidance and control system (SMGCS) route. When a taxiway or part of a taxiway is designated as a SMGCS route, the width of the taxiway centerline must be 12 inches (30 cm) wide and is outlined in black in light colored pavement. The centerline width of the remaining part of a taxiway that is not a part of a SMGCS route can change abruptly at the intersection with other taxiway centerline markings, e.g. from 12 inches (30 cm) to 6 inches (15 cm).

(ii) There is a need to emphasize a preferred routing through a confusing intersection.

(2) **Continuity.** The centerline is continuous in length except where it intersects a holding position marking (see Figure 10) or a runway designation (see paragraph 21b(4)).

e. Enhanced Taxiway Centerline Marking. The guidelines and standards contained in this section for enhanced taxiway markings will be considered the only acceptable means of compliance with Part 139 for airports with annual passenger enplanements of 1,500,000 or more, effective June 30, 2008. For airports with less than 1.5 million annual passenger enplanements but more than 370,000 annual passenger enplanements, the compliance date is one year from effective date of Change 1 to this AC. At all remaining airports certificated under 14 CFR Part 139, these same enhanced taxiway centerline markings will be the standard effective 2 years from the effective date of Change 1 to this AC. To minimize pilot confusion, if the enhanced centerline is used at an airport, it must be applied to all runway holding positions on the airport.

(1) **Location.** Taxiway centerlines are enhanced for 150 feet (45.7 m) prior to a runway holding position marking, except in the situations described in Paragraph e(3)(i) below. The taxiway centerline is not enhanced between the runway holding position marking and the runway. The following methods are commonly used to measure the 150-foot (45.7 m) length on a curved taxiway from the runway holding position:

(i) With a measuring wheel, measure from the intersection of the taxiway centerline at the runway holding position along the existing taxiway centerline out to 150 feet (45.7 m).

(ii) With a 150-foot (45.7 m) tape measure, swing an arc from the intersection of the taxiway centerline at the runway holding position until it intersects the taxiway centerline.

(2) **Color.** Enhanced taxiway centerline markings are yellow and must contain glass beads. In addition, the enhanced taxiway centerline marking must be outlined in black paint on light-colored pavements.

(3) **Characteristics.** An enhanced taxiway centerline marking consists of a parallel line of yellow dashes on either side of the existing taxiway centerline. The first dashes start 6 to 12 inches (15–30 cm) from the runway holding

position marking, and the pattern is repeated for a distance of 150 feet (45.7 m). The yellow dashes are 9 feet (2.74 m) in length and 6 inches (15 cm) wide and have a gap of 3 feet (1 m) between them, as shown in Appendix 3, Figure C-1.

(i) If the taxiway centerline to be enhanced continues through a taxiway/taxiway intersection that is located within 150 feet (45.7 m) of a runway holding position marking, the taxiway centerline enhancement must be terminated 5 feet (1.5 m) prior to the point where the other taxiway centerline crosses the enhanced taxiway centerline (see Appendix 3, Figure C-10).

(ii) If the enhanced taxiway centerline intersects another runway holding position marking that is located within 150 feet (45.7 m) of a runway holding position marking, then the entire taxiway centerline between the two runway holding position markings must be enhanced. However, in no case should the taxiway centerline be enhanced between the runway holding position marking and the runway (see Appendix 3, Figure C-10).

(iii) Where two taxiway centerlines come together (converge) at or before the runway holding position marking, there must be no partial dashed lines less than 9-feet (2.74 m) at the point of convergence. The first inside dashed lines must be aligned with the outside dashed lines—starting and stopping with the dashed lines on the outside. (Appendix 3, Figure C-2)

(iv) If an ILS holding position marking is within 150 feet of a runway holding position marking, the enhanced taxiway centerline is interrupted the same as it is for a regular centerline (i.e. 3 feet (0.9 m) on the runway side and 6 - 12 inches (15 to 30 cm) on the holding side).

22. TAXIWAY EDGE MARKING.

a. Purpose. Taxiway edge markings are used to delineate the edge of the taxiway. They are primarily used when the usable taxiway edge does not correspond with the edge of the pavement. Two types of markings are used depending upon whether the aircraft is supposed to cross the taxiway edge. The outer edge of the stripe defines the edge of the usable pavement.

(1) Continuous Markings. Continuous taxiway edge markings are used to delineate the taxiway edge from the shoulder or some other

contiguous paved surface not intended for use by aircraft (see Figures 10 and B-3). When an operational need exists, the continuous taxiway edge marking may be used to delineate the edge of the taxiway from a contiguous non-paved surface. Continuous taxiway edge markings are not to be used in situations where aircraft would be required to cross them.

(2) Dashed Markings. Dashed taxiway edge markings are used when there is an operational need to define the edge of a taxiway or taxilane on a paved surface where the pavement contiguous to the taxiway edge is intended for use by aircraft, e.g., an apron (see Figures 10 and B-4). Where the taxiway is contiguous to an apron, the markings must be installed at a distance equal to one-half the taxiway width from taxiway centerline. Dashed edge stripes are not to be used to provide wing tip clearances for parked aircraft on an apron. See taxiway/taxiway hold lines Par. 25, or non-movement area boundary markings Par. 38, as appropriate.

b. Location. Taxiway edge markings are located on the taxiway at its defined edge, and are part of the usable taxiway pavement.

c. Color. Taxiway edge markings are yellow.

d. Characteristics. Continuous taxiway edge markings consist of a continuous double yellow line, with each line being at least 6 inches (15 cm) in width, spaced 6 inches (15 cm) apart (edge to edge). These markings can also be used to designate islands that have been painted green or striated with yellow markings. Dashed taxiway edge markings consist of a broken double yellow line, with each line being at least 6 inches (15 cm) in width, spaced 6 inches (15 cm) apart (edge to edge). The lines are 15 feet (4.5 m) in length with 25-foot (7.5 m) gaps (see Figure 10). These markings are not to be used to designate islands except for some very special conditions.

23. RUNWAY HOLDING POSITION MARKINGS ON TAXIWAYS.

a. Purpose. At airports with operating airport traffic control towers, runway holding position markings identify the location on a taxiway where a pilot is to stop when he/she does not have clearance to proceed onto the runway. Holding position markings may be supplemented with Geographic Position Markings (see Paragraph 32) as part of the airport's SMGCS Plan. At airports without operating control towers these

**TABLE 5. PERPENDICULAR DISTANCES FOR TAXIWAY
INTERSECTION MARKINGS FROM CENTERLINE OF CROSSING TAXIWAY.**

Airplane design group ¹					
I	II	III	IV	V	VI
44.5 feet	65.5 feet	93 feet	129.5 feet	160 feet	193 feet
(13.5 m)	(20 m)	(28.5 m)	(39 m)	(48.5 m)	(59 m)

¹ See AC 150/5300-13, *Airport Design*.

26. SURFACE PAINTED HOLDING POSITION SIGNS.

a. Purpose. Surface painted holding position signs supplement the signs located at the holding position (including ILS/POFZ holding position markings) in accordance with current AC 150/5340-18, *Standards for Airport Sign Systems*. This marking is required at all runway/taxiway holding positions at an airport that has multiple runways either converging, intersecting, or parallel (e.g., Runways 5-23 and 16-34). This type of marking is required where the width of the holding position on the taxiway is greater than 200 feet (60 m). If a taxiway centerline is closer than 45 feet from the edge of the taxiway and the mandatory hold sign is in clear view, the surface painted holding position sign on that side of the taxiway may be eliminated.

b. Location. The surface painted holding position signs are located both to the left and to the right of the taxiway centerline. It might not be possible to install surface painted holding position signs on both sides of the taxiway centerline, particularly where taxiway centerlines converge just prior to the runway holding position marking. In these cases, the surface painted holding position signs may be omitted on one side. Additionally, surface painted hold position signs are to be at least 2 feet from the edge of the inside taxiway edge marking (or from the edge of the taxiway, if there are no taxiway edge markings). Holding position signs must *not* be painted on runways. Surface painted location signs may be located along with the surface painted holding position signs when adequate pavement width exists. In these cases, the surface painted signs will mimic the mandatory hold position signs. If the collocated surface painted location sign and mandatory sign serves two converging taxiways, then the surface painted location sign should be

located on the left of the surface painted holding position sign. Surface painted taxiway direction signs are not to be co-located with a surface painted holding position sign.

(1) The surface painted holding position signs may be located parallel to the runway holding position marking:

(i) At a distance of 2 feet (.67m) to 4 feet (1.34m) prior to the holding position marking to allow clearance of in-pavement runway guard lights and/or stopbars (see Appendix 3, Figures C-4 and C-5), and

(ii) At a distance of 3 to 10 feet (1–3 m) from the center of the taxiway centerline. If the holding position marking and the taxiway centerline are not perpendicular to each other, then this distance should be measured from the center of the taxiway centerline to the nearest corner of the surface painted holding position sign (see Appendix 3, Figure C-5).

(2) Alternately, surface painted holding position signs may be located perpendicular to the taxiway centerline:

(i) At a distance of 3 –10 feet (1 – 3 m) from the center of the taxiway centerline

(ii) The distance measured from the runway holding position marking to the nearest corner of one of the surface painted holding position sign should be 2 – 4 feet (0.6 – 1.2 m).

(3) Surface painted holding position signs located between two taxiway centerlines should be:

(i) Parallel to the runway holding position marking.

(ii) Approximately equidistant from both taxiway centerlines at a distance of no less than 3 feet (1 m) or more than 15 feet (4.57 m) from either taxiway centerline as measured from the center of the taxiway centerlines to the nearest corner of the surface painted holding position sign.

(4) If two or more taxiway centerlines intersect the runway holding position marking or intersect each other within 15 feet (4.57 m) of the runway holding position, there might not be enough space for two or more surface painted holding position signs. These locations will require individual assessment for applying surface painted holding position signs that take into account such factors as taxi route usage rate and space.

c. Color. The surface painted holding position sign has a red background with a white inscription, and will be outlined in black on light colored pavements. The black border around the white alphanumeric required on the actual mandatory holding position sign is not necessary on the surface painted holding position signs

d. Characteristics. The inscription is to have a height of 12 feet (3.67m), however it may be reduced, as necessary to the minimum height of 9 feet (3m). If it is necessary to reduce the height below 12 feet at one location on the airport, the airport operator may want to reduce all surface painted holding position signs on the airport to the same height in order to avoid the need for multiple stencils. However, the height of the surface painted holding position signs should be uniform for each holding position. The width of the letters, numbers, and other symbols used in the inscription must be proportional to the height in order to conform in appearance to the letters, numbers, and other symbols in Appendix 1. The background is rectangular and extends a minimum of 15 inches (38 cm) laterally and vertically beyond the extremities of the inscription. The Surface Painted Holding Position Sign may be eliminated if it would extend onto another taxiway.

27. SURFACE PAINTED TAXIWAY DIRECTION SIGNS.

a. Purpose. Surface painted taxiway direction signs will be provided when it is not possible to provide taxiway direction signs at intersections in accordance with AC 150/5340-18 or, when necessary, to supplement such signs.

b. Location. Surface painted taxiway direction signs are 3 feet (1 m) from the centerline

with signs indicating turns to the left being on the left side of the taxiway centerline and signs indicating turns to the right being on the right side of the centerline, as shown in Figure 13. Taxiway direction signs are not painted on runways, or between a runway holding position and a runway. For taxiways intersecting at 90 degrees a surface painted taxiway direction sign is combined with arrows to indicate directions and is located on the left side of the taxiway centerline.

(1) When a direction sign is not installed along side of the taxiway, the surface painted taxiway direction sign is located at the same distance from the intersection as the distance specified in AC 150/5340-18.

(2) When a surface painted taxiway direction sign supplements a direction sign installed along side of the taxiway, the surface painted direction sign may be located at or anywhere between the distance specified in subparagraph (1) above and the point of divergence of the painted centerlines.

c. Color. Surface painted taxiway direction signs have a yellow background with a black inscription.

d. Characteristics. The inscription is to have a height of 12 feet (3.67m), however it may be reduced, as necessary to the minimum height of 9 feet (3m). The width of the letters, numbers, and other symbols used in the inscription must be proportional to the height in order to conform in appearance to the letters, numbers, and other symbols in Appendix 1. Each taxiway designation must be accompanied by an arrow showing the general direction of turn. The background is rectangular and extends a minimum of 15 inches (38 cm) laterally and vertically beyond the extremities of the inscription. A 6-inch (15 cm) wide vertical black stripe separates each taxiway designation when more than one designation is included on either side of the centerline.

28. SURFACE PAINTED TAXIWAY LOCATION SIGNS.

a. Purpose. Surface painted taxiway location signs are used, when necessary, to supplement the signs located along side the taxiway and assist the pilot in confirming the designation of the taxiway on which the aircraft is located.

b. Location. The surface painted taxiway location signs are normally located on the right side