

RA 3514 - Permanent Fixed Wing Aerodrome - Markings

Rationale

Movement around an Aerodrome and understanding of an Aerodrome layout is essential for safe operations. Any misunderstanding of the purpose of the various surfaces could prove hazardous to Air Systems or operators. To provide clarity and to enhance the safe movement of Air Systems at an Aerodrome, markings are provided for clear and consistent information and guidance to the operating community.

Contents

- 3514(1): General Markings**
- 3514(2): Runway Markings**
- 3514(3): Aiming Point and Touchdown Zone Markings**
- 3514(4): Taxiway Markings**
- 3514(5): Vehicle Roadway Markings**
- 3514(6): Air System Stand Markings**
- 3514(7): Arrestor System Markings**
- 3514(8): Mandatory Instruction Markings**
- 3514(9): Information Markings**

Regulation

3514(1)

General Markings

3514(1) Heads of Establishments (HoEs) and Aviation Duty Holder - Facing Organizations (ADH-Facing Organizations) **shall** ensure that clearly defined markings are provided to allow safe movement within the Aerodrome by vehicles and Air Systems.

Acceptable Means of Compliance 3514(1)

General Markings

1. Runway markings **should** be white.
2. Markings for taxiways, Runway turn pads and Air System stands **should** be yellow.
3. Apron Safety lines **should** be of a conspicuous colour which **should** contrast with that used for Air System stand markings.
4. Black outlining (at least 0.15 m in width) **should** be provided where there is insufficient background contrast.
5. At Aerodromes where operations take place at night, pavement markings **should** be made with reflective materials designed to enhance the visibility of the markings.
6. At the intersection of two or more Runways the markings of the more important Runway **should** be displayed, and the markings of the other Runways interrupted.
7. At the intersection of a Runway and a taxiway the markings of the Runway **should** be displayed, and the markings of the taxiway interrupted, except that Runway side stripe may be interrupted.
8. Colour and discrimination requirements for all objects **should** be as detailed in International Civil Aviation Organization (ICAO) Annex 14, Vol I, Appendix 1.
9. All markings on paved Runways **should** have friction values not less than the friction assessment Minimum Friction Level for the surrounding Runway.
10. Markings on Aprons and taxiways **should** be made with materials having similar wet friction qualities to those of the surrounding paved surfaces.

Guidance Material 3514(1)

General Markings

11. At the intersection of two Runways, the Runway side stripe marking of the main Runway may either be continued across the intersection or interrupted.
12. The order of importance of Runways for the display of Runway markings may be defined as follows:
 - a. 1st - Precision Approach Runway;
 - b. 2nd - Non-Precision Approach Runway; and
 - c. 3rd - Non-Instrument Runway.
13. Colour specifications for paints can be found in BS 381C and colour specifications for signs and surface markings are for reflective materials are prescribed in BS EN 12899-1:2007.
14. Requirements for the friction characteristics on a Runway are detailed in RA 3590¹.

Civil Equivalence.

15. This Regulation is in line with ICAO Annex 14 Vol I para 5.2.1.

Regulation 3514(2)

Runway Markings

- 3514(2) HoEs and ADH-Facing Organizations **shall** ensure that all paved Runways are provided with markings for Runway Designation, Runway Centre-Line and Threshold.

Acceptable Means of Compliance 3514(2)

Runway Markings

16. Runway Designation Markings **should**:
 - a. Be located at a threshold as shown in Figure 1 as appropriate;
 - b. Consist of a two-digit number comprised of the whole number nearest the one-tenth of the magnetic North when viewed from the direction of approach (including a leading zero where the nearest one-tenth is less than 10);
 - c. On parallel Runways, be supplemented with a letter (for two parallel Runways: "L" "R" viewed from the direction of approach, for three parallel Runways: "L" "C" "R" viewed from the direction of approach);
 - d. Be in the form and proportion, but not less than, those shown in Figure 2.
17. Runway Centre-Line Markings **should**:
 - a. Be located along the centre-line of the Runway between the Runway designation markings as shown in Figure 3, except when interrupted in compliance with RA 3519²;
 - b. Consist of a line of uniformly spaced stripes and gaps. The length of a stripe plus a gap **should** be not less than 50 m or more than 75 m;
 - c. The length of each stripe **should** be at least equal to the length of the gap or 30 m, whichever is greater; and
 - d. Have a width no less than:
 - (1) 0.90 m on Precision Approach category II and III Runways;
 - (2) 0.45 m on Non-precision Approach Runways where the code number is 3 or 4, and Precision Approach category I Runways; and
 - (3) 0.30 m on Non-precision Approach Runways where the code number is 1 or 2, and on Non-instrument Runways.

¹ Refer to RA 3590 – Maintenance and Safeguarding.


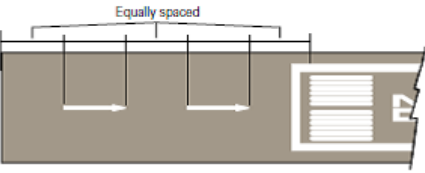
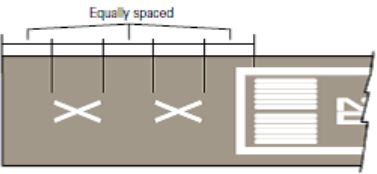

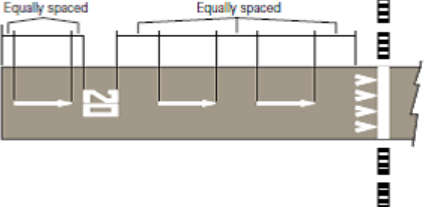
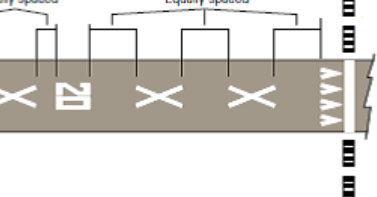
² Refer to RA 3519 – Permanent Fixed Wing Aerodrome - Visual Aids for Denoting Restricted Use Areas.

**Acceptable
Means of
Compliance
3514(2)**

18. Threshold Markings **should**:
- Have its longitudinal stripes commenced 6 m from the threshold.
 - Consist of a pattern of longitudinal stripes of uniform dimensions disposed symmetrically about the centre-line of the Runway as shown in Figure 1 for a Runway of width 45 m.
 - Have stripes extending laterally to within 3 m of the edge of the Runway; or to 27 m on either side of a Runway centre line, whichever results in the smaller lateral distance.
 - Have numbers in accordance with (iaw) Table 1; and
 - Have a Transverse Stripe with a minimum width of 1.8 m if the extremity of the Runway is not square with the Runway centre-line or as shown in Figure 4.
19. Permanently displaced Runway thresholds **should**:
- Be marked as shown in Figure 1: 2(i) and 2(ii);
 - Have a Transverse Stripe, with a minimum width of 1.8 m, provided as per Figure 4 (the outer edge of the Transverse Stripe indicates the displaced threshold location)
 - Have all markings prior to the displaced threshold obscured except the Runway centre-line marking, which **should** be converted to arrows.
20. Temporarily displaced Runway thresholds **should**:
- Be marked as shown in Figure 1: 3(i) and 3(ii).
 - Have all markings prior to the displaced threshold obscured except the Runway centre-line marking, which **should** be converted to arrows;
 - Have the Runway centre-line markings prior to the displaced threshold turned into arrows; and
 - Be marked iaw RA 3519, if the Runway before the displaced threshold is unfit for the surface movement of Air Systems.
21. Runway Side Stripe Markings **should**:
- Be provided between the thresholds of a paved Runway where:
 - The width of the Runway is greater than 45 m wide; or
 - There is a lack of contrast between the Runway edges and the shoulders or surrounding terrain; or
 - The Runway is served by a precision approach aid.
 - Consist of two parallel lines, one placed along each edge of the Runway with the outer edge of each line marking the declared edge of the Runway; except that, where the Runway is greater than 60 m in width, the stripes **should** be located 30 m from the Runway centre-line;
 - Be 0.9 m wide where the Runway is 30 m or more in width and 0.45 m wide on narrower Runways;
22. At an intersection of two or more Runways the markings of the main Runway, except for the Runway side stripe marking, **should** be displayed and the markings of the other Runways, interrupted. The Runway side stripe marking of the more important Runway may be either continued across the intersection or interrupted.

Acceptable Means of Compliance 3514(2)

Figure 1. Precision Approach Runways

Type of threshold	Precision instrument approach runways	
1		
2(i)		<p>Key:</p> <ul style="list-style-type: none"> 1 Not displaced. 2 Permanently displaced or temporarily displaced for more than six months. <ul style="list-style-type: none"> (i) Pre-threshold area of runway fit for movement of aircraft. (ii) Pre-threshold area of runway unfit for movement of aircraft and unsuitable as stopway. (iii) Pre-threshold area of runway fit for use by aircraft as a stopway, but not for normal movement of aircraft. 3 Temporarily displaced for six months or less. (Runway designator is NOT moved.) <ul style="list-style-type: none"> (i) Pre-threshold area of runway fit for movement of aircraft. (ii) Pre-threshold area of runway unfit for movement of aircraft.
2(ii)		
2(iii)		
3(i)		
3(ii)		

Acceptable Means of Compliance 3514(2)

Figure 2. Character Dimensions

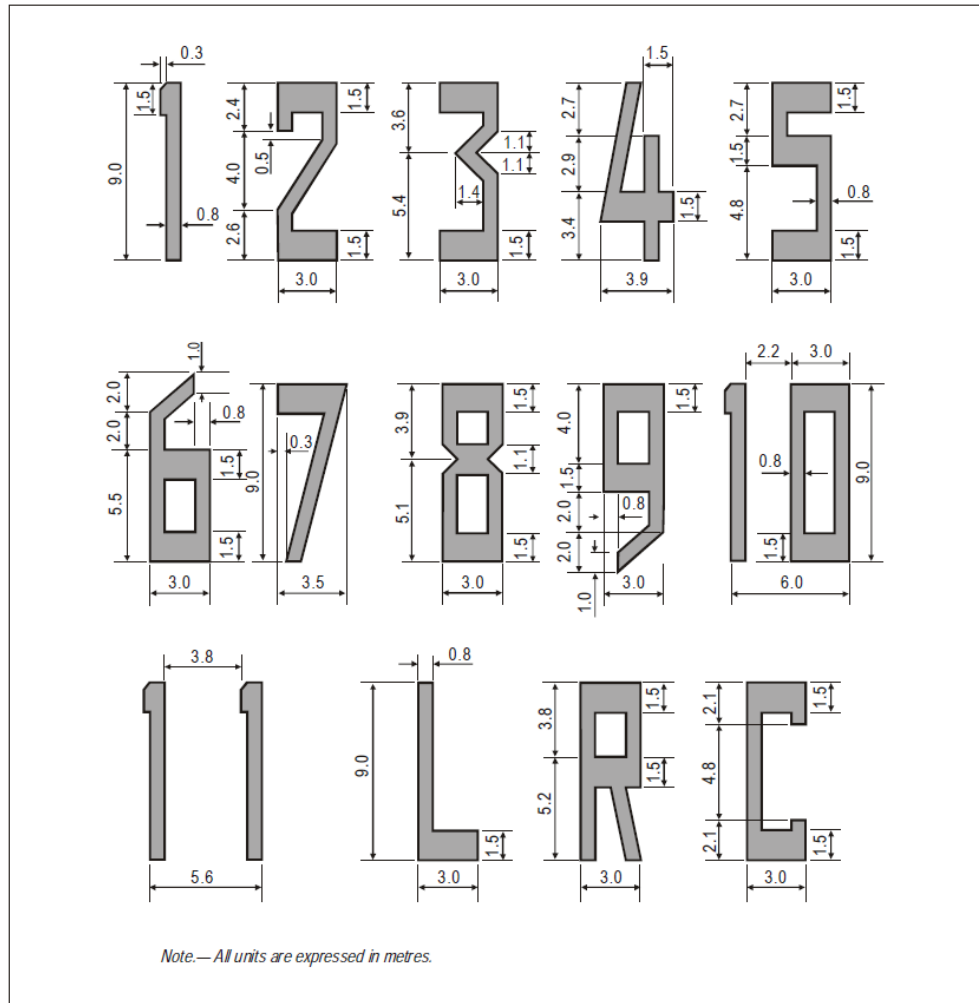
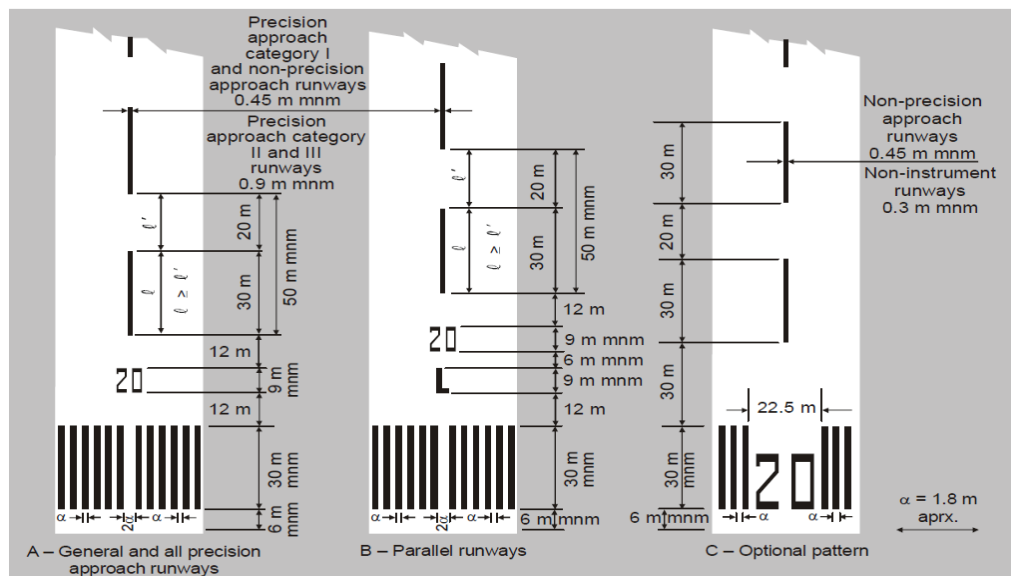


Figure 3. Runway designation, centre-line and threshold markings



Acceptable Means of Compliance 3514(2)

Figure 4. Displaced threshold markings

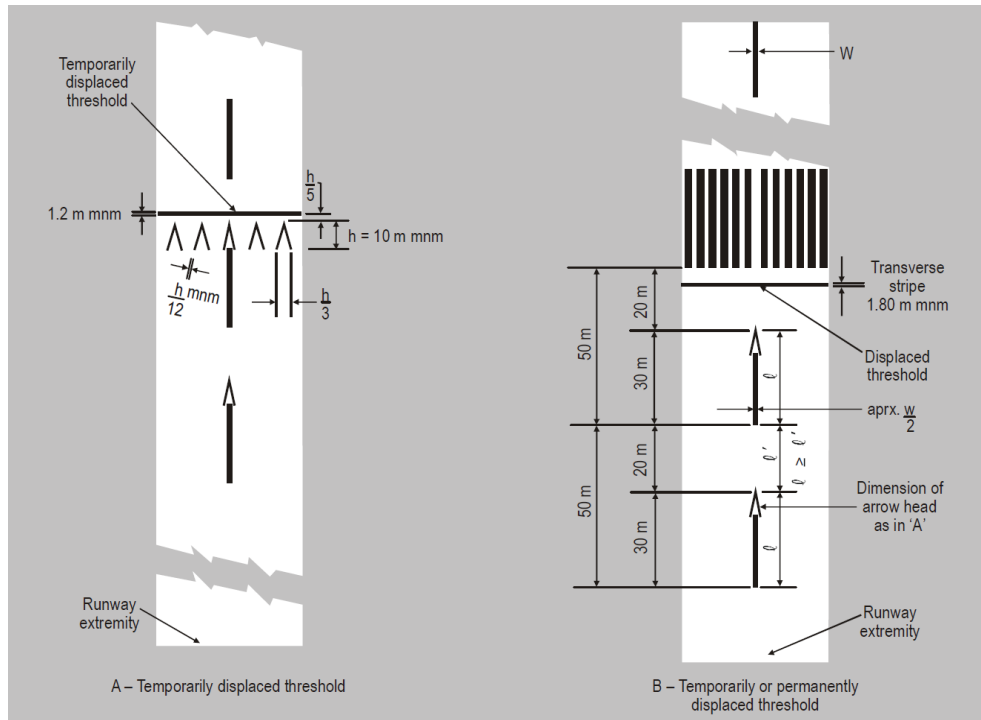


Table 1. Threshold Marking Stripes

Runway width	Number of stripes
18 m	4
23 m	6
30 m	8
45 m	12
60 m	16

Guidance Material 3514(2)

Runway Markings

23. Where edge light units are located along the extremity of the declared Runway width, the Runway strip markings may be located inboard of the edge light units to avoid painting the light units.

24. Edge light units may be placed along the edge of the load-bearing pavement, with the outer edge of the marking approximately on the edge of the load-bearing pavement.

Civil Equivalence.

25. This Regulation is in line with ICAO Annex 14 Vol I para 5.2.2. – 5.2.4.

Regulation 3514(3)

Aiming Point and Touchdown Zone Markings

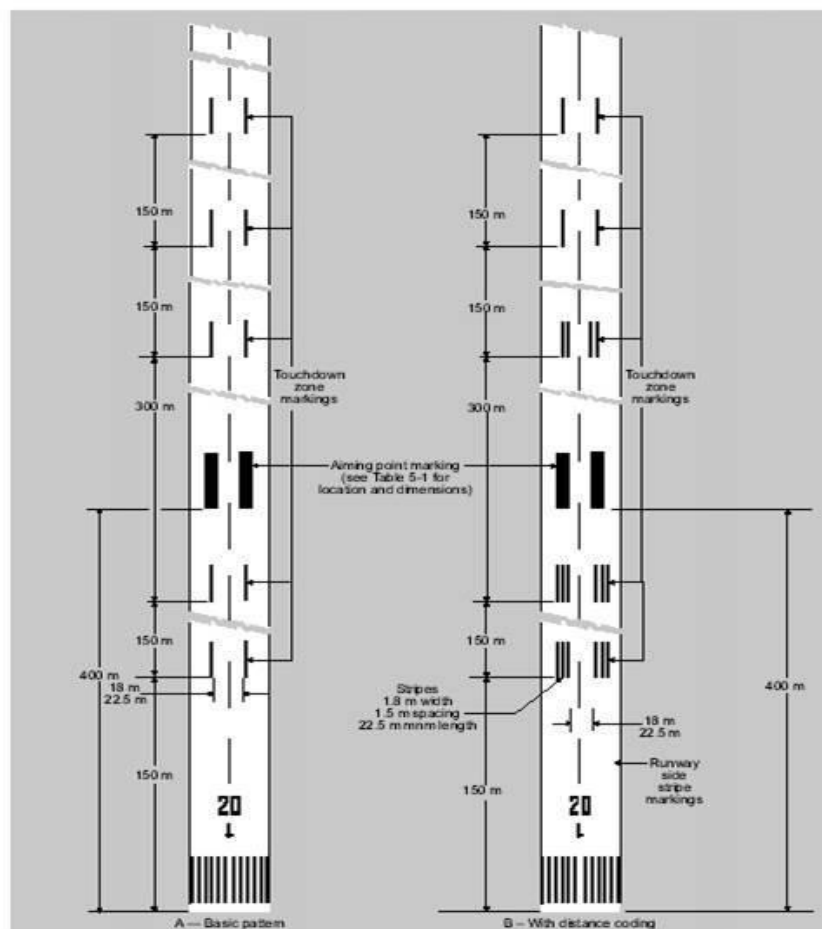
3514(3) HoEs and ADH-Facing Organizations **shall** ensure that Aiming Point Markings are provided on a paved instrument Runway where code number is 2 - 6; and Touchdown Zone Markings are provided on a paved precision Runway where the code number is 2 - 6.

**Acceptable
Means of
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3514(3)**

Aiming Point and Touchdown Zone Markings

26. Aiming Point Markings **should**:
- Be symmetrically disposed about the Runway centre-line;
 - Have stripes and lateral spacing as described in Figure 5; and
 - Be placed at a point no closer to the threshold than the distance indicated in Table 2, except that, on a Runway equipped with a visual slope indicator system, the beginning of the markings **should** be coincident with the visual slope origin.
27. Touchdown Zone Markings **should**:
- Consist of pairs of rectangular markings symmetrically disposed about the Runway centre-line, either pattern shown in Figure 5 is acceptable. For the pattern shown in Figure 5 (A), the markings **should not** be less than 22.5 m long and 3 m wide. For the pattern shown in Figure 5 (B), each stripe of each marking **should** be not less than 22.5 m long and 1.8 m wide with a spacing of 1.5 m between adjacent stripes.
 - Have a number of pairs related to the landing distance available, shown in Table 3 and, the pairs of markings **should** be provided at longitudinal spacings of 150 m beginning from the threshold, except that pairs of touchdown zone markings coincident with or located within 50 m of an aiming point marking **should** be deleted from the pattern.
 - Have lateral spacing between the inner sides of stripes as for the Aiming Point marking as per Figure 5 and Table 2.
28. Where Aiming Point and Touchdown Zone Markings are not provided, their absence **should** be clearly communicated in relevant aeronautical information publications and the Defence Aerodrome Manual.

Figure 5. Touchdown Zone Markings



**Acceptable
Means of
Compliance
3514(3)**

Table 2. Location and Dimensions of Aiming Point Marking

Location and dimensions	Landing Distance Available			
	Less than 800 m	800 m – 1199 m	1200 m – 2399 m	2400 m and above
Distance from threshold to beginning of marking	150 m	250 m	300 m	400 m
Length of stripe ^a	30 - 45 m	30 - 45 m	45 – 60 m	45 – 60 m
Width of stripe ^c	4 m	6 m	6 – 10 m ^b	6 – 10 m ^b
Lateral spacing between inner sides of stripes ^c	6 m	9 m	18 – 22.5 m	18 - 22.5 m
<p>^a The greater dimensions of the specified ranges are intended to be used where increased conspicuity is required.</p> <p>^b The lateral spacing may be varied within these limits to minimize the contamination of the marking by rubber deposits.</p> <p>^c Where a Runway is less than 45 m wide the parameters for width and lateral spacing should be discussed and agreed with Defence Infrastructure Organisation and the MAA as appropriate iaw RA 3500(1)³.</p>				

Table 3. Numbers of Pairs of Touchdown Zone Markings

Landing Distance Available or the distance between thresholds	Pair(s) of markings
< 900 m	1
900 – 1199	2
1200 – 1499	3
1500 – 2399	4
> 2400 m	6 ^a
<p>^a Aiming Point Markings may be considered as 1 of the pairs in the painting pattern.</p>	

**Guidance
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3514(3)**

Aiming Point and Touchdown Zone Markings

29. Aiming Point and Touchdown Zone markings constitute large areas of painted surface and therefore reduced friction characteristics, which may be assessed to present a Hazard to some Air System operations.

30. Aiming Point and Touchdown Zone Markings may be omitted where it is assessed that Risk to Life will be increased by their presence.

Civil Equivalence.

31. This Regulation is in line with ICAO Annex 14 Vol I para 5.2.5. and 5.2.6.

³ Refer to RA 3500(1): Aerodrome Design and Safeguarding, GM Para 12.



**Regulation
3514(4)**

Taxiway Markings

3514(4) HoEs and ADH-Facing Organizations **shall** ensure that Taxiway Markings are provided on paved taxiways, de-icing / anti-icing facilities, turn pads and aprons to provide continuous guidance between the Runway centre line and Air System stand.

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3514(4)**

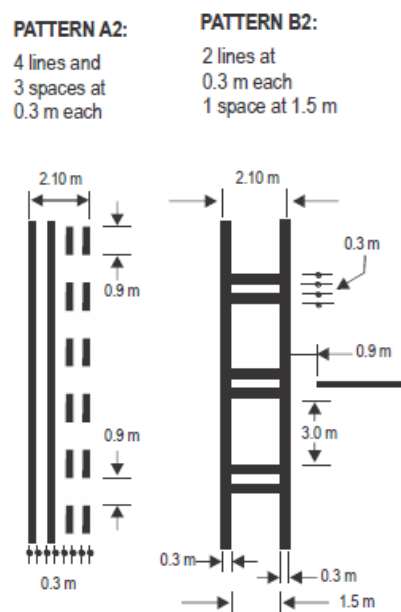
Taxiway Markings

32. Taxiway centre-line markings **should**:
- a. Be at least 0.15 m in width and of continuous length except where detailed in sub-paras b to h, or where:
 - (1) It intersects with a Runway-holding position marking; or
 - (2) It intersects with an intermediate holding position marking.
 - b. On a straight section of taxiway, be located along the taxiway centre-line;
 - c. On a taxiway curve, continue from the straight portion of the taxiway at a constant distance from the outside edge of the curve;
 - d. 
 - e. 
 - f. Be broken at a distance of 1.5 m from the threshold or Runway designation markings when the taxiway centre-line marking crosses the threshold or Runway designation markings;
 - g. Be extended parallel to the Runway centre-line marking for a distance of at least 60 m beyond the point of tangency where the code number is 3 or above and for a distance of at least 30 m where the code number is 1 or 2;
 - h. Be provided on a paved Runway when:
 - (1) The Runway is part of a standard taxi-route and there is no Runway centre-line marking; or
 - (2) The taxiway centre-line is not coincident with the Runway centre-line.
33. Taxiway side stripe markings **should**:
- a. Be provided if:
 - (1) It is necessary to define the outer edges of a taxiway; or
 - (2) A paved taxiway shoulder has insufficient bearing strength; or
 - (3) There is little contrast between the taxiway and the surrounding area.
 - b. **▶ Be discontinued at the edge of the Runway if leading to a Runway threshold.**
 - c. **Be placed along the edge of the load-bearing pavement, with the outer edge of the marking approximately on the edge of the load-bearing pavement. ◀**
 - d. Consist of a pair of solid lines, each 0.15 m wide and spaced 0.15 m apart;
 - e. Be the same colour as the taxiway centre-line marking; and
 - f. Be so positioned that the inner edge of the marking represents the outer edge of the taxiway.
34. Runway turn pad markings **should**:
- a. Be curved from the Runway centre line into the turn pad. The radius of the curve **should** be compatible with the manoeuvring capability and normal taxiing speeds of the Air Systems for which the Runway turn pad is intended. The intersection angle of the Runway turn pad marking with the Runway centre line **should not** be greater than 30 degrees.

**Acceptable
Means of
Compliance
3514(4)**

- b. Be extended parallel to the Runway centre line marking for a distance of at least 60 m beyond the point of tangency where the code number is 3 to 6, and for a distance of at least 30 m where the code number is 1 or 2.
- c. Guide the Air System in such a way as to allow a straight portion of taxiing before the point where a 180-degree turn **will** be made. The straight portion of the Runway turn pad marking **should** be parallel to the outer edge of the Runway turn pad.
- d. Be at least 15 cm in width and continuous in length.
35. The design of the curve allowing the Air System to negotiate a 180-degree turn **should** be based on a nose wheel steering angle not exceeding 45 degrees.
36. The design of the turn pad marking **should** be such that, when the cockpit of the Air System remains over the Runway turn pad marking, the clearance distance between any wheel of the Air System landing gear and the edge of the Runway turn pad **should** be not less than those specified in ICAO Annex 14 para 3.3.6.
37. Runway holding position markings **should**:
- a. Be established iaw RA 3511(6)⁴, on each taxiway serving a Runway **iaw Figure 6 Pattern A.**
- b. Be marked iaw Figure 6, Pattern A for the Runway-holding position closest to the Runway. **Runway-holding positions provided on the same taxiway but farther from the Runway should use Pattern B.**
- c. **▶◀**
- d. Be positioned at right angles to the taxiway centre-line marking;
- e. Be perpendicular to the centre-line of the Runway forming part of the standard taxi-route. The pattern of the marking **should** be as shown in Figure 6, pattern A; and
- f. Be displayed at a Runway / Runway intersection, perpendicular to the centre-line of the Runway forming part of the standard taxi-route and iaw Figure 6, **▶ Pattern A.**
38. **Where a pattern B Runway-holding position marking is located on an area where it would exceed 60 m in length, the term "CAT II" or "CAT III" as appropriate should be marked on the surface at the ends of the Runway holding position marking and at equal intervals of 45 m maximum between successive marks. The letters should be not less than 1.8 m high and should be placed not more than 0.9 m beyond the holding position marking.**

Figure 6. Holding Position Patterns ◀

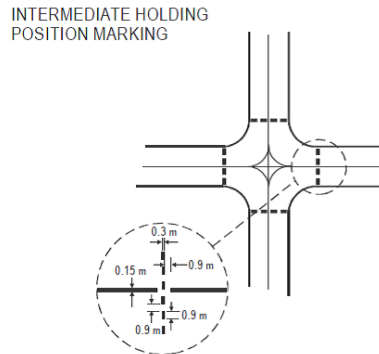


⁴ Refer to RA 3511(6): Taxiway - Characteristics.

Acceptable Means of Compliance 3514(4)

39. Intermediate holding position markings **should**:
 - a. Be displayed along an intermediate holding position;
 - b. Be displayed at the exit boundary of a remote de-icing / anti-icing facility adjoining a taxiway;
 - c. Where located at the intersection of 2 paved taxiways, be located across the taxiway at sufficient distance from the near edge of the intersecting taxiway to ensure safe clearance between taxiing Air Systems; and
 - d. Consist of a single broken line as shown in Figure 7.

Figure 7. Intermediate Holding Position Marking



Guidance Material 3514(4)

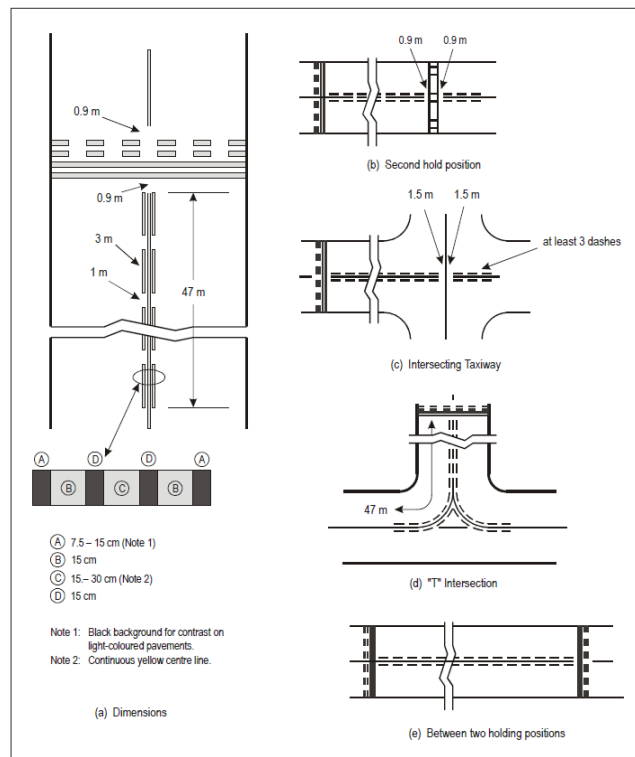
Taxiway Markings

40. Enhanced taxiway centre-line marking may be provided to denote the proximity of a Runway holding position. The provision of enhanced taxiway centre-line marking may form part of Runway incursion prevention measures.
41. Enhanced taxiway centre-line marking may be as shown in Figure 8.

Civil Equivalence.

42. This Regulation is in line with ICAO Annex 14 Vol I para 5.2.8, 5.8.10 and 5.8.11.

Figure 8. Enhanced Taxiway centre line marking



**Regulation
3514(5)**

Vehicle Roadway Markings

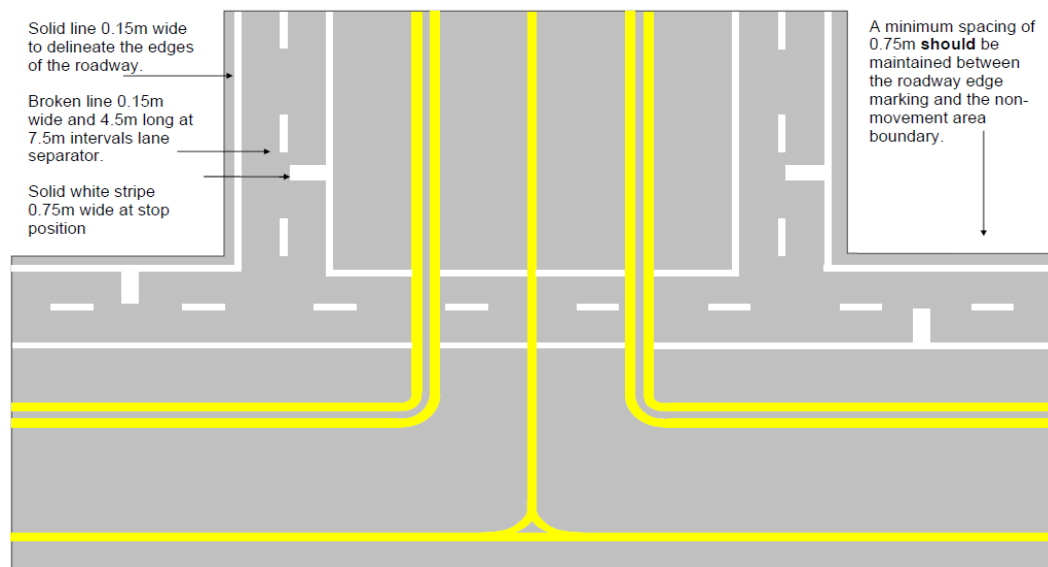
3514(5) HoEs and ADH-Facing Organizations **shall** ensure that vehicle roadway markings are used to delineate roadways located on areas that are also intended for use by Air Systems.

**Acceptable
Means of
Compliance
3514(5)**

Vehicle Roadway Markings

43. Vehicle roadway markings **should**:
- Be white in colour;
 - Consist of a solid line 0.15 m wide to delineate the edges of the roadway and a broken line 0.15 m wide and 4.5 m long at 7.5 m intervals to separate lanes within the edges of the roadway as shown in Figure 9;
 - Maintain a minimum spacing of 0.75 m between the roadway edge marking and the non-movement area boundary / boundary marking; and
 - Be interrupted by taxiway markings where a roadway and taxiway intersect.

Figure 9. Vehicle Roadway Markings



44. Road holding position markings **should**⁵:
- Be located across the road at the holding position; and
 - Where a road intersects a taxiway, be located across the road at the appropriate distance to ensure vehicles remain clear of the taxiway strip;
 - Be in accordance with the local road traffic Regulations for a yield right of way.
45. The usage of Runway ahead markings **should** be considered, as shown in Figures 10 and 11. Where possible, the Runway ahead marking **should** be located before the mandatory marking and collocated with the CAT II / III holding position marking where applicable. Runway ahead marking sizes and proportions **should** be determined by local conditions; however, any markings **should** be legible to both Air Systems and vehicles.
46. Vehicle Roadway Markings placed on a taxiway or pavement surface **should not** create confusion with taxiway or Runway markings for Aircraft operation.

⁵ Refer to RA 3511 - Permanent Fixed Wing Aerodrome – Physical Characteristics for separation distances from Runways.

Acceptable Means of Compliance 3514(5)

Figure 10. Runway Ahead Markings

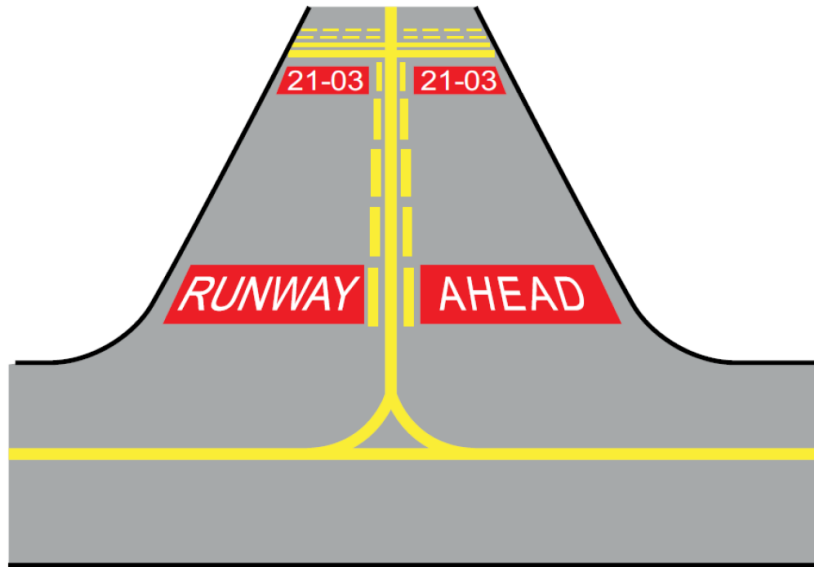
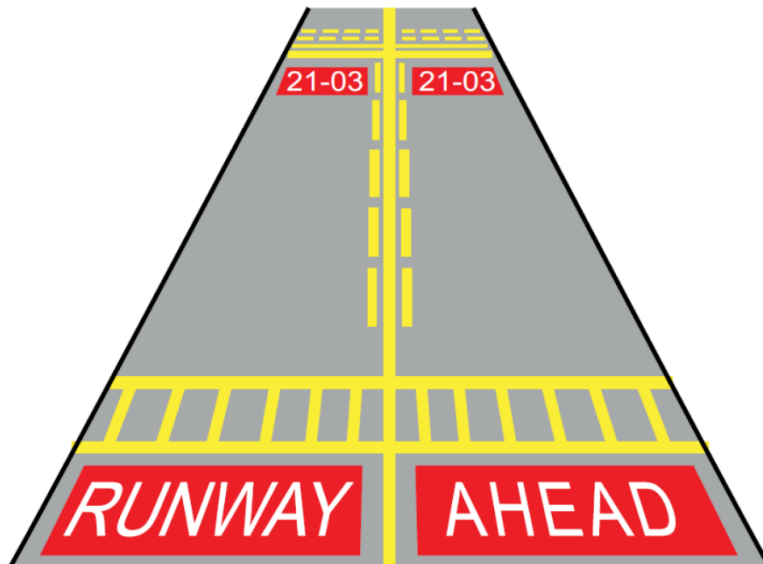


Figure 11. Runway Ahead Markings



Guidance Material 3514(5)

Vehicle Roadway Markings
Civil Equivalence.

47. This Regulation is in line with ICAO Annex 14 Vol I para 5.2.15.

Regulation 3514(6)

Air System Stand Markings

3514(6) HoEs and ADH-Facing Organizations **shall** ensure that Air System stand markings are provided for designated parking positions on a paved apron.

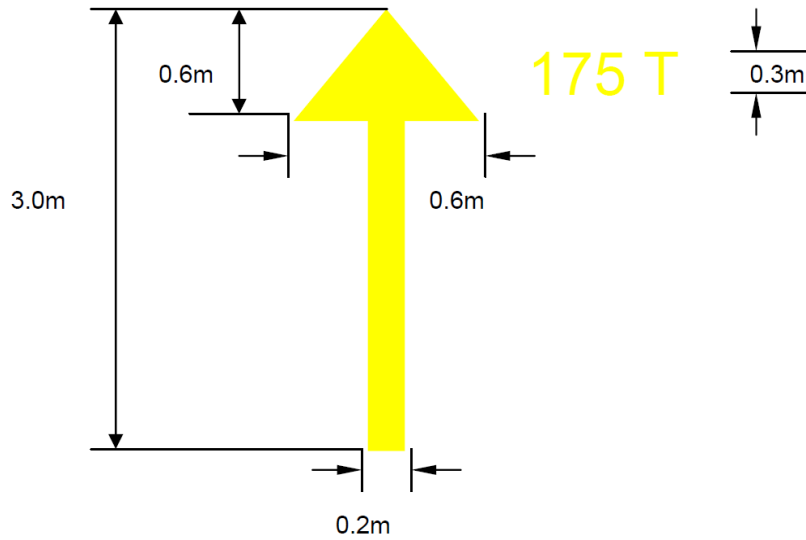
**Acceptable
Means of
Compliance
3514(6)****Air System Stand Markings**

48. It is recommended that an Air System stand marking **should**:
- Be included in the lead-in line a short distance after the beginning of the lead-in line;
 - Be of an adequate height to be readable from the cockpit of Air Systems using the stand; and
 - Have the identification of the Air System for which each set of markings is intended added to the stand identification where two sets of Air System stand markings are superimposed on each other.
49. Lead in, turning and lead-out lines **should**:
- Be continuous in length and have a width of not less than 15 cm;
 - Where one or more sets of stand markings are superimposed on a stand marking, be continuous for the most demanding Air System and broken for other Air Systems;
 - For the curved portions of lead-in, turning, and lead-out lines, have radii appropriate to the most demanding Air System type for which the markings are intended; and
 - Where it is intended that an Air System proceeds in one direction only, have arrows pointing in the direction to be followed added as part of the lead-in and lead-out lines.
50. Alignment bars **should**:
- Be placed to be coincident with the extended centre-line of the Air System in the specified parking position and visible to the pilot during the final part of the parking manoeuvre; and
 - Have a width of not less than 15 cm.
51. Turn bars **should**:
- Be located at right angles to the lead-in line, abeam the left pilot position at the point of initiation of any intended turn;
 - Have a length and width of not less than 6 m and 15 cm respectively, and include an arrowhead to indicate the direction of turn; and
 - Where more than one turn bar is required, be designated for the appropriate Air System types.
52. Stop lines **should**:
- Be located at right angles to the alignment bar, abeam the left pilot position at the intended point of stop;
 - Have a length and width of not less than 6 m and 15 cm respectively; and
 - Where more than one stop line is required, be designated for the appropriate Air System types.
53. Apron Safety lines **should**:
- Be located to define the areas intended for use by ground vehicles and other Air System servicing equipment to provide safe separation from Air Systems;
 - Include such elements as wing tip clearance lines and service road boundary lines as required by the parking configurations and ground facilities;
 - Be of a conspicuous colour which **should** contrast with that used for Air System stand markings; and
 - Be continuous in length and at least 10 cm in width.
54. Where provided, an Air System safe heading marking **should**:
- Identify a safe directional heading for armed Air Systems;

Acceptable Means of Compliance 3514(6)

- b. Be an arrow, in aviation yellow, conforming to Figure 12 and
- c. Have the heading, in degrees true, shown in aviation yellow adjacent to the arrow head and followed by the letter 'T'.

Figure 12. Air System Heading Marking



Guidance Material 3514(6)

Air System Stand Markings Civil Equivalence.

55. This Regulation is in line with ICAO Annex 14 Vol I para 5.2.13 and 5.2.14.

Regulation 3514(7)

Arrestor System Markings

3514(7) HoEs and ADH-Facing Organizations **shall** ensure that when an Air System arresting system cable (or tape) is installed on a paved operational Runway surface, its location is marked.

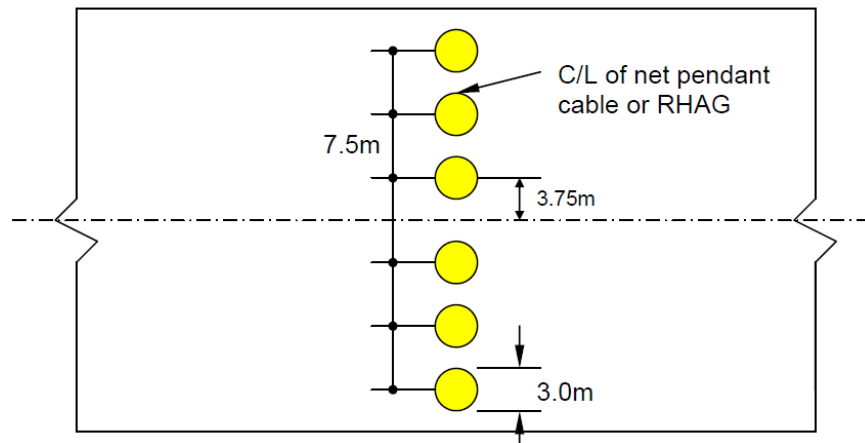
Acceptable Means of Compliance 3514(7)

Arrestor System Markings

56. Air System arrestor system markings **should** be a series of discs, in aviation yellow, along the line of the pendant cable across the width of the full Runway conforming to Figure 13.

57. The disks **should** be 3 m in diameter and spaced at 7.5 m between centres, arranged in two groups symmetrically disposed about the Runway centre-line with the innermost disc in each group located 3.75 m from the Runway centre.

Figure 13. Arrestor System Markings



**Guidance
Material
3514(7)**

Arrestor System Markings

58. Nil.

**Regulation
3514(8)**

Mandatory Instruction Markings

3514(8) HoEs and ADH-Facing Organizations **shall** ensure that where it is impracticable to install a mandatory instruction sign in accordance with RA 3516⁶, or the taxiway width exceeds 60 m, a mandatory instruction marking is displayed on the surface of the pavement.

**Acceptable
Means of
Compliance
3514(8)**

Mandatory Instruction Markings

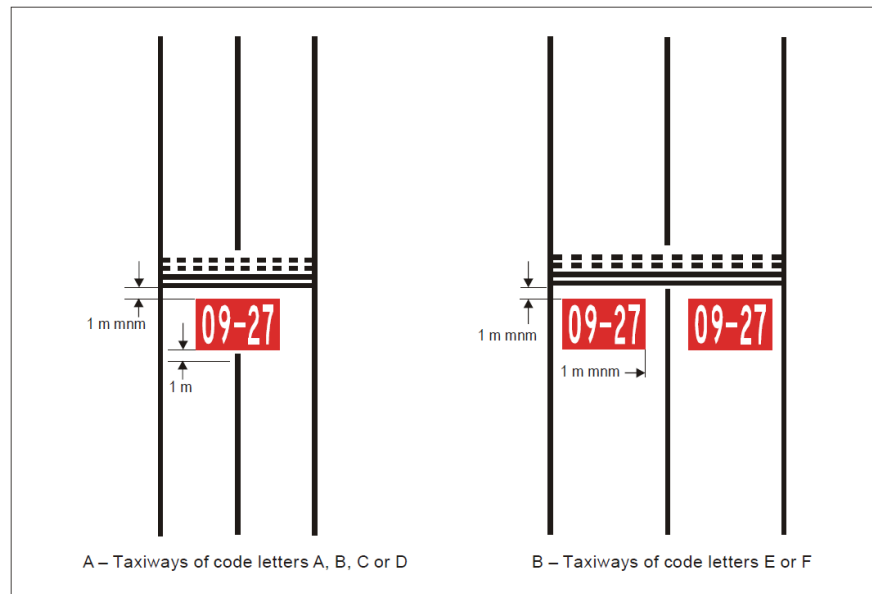
59. The mandatory instruction marking on taxiways, where the **▶ Outer Main Gear Wheel Span (OMGWS) is up to but not including 9 m ◀** **should**:

- Be located across the taxiway equally placed about the taxiway centre-line and on the holding side of the Runway holding position marking as shown in Figure 14 **▶ ◀**.
- Have the nearest edge of the marking not less than 1 m from the Runway holding position marking or the taxiway centre-line marking.

60. The mandatory instruction marking on taxiways, where the **▶ OMGWS from 9 m up to but not including 15 m ◀**, **should**:

- Be located on the both sides of the taxiway centre-line marking and on the holding side of the Runway-holding position marking as shown in Figure 14; and
- Have the nearest edge of the marking not less than 1 m from the Runway holding position marking or the taxiway centre-line marking.

Figure 14. Mandatory Instruction Markings



61. A mandatory instruction marking **should** consist of an inscription in white on a red background. Except for a NO ENTRY marking, the inscription **should** provide information identical to that of the associated mandatory instruction sign.

62. Where operationally required, such as on taxiways exceeding 60 m in width, or to assist in the prevention of a Runway incursion, a mandatory instruction sign **should** be supplemented by a mandatory instruction marking.

⁶ Refer to RA 3516 – Permanent Fixed Wing Aerodrome - Signs.

**Acceptable
Means of
Compliance
3514(8)**

63. A NO ENTRY marking **should** consist of an inscription in white reading NO ENTRY on a red background.
64. The character height **should** be:
- 4 m for inscriptions where the ►OMGWS is from 6 m up to but not including 15 m.◀
 - 2 m where the ►OMGWS is up to but not including 6 m.◀
 - In the form and proportions shown in Figure 15.
65. Where there is insufficient contrast between the marking and the pavement surface, the mandatory instruction marking **should** include an appropriate border, preferably white or black.
66. The background **should** be rectangular and extend a minimum of 0.5 m laterally and vertically beyond the extremities of the inscription.
67. Except where operationally necessary mandatory instructions **should not** be used on Runways.
68. Markers **should** be used to delineate an unserviceable portion of the manoeuvring area.

Figure 15a. Character Form

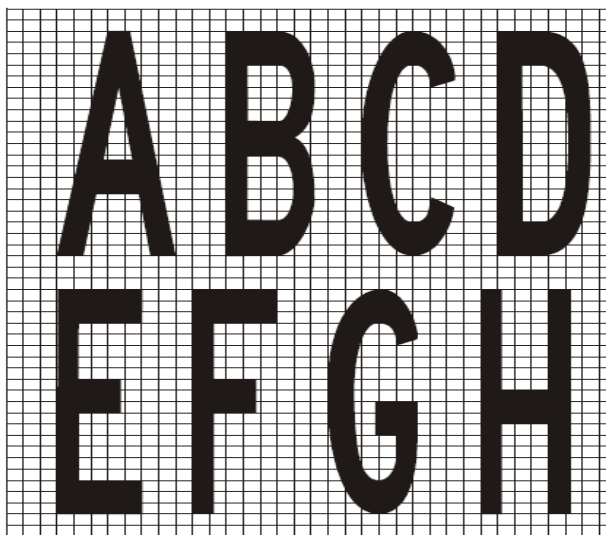
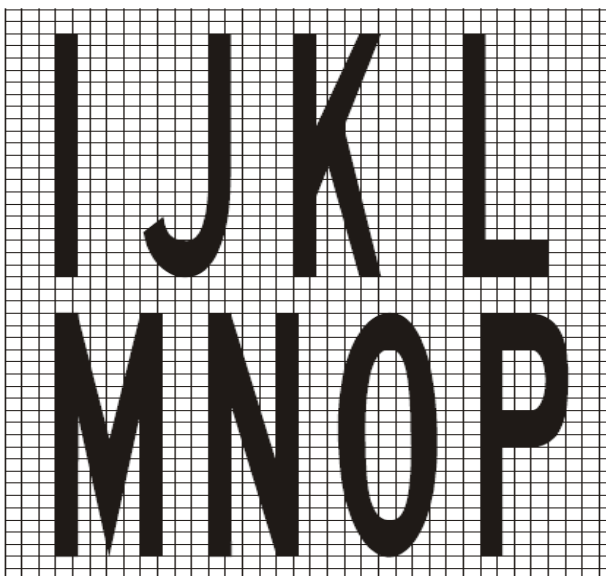


Figure 15b. Character Form



Acceptable
Means of
Compliance
3514(8)

Figure 15c. Character Form

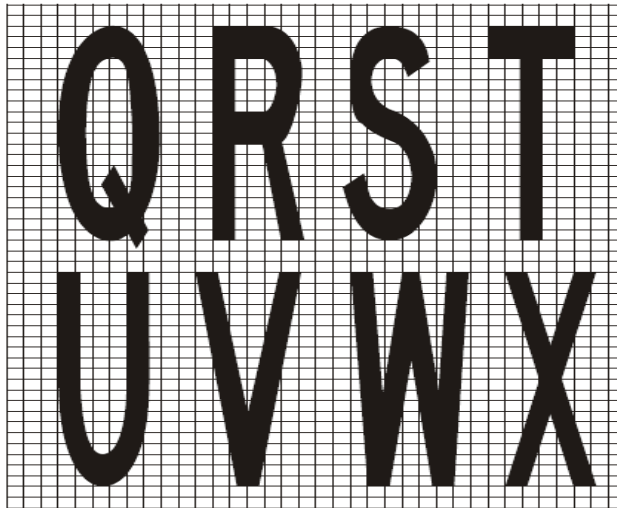


Figure 15d. Character Form

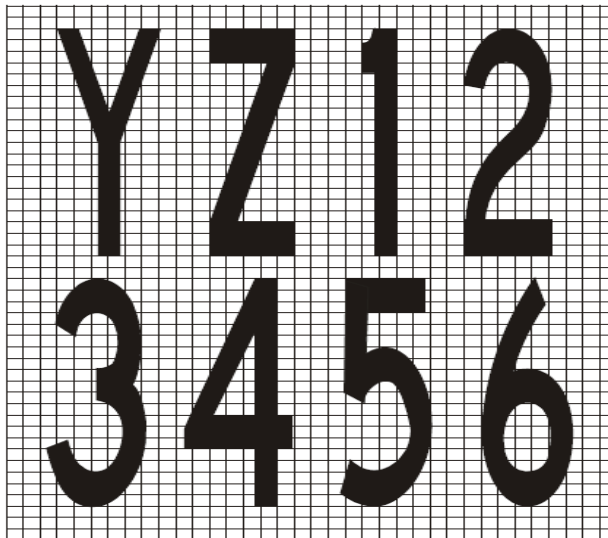
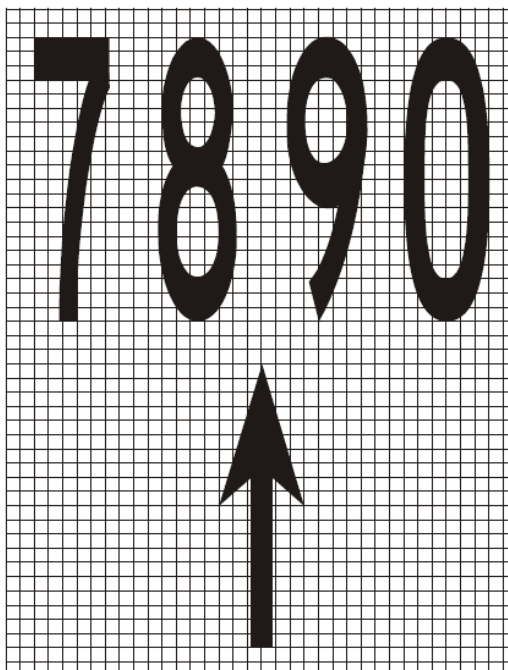


Figure 15e. Character Form



**Guidance
Material
3514(8)**

Mandatory Instruction Markings

Civil Equivalence.

69. This Regulation is in line with ICAO Annex 14 Vol I para 5.2.16.

**Regulation
3514(9)**

Information Markings

3514(9) HoEs and ADH-Facing Organizations **shall** ensure that where it is not practicable to install an information sign iaw RA 3516⁶, an information marking is displayed on the surface of the pavement.

**Acceptable
Means of
Compliance
3514(9)**

Information Markings

70. An information marking **should**:

- a. Consist of an inscription in yellow upon a black background when it replaces or supplements a location sign;
- b. Consist of an inscription in black upon a yellow background when it replaces or supplements a direction or destination sign;
- c. Be of the same dimensions as a mandatory instruction marking;
- d. Be displayed across the surface of the taxiway or apron and positioned to be legible from the cockpit of an approaching Air System; and
- e. Use characters 4 m high in the form and proportion shown in Figure 15.

71. Where there is insufficient contrast between the marking background and the pavement surface, the marking **should** include:

- a. A black border where the inscriptions are in black; and
- b. A yellow border where the inscriptions are in yellow.

**Guidance
Material
3514(9)**

Information Markings

72. Where operationally required to assist in the prevention of a Runway incursion, an information sign may be supplemented by an information (location / direction) marking which may be:

- a. Displayed prior to and following complex taxiway intersections and where operational experience has indicated the addition of a taxiway location marking could assist flight crew ground navigation; and
- b. Displayed on the pavement surface at regular intervals along taxiways of great length.

Civil Equivalence.

73. This Regulation is in line with ICAO Annex 14 Vol I para 5.2.17.

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