

Appendix to report:

SBJ-33-C5-OON-22-RE-013-APPB
K12 - SHIP IMPACT, GLOBAL ASSESSMENT

Appendix title:

APPENDIX B – COMPLEMENTARY MODEL DATA

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CONCEPT DEVELOPMENT FLOATING BRIDGE E39 BJØRNAFJORDEN



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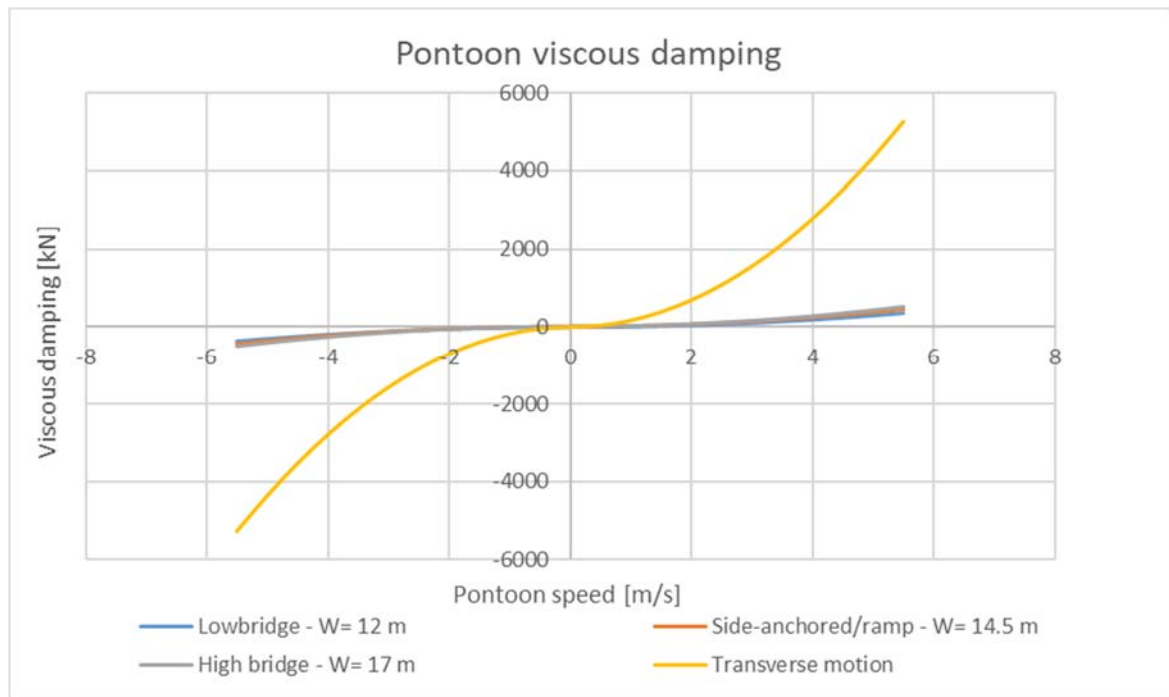
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B.1 Pontoon data

Pontoon properties used in the global model ship impact analysis is shown below. See structural response analyses [1] and analysis method [2] for details.

Pontoon data			
Axes	Lowbridge - 13-26, 31-41	Ramp, anchors - 7-12, 27-30	Highbridge - 3-6
Wamit-name	Wamit 54	Wamit 55	Wamit 56
Number of each pontoon	25	10	4
<i>Stiffness properties</i>			
Vertical stiffness, heave, S33 [N/m]	6.68E+06	8.00E+06	9.29E+06
Rotational stiffness global pitch, S44 [Nm/rad]	4.15E+06	4.84E+07	1.14E+08
Rotational stiffness global roll, S55 [Nm/rad]	1.65E+09	1.94E+09	2.22E+09
<i>Structural mass properties</i>			
Structural mass SM11-SM33 [kg]	1.10E+06	1.44E+06	1.93E+06
Structural inertia SM44 [kg]	3.36E+07	5.22E+07	7.93E+07
Structural inertia SM55 [kg]	5.10E+08	6.52E+08	8.60E+08
Structural inertia SM66 [kg]	5.18E+08	6.72E+08	9.01E+08
<i>Added mass properties</i>			
Added mass - AM11 [kg]	3.71E+05	4.86E+05	6.08E+05
Added mass - AM22 [kg]	3.04E+06	3.08E+06	3.10E+06
Added mass - AM33 [kg]	6.65E+06	9.05E+06	1.17E+07
Added mass - AM44 [kg]	2.26E+07	3.68E+07	6.26E+07
Added mass - AM55 [kg]	9.24E+08	1.20E+09	1.47E+09
Added mass - AM66 [kg]	5.74E+08	5.47E+08	5.16E+08

Viscous damping in pontoons, longitudinal and transverse directions, as a function of velocity is shown below. The drag coefficients used are 0,4 for longitudinal movement, 1,2 for transverse movement:



1 REFERENCES

- [1] SBJ-33-C5-OON-22-RE-012-B, «K12 - Structural response analyses,» 2019.
- [2] SBJ-32-C5-OON-22-RE-003-B, «Analysis method,» 2019.