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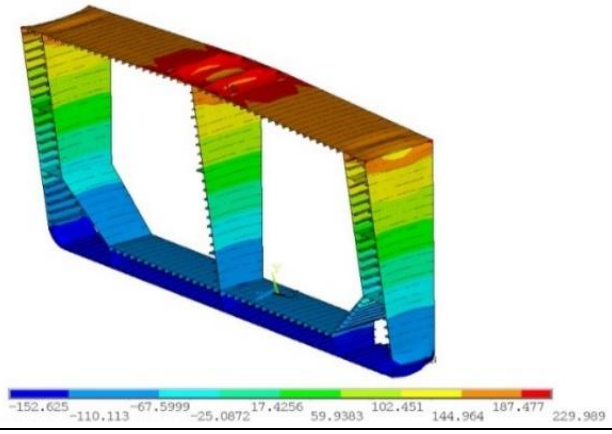
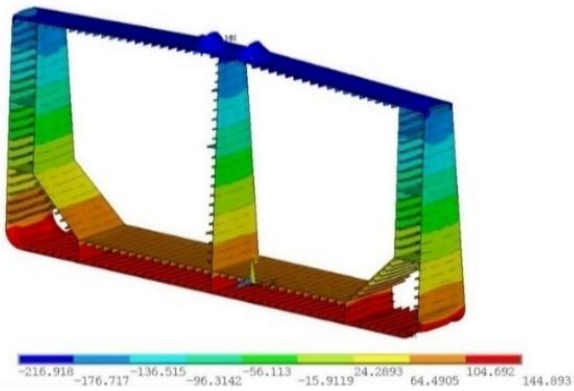
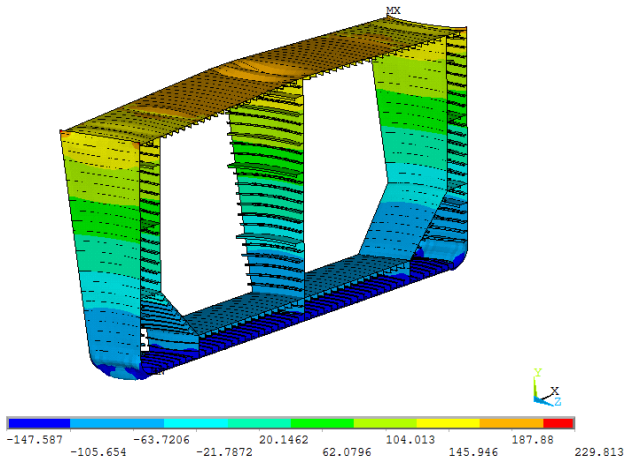
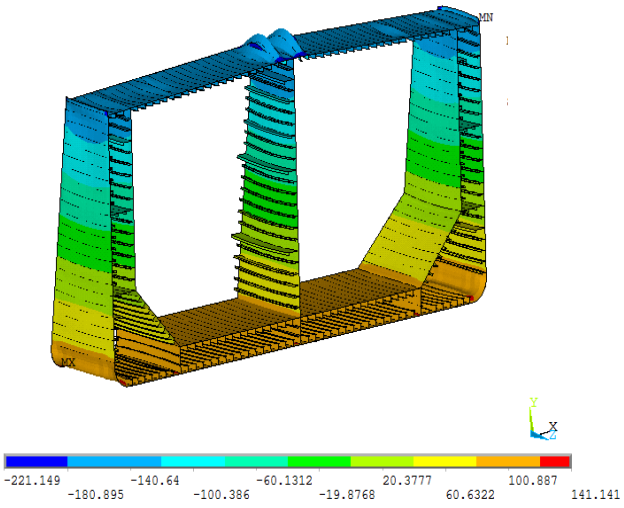
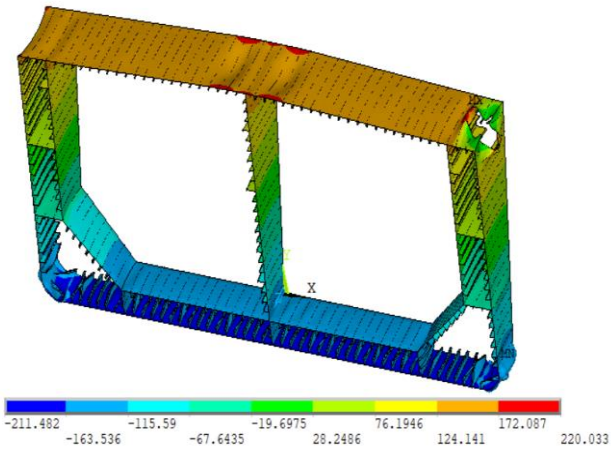
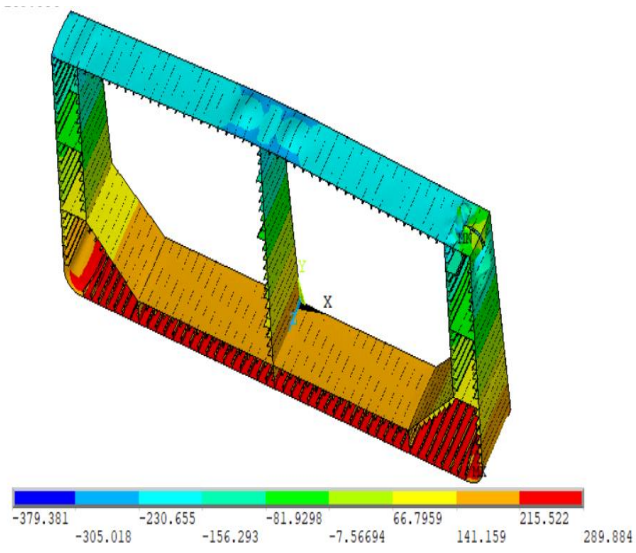
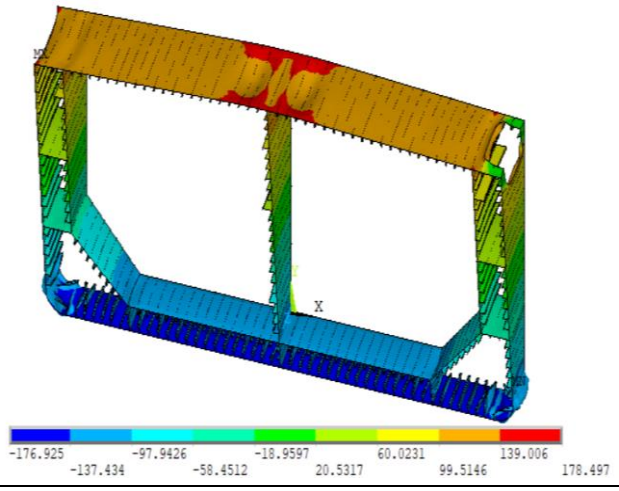
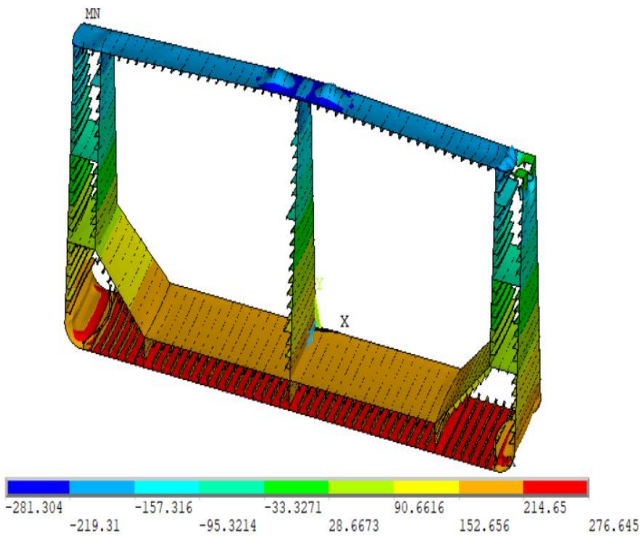
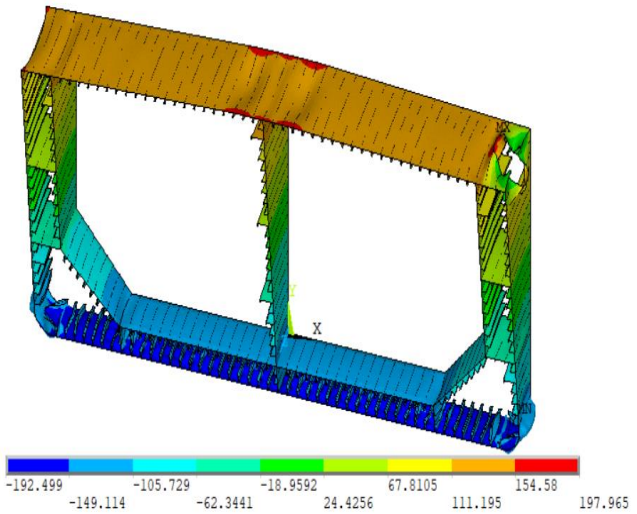
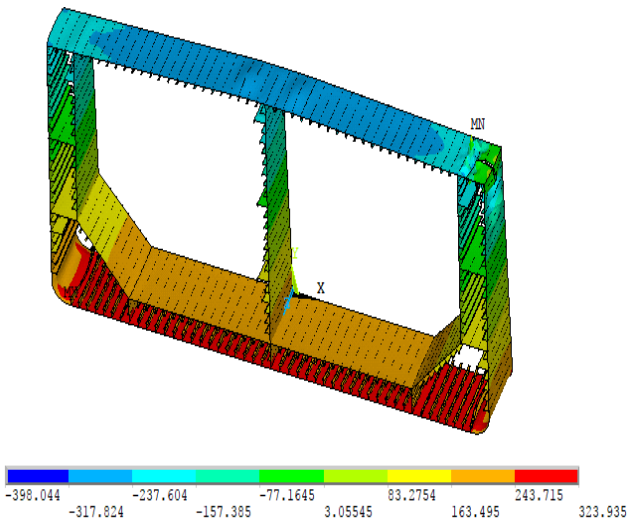
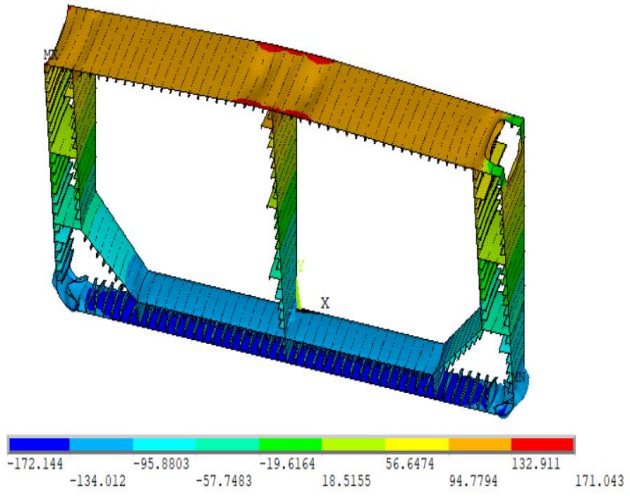
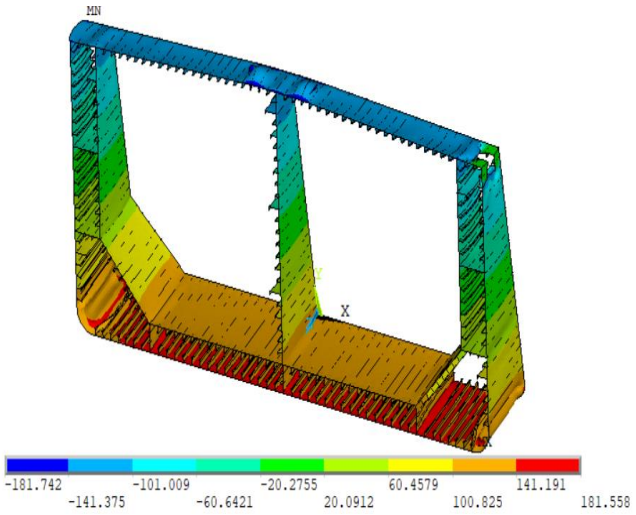
LAMPIRAN

Lampiran 1. Perilaku dan distribusi tegangan kerja untuk kapal *tanker* T3 dan T4 sebelum dan sesudah mengalami kerusakan untuk kondisi *hogging* dan *sagging*.

Tipe Kapal Tanker	Presentasi Kerusakan	Perilaku dan Distribusi Tegangan Kerja
T3	Kondisi Utuh (*Hogging*)	
T3	Kondisi Utuh (*Sagging*)	
T4	Kondisi Utuh (*Hogging*)	

Tipe Kapal Tanker	Presentasi Kerusakan	Perilaku dan Distribusi Tegangan Kerja
T4	Kondisi Utuh (*Sagging*)	
T3	Kerusakan 20% (*Hogging*)	
T3	Kerusakan 20% (*Sagging*)	

Tipe Kapal Tanker	Presentasi Kerusakan	Perilaku dan Distribusi Tegangan Kerja
T3	Kerusakan 80% (*Hogging*)	
T3	Kerusakan 80% (*Sagging*)	
T4	Kerusakan 20% (*Hogging*)	

Tipe Kapal Tanker	Presentasi Kerusakan	Perilaku dan Distribusi Tegangan Kerja
T4	Kerusakan 20% (*Sagging*)	
T4	Kerusakan 80% (*Hogging*)	
T4	Kerusakan 80% (*Sagging*)	

Lampiran 5. Tabel 1. Perhitungan Kekuatan Batas Kapal Tanker T3 Menggunakan Metode NLFEA Kondisi Sagging dan Hogging untuk Kondisi Utuh

Hogging		***Sagging***	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+12	2.24E-02	-4.00E+11	-4.48E-03
4.00E+12	4.48E-02	-8.00E+11	-8.96E-03
6.01E+12	6.72E-02	-1.20E+12	-1.34E-02
8.02E+12	8.96E-02	-1.60E+12	-1.79E-02
1.00E+13	1.12E-01	-2.00E+12	-2.24E-02
1.20E+13	1.34E-01	-2.39E+12	-2.69E-02
1.23E+13	1.57E-01	-2.79E+12	-3.14E-02
1.28E+13	1.79E-01	-3.19E+12	-3.58E-02
1.30E+13	2.02E-01	-3.58E+12	-4.03E-02
1.29E+13	2.24E-01	-3.98E+12	-4.48E-02
1.29E+13	2.46E-01	-4.37E+12	-4.93E-02
1.29E+13	2.69E-01	-4.76E+12	-5.38E-02
1.28E+13	2.91E-01	-5.16E+12	-5.82E-02
1.28E+13	3.14E-01	-5.54E+12	-6.27E-02
1.28E+13	3.36E-01	-5.93E+12	-6.72E-02
1.28E+13	3.58E-01	-6.32E+12	-7.17E-02
1.28E+13	3.81E-01	-6.70E+12	-7.62E-02
1.28E+13	4.03E-01	-7.09E+12	-8.07E-02
1.28E+13	4.26E-01	-7.46E+12	-8.51E-02
1.27E+13	4.48E-01	-7.72E+12	-8.96E-02
1.27E+13	4.70E-01	-8.05E+12	-9.41E-02
1.27E+13	4.93E-01	-8.32E+12	-9.86E-02
1.27E+13	5.15E-01	-8.54E+12	-1.03E-01
1.26E+13	5.38E-01	-8.92E+12	-1.08E-01
1.26E+13	5.38E-01	-9.00E+12	-1.12E-01
1.26E+13	5.38E-01	-8.59E+12	-1.16E-01
1.26E+13	5.38E-01	-8.59E+12	-1.21E-01
1.26E+13	5.38E-01	-8.59E+12	-1.25E-01
1.26E+13	5.38E-01	-8.59E+12	-1.30E-01
1.26E+13	5.38E-01	-8.59E+12	-1.34E-01
1.26E+13	5.38E-01	-8.59E+12	-1.39E-01
1.26E+13	5.38E-01	-8.59E+12	-1.43E-01
1.26E+13	5.38E-01	-8.59E+12	-1.48E-01
1.26E+13	5.38E-01	-8.59E+12	-1.52E-01

Hogging		***Sagging***	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
1.26E+13	5.38E-01	-8.59E+12	-1.57E-01
1.26E+13	5.38E-01	-8.59E+12	-1.61E-01
1.26E+13	5.38E-01	-8.59E+12	-1.66E-01
1.26E+13	5.38E-01	-8.60E+12	-1.70E-01
1.26E+13	5.38E-01	-8.60E+12	-1.75E-01
1.26E+13	5.38E-01	-8.60E+12	-1.79E-01
1.26E+13	5.38E-01	-8.60E+12	-1.84E-01
1.26E+13	5.38E-01	-8.60E+12	-1.88E-01
1.26E+13	5.38E-01	-8.60E+12	-1.93E-01
1.26E+13	5.38E-01	-8.60E+12	-1.97E-01
1.26E+13	5.38E-01	-8.60E+12	-2.02E-01
1.26E+13	5.38E-01	-8.60E+12	-2.06E-01
1.26E+13	5.38E-01	-8.60E+12	-2.11E-01
1.26E+13	5.38E-01	-8.61E+12	-2.15E-01
1.26E+13	5.38E-01	-8.61E+12	-2.20E-01
1.26E+13	5.38E-01	-8.61E+12	-2.24E-01
1.26E+13	5.38E-01	-8.61E+12	-2.29E-01
1.26E+13	5.38E-01	-8.61E+12	-2.33E-01
1.26E+13	5.38E-01	-8.61E+12	-2.37E-01
1.26E+13	5.38E-01	-8.61E+12	-2.42E-01
1.26E+13	5.38E-01	-8.61E+12	-2.46E-01
1.26E+13	5.38E-01	-8.61E+12	-2.51E-01
1.26E+13	5.38E-01	-8.61E+12	-2.55E-01
1.26E+13	5.38E-01	-8.61E+12	-2.60E-01
1.26E+13	5.38E-01	-8.62E+12	-2.64E-01
1.26E+13	5.38E-01	-8.62E+12	-2.69E-01
1.26E+13	5.38E-01	-8.62E+12	-2.73E-01
1.26E+13	5.38E-01	-8.62E+12	-2.78E-01
1.26E+13	5.38E-01	-8.62E+12	-2.82E-01
1.26E+13	5.38E-01	-8.62E+12	-2.87E-01
1.26E+13	5.38E-01	-8.62E+12	-2.91E-01
1.26E+13	5.38E-01	-8.62E+12	-2.96E-01
1.26E+13	5.38E-01	-8.62E+12	-3.00E-01
1.26E+13	5.38E-01	-8.62E+12	-3.05E-01
1.26E+13	5.38E-01	-8.63E+12	-3.09E-01
1.26E+13	5.38E-01	-8.63E+12	-3.14E-01
1.26E+13	5.38E-01	-8.63E+12	-3.18E-01
1.26E+13	5.38E-01	-8.63E+12	-3.23E-01
1.26E+13	5.38E-01	-8.63E+12	-3.27E-01
1.26E+13	5.38E-01	-8.63E+12	-3.32E-01

Hogging		***Sagging***	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
1.26E+13	5.38E-01	-8.63E+12	-3.36E-01
1.26E+13	5.38E-01	-8.63E+12	-3.41E-01
1.26E+13	5.38E-01	-8.63E+12	-3.45E-01
1.26E+13	5.38E-01	-8.63E+12	-3.49E-01
1.26E+13	5.38E-01	-8.64E+12	-3.54E-01
1.26E+13	5.38E-01	-8.64E+12	-3.58E-01
1.26E+13	5.38E-01	-8.64E+12	-3.63E-01
1.26E+13	5.38E-01	-8.64E+12	-3.67E-01
1.26E+13	5.38E-01	-8.64E+12	-3.72E-01
1.26E+13	5.38E-01	-8.64E+12	-3.76E-01
1.26E+13	5.38E-01	-8.64E+12	-3.81E-01
1.26E+13	5.38E-01	-8.64E+12	-3.85E-01
1.26E+13	5.38E-01	-8.64E+12	-3.90E-01

Lampiran 7. Tabel 2. Perhitungan Kekuatan Batas Kapal Tanker T3 Menggunakan Metode NLFEA Kondisi Sagging dan Hogging untuk Kerusakan 20%

***Hogging* T3 20%**		***Sagging* T3 20%**	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
0.00	0.0000	0	0.0000
5.62E+11	7.05E-03	-5.62E+11	-6.85E-03
1.12E+12	1.41E-02	-1.12E+12	-1.35E-02
1.69E+12	2.09E-02	-1.69E+12	-2.03E-02
2.25E+12	2.78E-02	-2.25E+12	-2.72E-02
2.81E+12	3.40E-02	-2.81E+12	-3.38E-02
3.37E+12	4.01E-02	-3.37E+12	-4.03E-02
3.93E+12	4.67E-02	-3.93E+12	-4.65E-02
4.49E+12	5.30E-02	-4.49E+12	-5.29E-02
5.05E+12	5.92E-02	-5.05E+12	-5.87E-02
5.61E+12	6.58E-02	-5.51E+12	-6.37E-02
6.17E+12	7.16E-02	-6.03E+12	-7.00E-02
6.73E+12	7.76E-02	-6.13E+12	-7.31E-02
7.19E+12	8.33E-02	-6.13E+12	-7.47E-02
7.74E+12	9.02E-02	-6.13E+12	-7.72E-02
8.33E+12	9.52E-02	-6.13E+12	-8.23E-02
8.46E+12	1.01E-01	-6.13E+12	-9.11E-02
8.46E+12	1.07E-01	-6.13E+12	-9.71E-02
8.46E+12	1.12E-01	-6.13E+12	-1.02E-01

***Hogging* T3 20%**		***Sagging* T3 20%**	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
8.46E+12	1.13E-01	-6.13E+12	-1.04E-01
8.46E+12	1.13E-01	-6.13E+12	-1.07E-01
8.46E+12	1.13E-01	-6.13E+12	-1.16E-01
8.46E+12	1.12E-01	-6.13E+12	-1.18E-01
8.46E+12	1.12E-01	-6.13E+12	-1.23E-01
8.46E+12	1.12E-01	-6.13E+12	-1.25E-01
8.46E+12	1.12E-01	-6.13E+12	-1.34E-01
8.46E+12	1.12E-01	-6.13E+12	-1.39E-01
8.46E+12	1.12E-01	-5.82E+12	-1.25E-01
8.46E+12	1.12E-01	-5.88E+12	-1.27E-01
8.46E+12	1.12E-01	-5.92E+12	-1.38E-01
8.46E+12	1.12E-01	-5.83E+12	-1.45E-01
8.46E+12	1.12E-01	-5.69E+12	-1.43E-01
1.12E+13	1.12E-01	-5.67E+12	-1.43E-01
1.12E+13	1.12E-01	-5.77E+12	-1.44E-01
1.12E+13	1.12E-01	-5.87E+12	-1.45E-01
1.12E+13	1.13E-01	-6.14E+12	-1.48E-01
1.13E+13	1.13E-01	-6.35E+12	-1.51E-01
1.13E+13	1.13E-01	-6.43E+12	-1.52E-01
1.13E+13	1.13E-01	-6.43E+12	-1.12E-01
1.13E+13	1.13E-01	-6.44E+12	-1.52E-01
1.13E+13	1.13E-01	-6.44E+12	-1.52E-01
1.12E+13	1.13E-01	-6.43E+12	-1.52E-01
1.12E+13	1.13E-01	-6.43E+12	-1.52E-01
1.13E+13	1.12E-01	-6.43E+12	-1.52E-01
1.13E+13	1.12E-01	-6.43E+12	-1.52E-01
1.12E+13	1.12E-01	-6.43E+12	-1.52E-01

Lampiran 9. Tabel 3. Perhitungan Kekuatan Batas Kapal Tanker T3 Menggunakan Metode NLFEA Kondisi Sagging dan Hogging untuk Kerusakan 80%

***Hogging* T3 80%**		***Sagging* T3 80%**	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
0	0	0	0
5.68E+11	7.58E-03	-5.62E+11	-6.25E-03
1.14E+12	1.48E-02	-1.12E+12	-1.25E-02
1.70E+12	2.18E-02	-1.69E+12	-1.88E-02
2.27E+12	2.89E-02	-2.25E+12	-2.50E-02
2.84E+12	3.56E-02	-2.81E+12	-3.12E-02

***Hogging* T3 80%**		***Sagging* T3 80%**	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
3.41E+12	4.25E-02	-3.37E+12	-3.75E-02
3.98E+12	4.91E-02	-3.93E+12	-4.37E-02
4.55E+12	5.58E-02	-4.49E+12	-5.00E-02
5.11E+12	6.17E-02	-5.05E+12	-5.62E-02
5.68E+12	6.80E-02	-5.16E+12	-6.13E-02
6.25E+12	7.48E-02	-5.16E+12	-6.70E-02
6.37E+12	8.09E-02	-5.16E+12	-6.94E-02
6.37E+12	8.72E-02	-5.16E+12	-6.99E-02
6.37E+12	9.37E-02	-5.16E+12	-7.04E-02
6.37E+12	9.97E-02	-5.16E+12	-7.65E-02
6.37E+12	1.01E-01	-5.16E+12	-7.95E-02
6.37E+12	1.07E-01	-5.16E+12	-8.09E-02
1.01E+13	1.12E-01	-5.16E+12	-8.36E-02
1.07E+13	1.20E-01	-5.16E+12	-8.45E-02
1.08E+13	1.20E-01	-5.16E+12	-9.03E-02
1.08E+13	1.20E-01	-5.16E+12	-9.79E-02
1.08E+13	1.20E-01	-5.16E+12	-9.93E-02
1.07E+13	1.20E-01	-5.52E+12	-1.01E-01
1.07E+13	1.20E-01	-5.47E+12	-1.03E-01
1.08E+13	1.20E-01	-5.57E+12	-1.08E-01
1.08E+13	1.20E-01	-5.68E+12	-1.17E-01
1.08E+13	1.20E-01	-5.98E+12	-1.19E-01
1.08E+13	1.20E-01	-6.00E+12	-1.27E-01
1.11E+13	1.23E-01	-6.00E+12	-1.33E-01
1.16E+13	1.29E-01	-5.99E+12	-1.35E-01
1.19E+13	1.32E-01	-5.98E+12	-1.37E-01
1.21E+13	1.35E-01	-5.97E+12	-1.47E-01
1.20E+13	1.34E-01	-5.96E+12	-1.50E-01
1.15E+13	1.28E-01	-5.96E+12	-1.54E-01

Lampiran 10. Tabel 4. Perhitungan Kekuatan Batas Kapal Tanker T4 Menggunakan Metode NLFEA Kondisi Sagging dan Hogging untuk Kondisi Utuh

Hogging		***Sagging***	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
0.00E+00	0.00E+00	0.00E+00	0.00E+00
-3.20E+11	-3.27E-03	3.20E+11	3.27E-03
-6.40E+11	-6.54E-03	6.40E+11	6.54E-03

Hogging		***Sagging***	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
-9.60E+11	-9.81E-03	9.60E+11	9.81E-03
-1.28E+12	-1.31E-02	1.28E+12	1.31E-02
-1.60E+12	-1.63E-02	1.60E+12	1.63E-02
-1.92E+12	-1.96E-02	1.92E+12	1.96E-02
-2.24E+12	-2.29E-02	2.24E+12	2.29E-02
-2.56E+12	-2.62E-02	2.56E+12	2.62E-02
-2.88E+12	-2.94E-02	2.88E+12	2.94E-02
-3.20E+12	-3.27E-02	3.20E+12	3.27E-02
-3.52E+12	-3.60E-02	3.52E+12	3.60E-02
-3.84E+12	-3.92E-02	3.84E+12	3.92E-02
-4.15E+12	-4.25E-02	4.16E+12	4.25E-02
-4.47E+12	-4.58E-02	4.48E+12	4.58E-02
-4.79E+12	-4.90E-02	4.80E+12	4.90E-02
-5.11E+12	-5.23E-02	5.13E+12	5.23E-02
-5.43E+12	-5.56E-02	5.45E+12	5.56E-02
-5.75E+12	-5.89E-02	5.77E+12	5.89E-02
-6.07E+12	-6.21E-02	6.09E+12	6.21E-02
-6.38E+12	-6.54E-02	6.41E+12	6.54E-02
-6.70E+12	-6.87E-02	6.73E+12	6.87E-02
-7.02E+12	-7.19E-02	7.05E+12	7.19E-02
-7.34E+12	-7.52E-02	7.37E+12	7.52E-02
-7.65E+12	-7.85E-02	7.69E+12	7.85E-02
-7.97E+12	-8.17E-02	8.01E+12	8.17E-02
-8.29E+12	-8.50E-02	8.33E+12	8.50E-02
-8.60E+12	-8.83E-02	8.65E+12	8.83E-02
-8.92E+12	-9.16E-02	8.97E+12	9.16E-02
-9.23E+12	-9.48E-02	9.29E+12	9.48E-02
-9.54E+12	-9.81E-02	9.61E+12	9.81E-02
-9.83E+12	-1.01E-01	9.93E+12	1.01E-01
-1.01E+13	-1.05E-01	1.02E+13	1.05E-01
-1.04E+13	-1.08E-01	1.06E+13	1.08E-01
-1.06E+13	-1.11E-01	1.08E+13	1.11E-01
-1.08E+13	-1.14E-01	1.10E+13	1.14E-01
-1.10E+13	-1.18E-01	1.14E+13	1.18E-01
-1.11E+13	-1.21E-01	1.15E+13	1.21E-01
-1.12E+13	-1.24E-01	1.18E+13	1.24E-01
-1.13E+13	-1.28E-01	1.20E+13	1.28E-01
-1.14E+13	-1.31E-01	1.23E+13	1.31E-01

Hogging		***Sagging***	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
-1.15E+13	-1.34E-01	1.24E+13	1.34E-01
-1.16E+13	-1.37E-01	1.26E+13	1.37E-01
-1.16E+13	-1.41E-01	1.27E+13	1.41E-01
-1.17E+13	-1.44E-01	1.29E+13	1.44E-01
-1.17E+13	-1.47E-01	1.30E+13	1.47E-01
-1.17E+13	-1.50E-01	1.31E+13	1.50E-01
-1.16E+13	-1.54E-01	1.32E+13	1.54E-01
-1.16E+13	-1.57E-01	1.34E+13	1.57E-01
-1.16E+13	-1.70E-01	1.35E+13	1.60E-01
-1.16E+13	-1.83E-01	1.36E+13	1.63E-01
-1.16E+13	-1.86E-01	1.37E+13	1.67E-01
-1.16E+13	-1.90E-01	1.38E+13	1.70E-01
-1.16E+13	-1.93E-01	1.39E+13	1.73E-01
-1.16E+13	-1.96E-01	1.39E+13	1.83E-01
-1.16E+13	-1.99E-01	1.39E+13	2.06E-01
-1.16E+13	-2.13E-01	1.39E+13	2.19E-01
-1.16E+13	-2.19E-01	1.39E+13	2.22E-01
-1.16E+13	-2.26E-01	1.39E+13	2.26E-01
-1.16E+13	-2.26E-01	1.39E+13	2.29E-01
-1.16E+13	-2.26E-01	1.39E+13	2.32E-01
-1.16E+13	-2.26E-01	1.39E+13	2.42E-01
-1.16E+13	-2.26E-01	1.39E+13	2.45E-01
-1.16E+13	-2.26E-01	1.39E+13	2.55E-01
-1.16E+13	-2.26E-01	1.39E+13	2.75E-01
-1.16E+13	-2.26E-01	1.39E+13	2.78E-01
-1.16E+13	-2.26E-01	1.39E+13	2.81E-01
-1.16E+13	-2.26E-01	1.39E+13	2.91E-01

Lampiran 12. Tabel 5. Perhitungan Kekuatan Batas Kapal Tanker T4 Menggunakan Metode NLFEA Kondisi Sagging dan Hogging untuk Kerusakan 20%

***Hogging* T4 20%**		***Sagging* T4 20%**	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
0	0	0	0
5.46E+11	6.05E-03	-5.05E+11	-5.59E-03
1.09E+12	1.21E-02	-1.01E+12	-1.12E-02

***Hogging* T4 20%**		***Sagging* T4 20%**	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
1.64E+12	1.81E-02	-1.52E+12	-1.68E-02
2.19E+12	2.42E-02	-2.02E+12	-2.24E-02
2.73E+12	3.02E-02	-2.53E+12	-2.80E-02
3.28E+12	3.63E-02	-3.03E+12	-3.35E-02
3.82E+12	4.23E-02	-3.53E+12	-3.91E-02
4.37E+12	4.84E-02	-4.04E+12	-4.47E-02
4.92E+12	5.44E-02	-4.54E+12	-5.03E-02
5.46E+12	6.05E-02	-5.05E+12	-5.59E-02
6.01E+12	6.65E-02	-5.50E+12	-6.11E-02
6.55E+12	7.24E-02	-5.96E+12	-6.55E-02
7.06E+12	7.83E-02	-6.03E+12	-6.63E-02
9.61E+12	1.20E-01	-7.55E+12	-8.10E-02
9.62E+12	1.51E-01	-8.69E+12	-9.30E-02
9.62E+12	1.97E-01	-8.69E+12	-1.11E-01
9.73E+12	4.57E-01	-8.70E+12	-1.74E-01
9.82E+12	1.09E-01	-8.69E+12	-4.55E-02
1.00E+12	1.11E-01	-8.69E+12	-4.08E-02
9.44E+12	1.05E-01	-8.08E+12	-3.41E-02
9.91E+12	1.10E+00	-7.59E+12	-2.87E-02
1.01E+12	1.12E+00	-7.70E+12	-1.88E-01
9.97E+12	1.10E+00	-7.25E+12	-1.38E-01
9.91E+11	1.10E+00	-7.57E+12	-8.38E-02
9.89E+12	1.09E+00	-7.62E+12	-2.90E-02
9.88E+12	1.09E+00	-4.58E+12	-5.07E-02

Lampiran 13. Tabel 6. Perhitungan Kekuatan Batas Kapal Tanker T4 Menggunakan Metode NLFEA Kondisi Sagging dan Hogging untuk Kerusakan 80%

***Hogging* T4 80%**		***Sagging* T4 80%**	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
0	0	0	0
5.62E+11	6.23E-03	-5.29E+11	-5.87E-03
1.12E+12	1.25E-02	-1.06E+12	-1.17E-02
1.69E+12	1.87E-02	-1.59E+12	-1.76E-02
2.25E+12	2.49E-02	-2.12E+12	-2.35E-02
2.81E+12	3.14E-02	-2.65E+12	-2.93E-02
3.37E+12	3.74E-02	-3.17E+12	-3.52E-02
3.93E+12	4.36E-02	-3.70E+12	-4.10E-02
4.49E+12	4.98E-02	-4.23E+12	-4.69E-02

***Hogging* T4 80%**		***Sagging* T4 80%**	
Bending Moment	*Curvature*	*Bending Moment*	*Curvature*
5.06E+12	5.60E-02	-4.76E+12	-5.28E-02
5.62E+12	7.23E-02	-5.29E+12	-6.66E-02
5.44E+12	1.06E-01	-5.12E+12	-1.31E-01
5.41E+12	1.67E-01	-5.26E+12	-8.78E-01
7.30E+12	8.09E-01	-5.17E+12	-5.73E-01
7.86E+12	8.71E-01	-4.84E+12	-5.38E-01
8.41E+12	9.32E-01	-4.58E+12	-5.08E-01
8.97E+12	9.94E-01	-4.72E+12	-5.23E-01
9.17E+12	1.06E+00	-4.76E+12	-5.28E-01
9.17E+12	1.11E+00	-4.88E+12	-5.42E-01
9.17E+12	1.12E+00	-4.98E+12	-5.53E-01
9.17E+12	1.02E+00	-4.69E+12	-5.20E-01
8.51E+12	9.44E-01	-4.26E+12	-4.72E-01
8.03E+12	8.90E-01	-3.81E+12	-4.22E-01
7.43E+12	8.24E-01	-2.92E+12	-3.23E-01
6.66E+12	7.38E-01	-2.41E+12	-2.67E-01
5.93E+12	6.58E-01	-1.60E+12	-1.77E-01
5.39E+12	5.97E-01	-1.09E+12	-1.21E-01
4.60E+12	5.10E-01	-4.07E+11	-4.50E-02
4.06E+12	4.50E-01	-1.22E+11	-1.35E-02
3.22E+12	3.57E-01	-7.22E+11	-8.01E-02
2.68E+12	2.97E-01	-1.25E+12	-1.39E-01
1.82E+12	2.02E-01	-1.78E+12	-1.98E-01
1.32E+12	1.47E-01	-2.32E+12	-2.57E-01
9.77E+11	1.08E-01	-2.84E+12	-3.15E-01
4.34E+11	4.81E-02	-3.37E+12	-3.74E-01
-4.90E+11	-5.43E-02	-3.90E+12	-4.33E-01
-1.02E+12	-1.13E-01	-4.43E+12	-4.91E-01
-1.65E+12	-1.83E-01	-4.96E+12	-5.50E-01
-2.00E+12	-2.22E-01	-5.49E+12	-6.09E-01
-2.01E+12	-2.22E-01	-6.02E+12	-6.67E-01
-2.00E+12	-2.22E-01	-6.55E+12	-7.26E-01
-2.00E+12	-2.22E-01	-7.08E+12	-7.84E-01
-2.00E+12	-2.22E-01	-7.60E+12	-8.43E-01
-2.00E+12	-2.22E-01	-8.10E+12	-8.98E-01