

EXPOSURE TESTING FOR SKUDO FLOOR SYSTEM



The Skudo commitment to quality is no more apparent than in its ability to endure the harsh environmental elements of Australia's extreme weather range. In order for the Skudo Floor system to be suitable for its external applications, the product had to be tested using intense weathering systems.

Skudo has been using the Allunga exposure facilities for many years and it was there where Skudo Floor was put to the test. The Skudo Floor system was exposed to 160,000 Langley's of Solar Radiation which to put things into perspective equates to approximately 12 months of full exterior exposure for say, the Brisbane climate. Each region has a different radiation rate but most are less severe than Queensland.

ABOUT ALLUNGA:

Allunga is an Aboriginal word for 'Sun' and well suited to the name and location. The site in Townsville is ideal for weathering tests - clear sunny days and moist dewy nights averaging more than 310 days of sunshine every year, and more than 8.7 hours of sunshine per day.

Allunga's main laboratory and exposure facilities are based at Antill Plains, about 20 km from the centre of Townsville and 12 km from Cleveland Bay and the Coral Sea. What gives Townsville its dubious title of 'Australia's skin cancer capital' also makes it an ideal location for weathering tests.

THE TEST:

Altrac units use a fresnel-like array of 10 mirrors focused onto a target zone, and the units rotate during the day tracking the movement of the sun. Altrac units meet the requirements of ASTM G90. Altrac units allow concentrated exposure to the natural solar spectrum. A specially designed pyranometer sensor measures radiation in the target area. On clear sunny days the acceleration factor, in radiation terms, may reach 900%, while the long-term acceleration factor is within the 450–550% band.



During evenings and cloudy periods the target area can rotate allowing Tracrac-like exposure (with prolonged natural moisture exposure). Surface temperatures of exposed samples are regulated with fan driven forced-air draughts. Altrac Options include programmable water spray cycles and under-glass exposure.

THE CLIMATE:

Townsville is at a latitude of 19° South. This is a truly tropical climate: the sun passes directly overhead twice each year. The region has a harsh, complex, tropical climate that is ideal for weathering tests and durability studies. The low latitude also means significantly less seasonal variation in radiation and temperature. The region around Townsville is characterised as part of the 'dry tropics'. This area has less rainfall (annual average about 1100mm) and higher radiation levels than 'wet tropics' regions north and south of Townsville.

Allunga's Townville site averages 7500 MJ/m² global solar radiation per year (the adjective 'global' meaning direct and diffuse) and this includes approximately 400 MJ/m² UV (below 385 nm). Its low latitude means there is a reduced atmospheric path length, which means higher radiation levels and less scattering so the Direct:Diffuse ratio is higher.



Allunga
EXPOSURE LABORATORY