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## LAMPIRAN

Lampiran 1. Tabel Perhitungan Kekuatan Batas Kapal Tanker T3 Menggunakan Metode NLFEA Kondisi *Sagging* dan *Hogging* Kondisi Utuh.

Sagging				Hogging			
Moment	Rotation	Curvature		Moment	Rotation	Curvature	
0	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	4.07E-09	4.07E-03
0.000	0.000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-08	1.36E-02
-1.943	-0.155	-3.09E-05	-3.09E+01	0.00E+00	0.00E+00	1.77E-08	1.77E-02
-2.035	-0.162	-3.24E-05	-3.24E+01	2.00E+00	1.58E-01	2.21E-08	2.21E-02
-2.180	-0.175	-3.50E-05	-3.50E+01	2.20E+00	1.79E-01	3.55E-08	3.55E-02
-2.317	-0.186	-3.72E-05	-3.72E+01	2.33E+00	2.05E-01	3.56E-08	3.56E-02
-2.369	-0.199	-3.99E-05	-3.99E+01	2.37E+00	2.14E-01	5.49E-08	5.49E-02
-2.270	-0.233	-4.67E-05	-4.67E+01	2.40E+00	2.24E-01	7.62E-08	7.62E-02
-2.237	-0.246	-4.92E-05	-4.92E+01	2.41E+00	2.34E-01	9.56E-08	9.56E-02
-2.208	-0.261	-5.22E-05	-5.22E+01	2.41E+00	2.46E-01	1.15E-07	1.15E-01
-2.186	-0.270	-5.39E-05	-5.39E+01	2.41E+00	2.63E-01	1.34E-07	1.34E-01
-2.169	-0.279	-5.57E-05	-5.57E+01	2.41E+00	2.71E-01	1.52E-07	1.52E-01
-2.135	-0.299	-5.98E-05	-5.98E+01	2.40E+00	2.82E-01	1.70E-07	1.70E-01
-2.096	-0.316	-6.33E-05	-6.33E+01	2.37E+00	3.09E-01	1.89E-07	1.89E-01
-2.033	-0.350	-7.00E-05	-7.00E+01	2.36E+00	3.29E-01	2.07E-07	2.07E-01
-1.925	-0.405	-8.11E-05	-8.11E+01	2.34E+00	3.48E-01	2.22E-07	2.22E-01
0	0.00E+00	0.00E+00	0.00E+00	2.30E+00	4.05E-01	2.24E-07	2.24E-01

Lampiran 2. Tabel Perhitungan Kekuatan Batas Kapal Tanker T3 Menggunakan Metode NLFEA Kondisi *Sagging* dan *Hogging* Kondisi Kerusakan.

Sagging				Hogging			
Moment	Rotation	Curvature		Moment	Rotation	Curvature	
0	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00
0	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00
-0.5455	-4.79E-02	-9.58E-06	-9.58E+00	0.5455	4.79E-02	9.58E-06	9.58E+00
-1.0909	-9.40E-02	-1.88E-05	-1.88E+01	1.0909	9.40E-02	1.88E-05	1.88E+01
-1.6354	-1.42E-01	-2.83E-05	-2.83E+01	1.6354	1.42E-01	2.83E-05	2.83E+01
-1.843	-1.58E-01	-3.15E-05	-3.15E+01	1.8	1.58E-01	3.16E-05	3.16E+01
-1.848	-1.59E-01	-3.17E-05	-3.17E+01	1.947	1.74E-01	3.47E-05	3.47E+01
-1.967	-1.68E-01	-3.37E-05	-3.37E+01	2.098	1.90E-01	3.80E-05	3.80E+01
-2.096	-1.87E-01	-3.74E-05	-3.74E+01	2.239	2.14E-01	4.28E-05	4.28E+01
-2.026	-2.34E-01	-4.68E-05	-4.68E+01	2.321	2.34E-01	4.68E-05	4.68E+01
-1.974	-2.60E-01	-5.20E-05	-5.20E+01	2.325	2.61E-01	5.22E-05	5.22E+01
-1.908	-2.96E-01	-5.91E-05	-5.91E+01	2.282	2.96E-01	5.91E-05	5.91E+01
-1.821	-3.35E-01	-6.71E-05	-6.71E+01	2.248	3.35E-01	6.71E-05	6.71E+01
-1.73	-3.82E-01	-7.64E-05	-7.64E+01	2.192	4.01E-01	8.01E-05	8.01E+01

Lampiran 3. Tabel Perhitungan Kekuatan Batas Kapal Tanker T4 Menggunakan Metode NLFEA Kondisi *Sagging* dan *Hogging* Kondisi Utuh.

Sagging				Hogging			
Moment	Rotation	Curvature		Moment	Rotation	Curvature	
0	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00
0	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00
-							
0.095238	-6.50E-03	-1.30E-06	-1.30E+00	0.095238	6.50E-03	1.30E-06	1.30E+00
-							
0.190476	-1.30E-02	-2.60E-06	-2.60E+00	0.190476	1.30E-02	2.60E-06	2.60E+00
-							
0.285714	-1.95E-02	-3.90E-06	-3.90E+00	0.285714	1.95E-02	3.90E-06	3.90E+00
-							
0.380952	-2.60E-02	-5.20E-06	-5.20E+00	0.380952	2.60E-02	5.20E-06	5.20E+00
-							
-0.47619	-3.25E-02	-6.50E-06	-6.50E+00	0.47619	3.25E-02	6.50E-06	6.50E+00
-							
0.571429	-3.90E-02	-7.80E-06	-7.80E+00	0.571429	3.90E-02	7.80E-06	7.80E+00
-							
0.666667	-4.55E-02	-9.10E-06	-9.10E+00	0.666667	4.55E-02	9.10E-06	9.10E+00
-							
0.761905	-5.20E-02	-1.04E-05	-1.04E+01	0.761905	5.20E-02	1.04E-05	1.04E+01
-							
0.857143	-5.85E-02	-1.17E-05	-1.17E+01	0.857143	5.85E-02	1.17E-05	1.17E+01
-							
0.952381	-6.50E-02	-1.30E-05	-1.30E+01	0.952381	6.50E-02	1.30E-05	1.30E+01
-							
-1.04762	-7.15E-02	-1.43E-05	-1.43E+01	1.04762	7.15E-02	1.43E-05	1.43E+01
-							
-1.14286	-7.80E-02	-1.56E-05	-1.56E+01	1.14286	7.80E-02	1.56E-05	1.56E+01
-							
-1.2381	-8.45E-02	-1.69E-05	-1.69E+01	1.2381	8.45E-02	1.69E-05	1.69E+01
-							
-1.33333	-8.99E-02	-1.80E-05	-1.80E+01	1.33333	8.99E-02	1.80E-05	1.80E+01
-							
-1.44	-9.75E-02	-1.95E-05	-1.95E+01	1.44	9.75E-02	1.95E-05	1.95E+01
-							
-1.546	-1.04E-01	-2.08E-05	-2.08E+01	1.53	1.04E-01	2.08E-05	2.08E+01
-							
-1.629	-1.10E-01	-2.20E-05	-2.20E+01	1.62	1.10E-01	2.20E-05	2.20E+01
-							
-1.744	-1.18E-01	-2.35E-05	-2.35E+01	1.722	1.18E-01	2.35E-05	2.35E+01
-							
-1.853	-1.25E-01	-2.49E-05	-2.49E+01	1.822	1.25E-01	2.49E-05	2.49E+01
-							
-1.942	-1.31E-01	-2.62E-05	-2.62E+01	1.944	1.33E-01	2.67E-05	2.67E+01
-							
-2.118	-1.44E-01	-2.88E-05	-2.88E+01	2	1.38E-01	2.75E-05	2.75E+01
-							
-2.18	-1.50E-01	-3.00E-05	-3.00E+01	2.17	1.50E-01	3.01E-05	3.01E+01
-							
-2.282	-1.59E-01	-3.19E-05	-3.19E+01	2.328	1.66E-01	3.33E-05	3.33E+01
-							
-2.621	-2.02E-01	-4.04E-05	-4.04E+01	2.436	1.88E-01	3.76E-05	3.76E+01
-							
-2.491	-2.35E-01	-4.69E-05	-4.69E+01	2.563	2.28E-01	4.56E-05	4.56E+01
-							
-2.423	-2.55E-01	-5.09E-05	-5.09E+01	2.563	2.65E-01	5.30E-05	5.30E+01
-							
-2.31	-3.05E-01	-6.09E-05	-6.09E+01	2.534	3.05E-01	6.09E-05	6.09E+01
-							
-2.123	-4.21E-01	-8.42E-05	-8.42E+01	2.441	4.08E-01	8.16E-05	8.16E+01

Lampiran 4. Tabel Perhitungan Kekuatan Batas Kapal Tanker T4 Menggunakan Metode NLFEA Kondisi *Sagging* dan *Hogging* Kondisi Kerusakan.


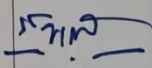

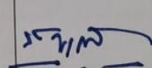

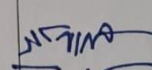

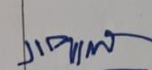

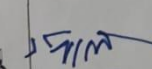

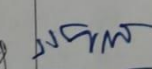
Sagging				Hogging			
Moment	Rotation	Curvature		Moment	Rotation	Curvature	
0	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00
0.0923077	-6.59E-03	-1.32E-06	-1.32E+00	0.092308	6.59E-03	1.32E-06	1.32E+00
-0.103846	-7.41E-03	-1.48E-06	-1.48E+00	0.103846	7.41E-03	1.48E-06	1.48E+00
-0.115388	-8.23E-03	-1.65E-06	-1.65E+00	0.115388	8.23E-03	1.65E-06	1.65E+00
-0.132701	-9.47E-03	-1.89E-06	-1.89E+00	0.132701	9.47E-03	1.89E-06	1.89E+00
-0.150015	-1.07E-02	-2.14E-06	-2.14E+00	0.150015	1.07E-02	2.14E-06	2.14E+00
-0.167329	-1.19E-02	-2.39E-06	-2.39E+00	0.167329	1.19E-02	2.39E-06	2.39E+00
-0.193299	-1.38E-02	-2.76E-06	-2.76E+00	0.193299	1.38E-02	2.76E-06	2.76E+00
-0.227926	-1.63E-02	-3.25E-06	-3.25E+00	0.227926	1.63E-02	3.25E-06	3.25E+00
-0.271211	-1.94E-02	-3.87E-06	-3.87E+00	0.271211	1.94E-02	3.87E-06	3.87E+00
-0.323152	-2.31E-02	-4.61E-06	-4.61E+00	0.323152	2.31E-02	4.61E-06	4.61E+00
-0.380466	-2.71E-02	-5.43E-06	-5.43E+00	0.380466	2.71E-02	5.43E-06	5.43E+00
-0.43778	-3.12E-02	-6.25E-06	-6.25E+00	0.43778	3.12E-02	6.25E-06	6.25E+00
-0.496474	-3.54E-02	-7.08E-06	-7.08E+00	0.496474	3.54E-02	7.08E-06	7.08E+00
-0.555168	-3.96E-02	-7.92E-06	-7.92E+00	0.555168	3.96E-02	7.92E-06	7.92E+00
-0.614222	-4.38E-02	-8.77E-06	-8.77E+00	0.614222	4.38E-02	8.77E-06	8.77E+00
-0.673277	-4.80E-02	-9.61E-06	-9.61E+00	0.673277	4.80E-02	9.61E-06	9.61E+00
-0.732331	-5.23E-02	-1.05E-05	-1.05E+01	0.732331	5.23E-02	1.05E-05	1.05E+01
-0.79148	-5.65E-02	-1.13E-05	-1.13E+01	0.79148	5.65E-02	1.13E-05	1.13E+01
-0.850628	-6.07E-02	-1.21E-05	-1.21E+01	0.850628	6.07E-02	1.21E-05	1.21E+01
-0.909799	-6.49E-02	-1.30E-05	-1.30E+01	0.909799	6.49E-02	1.30E-05	1.30E+01
-0.96897	-6.91E-02	-1.38E-05	-1.38E+01	0.96897	6.91E-02	1.38E-05	1.38E+01
-1.02731	-7.33E-02	-1.47E-05	-1.47E+01	1.02731	7.33E-02	1.47E-05	1.47E+01
-1.08564	-7.75E-02	-1.55E-05	-1.55E+01	1.08564	7.75E-02	1.55E-05	1.55E+01
-1.17309	-8.37E-02	-1.67E-05	-1.67E+01	1.17309	8.37E-02	1.67E-05	1.67E+01
-1.2652	-9.03E-02	-1.81E-05	-1.81E+01	1.2652	9.03E-02	1.81E-05	1.81E+01
-1.35727	-9.69E-02	-1.94E-05	-1.94E+01	1.35727	9.69E-02	1.94E-05	1.94E+01
-1.44924	-1.03E-01	-2.07E-05	-2.07E+01	1.44924	1.03E-01	2.07E-05	2.07E+01
-1.51462	-1.08E-01	-2.16E-05	-2.16E+01	1.51462	1.08E-01	2.16E-05	2.16E+01
-1.56113	-1.11E-01	-2.23E-05	-2.23E+01	1.56113	1.11E-01	2.23E-05	2.23E+01
-1.6076	-1.15E-01	-2.30E-05	-2.30E+01	1.6076	1.15E-01	2.30E-05	2.30E+01
-1.65318	-1.18E-01	-2.36E-05	-2.36E+01	1.65318	1.18E-01	2.36E-05	2.36E+01
-1.69881	-1.21E-01	-2.43E-05	-2.43E+01	1.69881	1.21E-01	2.43E-05	2.43E+01
-1.76608	-1.26E-01	-2.52E-05	-2.52E+01	1.76608	1.26E-01	2.52E-05	2.52E+01
-1.82592	-1.31E-01	-2.61E-05	-2.61E+01	1.82592	1.31E-01	2.61E-05	2.61E+01

-1.886	-1.36E-01	-2.73E-05	-2.73E+01	1.886	1.36E-01	2.73E-05	2.73E+01
-1.949	-1.42E-01	-2.83E-05	-2.83E+01	1.94657	1.42E-01	2.83E-05	2.83E+01
-2.177	-1.62E-01	-3.24E-05	-3.24E+01	2.256	1.77E-01	3.54E-05	3.54E+01
-2.4	-1.97E-01	-3.94E-05	-3.94E+01	2.469	2.35E-01	4.69E-05	4.69E+01
-2.164	-2.67E-01	-5.34E-05	-5.34E+01	2.452	2.74E-01	5.47E-05	5.47E+01
-2.027	-3.28E-01	-6.55E-05	-6.55E+01	2.39	3.28E-01	6.55E-05	6.55E+01
-1.897	-4.04E-01	-8.08E-05	-8.08E+01	2.329	3.97E-01	7.94E-05	7.94E+01

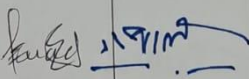
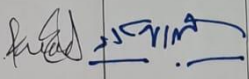
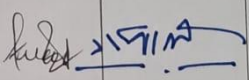
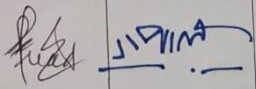
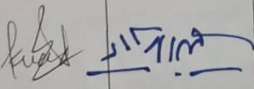
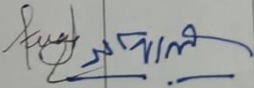
## Lampiran 5. Bukti Kartu Asistensi Skripsi

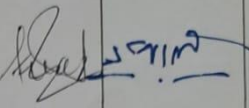
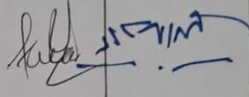
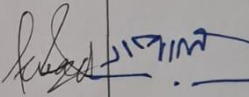
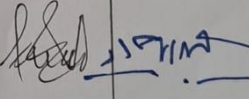
LEMBAR ASISTENSI SKRIPSI

Nama : FADAFERANILG RUMI  
 NIM : 008120105A  
 Judul Skripsi : ANALISIS KEKUATAN DOUBLE HULL OIL TANKER AKIBAT KOROSI  
 Peminatan : Ocean Structure Analysis Research of Laboratory (OSAREL)  
 Pembimbing : PROF. MUHAMMAD ZOBAIR MUHAMMAD ALIE, ST., MT., PH.D

NO.	Hari/Tanggal/ Bulan/Tahun	Deskripsi	Paraf Mahasiswa	Paraf Pembimbing
1.	Sabtu 9/12/2023	Pengambilan data dan asistensi judul skripsi		
2.	Kamis 19/1/2024	Perbaikan laporan skripsi terkait BAB I sampai BAB II		
3.	6/3/2024	Pembuatan model penampang T3 di autocad		
4.	15/3/2024	Pembuatan model penampang T9 di autocad		
5.	29/3/2024	Pembuatan model penampang T3 di Ansys Mechanical APDL		
6.	1/4/2024	Pembuatan model penampang T9 di Ansys Mechanical APDL		



7.	17/4/2024	- Perbaiki model penampang T3 dan T9 di Ausys	
8.	22/4/2024	- Revisi posisi MPC sumbu z pada ausys mechanical	
9.	24/4/2024	- Pemberian modifikasi tebal pelat pada bottom kapal T3	
10.	25/4/2024	- Pemberian modifikasi tebal pelat pada bottom kapal T9	
11.	29/4/2024	- Polishing 300, substep 100 kondisi intact kapal T3	
12.	2/5/2024	- Polishing 350, 360, 370, 380, 390 substep 100 - 500 kapal T3 dan T9	

13.	13/5/2024	Penelitian 370-180 substep 50-700 Kapal T3 dan T4	
14.	29/6/2024	Gratifikasi kelengkapan sugung hoggung kondisi utuh dan kondisi modifikasi korosi kapal T3 dan T4	
15.	5/7/2024	- Asistensi Laporan Skripsi untuk seminar hasil	
16.	10/7/2024	- Seminar Hasil dan revisi awal skripsi	
17.	19/7/2024	- Perbaiki abstrak skripsi	