



EZSlamX

INSTALLATION/SOFTWARE/USAGE

Q: Question

What is a wiggle test and why should it be tested?

A: Answer

Regarding the Wiggle Test there are a few facts:

Door check

Ideally the wiggle test would be executed without the door check. In this case we can perform the wiggle movement anywhere around 20 ~40 degrees open, or at least a sufficient distance away from the cabin.

Removing the door check excludes the uncertainty introduced by the forces provided by this component.

If the door check cannot be removed, the wiggle is best executed in a region where the door check force is relatively low or at least constant.

Inertia (kgm²) vs Weight (kg)

It is important to understand the difference between both values.

As the motion of a door closing effort is rotational, the inertia is essential and is measured via the wiggle test. It takes into account the weight and how far it is distributed around the hinge axis. This will allow to convert speed into, for example, kinetic energy.

The weight can theoretically NOT be determined by EZSlam. The simple reason is that there are 2 variables: the weight and the center of gravity.

Example 1 : For an inertia of 10kgm² is impossible to know if there is 10kg at 1m or 40kg at 0.5m.

Example 2 : For an inertia of 12kgm² it could be 33kg at 0.6m or 28kg at 0.65m, or weight difference of about 5kg for a shift in center of gravity of about 50mm.

So, depending on the design and the weight distribution, EZSlam can only approximate the weight. This is the reason why the values are displayed in brackets '['']

However, if you enter the known weight, EZSlam will be able to determine the matching center of gravity or the other way around.

In the calculations it is important to have the appropriate corresponding weight and center of gravity.

It is important to understand that the results presented by EZSlam are a function of inertia and only limited based on the weight itself.



Wiggle

In conclusion, yes; the Wiggle test remains important as the system needs inertia. For the same reason as above, the inertia cannot be determined from the weight alone. It also needs the center of gravity. Depending on the level of accuracy even this information alone is not sufficient.