

/ Internal Tank Modelling – Geometry Preparation

- The internal tank surfaces need to be **split** by the **internal fluid waterplane**.
- Internal fluid waterplane should be **parallel** to the **Global X-Y plane**.
- Currently, we don't need to add in the internal fluid waterplane surface.
- The **normal** of the internal tank should pointing **inward** toward the fluid inside.
- The surfaces of an internal tank should be **exclusive**, i.e.
 - Different internal tanks should not share common surfaces.
 - External structure surface should not share common surfaces with internal tanks.
- An internal tank is not a structure, but a part of the structure, so it needs to **share topology** with other structure surfaces.

/ Aqwa Internal Tank Object

- Internal Tank Surfaces: select all the internal tank surfaces
- Fluid Level Definition: select the split line on the internal tank
- Permeability: influence the fluid volume

The screenshot displays the ANSYS Aqwa software interface. On the left, the 'Outline' tree shows the project hierarchy: Project > Model (A3, B3, C3) > Geometry > Con. The 'Add' menu is open, showing options like Point Mass, Distributed Mass, Point Buoyancy, Internal Tank (selected), Connection Point, Disc, Additional Hydrostatic Stiffness, Additional Damping, Additional Added Mass, and Morison Hull Drag Coefficients. The 'Details' panel on the right shows the configuration for 'Internal Tank 2'.

Details of Internal Tank 2	
Name	Internal Tank 2
Visibility	Visible
Activity	Not Suppressed
Geometry	
Internal Tank Surfaces	2 Bodies
Fluid Level Definition	1 Edge
Surface Height (in Global Axes)	0.4 m
Properties	
<input type="checkbox"/> Permeability	1
<input type="checkbox"/> Fluid Density	1025 kg/m ³
<input type="checkbox"/> Damping Factor	0.01
Hydrostatics	
Fluid Mass	103401.625 kg
Fluid Center of Gravity X	15.47568 m
Fluid Center of Gravity Y	4.2786 m
Fluid Center of Gravity Z	-0.20047 m
Fluid Center of Floatation X	15.47628 m
Fluid Center of Floatation Y	4.27977 m