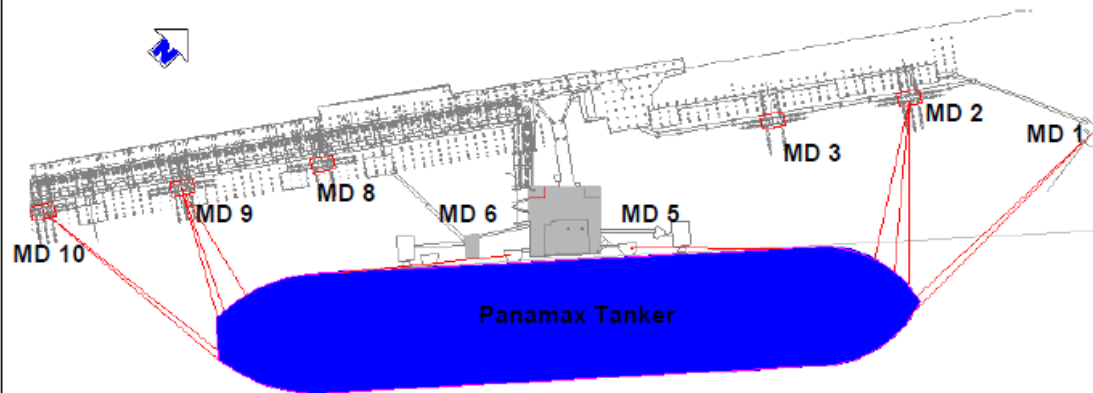


# Recommended Mooring Pattern and Operational Wind Limits

## Panamax Tankers

### Minimum Equipment Requirements



**ALTONA REFINERY**  
**GELLIBRAND PIER**

Maximum Operating Environmental Limits	
	Wind Velocity <sup>(1)</sup>
Stop Cargo Transfer	35 knots
Disconnect Marine Loading Arms	40 knots
Take Special Precautions	45 knots

(1) 20 second gust measured at 10 m elevation

#### Notes:

- Wind limits apply to all wind directions.
- Lines must be tended periodically.
- Additional mooring lines or stronger lines will not increase wind limits.
- Take Special Precautions - refinery shall either deploy additional lines, call in standby tugs, or release vessel.

Minimum Mooring Requirements								
	Structure Number							
	MD 10	MD9	MD8	MD 6	MD 5	MD 3	MD 2	MD 1
Number of Lines	2	3		2	2		3	2
Line Breaking Strength	Minimum ≥ 52 metric tons							
Mooring Line Material	Conventional Fibre, HMF Ropes, or Steel Wires with Tails							
Tail Properties	11 m with Strength 25% Stronger than MBL of Main Mooring Ropes							

Mooring Diagram Limits		
	Max	Min
LOA	230.0 m	182.9 m
Beam	36.0 m	32.2 m
Draft	13.7 m	6.5 m
Moulded Depth	20.9 m	-