

Engineering Standard

SAES-B-063

29 June 2005

Aviation Obstruction Marking and Lighting

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Saudi Aramco DeskTop Standards

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Previous Issue: 28 June 2000 Next Planned Update: 1 July 2010

Revised paragraphs are indicated in the right margin

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1 Scope

This Standard defines the minimum mandatory requirements governing the design and installation for the marking and lighting of communications towers and other obstructions that may pose a hazard to aviation. If any object or portion thereof, either temporary or permanent, exceeds an overall height of 60 m above ground level (AGL), if the object meets the criteria for determining obstructions set forth under 14 CFR part 77 of the United States Federal Aviation Administration (FAA) Regulations regardless of height, or if the Manager of the Aviation or Loss Prevention Departments or their representative deems a structure as an obstruction, that object shall be marked and lighted according to the requirements in this standard. The overall height includes all appurtenances such as lights, rods, or antennas.

Commentary Note:

The information in this Standard is based on the latest FAA Circular AC 70/7460-1K.

2 Conflicts and Deviations

- 2.1 Any conflicts between this Standard and applicable Saudi Aramco Engineering Standards (SAESs), Materials System Specifications (SAMSSs), Standard Drawings (SASDs), or industry standards, codes, and forms shall be resolved in writing by the company or buyer representative through the Manager, Loss Prevention Department of Saudi Aramco, Dhahran.
- 2.2 Direct all requests to deviate from this Standard in writing to the company or buyer representative, who shall follow internal company procedure [SAEP-302](#) and forward such requests to the Manager, Loss Prevention Department of Saudi Aramco, Dhahran.

3 References

The selection of material and equipment and the design, construction, maintenance, and repair covered by this Standard shall meet the latest edition of the references listed below, unless otherwise noted.

3.1 Saudi Aramco References

Saudi Aramco Engineering Procedure

[SAEP-302](#)

*Instructions for Obtaining a Waiver of a
Mandatory Saudi Aramco Engineering
Requirement*

Saudi Aramco Engineering Standards

[SAES-H-100](#)

Painting Requirements for Industrial Facilities

[SAES-H-101](#)

Approved Protective Coating Systems

3.2 Industry Codes and Standards

British Standards Institution

BS 381C

British Color Standard

RAL Color Standard No. RAL HR Series K3

United States Federal Air Regulation

FAR Part 77, 14 CFR 77 Objects Affecting the Navigable Airspace, copies available from FAA Website at www.faa.gov/ats/ata/ata400 or

Manager, ASD-110

Department of Transportation

Documentation Control Center

Martin Marietta/Air Traffic Systems

475 School St., SW

Washington, DC 20024

U.S. Federal Aviation Administration Advisory Circulars

AC 70/7460-1K

Obstruction Marking and Lighting, copies available from

<http://www.faa.gov/ats/ata/ai/index.html> or

<http://wireless.fcc.gov/antenna/documentation/FAAdocuments.html> or

Department of Transportation

Property Use and Storage Section

Subsequent Distribution Office, M483.6

Ardmore East Business Center

3341 Q 75th Avenue

Landover, MD 20785

United States Federal Standard

FED STD 595

Colors

The circular on paint is available from:

GSA-Specification Section

470 L'Enfant Plaza

Suite 8100

Washington, DC 20407

4 General Requirements for Obstruction Marking and Lighting

The following chapter and paragraph numbers refer to Federal Aviation Administration Circular AC 70/7460-1K which is a part of this standard. The text in each paragraph is an addition, modification, exception, or deletion to the requirements of AC 70/7460-1K, as noted.

Chapter 1. Administrative and General Procedures

(Deletion) Delete All

Chapter 2. General

(Modification) 23. Light Failure Notification

Any observed or otherwise known extinguishment or improper functioning of any top steady-burning light or any flashing obstruction light, regardless of its position on a natural or man-made obstruction, which will last more than 30 minutes, shall be immediately reported. Such reports shall be made by telephone to both the Manager, Aviation Department and, if the lighting is for a communications facility, the Manager, Communications Operations Department. Set forth the condition of the light, or lights, the circumstances which caused the failure, if known, and the probable date the normal operation will be resumed. Further notification shall be given immediately upon resumption of normal operation of the light, or lights. Any extinguishment or improper functioning of a steady-burning side or intermediate light, or lights, installed on a natural or man-made obstruction shall be corrected as soon as possible, but notification of such extinguishment or improper functioning is not necessary.

(Deletion) 24. Notification of Restoration – Delete All

(Deletion) 25. FCC Requirement -- Delete All

Chapter 3. Marking Guidelines

(Modification) 32. a. Materials and Application

Quality paint and materials shall be selected to provide extra years of service. The paint shall be compatible with the surfaces to be painted, including any previous coatings, and suitable for the environmental conditions. Surface preparation and paint application shall be in accordance with [SAES-H-100](#), [SAES-H-101](#), the appropriate Saudi Aramco Data Sheets ([SAES-H-101V](#)) that give the

application requirements for the paint systems, and the manufacturer's recommendations. See Section 121 for further information on paint specifications. In-Service Aviation Orange Tolerance Charts shall be used to determine when repainting is required. The color should be sampled on the upper half of the structure, since weathering is greater there. *(previously 5.3.1)*

- Chapter 4. Lighting Guideline
- Chapter 5. Red Obstruction Light System
- (Addition) 59. Offshore Heliports

Where the highest point on the platform exceeds the elevation of the helideck by more than 15 m, an omnidirectional red light shall be fitted at the highest elevation of the platform, with additional such lights fitted at 10 m intervals down to the elevation of the helideck. *(previously 7.4.3)*

- Chapter 6. Medium Intensity Flashing White Obstruction Light Systems
- Chapter 7. High Intensity Flashing White Obstruction Light Systems
- Chapter 8. Dual Lighting with Red/Medium Intensity Flashing White Systems
- Chapter 9. Dual Lighting with Red/High Intensity Flashing White Systems
- Chapter 10. Marking and Lighting of Catenary and Catenary Support Structures
- Chapter 11. Marking and Lighting Moored Balloons and Kites
- Chapter 12. Marking and Lighting Equipment Information
- (Modification) 121. Paint Standard

Paint and aviation colors shall comply with Chromaticity and luminance factors requirements per U. S. Federal Standards FED STD 595; British Standard, BS 381C; and RAL 840 HR, Series K3 as follows:

Paint Standards Color Table

Color ^{1, 2, 3}	Fed Std. Number	Alternate Std. Number	Alternate Color Number
Orange	12197	BS 381C	592
White	17875	RAL	9003
Yellow	13538	BS 381C	356

Notes:

1. Federal Specification FED SPEC T1-P-59, Aviation Surface Paint, Ready-Mixed INTERNATIONAL ORANGE.
2. Federal Specification FED SPEC T1-102, Aviation Surface Paint, Oil titanium zinc.
3. Federal Specification FED SPEC T1-102, Aviation Surface Paint, Oil, Exterior, Ready-Mixed, WHITE AND LIGHT TINTS.

Appendix 1 Specifications for Obstruction Lighting Equipment Classification

Appendix 2 Miscellaneous

29 June 2005 **Revision Summary**
Major revision.