

Australian Noise Exposure Forecast

The system in use in Australia for managing aircraft noise emissions was originally developed by the FAA to provide a means of determining the expected level of aircraft noise complaints from residents of lands exposed to aircraft noise around airports. Known as the Noise Exposure Forecast (NEF), this was applied in North America to place a numerical value on the expected level of noise disturbance within bands of exposure to aircraft noise. These numerical values were then adopted by local authorities when determining the suitability of lands for certain types of use. Although superseded by other noise metrics in North America, the FAA's NEF system remains in use in Australia. It was modified for Australian application, with lower threshold levels for acceptable noise exposure adopted for land use control and impact assessment purposes. This is referred to as the Australian Noise Exposure Forecast (ANEF).

The ANEF is not a direct measure of noise emissions. It identifies contours of forecast noise exposure impact around an airport. These contours are modelled using the future aircraft flight schedule, types of aircraft, flight

paths and frequency of aircraft operations occurring during the daytime, evening and at night.

Australian Standard 2021:2015 incorporates the ANEF, providing guidance on the types of development and levels of acceptability within a range of noise contours. The building site acceptability table from the Australian Standard is presented below.

The ANEF is largely a land use planning mechanism that will ultimately be incorporated within the Sunshine Coast Council Planning Scheme.

Contours which are calculated using the same methods as the ANEF but have not yet been formally endorsed are known as Australian Noise Exposure Concept (ANEC) contours. An ANEF drawing depicts a set of noise contours which has been formally endorsed by Airservices Australia.

An ANEF drawing has been produced for future operations on Sunshine Coast Airport's new runway based on forecast aircraft movements to 2040.

Type of development	ANEF Zone		
	Acceptable	Conditionally Acceptable	Unacceptable
House, Home Unit, Flat, Caravan Park	< 20 ANEF	20 to 25 ANEF	> 25 ANEF
Hotel, Motel, Hostel	< 25 ANEF	25 to 30 ANEF	> 30 ANEF
School, University	< 20 ANEF	20 to 25 ANEF	> 25 ANEF
Hospital, Nursing Home	< 20 ANEF	20 to 25 ANEF	> 25 ANEF
Public Building	< 20 ANEF	20 to 30 ANEF	> 30 ANEF
Commercial Building	< 25 ANEF	25 to 35 ANEF	> 35 ANEF
Light Industrial	< 30 ANEF	30 to 40 ANEF	> 40 ANEF
Other Industrial	Acceptable in all ANEF Zones		

Table: Building site acceptability based on ANEF zones – AS2021:2015.