Obstacle Surfaces Identification

Not to Scale
ICAO Specs

ICAO Annex 14  TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION, VOLUME I, AERODROME DESIGN AND OPERATIONS,
Lateral Surfaces

Not to Scale
Runway

Not to Scale
Runway Strip and Runway End Safety Area

For the purposes of determining obstacles on the sides of the runway, the Runway Strip is referenced horizontally to the runway ends and vertically to the highest threshold on the facility. It extends 300m (240m beyond 60m strip) from each runway end and 150m on either side of the centerline.
Transitional Surface

The transitional surfaces extend outward (perpendicular to the centerline of each runway) from the edges of the Runway strip 315m, at a 1:7 slope upward to a height 45m above the published reference elevation of the aerodrome.
Inner Horizontal Surface

The inner horizontal surface for each runway is defined by 2 half circles centered on the runway ends and joined by tangents. The radii of the half circles is 4000m and the tangents are parallel to the runway centerline at a distance of 4000m. The surface is a constant 45m above the published reference elevation of the aerodrome.
Conical Surface

The inner edge of conical surface for each runway begins at the outer edge of the inner horizontal surface. Its outer edge is defined by 2 half circles centered on the runway ends and joined by tangents. The radii of the half circles is 6100 m and the tangents are parallel to the runway centerline at a distance of 6100 m. The surfaces extend 2100 m horizontally and are sloped at a 1:20 ratio. The outer edge is 150 m above the height of the published reference elevation of the aerodrome.
Outer Horizontal Surface

The Outer Horizontal surface begins at the outer edge of the conical surface and extends outward to a distance of 8000 m from the endpoints and centerline of the runway at a constant height of 150 m above the published reference elevation of the aerodrome.
Recap of Lateral Surfaces

- Outer Horizontal
- Conical
- Inner Horizontal
- Transitional
- Runway Strip

Not to Scale
Approach/Departure Surfaces

15% divergence (9 Degrees)

RESA – runway end safety area

Not to Scale
Runway Strip and Clearway

For the purposes of determining obstacles on the sides of the runway, the Primary Surface is referenced horizontally to the runway ends and vertically to the highest threshold on the facility. It extends 300 m from each runway end and 150 m on either side of the centerline.

For the purposes of determining obstacles in the approach/departure zones, **the horizontal and vertical point of reference is the runway Threshold**.

_Not to Scale_
1:50 Surface vertical reference is the height of the runway threshold.

1:50 Surface horizontal reference is 60 m from the runway end.

150m Above lowest Runway end on airport

~8 000m

15 000m

Not to Scale
The runway and stopway is included in the runway strip.

At the end of the runway

150m Runway strip

150m Runway strip

Not to Scale
If no object reaches the 2 per cent (1:50) take-off climb surface, new objects shall be limited to preserve the existing obstacle free surface or a surface down to a slope of 1.6 per cent (1:62.5).

The 1:50 Sloped surface
Side view

150 m above the lowest approach end on the airport
First section extends to 3000m
Height of approach end

1:50 (1:62.5) Slope

~8 000m

Threshold

Not to Scale
At the end of the runway

Not to Scale
The 1:50 Sloped surface

150m above the lowest approach end on the airport
At the end of the runway
Side View

Not to Scale

150M above the lowest approach end on the airport

1:50 Slope

~8 000m

15 000m

Threshold
The “flat” approach departure surface

150m above the lowest approach end on the airport

~8,000m

~15,000m

Not to Scale
Approach/Departure Surfaces

1:50 Surface vertical reference is the height of the runway end point

1:50 Slope

~8 000m

150m Above lowest approach end on airport

1:50 Surface horizontal reference is 60m from the runway end

300m

Not to Scale
+ Transitional

Not to Scale
+ Inner Horizontal

*Not to Scale*
Obstacle Identification Surfaces

Not to Scale