Rated loads and weight ratings: an explanation of AFRDI's testing

by Ian Burton, AFRDI technical manager

There is still confusion over the concept of rated load and weight ratings for chairs.

"When AFRDI rates a chair for a person with a body mass of up to 135kg, we apply over 400kg to the chair during testing. People continue to be confused about this point, and in fact sometimes consider the chair is then 'rated' at 400kg," Ian says.

"Similarly, for testing to AS/NZS 4438 *(i.e. chairs with a suggested maximum user body mass of around 110kg)*, they find we put 2000N on AFRDI Level 6 chairs, and the next thing is, they're claiming the chair is rated at 200kg.

"It simply does not follow, and in fact is a false and misleading claim.

"The reason is due to the effects of **impact loading versus static loading** (some manufacturers claim elevated 'load ratings' for their chairs when the figure is derived from a static loading involving maybe just ten load applications, and loads of perhaps as little as 160 to 200 kg).

"If you want to see an example of impact loading, jump on some scales: someone who weighs only 70 kg can wreck them. Impact can 'convert' 70kg into what is effectively two or three times that load".

This example leads on to another of the key strengths of AFRDI's testing programs – fatigue testing. These are tests where a load which exceeds the 'projected rating' of the chair is applied over hundreds of thousands of cycles. The load applied simulates the action of a person sitting down, in effect, a type of low level impact loading.

"Many chairs will not be adversely affected if the only 'test' they receive is a load applied in a careful manner only a small number of times.

"Our testing is quite severe yet realistic in terms of the way people use chairs, and the chairs which survive this testing – or indeed are modified or re-engineered to survive it – are genuinely superior."

AFRDI TM RATED LOAD

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