D274 Take-off and Approach Fan, Transitional (side) Surface, Horizontal and Conical Surfaces

Designation Number	D274
Requiring Authority	Dunedin International Airport Limited
Designation Purpose	Take-off and Approach Fan, Transitional (side) Surface, Horizontal and Conical Surfaces - Airport Approach and Land Use Controls
Location (address)	
Conditions	Yes
Legacy	
Rollover Designation	Yes
Lapse Date	Given effect to - no lapse date

D274 Conditions

1. Background and Requirement:
    a. Airspace around airports is required to be protected under the Civil Aviation Act 1990. The Civil Aviation Authority promotes New Zealand Aerodrome Design Rules and Standards to prevent the encroachment of obstructions into airspace that may affect aircraft operations.
    b. Protection is provided by way of Obstacle Limitation Surfaces (OLS) that are described in this designation. These surfaces are illustrated in the Dunedin Airport and Land Use Controls Map attached as **Appendix A** below. The OLS depicted on the Map in **Appendix A** are indicative only, the precise positioning of these surfaces is set out in the text of this designation.
2. Survey co-ordinate and elevation datum - All survey co-ordinates in this designation are Geodetic Datum 2000 – North Taieri Circuit, and elevations are in terms of

Dunedin Vertical Datum 1958 (Local Mean Sea Level). The aerodrome reference height is 1.22m.

3. Main Runway - The main runway once extended will be 2,400m long by 45m wide. Provision is included for 170m long starter extensions at each end contained within the runway strip and runway end safety area.
4. Runway Strip:

a. The extended main runway is contained within the runway strip. The runway strip is 2,520m long by 300m wide. The edges are parallel to and 150m either side of the runway centreline and the ends extend 60m beyond each threshold and are perpendicular to the runway extended centreline.

b. The coordinates and elevations of the ends of the runway strip on the extended runway centreline, which are also the take off and approach OLS origin points, are listed in Table 1 below:

c. **Table 1: Runway strip end and takeoff and approach OLS origin points**

	mN	mE	Elevation
North End	793035.15	394254.88	2.20m
South End	791625.00	392166.43	2.00m

5. Horizontal Surface - The horizontal surface is a horizontal plane above the runway with an elevation of 45m having its out limit at a locus of 4000m measured from the periphery of the 300m wide runway strip.
6. Conical Surface - The conical surface slopes upwards and outwards from the periphery of the horizontal surface at a gradient of 1 vertical to 20 horizontal (1:20) to an elevation of 150m above aerodrome datum.
7. Takeoff Surface - The takeoff surface extends outwards and upwards from each end of the runway strips as described below:

a. North takeoff surface:

i. The north takeoff surface centreline commences at the north end origin point in Table 1. It climbs at a gradient of 1 in 62.5 on a bearing of 56.07° grid for a distance of 10642m at which point the surface turns east at radius 2450m onto bearing 108° grid. The surface continues for a total distance of 18750m.

ii. The edges of the surface commence 90m either side of the origin point and expand at 12.5% of the centreline distance to a maximum width of 900m either side of centreline at 6480m from the origin. From this point until the end of the surface at 18750m from the origin the edges of the surface remain parallel 900m either side of its centerline.

b. South takeoff surface:

i. The south takeoff surface centreline commences at the south end origin point in Table 1 climbs at a gradient of 1 in 62.5 on a bearing of 236.07° grid for a distance of 2324m at which point the surface turns abruptly east onto bearing 226° grid. The surface continues for a total distance of 18750m.

ii. The edges of the surface commence 90m either side of the origin point and expand at 12.5% of the centreline distance to a maximum width of 900m either side of centreline at 6480m from the origin. From this point until the end of the surface at 18750m from the origin the edges of the surface remain parallel 900m either side of its centerline.

8. Approach Surface - The approach surface extends outwards and upwards from each end of the runway strip as described below:

a. North approach surface:

i. The north approach surface centreline commences at the north end origin point in Table 1 climbs at a gradient of 1 in 50 on a bearing of 56.07° grid for a distance of 15000m at which point the surface ends.

ii. The edges of the surface commence 150m either side of the origin point and expand at 15.0% of the centreline distance to a width of 2400m either side of centreline at the end of the surface.

b. South approach surface:

i. The south approach surface centreline commences at the south end origin point in Table 1 climbs at a gradient of 1 in 50 on a bearing of 236.07° grid for a distance of 15000m at which point the surface ends.

ii. The edges of the surface commence 150m either side of the origin point and expand at 15.0% of the centreline distance to a width of 2400m either side of centreline at the end of the surface.

9. Transitional Surfaces - The transitional surfaces arise upwards and outwards from the sides of runway strip at a gradient of 1 in 7 to intercept the approach surfaces at each runway end and the horizontal surface.

10. Controlling Surface - At any point where any two surfaces overlap and are at differing elevations, the lower of the two surfaces shall apply for the purposes of the height controls specified at 11. below.

11. Height Controls - Prior to any resource consent application, building consent application, carrying out works involving the establishment of forestry, constructing any structure which includes any building, aerial, antennae or other object, on land that is covered by any of the surfaces specified in this designation, the person(s) wishing to obtain consent or carry out the work must:

a. Provide written notice to the Dunedin International Airport Limited of the work they wish to carry out; and
b. Demonstrate to Dunedin International Airport Limited that the work will not penetrate in any way any of the surfaces specified in this designation; or
c. Obtain the written approval of the Dunedin International Airport Limited if the surfaces specified in this designation will be penetrated in any way. Where the written approval of the Dunedin International Airport Limited is required, then that approval may be given subject to the payment of the reasonable costs incurred by Dunedin International Airport Limited in assessing any application for approval.

Appendix A: Dunedin Airport Approach and Land Use Controls Map (including OLS)