

BAB IV

KESIMPULAN DAN SARAN

4.1. Kesimpulan

Berdasarkan hasil dan pembahasan dalam penelitian ini dapat disimpulkan bahwa variasi kemiringan sudut linggi haluan pada simulasi *drop test* mempengaruhi nilai tekanan maksimum yang dihasilkan. Nilai tekanan yang dihasilkan berdasarkan berbagai variasi kemiringan linggi haluan mengalami penurunan. Tekanan terbesar terjadi pada linggi haluan kemiringan 52 derajat dengan sudut jatuh 5 derajat pada kondisi 0,22 detik. Sedangkan tekanan terkecil terjadi pada linggi haluan kemiringan 62 dengan sudut jatuh 15 derajat, maka dari itu semakin tinggi kemiringan haluan yang terjadi maka semakin kecil tekanan yang terjadi pada kapal.

4.2. Saran

1. Menggunakan basis software yang berbeda untuk mendapatkan hasil yang lebih akurat mengenai fenomena yang diteliti.
2. Penelitian berbasis simulasi memerlukan komputer dengan spesifikasi yang sangat tinggi agar simulasi dapat dijalankan sesuai dengan eksperimen yang sesungguhnya.



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LAMPIRAN



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Lampiran 1 Data Hasil Simulasi Drop Test Secara Global

1. Sudut jatuh 5 derajat

| Waktu (detik) | Kemiringan linggi haluan (derajat) | | |
|---------------|------------------------------------|----------|----------|
| | 52 | 57 | 62 |
| 0,00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| 0,11 | 1,31E+06 | 8,30E+05 | 3,48E+05 |
| 0,22 | 2,69E+06 | 2,21E+06 | 1,54E+06 |
| 0,33 | 7,24E+05 | 5,48E+05 | 3,19E+05 |
| 0,44 | 6,58E+05 | 7,92E+05 | 3,57E+05 |
| 0,55 | 7,41E+05 | 6,95E+05 | 5,79E+05 |
| 0,66 | 7,62E+05 | 6,19E+05 | 3,87E+05 |
| 0,77 | 9,39E+05 | 7,09E+05 | 3,95E+05 |
| 0,88 | 8,70E+05 | 5,99E+05 | 3,23E+05 |
| 0,99 | 6,63E+05 | 5,86E+05 | 2,91E+05 |
| 1,10 | 6,21E+05 | 6,47E+05 | 2,93E+05 |
| 1,21 | 5,27E+05 | 5,92E+05 | 2,42E+05 |
| 1,32 | 5,12E+05 | 4,91E+05 | 2,17E+05 |
| 1,43 | 5,26E+05 | 4,73E+05 | 2,22E+05 |
| 1,54 | 4,77E+05 | 3,86E+05 | 1,85E+05 |
| 1,65 | 4,73E+05 | 3,74E+05 | 1,41E+05 |
| 1,76 | 3,48E+05 | 3,56E+05 | 1,36E+05 |
| 1,87 | 2,71E+05 | 3,44E+05 | 8,67E+04 |
| 1,98 | 3,82E+05 | 2,98E+05 | 9,67E+04 |
| 2,09 | 3,07E+05 | 2,28E+05 | 6,98E+04 |
| 2,20 | 3,31E+05 | 1,85E+05 | 9,25E+04 |



2. Sudut jatuh 15 derajat

| Waktu (detik) | Kemiringan linggi haluan (derajat) | | |
|---------------|------------------------------------|----------|----------|
| | 52 | 57 | 62 |
| 0,00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| 0,11 | 1,95E+06 | 9,77E+05 | 5,45E+05 |
| 0,22 | 2,43E+06 | 1,92E+06 | 1,35E+06 |
| 0,33 | 9,63E+05 | 9,61E+05 | 1,05E+06 |
| 0,44 | 8,83E+05 | 8,75E+05 | 1,06E+06 |
| 0,55 | 8,42E+05 | 7,18E+05 | 7,98E+05 |
| 0,66 | 2,08E+05 | 4,82E+05 | 8,75E+05 |
| 0,77 | 8,56E+05 | 5,48E+05 | 5,76E+05 |
| 0,88 | 3,58E+05 | 4,97E+05 | 6,17E+05 |
| 0,99 | 6,20E+05 | 4,92E+05 | 4,38E+05 |
| 1,10 | 6,20E+05 | 4,59E+05 | 4,15E+05 |
| 1,21 | 3,08E+05 | 3,24E+05 | 3,22E+05 |
| 1,32 | 4,01E+05 | 3,21E+05 | 2,53E+05 |
| 1,43 | 7,03E+05 | 3,19E+05 | 3,93E+05 |
| 1,54 | 3,63E+05 | 2,90E+05 | 1,74E+05 |
| 1,65 | 4,16E+05 | 1,29E+05 | 3,07E+05 |
| 1,76 | 4,07E+05 | 2,03E+05 | 2,32E+05 |
| 1,87 | 2,69E+05 | 1,35E+05 | 2,76E+05 |
| 1,98 | 2,64E+05 | 1,05E+05 | 2,14E+05 |
| 2,09 | 2,46E+05 | 1,15E+05 | 2,42E+05 |
| 2,20 | 1,89E+05 | 9,50E+04 | 2,00E+05 |

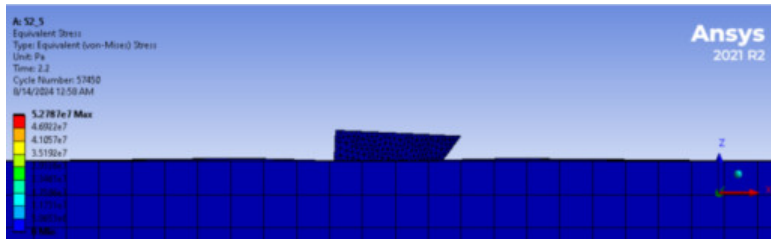
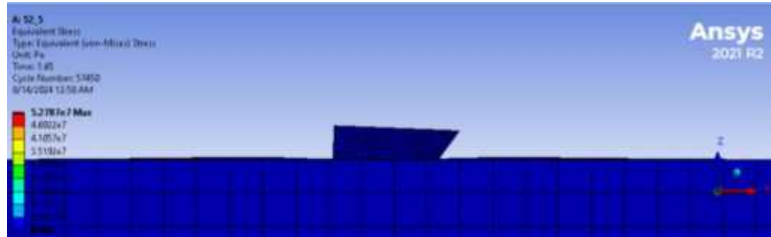
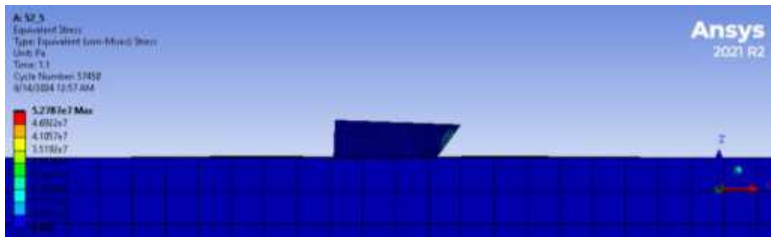
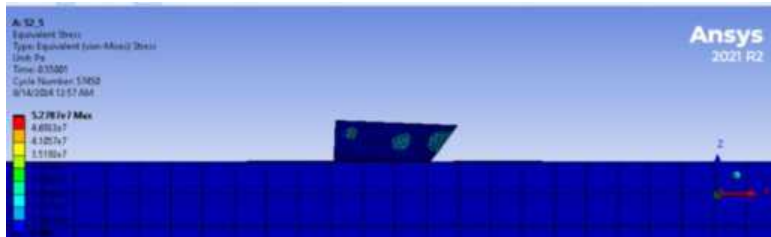
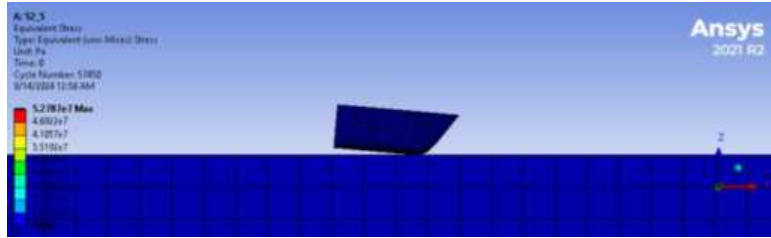


Lampiran 2 Data hasil simulasi drop test pada model sudut 52

1. Sudut jatuh 5 derajat

| Waktu (detik) | Kemiringan linggi haluan (derajat) | | |
|---------------|------------------------------------|----------|----------|
| | Point 1 | Point 2 | Point 3 |
| 0,00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| 0,11 | 4,72E+06 | 3,99E+06 | 3,28E+06 |
| 0,22 | 1,83E+07 | 1,20E+07 | 7,31E+06 |
| 0,33 | 2,86E+06 | 2,29E+06 | 1,96E+06 |
| 0,44 | 6,36E+06 | 4,38E+06 | 2,34E+06 |
| 0,55 | 5,86E+06 | 4,90E+06 | 3,05E+06 |
| 0,66 | 5,26E+06 | 4,30E+06 | 3,52E+06 |
| 0,77 | 3,70E+06 | 2,12E+06 | 7,64E+05 |
| 0,88 | 4,03E+06 | 3,07E+06 | 1,47E+06 |
| 0,99 | 2,35E+06 | 2,13E+06 | 1,31E+06 |
| 1,10 | 3,38E+06 | 1,79E+06 | 6,70E+05 |
| 1,21 | 1,04E+06 | 8,32E+05 | 7,45E+05 |
| 1,32 | 2,65E+06 | 2,37E+06 | 1,72E+06 |
| 1,43 | 2,76E+06 | 2,73E+06 | 2,13E+06 |
| 1,54 | 9,30E+05 | 8,72E+05 | 6,95E+05 |
| 1,65 | 1,80E+06 | 1,30E+06 | 8,58E+05 |
| 1,76 | 2,01E+06 | 1,81E+06 | 1,12E+06 |
| 1,87 | 4,40E+05 | 3,29E+05 | 2,30E+05 |
| 1,98 | 5,86E+05 | 8,82E+05 | 9,79E+05 |
| 2,09 | 4,10E+05 | 3,06E+05 | 3,53E+05 |
| 2,20 | 2,58E+05 | 1,96E+05 | 1,60E+05 |



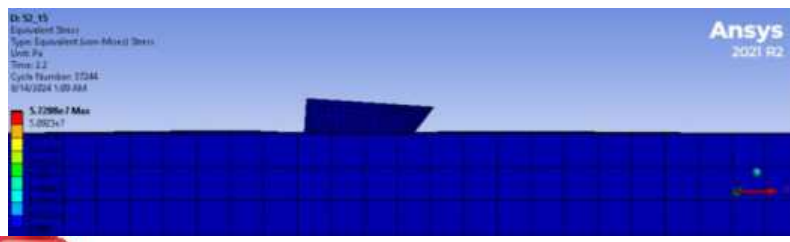
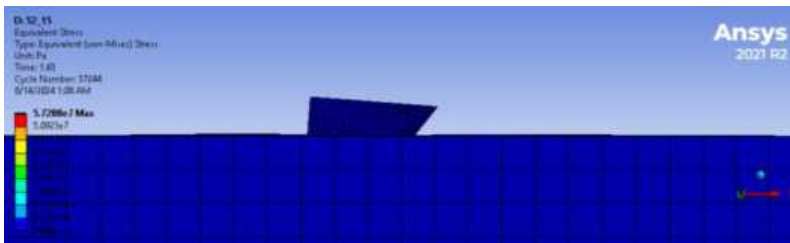
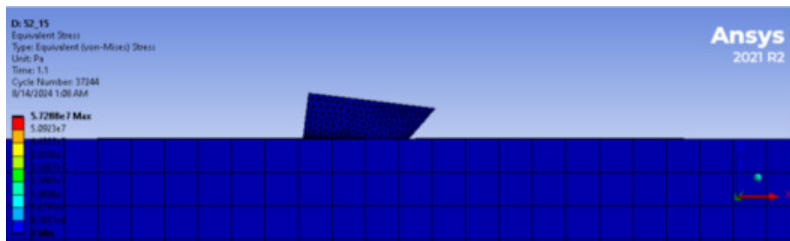
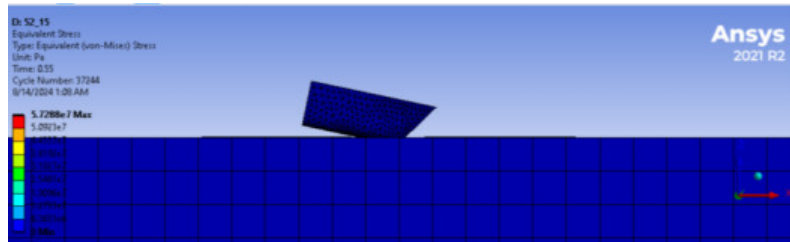
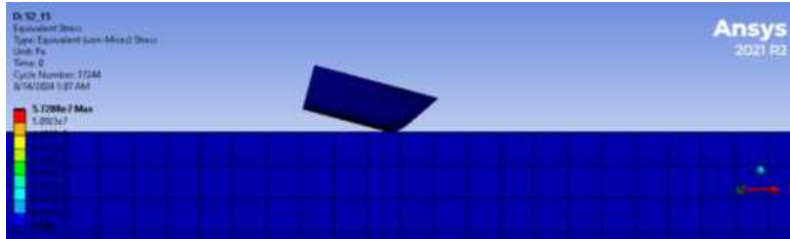


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2. Sudut jatuh 15 derajat

| Waktu (detik) | Kemiringan linggi haluan (derajat) | | |
|---------------|------------------------------------|----------|----------|
| | Point 1 | Point 2 | Point 3 |
| 0.00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 0.11 | 4.72E+06 | 3.22E+06 | 4.07E+06 |
| 0.22 | 8.02E+06 | 7.65E+06 | 6.66E+06 |
| 0.33 | 5.40E+06 | 5.03E+06 | 4.35E+06 |
| 0.44 | 1.60E+06 | 9.69E+05 | 1.97E+06 |
| 0.55 | 2.40E+06 | 2.31E+06 | 1.74E+06 |
| 0.66 | 1.29E+06 | 1.05E+06 | 8.47E+05 |
| 0.77 | 2.38E+06 | 2.29E+06 | 1.87E+06 |
| 0.88 | 9.29E+05 | 8.41E+05 | 8.65E+05 |
| 0.99 | 8.04E+05 | 7.26E+05 | 6.87E+05 |
| 1.10 | 6.65E+05 | 5.85E+05 | 6.52E+05 |
| 1.21 | 8.44E+05 | 7.59E+05 | 7.06E+05 |
| 1.32 | 9.66E+05 | 1.30E+06 | 6.03E+05 |
| 1.43 | 1.89E+06 | 1.49E+06 | 1.68E+06 |
| 1.54 | 2.38E+05 | 4.32E+05 | 2.63E+05 |
| 1.65 | 1.59E+06 | 1.21E+06 | 1.33E+06 |
| 1.76 | 1.03E+06 | 1.14E+06 | 8.88E+05 |
| 1.87 | 4.65E+05 | 6.27E+05 | 2.01E+05 |
| 1.98 | 3.70E+05 | 2.41E+05 | 3.86E+05 |
| 2.09 | 4.11E+05 | 4.71E+05 | 3.48E+05 |
| 2.20 | 1.72E+05 | 2.94E+05 | 2.11E+05 |





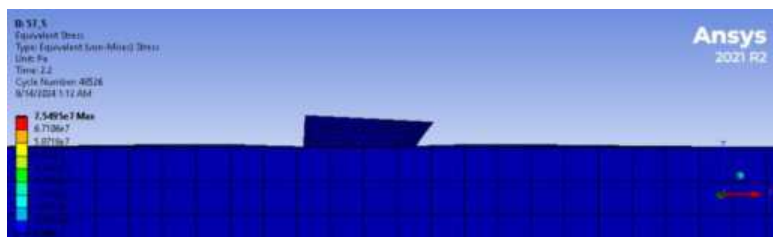
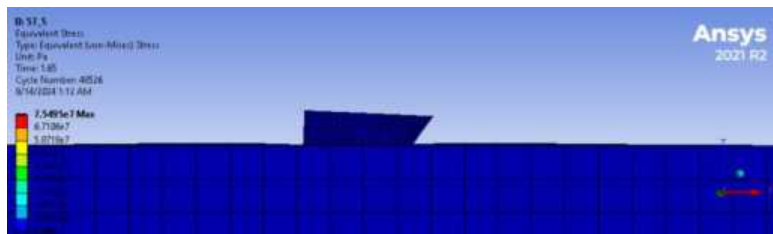
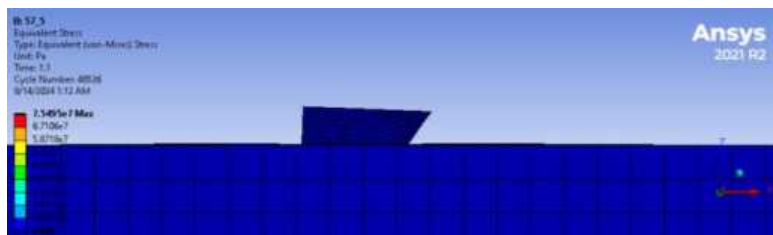
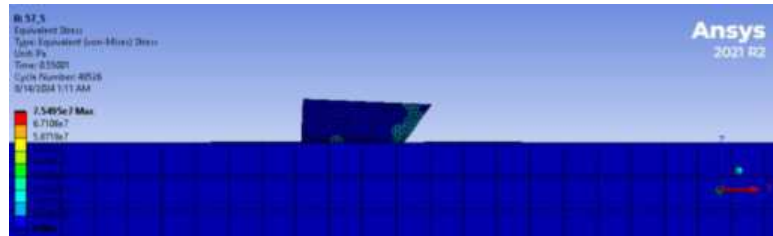
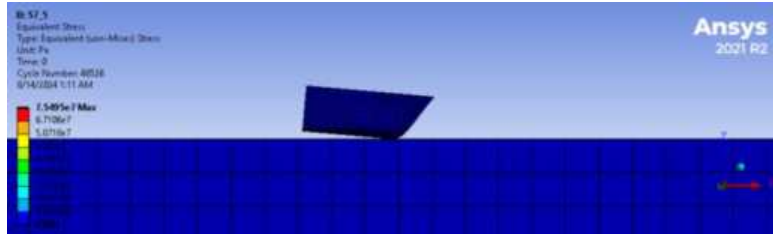
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Lampiran 3 Data hasil simulasi drop test pada model sudut 57

1. Sudut jatuh 5 derajat

| Waktu (detik) | Kemiringan linggi haluan (derajat) | | |
|---------------|------------------------------------|----------|----------|
| | Point 1 | Point 2 | Point 3 |
| 0.00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 0.11 | 1.02E+07 | 9.60E+06 | 7.28E+06 |
| 0.22 | 1.39E+07 | 1.05E+07 | 6.75E+06 |
| 0.33 | 3.02E+06 | 3.13E+06 | 3.56E+06 |
| 0.44 | 4.31E+05 | 1.12E+06 | 1.90E+06 |
| 0.55 | 8.54E+05 | 8.50E+05 | 6.95E+05 |
| 0.66 | 2.75E+06 | 2.73E+06 | 1.95E+06 |
| 0.77 | 3.46E+06 | 2.72E+06 | 1.51E+06 |
| 0.88 | 1.51E+06 | 1.25E+06 | 1.23E+06 |
| 0.99 | 2.09E+06 | 2.85E+06 | 2.33E+06 |
| 1.10 | 2.52E+06 | 1.39E+06 | 1.85E+06 |
| 1.21 | 3.80E+06 | 3.56E+06 | 2.59E+06 |
| 1.32 | 2.62E+06 | 2.63E+06 | 1.76E+06 |
| 1.43 | 1.95E+06 | 1.64E+06 | 1.29E+06 |
| 1.54 | 4.55E+05 | 3.33E+05 | 3.53E+05 |
| 1.65 | 7.97E+05 | 1.07E+06 | 1.15E+06 |
| 1.76 | 1.94E+06 | 1.36E+06 | 9.75E+05 |
| 1.87 | 1.92E+06 | 1.67E+06 | 1.19E+06 |
| 1.98 | 7.75E+05 | 7.04E+05 | 1.03E+06 |
| 2.09 | 5.67E+05 | 8.00E+05 | 7.48E+05 |
| 2.20 | 2.50E+05 | 2.58E+05 | 3.19E+05 |



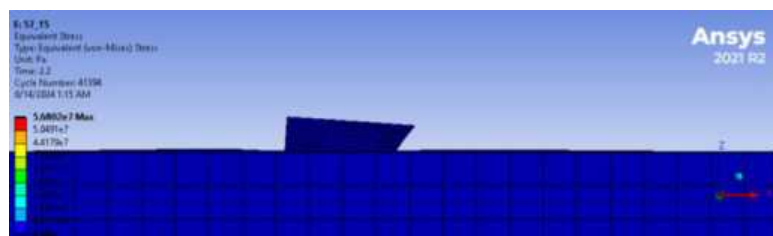
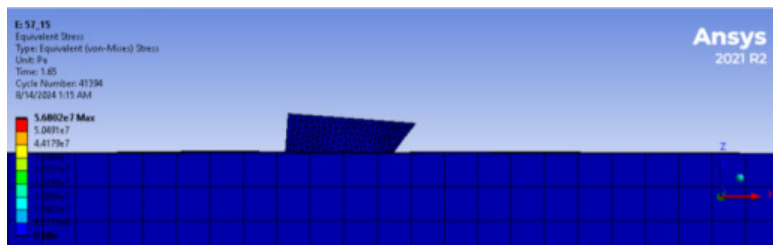
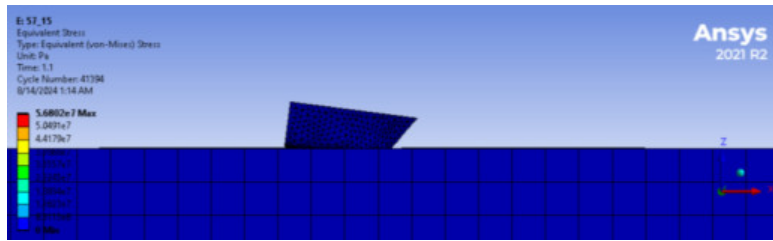
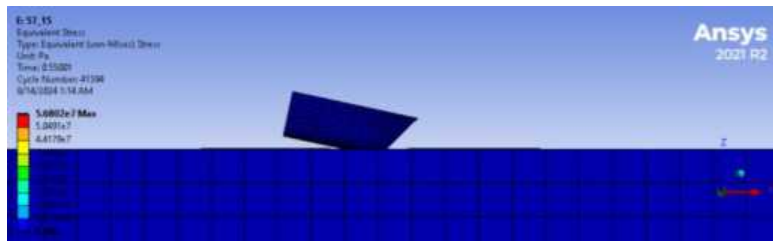
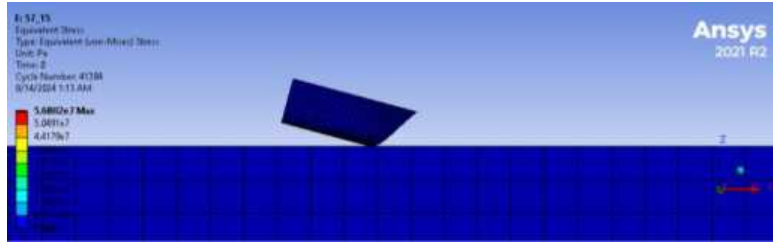


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2. Sudut jatuh 15 derajat

| Waktu (detik) | Kemiringan linggi haluan (derajat) | | |
|---------------|------------------------------------|----------|----------|
| | Point 1 | Point 2 | Point 3 |
| 0.00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 0.11 | 1.19E+06 | 9.92E+05 | 1.07E+06 |
| 0.22 | 7.33E+06 | 6.23E+06 | 5.62E+06 |
| 0.33 | 2.85E+06 | 3.38E+06 | 3.04E+06 |
| 0.44 | 2.60E+06 | 2.70E+06 | 2.26E+06 |
| 0.55 | 2.06E+06 | 1.79E+06 | 2.49E+06 |
| 0.66 | 3.49E+06 | 3.46E+06 | 2.75E+06 |
| 0.77 | 6.11E+05 | 1.18E+06 | 1.91E+06 |
| 0.88 | 1.98E+06 | 1.67E+06 | 1.69E+06 |
| 0.99 | 4.89E+05 | 1.46E+06 | 1.35E+06 |
| 1.10 | 3.12E+05 | 7.18E+05 | 1.20E+06 |
| 1.21 | 1.02E+06 | 5.77E+05 | 5.42E+05 |
| 1.32 | 2.26E+05 | 2.02E+05 | 3.39E+05 |
| 1.43 | 6.24E+05 | 8.23E+05 | 5.58E+05 |
| 1.54 | 5.09E+05 | 6.79E+05 | 8.02E+05 |
| 1.65 | 3.34E+05 | 3.99E+05 | 2.98E+05 |
| 1.76 | 1.22E+06 | 1.11E+06 | 7.59E+05 |
| 1.87 | 8.62E+05 | 7.39E+05 | 5.98E+05 |
| 1.98 | 6.95E+05 | 9.46E+05 | 7.74E+05 |
| 2.09 | 5.94E+05 | 3.42E+05 | 1.75E+05 |
| 2.20 | 1.45E+05 | 1.53E+05 | 1.48E+05 |





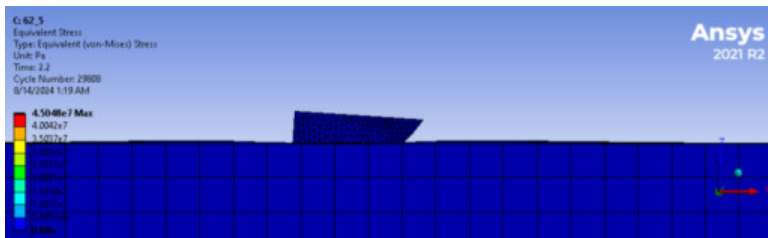
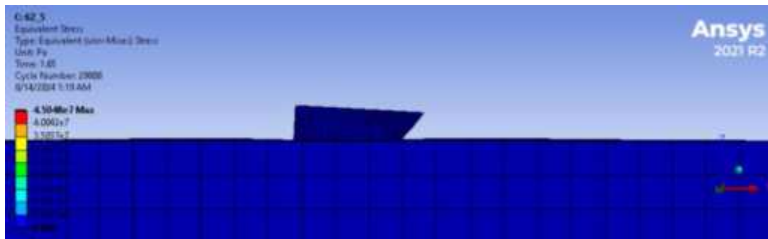
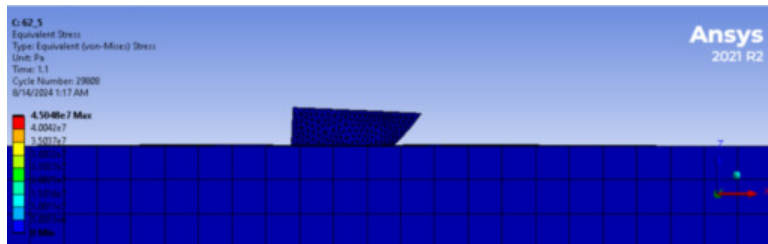
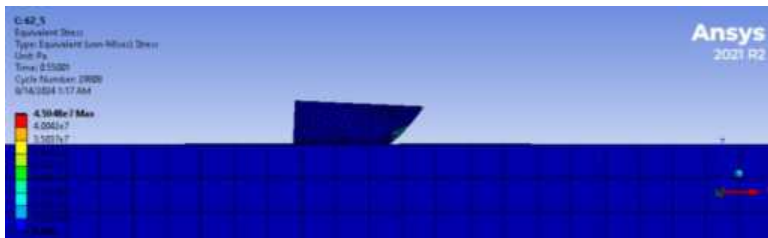
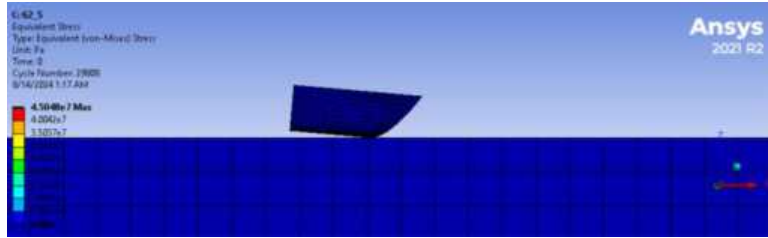
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Lampiran 4 Data hasil simulasi drop test pada model sudut 62

1. Sudut jatuh 5 derajat

| Waktu (detik) | Kemiringan linggi haluan (derajat) | | |
|---------------|------------------------------------|----------|----------|
| | Point 1 | Point 2 | Point 3 |
| 0.00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 0.11 | 7.27E+05 | 9.19E+05 | 6.57E+05 |
| 0.22 | 5.08E+06 | 4.63E+06 | 3.82E+06 |
| 0.33 | 5.89E+05 | 2.52E+05 | 6.65E+05 |
| 0.44 | 8.13E+05 | 8.74E+05 | 7.38E+05 |
| 0.55 | 1.26E+06 | 4.70E+05 | 1.45E+06 |
| 0.66 | 5.20E+05 | 2.42E+05 | 8.72E+05 |
| 0.77 | 5.46E+05 | 7.09E+05 | 5.10E+05 |
| 0.88 | 1.03E+06 | 1.03E+06 | 1.03E+06 |
| 0.99 | 1.09E+06 | 9.93E+05 | 9.10E+05 |
| 1.10 | 7.53E+05 | 4.23E+05 | 8.34E+05 |
| 1.21 | 4.00E+05 | 2.06E+05 | 4.30E+05 |
| 1.32 | 1.05E+06 | 8.06E+05 | 1.02E+06 |
| 1.43 | 8.08E+05 | 7.84E+05 | 6.13E+05 |
| 1.54 | 8.32E+05 | 5.13E+05 | 8.76E+05 |
| 1.65 | 1.46E+05 | 2.39E+05 | 4.54E+04 |
| 1.76 | 9.46E+05 | 7.99E+05 | 8.30E+05 |
| 1.87 | 1.48E+05 | 1.34E+05 | 1.20E+05 |
| 1.98 | 3.02E+05 | 2.34E+05 | 2.78E+05 |
| 2.09 | 2.36E+05 | 2.40E+05 | 2.15E+05 |
| 2.20 | 7.55E+04 | 9.48E+04 | 3.95E+04 |



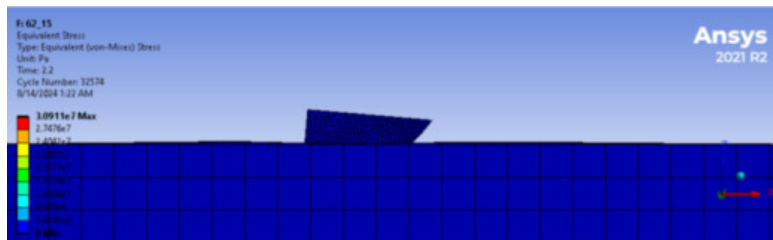
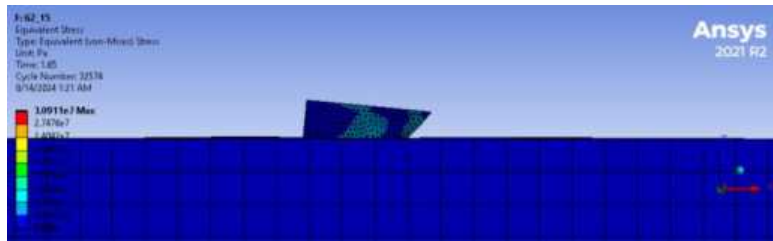
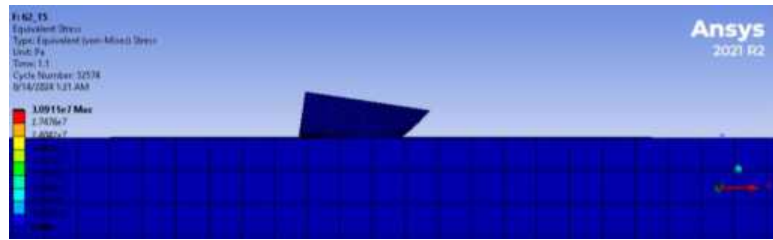
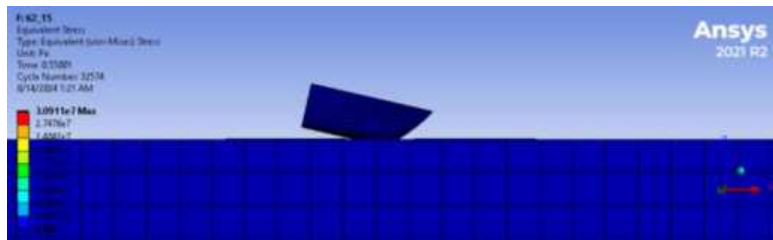
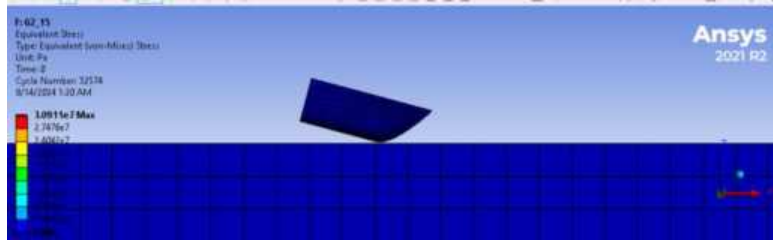


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2. Sudut jatuh 15 derajat

| Waktu (detik) | Kemiringan linggi haluan (derajat) | | |
|---------------|------------------------------------|----------|----------|
| | Point 1 | Point 2 | Point 3 |
| 0.00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 0.11 | 1.15E+06 | 1.74E+06 | 4.25E+05 |
| 0.22 | 3.75E+06 | 3.26E+06 | 2.86E+06 |
| 0.33 | 2.85E+06 | 2.87E+06 | 1.94E+06 |
| 0.44 | 1.32E+06 | 1.65E+06 | 4.47E+05 |
| 0.55 | 1.32E+06 | 1.54E+06 | 7.26E+05 |
| 0.66 | 9.39E+05 | 9.35E+05 | 6.44E+05 |
| 0.77 | 9.65E+05 | 9.49E+05 | 5.98E+05 |
| 0.88 | 4.83E+05 | 5.22E+05 | 2.52E+05 |
| 0.99 | 9.46E+05 | 9.31E+05 | 7.05E+05 |
| 1.10 | 6.78E+05 | 7.51E+05 | 4.14E+05 |
| 1.21 | 1.85E+05 | 1.21E+05 | 4.09E+05 |
| 1.32 | 2.18E+05 | 1.02E+05 | 2.55E+05 |
| 1.43 | 4.38E+05 | 3.62E+05 | 4.59E+05 |
| 1.54 | 8.60E+04 | 1.17E+05 | 1.23E+05 |
| 1.65 | 4.70E+05 | 4.89E+05 | 3.28E+05 |
| 1.76 | 3.74E+05 | 4.02E+05 | 2.45E+05 |
| 1.87 | 8.00E+04 | 4.08E+04 | 1.38E+05 |
| 1.98 | 2.63E+05 | 1.75E+05 | 3.34E+05 |
| 2.09 | 3.26E+05 | 2.67E+05 | 2.39E+05 |
| 2.20 | 2.14E+05 | 1.27E+05 | 2.12E+05 |





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