

## BERTHING ENERGY CALCULATIONS

### PROJECT INFORMATION

Project Title	Venstpils piestātne Nr.35 (Lielākais kuģis)
Country	Latvija
Project Reference	Not Stated
Prepared By	Not Stated

### SHIP DATA

Ship Category		Tanker
Select Dimensions By		Length Overall
Deadweight	dwt	48.200 t*
Displacement	M <sub>D</sub>	58.600 t*
Overall Length	LOA	195.0 m
Length Between Perpendiculars	LBP	185.0 m
Beam	B	32.00 m*
Laden Draft	D	12.50 m*
Freeboard	F	5.30 m*
Block Coefficient	C <sub>B</sub>	0.773

### BERTHING DATA

Berthing Mode		Dolphin Berthing
Structure Type		Open Structure
Eccentricity Calculation Method		Full Calculation
Under Keel Clearance	K <sub>D</sub>	0.50 m
Impact from Bow	x	33.50 %
		61.98 m
Radius of Gyration	K	47.52 m
Impact to Centre of Mass	R	34.46 m
Berthing Angle	α	7.00 deg
Velocity Vector Angle	Φ	55.33 deg
Added Mass Coefficient	C <sub>M</sub>	1.800
Eccentricity Coefficient	C <sub>E</sub>	0.767
Berth Configuration Coefficient	C <sub>C</sub>	1.000
Softness Coefficient	C <sub>S</sub>	1.000

PIANC (2002)

### BERTHING ENERGY

Berthing Velocity	V <sub>B</sub>	166 mm/s
PIANC 2002: Fig 4.2.1 (Deadweight v Velocity)		
	"c"	Easy berthing, exposed
Normal Energy	E <sub>N</sub>	1115 kNm 113.6 t-m
Factor of Safety	F <sub>s</sub>	1.50
	E <sub>A</sub>	1672 kNm 170.4 t-m