

**AIRPORT STANDARDS DIRECTIVE 515  
[ASD 515]**

**STANDARDS FOR  
AERODROME MARKERS**



**AIRPORTS STANDARD DIVISION  
DEPARTMENT OF CIVIL AVIATION  
MALAYSIA**

**This Airport Standard Directive is published and enforced by Director General of Civil Aviation Malaysia under the provision of Section 24O Civil Aviation Act 1969 (Act 3) – Amendment 2006**

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## **INTRODUCTION**

1. In exercise of the powers conferred by regulation 12(c) of the Civil Aviation (Aerodrome Operations) Regulations 2016, the Director General makes this Airport Standards Directive.
2. This Airport Standards Directive is published by the Director General under section 24O of Civil Aviation Act 1969 [Act 3] – Amendment 2006.
3. This Airport Standards Directive contains specifications that prescribe the markers that shall be provided at aerodrome.
4. This Directive has been written in general terms. Specific advice could be obtained from the Authority at:

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#### **Airport Standards Division**

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## **OBJECTIVE**

5. This Airport Standards Directive [Directive] is intended to serve guidance to aerodrome operators pertaining to ICAO mandatory requirement on the markers of aerodromes.
6. The implementation of this Directive will ensure facilities, equipments and operational procedures at certified aerodromes are in compliance with SARPS specified in Annex 14 to the Convention on International Civil Aviation, and to national standards and practices as defined under Airport Standards Directives published by Director General of Civil Aviation.

## **APPLICABILITY**

7. The specification in this directive shall apply for aerodromes used for international operations, in any state of Malaysia.

## **AUTHORITY**

8. The Authority is the Director General of Civil Aviation Malaysia under the provision of Section 2B, 2C and 24O Civil Aviation Act 1969 (Act 3).

## **GENERAL**

9. Markers shall be frangible. Those located near a runway or taxiway shall be sufficiently low to preserve clearance for propellers and for the engine pods of jet aircraft.
10. Anchors or chains, to prevent markers which have broken from their mounting from blowing away, are sometimes used.

Note : Guidance on frangibility of markers is given in the ICAO Aerodrome Design Manual (Doc 9157), Part 6.

## **UNPAVED RUNWAY EDGE MARKERS**

### **APPLICATION**

11. Markers should be provided when the extent of an unpaved runway is not clearly indicated by the appearance of its surface compared with that of the surrounding ground.

### **LOCATION**

12. Where runway lights are provided, the markers should be incorporated in the light fixtures. Where there are no lights, markers of flat rectangular or conical shape should be placed so as to delimit the runway clearly.

## **CHARACTERISTICS**

13. The flat rectangular markers should have a minimum size of 1 m by 3 m and should be placed with their long dimension parallel to the runway centre line. The conical markers should have a height not exceeding 50 cm.

## **STOPWAY EDGE MARKERS**

### **APPLICATION**

14. Stopway edge markers should be provided when the extent of a stopway is not clearly indicated by its appearance compared with that of the surrounding ground.

### **CHARACTERISTICS**

15. The stopway edge markers shall be sufficiently different from any runway edge markers used to ensure that the two types of markers cannot be confused.

Note : Markers consisting of small vertical boards camouflaged on the reverse side, as viewed from the runway, have proved operationally acceptable.

## **TAXIWAY EDGE MARKERS**

### **APPLICATION**

16. Taxiway edge markers should be provided on a taxiway where the code number is 1 or 2 and taxiway centre line or edge lights or taxiway centre line markers are not provided.

## **LOCATION**

17. Taxiway edge markers should be installed at least at the same locations as would the taxiway edge lights had they been used.

## **CHARACTERISTICS**

18. A taxiway edge marker shall be retroreflective blue.

19. The marked surface as viewed by the pilot should be a rectangle and should have a minimum viewing area of 150 cm<sup>2</sup>.

20. Taxiway edge markers shall be frangible. Their height shall be sufficiently low to preserve clearance for propellers and for the engine pods of jet aircraft.

## **TAXIWAY CENTRELINE MARKERS**

### **APPLICATION**

21. Taxiway centre line markers should be provided on a taxiway where the code number is 1 or 2 and taxiway centre line or edge lights or taxiway edge markers are not provided.

22. Taxiway centre line markers should be provided on a taxiway where the code number is 3 or 4 and taxiway centre line lights are not provided if there is a need to improve the guidance provided by the taxiway centre line marking.

### **LOCATION**

23. Taxiway centre line markers should be installed at least at the same location as would taxiway centre line lights had they been used.

Note : See ASD502 for the spacing of taxiway centre line lights.

24. Taxiway centre line markers should normally be located on the taxiway centre line marking except that they may be offset by not more than 30 cm where it is not practicable to locate them on the marking.

## **CHARACTERISTICS**

25. A taxiway centre line marker shall be retroreflective green.
26. The marked surface as viewed by the pilot should be a rectangle and should have a minimum viewing area of 20 cm<sup>2</sup>.
27. Taxiway centre line markers shall be so designed and fitted as to withstand being run over by the wheels of an aircraft without damage either to the aircraft or to the markers themselves.

## **UNPAVED TAXIWAY EDGE MARKERS**

### **APPLICATION**

28. Where the extent of an unpaved taxiway is not clearly indicated by its appearance compared with that of the surrounding ground, markers should be provided.

### **LOCATION**

29. Where taxiway lights are provided, the markers should be incorporated in the light fixtures. Where there are no lights, markers of conical shape should be placed so as to delimit the taxiway clearly.

## **BOUNDARY MARKERS**

### **APPLICATION**

30. Boundary markers shall be provided at an aerodrome where the landing area has no runway.

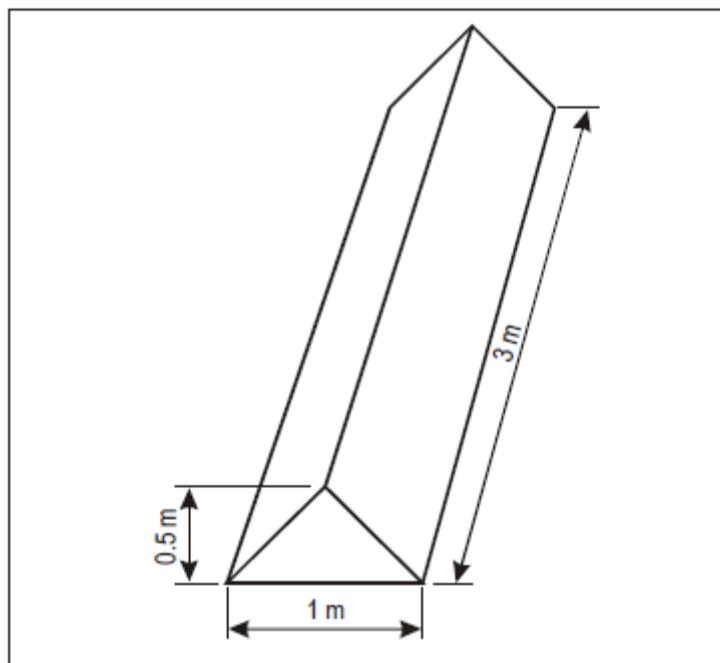
### **LOCATION**

31. Boundary markers shall be spaced along the boundary of the landing area at intervals of not more than 200 m, if the type shown in

Figure 5-34 is used, or approximately 90 m, if the conical type is used with a marker at any corner.

## CHARACTERISTICS

32. Boundary markers should be of a form similar to that shown in Figure 5-34, or in the form of a cone not less than 50 cm high and not less than 75 cm in diameter at the base. The markers should be coloured to contrast with the background against which they will be seen. A single colour, orange or red, or two contrasting colours, orange and white or alternatively red and white, should be used, except where such colours merge with the background.



**Figure 5-34. Boundary markers**

## **DEVIATIONS**

33. The Department of Civil Aviation shall notify and publish deviation from any Standards and Recommended Practices contained in ICAO Annex 14 in the Aeronautical Information Services publications in compliance to the Article 38 of the Convention on International Civil Aviation.

**DATO' SRI AZHARUDDIN BIN ABDUL RAHMAN**

**Director General**

**Department of Civil Aviation**

**Malaysia**

**Dated : 26 April 2016**