

SECTION 2 BUILDING SITING AGAINST AIRCRAFT NOISE INTRUSION

2.1 DETERMINATION OF NOISE EXPOSURE OF BUILDING SITE

2.1.1 Aerodromes with ANEF charts

ANEF charts for the major Australian city airports, military aerodromes and for many of the country aerodromes are available from the appropriate authorities. All or some of the noise exposure contours of 20, 25, 30, 35 and 40 ANEF are shown on these charts.

These contours indicate land areas around aerodromes which are forecast to be exposed to aircraft noise of certain levels as defined in Clause 1.5.6; the higher the ANEF value the greater is the noise exposure.

Locate the position of the building site on the ANEF chart and determine the highest value ANEF contour which crosses the building site.

If the building site is outside the 20 ANEF contour, noise from sources other than aircraft may dominate; therefore, there is usually no need to proceed further in this Standard as the construction of the building need not specifically be designed to provide protection against aircraft noise intrusion. Nevertheless, if it is desired that premises be insulated against aircraft noise, the procedures of this Standard may be followed.

NOTES:

- 1 The individual aerodrome operators should be approached regarding the availability of ANEF charts.
- 2 For certain highly specialized building types such as auditoria or recording studios, specialist acoustic advice should always be sought.

2.1.2 Aerodromes without ANEF charts

The ANEF system takes account of noise levels, frequency and time of day of aircraft noise events. Therefore it is always preferable to use an ANEF chart to predict aircraft noise exposure at a site. If one does not exist, the preparation of an ANEF chart for the particular aerodrome should be requested through the aerodrome owner.

Where aerodrome usage is confined to a small number of civil, non-jet aircraft movements the production of an ANEF chart may not be justified and is unlikely to occur. In these cases refer to Appendix E.

2.2 DETERMINATION OF BUILDING SITE ACCEPTABILITY

2.2.1 General

The acceptability of the building site is dependent on the type of building proposed and on the ANEF zone in which it is to be located.

2.2.2 Determination of acceptability

For the particular building type under consideration, determine from Table 2.1 the building site acceptability, i.e. acceptable, conditionally acceptable or unacceptable, for the ANEF zone in which it is to be located.

2.3 ACTION RESULTING FROM ACCEPTABILITY DETERMINATION

2.3.1 Acceptable

If from Table 2.1, the building site is classified as ‘acceptable’, there is usually no need for the building construction to provide protection specifically against aircraft noise. However, it should not be inferred that aircraft noise will be unnoticeable in areas outside the ANEF 20 contour. (See Notes 1, 2 and 3 of Table 2.1.)

2.3.2 Conditionally acceptable

If from Table 2.1, the building site is classified as ‘conditionally acceptable’, the maximum aircraft noise levels for the relevant aircraft and the required noise reduction should be determined from the procedure of Clauses 3.1 and 3.2, and the aircraft noise attenuation to be expected from the proposed construction should be determined in accordance with Clause 3.3 (see Notes 1 and 3 of Table 2.1).

2.3.3 Unacceptable

If, from Table 2.1 the building site is classified as ‘unacceptable’, construction of the proposed building should not normally be considered. Where in the community interest redevelopment is to occur in such areas, e.g. a hotel in the immediate vicinity of an aerodrome, refer to the notes to Table 2.1.

TABLE 2.1
BUILDING SITE ACCEPTABILITY BASED ON ANEF ZONES
(To be used in conjunction with Table 3.3)

Building type	ANEF zone of site		
	Acceptable	Conditionally acceptable	Unacceptable
House, home unit, flat, caravan park	Less than 20 ANEF (Note 1)	20 to 25 ANEF (Note 2)	Greater than 25 ANEF
Hotel, motel, hostel	Less than 25 ANEF	25 to 30 ANEF	Greater than 30 ANEF
School, university	Less than 20 ANEF (Note 1)	20 to 25 ANEF (Note 2)	Greater than 25 ANEF
Hospital, nursing home	Less than 20 ANEF (Note 1)	20 to 25 ANEF	Greater than 25 ANEF
Public building	Less than 20 ANEF (Note 1)	20 to 30 ANEF	Greater than 30 ANEF
Commercial building	Less than 25 ANEF	25 to 35 ANEF	Greater than 35 ANEF
Light industrial	Less than 30 ANEF	30 to 40 ANEF	Greater than 40 ANEF
Other industrial	Acceptable in all ANEF zones		

NOTES:

- 1 The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths. Because of this, the procedure of Clause 2.3.2 may be followed for building sites outside but near to the 20 ANEF contour.
- 2 Within 20 ANEF to 25 ANEF, some people may find that the land is not compatible with residential or educational uses. Land use authorities may consider that the incorporation of noise control features in the construction of residences or schools is appropriate (see also Figure A1 of Appendix A).
- 3 There will be cases where a building of a particular type will contain spaces used for activities which would generally be found in a different type of building (e.g. an office in an industrial building). In these cases Table 2.1 should be used to determine site acceptability, but internal design noise levels within the specific spaces should be determined by Table 3.3.
- 4 This Standard does not recommend development in unacceptable areas. However, where the relevant planning authority determines that any development may be necessary within existing built-up areas designated as unacceptable, it is recommended that such development should achieve the required ANR determined according to Clause 3.2. For residences, schools, etc., the effect of aircraft noise on outdoor areas associated with the buildings should be considered.
- 5 In no case should new development take place in greenfield sites deemed unacceptable because such development may impact airport operations.