

#### Revisions

Rev nr	Date	Subject
Rev 1	15.5.2018	Original version
Rev 2	16.8.2022	RWY sidestripe revised
Rev 3	11.10.2022	TWY/RWY lights fig 9 and 10 corrected
Rev 4	20.02.2023	Start TORA/ASDA/TODA reduced takeoff included
Rev 5	10.12.2024	Updated figures/illustrations

## Runway markings and lights, start TORA/ASDA/TODA, on Avinor aerodromes

### 1 Subject

Markings and lights on runways.

### 2 Purpose

This Pilot brief serves to ensure that pilots operating on Avinor aerodromes are aware of the new design of markings and lights on runways.

### 3 Background

The introduction of EASA legislation to aerodrome design has imposed changes to the design of threshold and runway end lights, and markings on runway turn pads.

#### 3.1 Runway threshold lights

On a runway 45 m wide, the threshold wingbar lights will be replaced by either 14 threshold lights evenly spread across the runway or two groups of threshold lights across the runway, each group consisting of 7 lights. At some of these runways, where drifting snow or frequent contamination of runway surface might cover flush threshold lights, the wingbars will remain operative. The latter is described in fig 1.

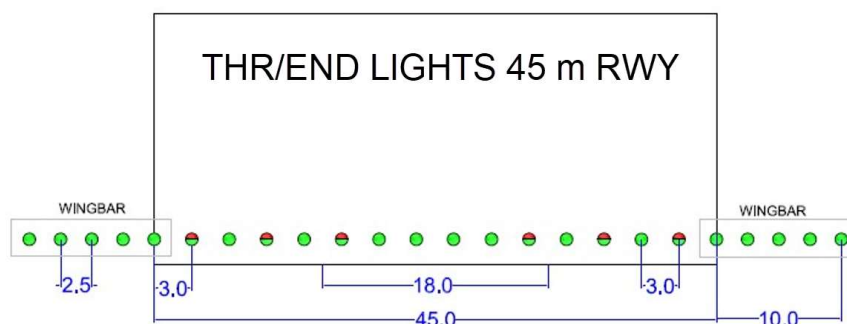


Fig 1, Threshold lights including wingbars, 45 m wide runway.

On a 30 m wide runway, 9 threshold lights will be added to the wingbar lights, across the runway, see fig 2.

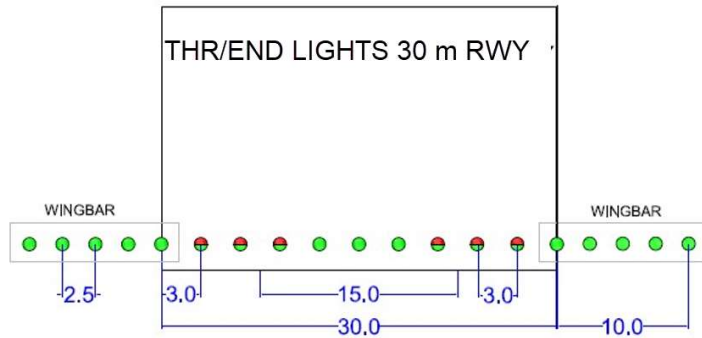


Fig 2, Threshold and wing bar lights, 30 m wide runway.

The changes described above will be implemented during the coming years, in connection with other construction or surface work on the runway.

### 3.2 Runway end lights

Runway end wingbar lights will be replaced by two groups of runway end lights.

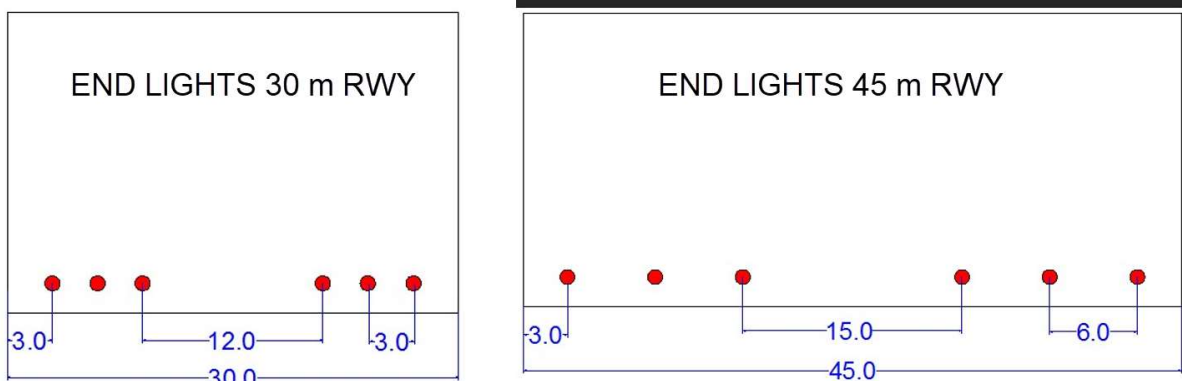


Fig 3, Runway end lights

The changes described above will be implemented during the coming years, typically in connection with other construction or surface work on the runway.

There is one exemption, Vardø airport (ENSS), where runway end lights are evenly spaced across the runway.

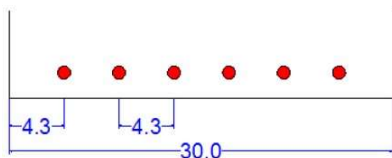


Fig 4, Runway end lights at Vardø airport (ENSS).

### 3.3 Runway and turn pad edge marking

Runway edge is marked with wide white lines. Start of TORA, ASDA and TODA is indicated by start of runway edge lines.

End of runway surface and edge of runway turn pad are marked with double yellow lines. When the white runway side stripe continues from the threshold or runway end until the end of surface, it indicates that the start of TORA, ASDA and TODA is at the end of surface.

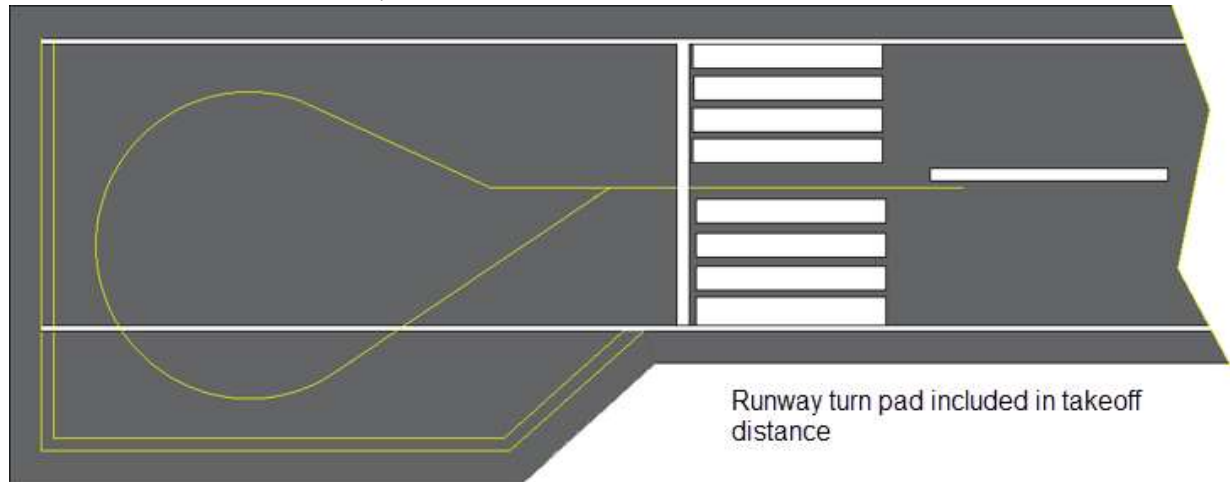


Fig 5, runway and turn pad edge markings, turn pad included in takeoff distances.

On a few runways (ENFL, ENBN and ENST) the start point of TORA, ASDA and TODA is not located at the end of the surface. The edge of the runway and runway turn pad prior to this start point is indicated with double yellow lines. Start point of TORA, ASDA and TODA is at start of RWY edge marking, at runway threshold.

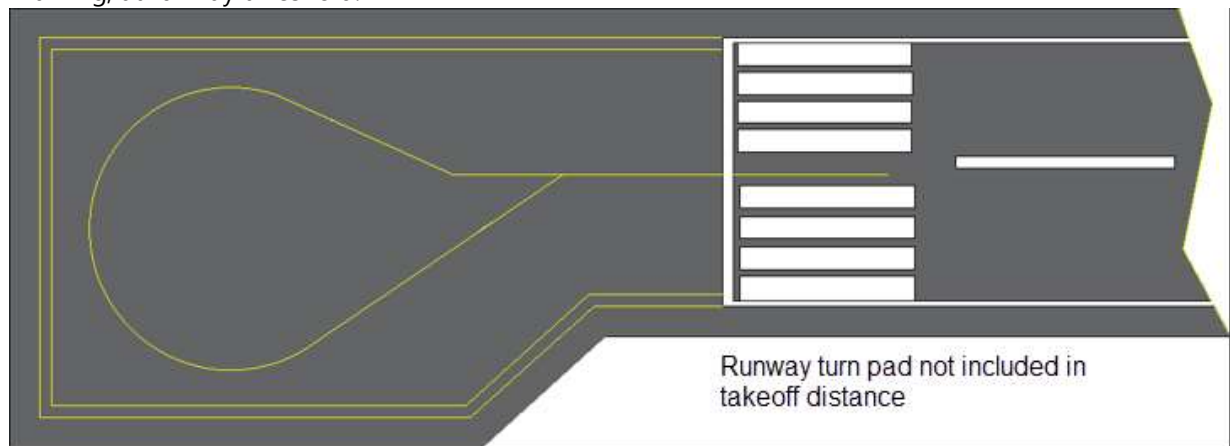


Fig 6, turn pad edge markings, turn pad not included in takeoff distances.

#### 4 Examples of markings and lights

Different layouts are illustrated below.

Fig 7, runway turn pad extension to one side only. Turn pad included in TORA, ASDA and TODA. Threshold displaced and collocated with opposite runway end.

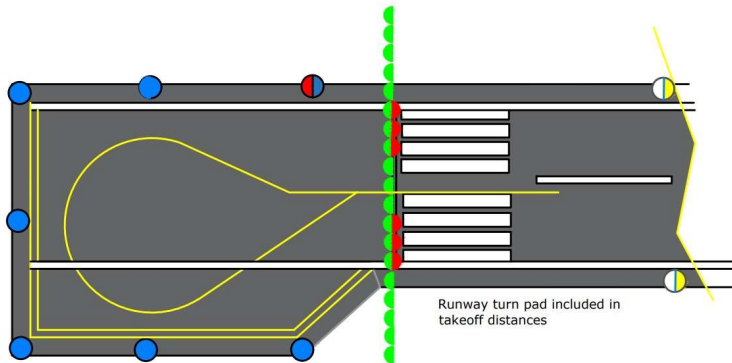


Fig 7, Runway turn pad extension to one side.

Fig 8, runway turn pad extension to both sides. Turn pad included in TORA, ASDA and TODA. Threshold displaced and located closer to the end of surface than the opposite runway end.

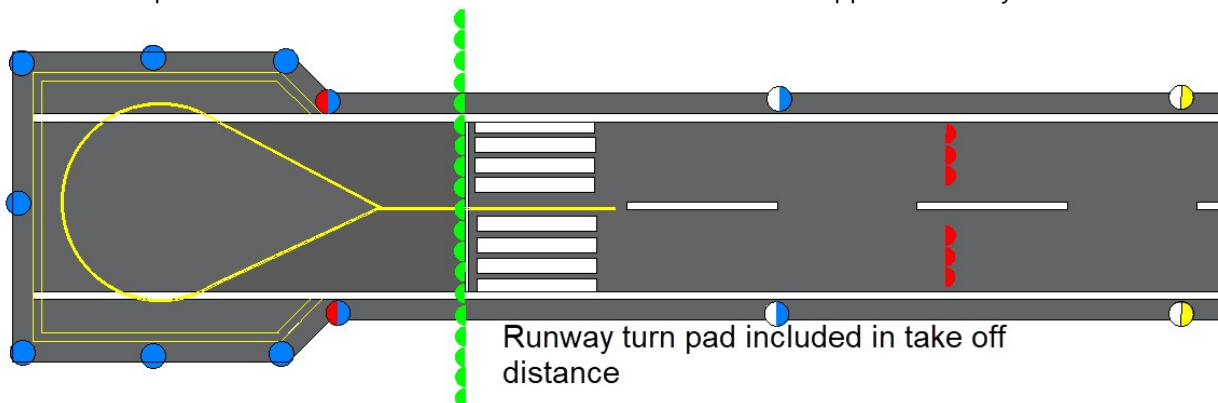


Fig 8, Runway turn pad extension to both sides.

Fig 9, Runway turn pad extension to one side. Turn pad included in TORA, ASDA and TODA. Runway end located at end of surface, threshold displaced.

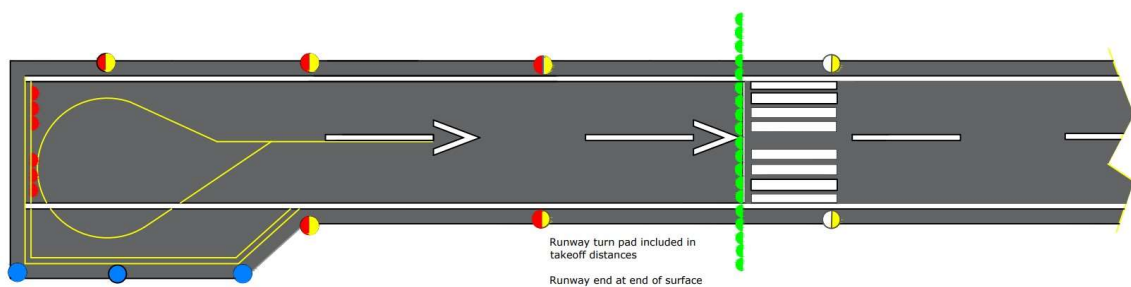


Fig 9, Runway turn pad extension to one side.

Fig 10, Entrance or vacation of runway via taxiway located at the end of surface. Start of TORA, ASDA and TODA at the end of surface. Threshold displaced. Opposite runway end is closer to surface end than the threshold.

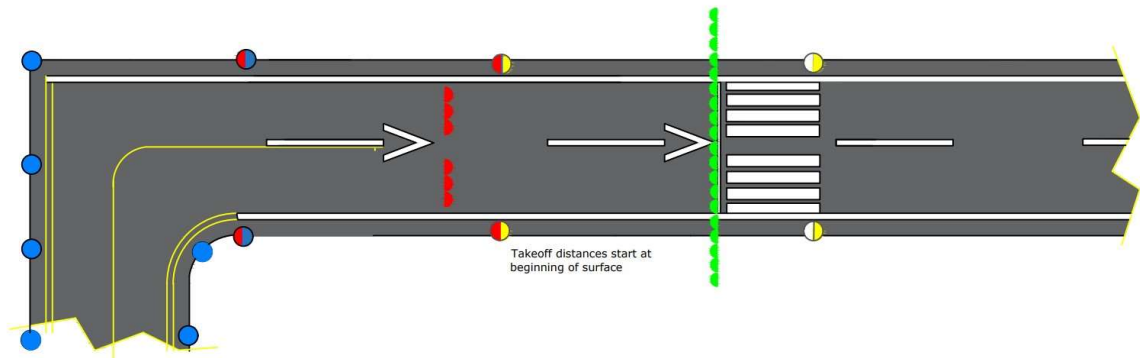
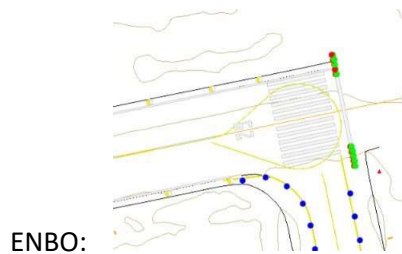


Fig 10, Connecting taxiway at surface end.



ENBO:

Fig 11, Runway turn pad extension to one side only. Turn pad not included in TORA, ASDA and TODA. Threshold displaced and collocated with opposite runway end.

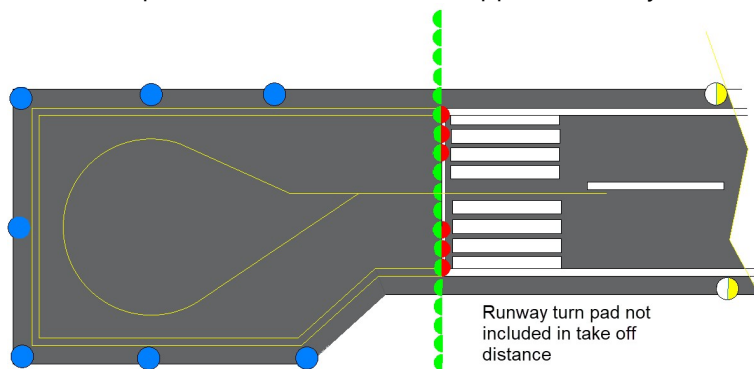


Fig 11, ENFL, ENBN and ENST: Runway turn pad not included in takeoff distances.

Fig 12, Runway turn pad extension to one side only. The turn pad is included in TORA, ASDA and TODA. Threshold is not displaced. Opposite runway end located some distance from end of surface.

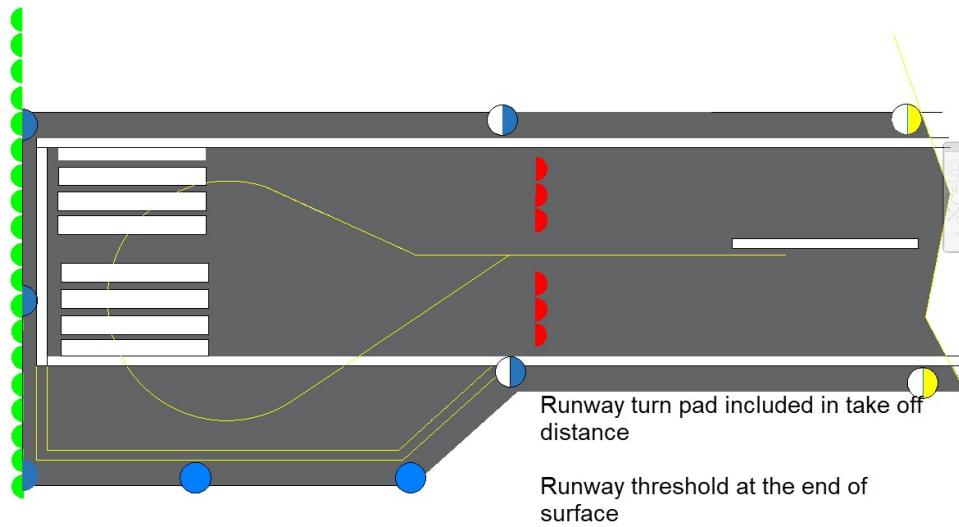


Fig 12, Threshold at the surface end.

## 5 Reduced runway declared distances for take-off from taxiway intersections

Reduced runway declared distances for take-off from taxiway intersections are measured from positions as described in three figures, below:



Fig 13

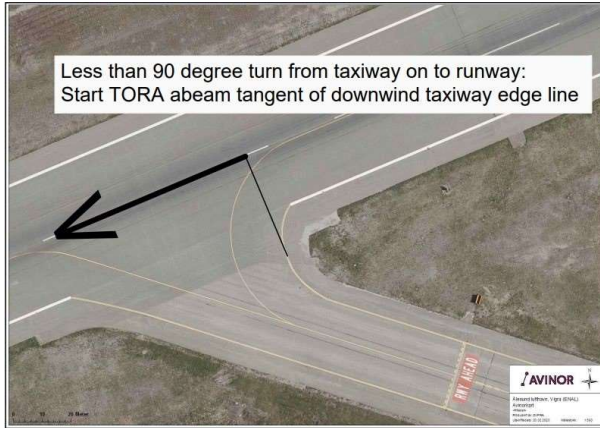


Fig 14

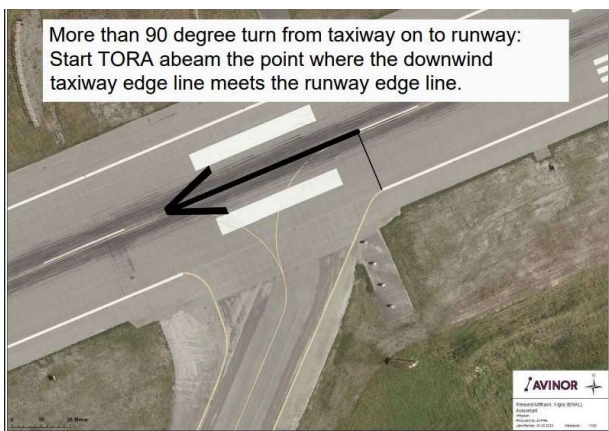


Fig 15