**TEST CONDITIONS and PROCEDURES for BOLLARD PULL**

1- During testing of continuous static (BPcont.) the main engine(s) shall be run at the manufacturer's recommended maximum continuous rating (MCR).

2- All auxiliary equipment such as pumps, generators and other equipment, which are driven from the main engine(s) or propeller shaft(s) in normal operation of the vessel shall be connected during the test.

3- The breaking load of the pulling cable, connecting tugboat and land, shall have twice the estimated maximum pulling load and shall be certified. The length of the said pulling cable shall be more than 100 m long.

4- The depth of the test location with a radius of 100 m around the vessel shall be at least twice the draft of the tugboat,in any case not less than 10m.

5- The vessel shall be trimmed at even keel or at a trim by stern not exceeding 2% of the vessel's length.

6- The vessel shall be able to maintain a fixed course for not less than 10 minutes while pulling as specified in items.

7- The test shall be performed with a fair wind speed not exceed 5 m/sec and the co-current at the test location shall not exceed 0,5 m/sec.

8- The load cell shall be capable of continuous monitoring, and shall have a valid calibration certificate. The error tolerance shall not be more than ± 2% between a temperature range of –10oC and +40 oC, and between a tension range of 25 and 200 tonnes. A copy of the valid calibration certificate shall be obtained and kept in the project file. Surveyor should have enough knowledge about the load cell before test. owner’s manual of the load cell is to be ready during the test.

9- If the bollard pull test is to be performed with tug’s own pulling hook, load cell shall be placed between the pulling hook and the pulling cable. Where if to be performed by towing winch, load cell shall be located either on the vessel or ashore.

10- As a precaution against potential breaking or uncontrolled movements of the pulling cable during the test, it is necessary to avoid standing in the pulling direction of the rope.