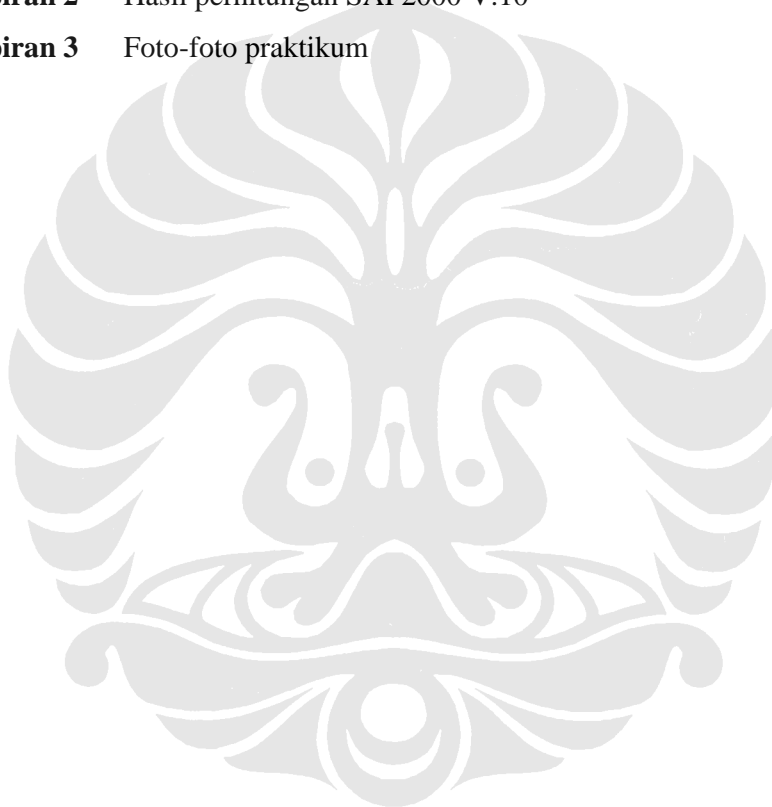


LAMPIRAN

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LAMPIRAN 1

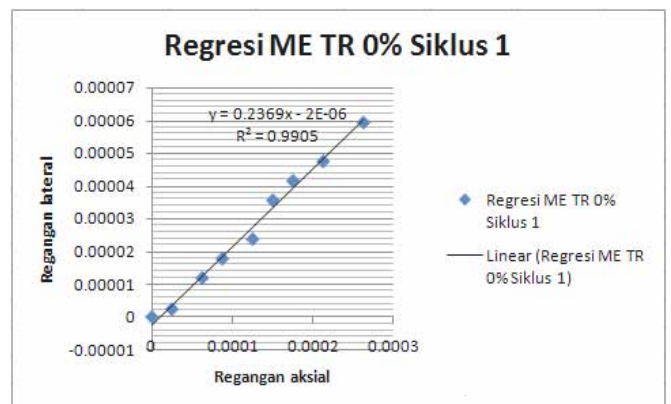
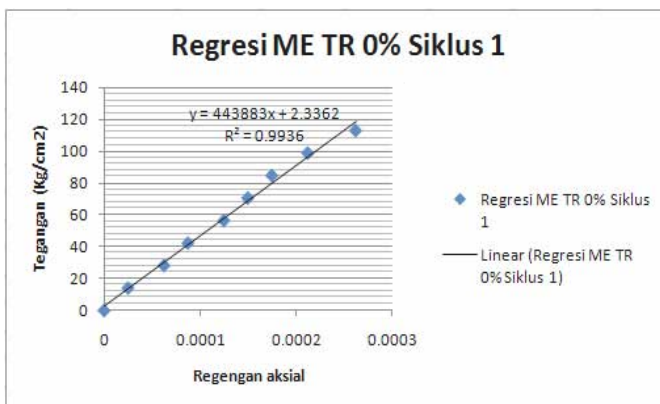
Balok Tanpa Rendam 0% (Siklus 1)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0.005 | 0.000357143 | 0.000025 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.0125 | 0.001785714 | 0.0000625 | 1.19048E-05 |
| 7500 | 42.44145908 | 0.0175 | 0.002678571 | 0.0000875 | 1.78571E-05 |
| 10000 | 56.58861211 | 0.025 | 0.003571429 | 0.000125 | 2.38095E-05 |
| 12500 | 70.73576513 | 0.03 | 0.005357143 | 0.00015 | 3.57143E-05 |
| 15000 | 84.88291816 | 0.035 | 0.00625 | 0.000175 | 4.16667E-05 |
| 17500 | 99.03007119 | 0.0425 | 0.007142857 | 0.0002125 | 4.7619E-05 |
| 20000 | 113.1772242 | 0.0525 | 0.008928571 | 0.0002625 | 5.95238E-05 |
| 17500 | 99.03007119 | 0.055 | 0.008928571 | 0.000275 | 5.95238E-05 |
| 15000 | 84.88291816 | 0.055 | 0.008928571 | 0.000275 | 5.95238E-05 |
| 12500 | 70.73576513 | 0.045 | 0.008928571 | 0.000225 | 5.95238E-05 |
| 10000 | 56.58861211 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 7500 | 42.44145908 | 0.035 | 0.00625 | 0.000175 | 4.16667E-05 |
| 5000 | 28.29430605 | 0.025 | 0.003571429 | 0.000125 | 2.38095E-05 |
| 2500 | 14.14715303 | 0.015 | 0.003571429 | 0.000075 | 2.38095E-05 |
| 0 | 0 | 0 | 0 | 0 | 0 |

Tabel. Modulus Elastisitas dan Poisson ratio



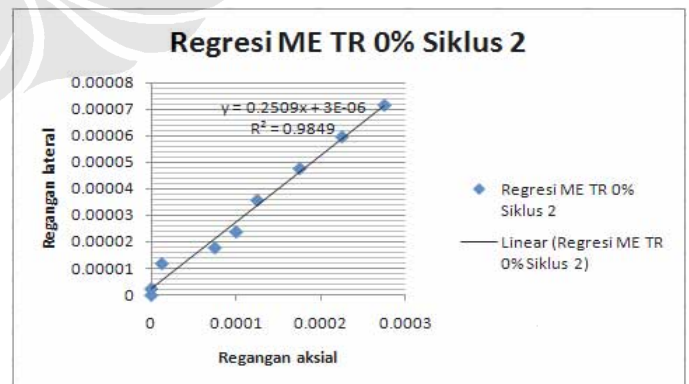
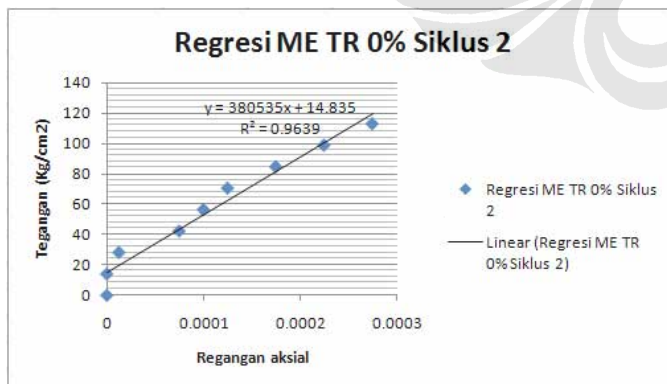
Balok Tanpa Rendam 0% (Siklus 2)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0 | 0.000357143 | 0 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.0025 | 0.001785714 | 0.0000125 | 1.19048E-05 |
| 7500 | 42.44145908 | 0.015 | 0.002678571 | 0.000075 | 1.78571E-05 |
| 10000 | 56.58861211 | 0.02 | 0.003571429 | 0.0001 | 2.38095E-05 |
| 12500 | 70.73576513 | 0.025 | 0.005357143 | 0.000125 | 3.57143E-05 |
| 15000 | 84.88291816 | 0.035 | 0.007142857 | 0.000175 | 4.7619E-05 |
| 17500 | 99.03007119 | 0.045 | 0.008928571 | 0.000225 | 5.95238E-05 |
| 20000 | 113.1772242 | 0.055 | 0.010714286 | 0.000275 | 7.14286E-05 |
| 17500 | 99.03007119 | 0.055 | 0.009821429 | 0.000275 | 6.54762E-05 |
| 15000 | 84.88291816 | 0.055 | 0.009821429 | 0.000275 | 6.54762E-05 |
| 12500 | 70.73576513 | 0.045 | 0.007857143 | 0.000225 | 5.2381E-05 |
| 10000 | 56.58861211 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 7500 | 42.44145908 | 0.03 | 0.005357143 | 0.00015 | 3.57143E-05 |
| 5000 | 28.29430605 | 0.025 | 0.003571429 | 0.000125 | 2.38095E-05 |
| 2500 | 14.14715303 | 0.01 | 0.001785714 | 0.00005 | 1.19048E-05 |
| 0 | 0 | 0 | 0 | 0 | 0 |

Tabel. Modulus Elastisitas dan Poisson ratio



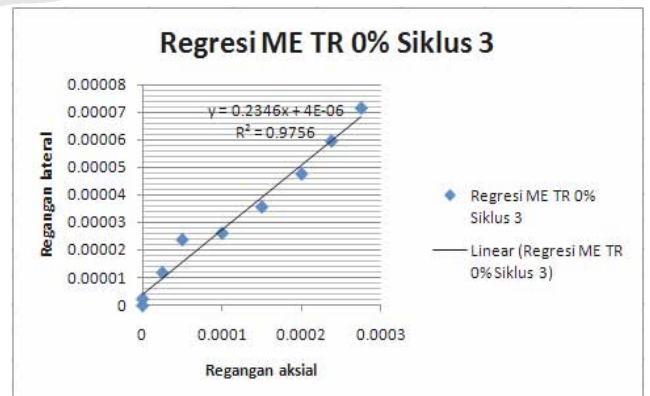
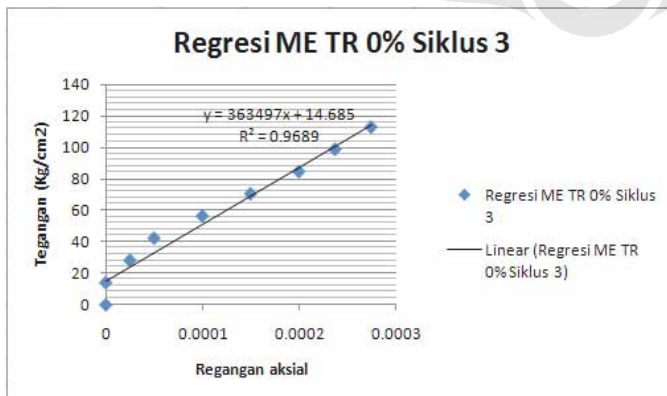
Balok Tanpa Rendam 0% (Siklus 3)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0 | 0.000357143 | 0 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.005 | 0.001785714 | 0.000025 | 1.19048E-05 |
| 7500 | 42.44145908 | 0.01 | 0.003571429 | 0.00005 | 2.38095E-05 |
| 10000 | 56.58861211 | 0.02 | 0.003928571 | 0.0001 | 2.61905E-05 |
| 12500 | 70.73576513 | 0.03 | 0.005357143 | 0.00015 | 3.57143E-05 |
| 15000 | 84.88291816 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 17500 | 99.03007119 | 0.0475 | 0.008928571 | 0.0002375 | 5.95238E-05 |
| 20000 | 113.1772242 | 0.055 | 0.010714286 | 0.000275 | 7.14286E-05 |
| 17500 | 99.03007119 | 0.065 | 0.010714286 | 0.000325 | 7.14286E-05 |
| 15000 | 84.88291816 | 0.055 | 0.01 | 0.000275 | 6.66667E-05 |
| 12500 | 70.73576513 | 0.045 | 0.008928571 | 0.000225 | 5.95238E-05 |
| 10000 | 56.58861211 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 7500 | 42.44145908 | 0.03 | 0.005357143 | 0.00015 | 3.57143E-05 |
| 5000 | 28.29430605 | 0.025 | 0.003571429 | 0.000125 | 2.38095E-05 |
| 2500 | 14.14715303 | 0.01 | 0.001785714 | 0.00005 | 1.19048E-05 |
| 0 | 0 | 0 | 0 | 0 | 0 |



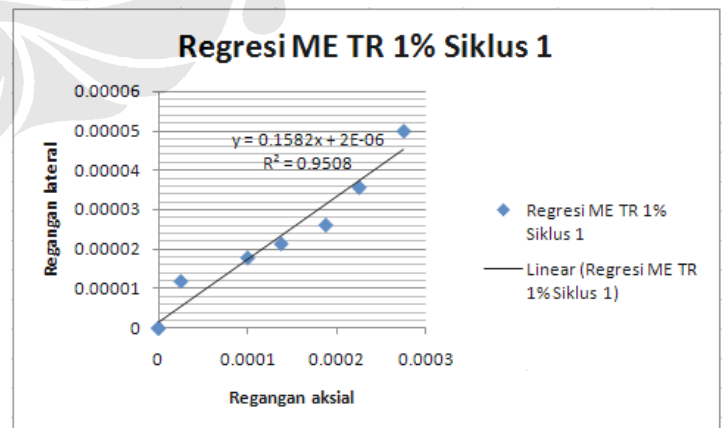
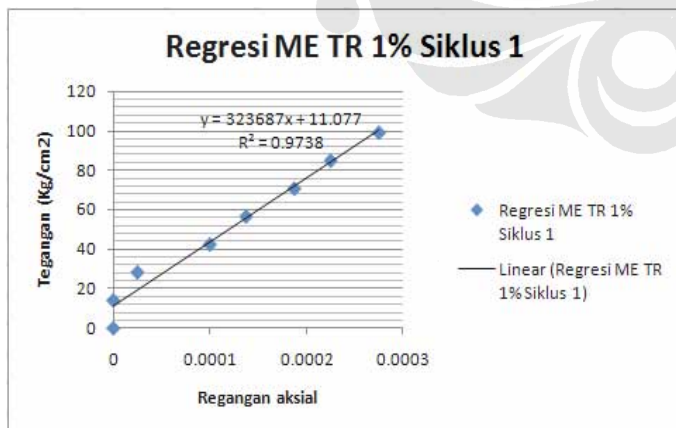
Balok Tanpa Rendam 1% (Siklus 1)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0 | 0 | 0 | 0 |
| 5000 | 28.29430605 | 0.005 | 0.001785714 | 0.000025 | 1.19048E-05 |
| 7500 | 42.44145908 | 0.02 | 0.002678571 | 0.0001 | 1.78571E-05 |
| 10000 | 56.58861211 | 0.0275 | 0.003214286 | 0.0001375 | 2.14286E-05 |
| 12500 | 70.73576513 | 0.0375 | 0.003928571 | 0.0001875 | 2.61905E-05 |
| 15000 | 84.88291816 | 0.045 | 0.005357143 | 0.000225 | 3.57143E-05 |
| 17500 | 99.03007119 | 0.055 | 0.0075 | 0.000275 | 0.00005 |
| 15000 | 84.88291816 | 0.0575 | 0.007142857 | 0.0002875 | 4.7619E-05 |
| 12500 | 70.73576513 | 0.0575 | 0.007142857 | 0.0002875 | 4.7619E-05 |
| 10000 | 56.58861211 | 0.0575 | 0.007142857 | 0.0002875 | 4.7619E-05 |
| 7500 | 42.44145908 | 0.055 | 0.007142857 | 0.000275 | 4.7619E-05 |
| 5000 | 28.29430605 | 0.0425 | 0.007142857 | 0.0002125 | 4.7619E-05 |
| 2500 | 14.14715303 | 0.025 | 0.003928571 | 0.000125 | 2.61905E-05 |
| 0 | 0 | 0 | 0.003571429 | 0 | 2.38095E-05 |



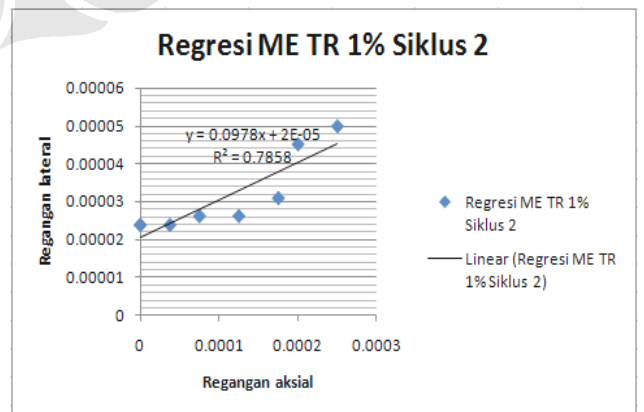
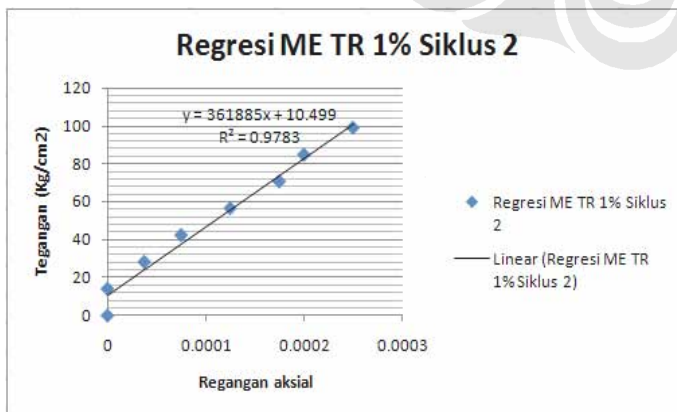
Balok Tanpa Rendam 1% (Siklus 2)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0.003571429 | 0 | 2.38095E-05 |
| 2500 | 14.14715303 | 0 | 0.003571429 | 0 | 2.38095E-05 |
| 5000 | 28.29430605 | 0.0075 | 0.003571429 | 0.0000375 | 2.38095E-05 |
| 7500 | 42.44145908 | 0.015 | 0.003928571 | 0.000075 | 2.61905E-05 |
| 10000 | 56.58861211 | 0.025 | 0.003928571 | 0.000125 | 2.61905E-05 |
| 12500 | 70.73576513 | 0.035 | 0.004642857 | 0.000175 | 3.09524E-05 |
| 15000 | 84.88291816 | 0.04 | 0.006785714 | 0.0002 | 4.52381E-05 |
| 17500 | 99.03007119 | 0.05 | 0.0075 | 0.00025 | 0.00005 |
| 15000 | 84.88291816 | 0.0525 | 0.0075 | 0.0002625 | 0.00005 |
| 12500 | 70.73576513 | 0.051 | 0.0075 | 0.000255 | 0.00005 |
| 10000 | 56.58861211 | 0.05 | 0.0075 | 0.00025 | 0.00005 |
| 7500 | 42.44145908 | 0.05 | 0.0075 | 0.00025 | 0.00005 |
| 5000 | 28.29430605 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 2500 | 14.14715303 | 0.02 | 0.005357143 | 0.0001 | 3.57143E-05 |
| 0 | 0 | 0 | 0.003571429 | 0 | 2.38095E-05 |



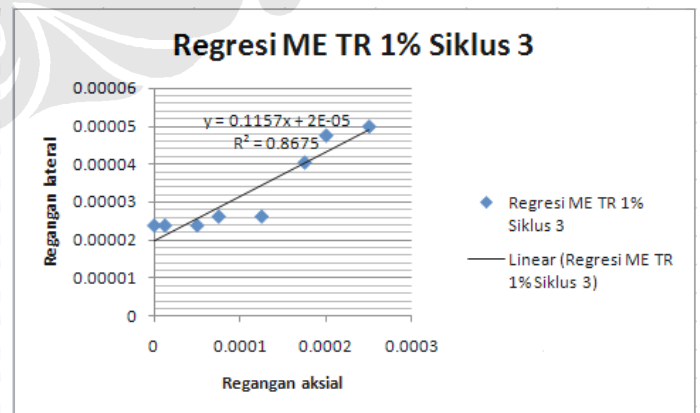
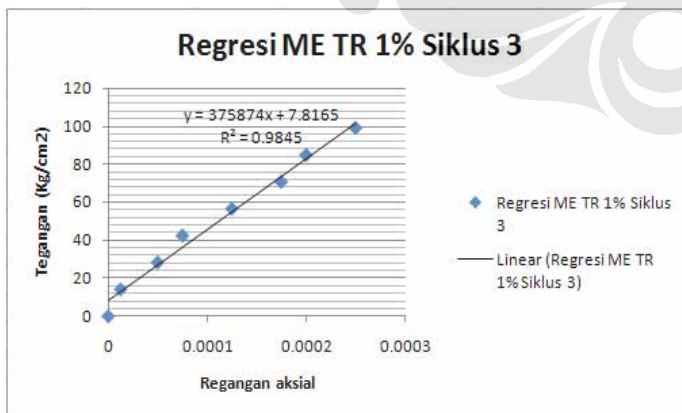
Balok Tanpa Rendam 1% (Siklus 3)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0.003571429 | 0 | 2.38095E-05 |
| 2500 | 14.14715303 | 0.0025 | 0.003571429 | 0.0000125 | 2.38095E-05 |
| 5000 | 28.29430605 | 0.01 | 0.003571429 | 0.00005 | 2.38095E-05 |
| 7500 | 42.44145908 | 0.015 | 0.003928571 | 0.000075 | 2.61905E-05 |
| 10000 | 56.58861211 | 0.025 | 0.003928571 | 0.000125 | 2.61905E-05 |
| 12500 | 70.73576513 | 0.035 | 0.006071429 | 0.000175 | 4.04762E-05 |
| 15000 | 84.88291816 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 17500 | 99.03007119 | 0.05 | 0.0075 | 0.00025 | 0.00005 |
| 15000 | 84.88291816 | 0.055 | 0.0075 | 0.000275 | 0.00005 |
| 12500 | 70.73576513 | 0.055 | 0.0075 | 0.000275 | 0.00005 |
| 10000 | 56.58861211 | 0.055 | 0.0075 | 0.000275 | 0.00005 |
| 7500 | 42.44145908 | 0.055 | 0.0075 | 0.000275 | 0.00005 |
| 5000 | 28.29430605 | 0.04 | 0.0075 | 0.0002 | 0.00005 |
| 2500 | 14.14715303 | 0.015 | 0.006071429 | 0.000075 | 4.04762E-05 |
| 0 | 0 | 0 | 0.003571429 | 0 | 2.38095E-05 |



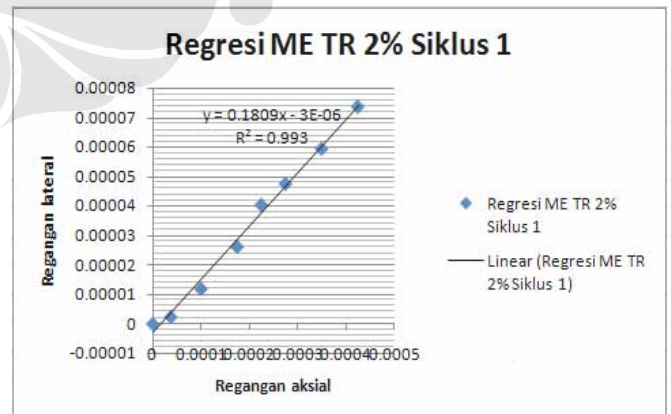
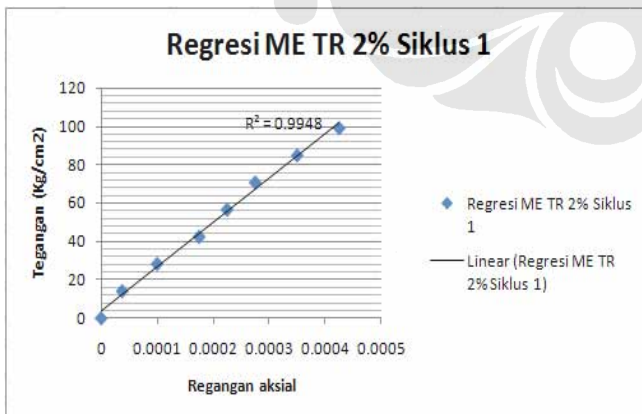
Balok Tanpa Rendam 2% (Siklus 1)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0.0075 | 0.000357143 | 0.0000375 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.02 | 0.001785714 | 0.0001 | 1.19048E-05 |
| 7500 | 42.44145908 | 0.035 | 0.003928571 | 0.000175 | 2.61905E-05 |
| 10000 | 56.58861211 | 0.045 | 0.006071429 | 0.000225 | 4.04762E-05 |
| 12500 | 70.73576513 | 0.055 | 0.007142857 | 0.000275 | 4.7619E-05 |
| 15000 | 84.88291816 | 0.07 | 0.008928571 | 0.00035 | 5.95238E-05 |
| 17500 | 99.03007119 | 0.085 | 0.011071429 | 0.000425 | 7.38095E-05 |
| 15000 | 84.88291816 | 0.08 | 0.011071429 | 0.0004 | 7.38095E-05 |
| 12500 | 70.73576513 | 0.065 | 0.01 | 0.000325 | 6.66667E-05 |
| 10000 | 56.58861211 | 0.055 | 0.007142857 | 0.000275 | 4.7619E-05 |
| 7500 | 42.44145908 | 0.045 | 0.00625 | 0.000225 | 4.16667E-05 |
| 5000 | 28.29430605 | 0.03 | 0.003571429 | 0.00015 | 2.38095E-05 |
| 2500 | 14.14715303 | 0.02 | 0.001785714 | 0.0001 | 1.19048E-05 |
| 0 | 0 | 0 | 0 | 0 | 0 |



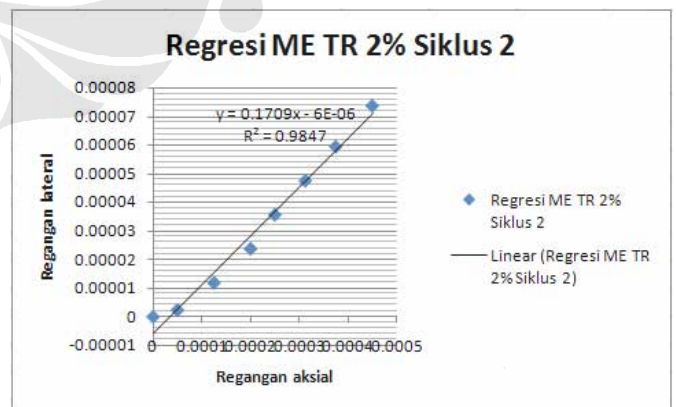
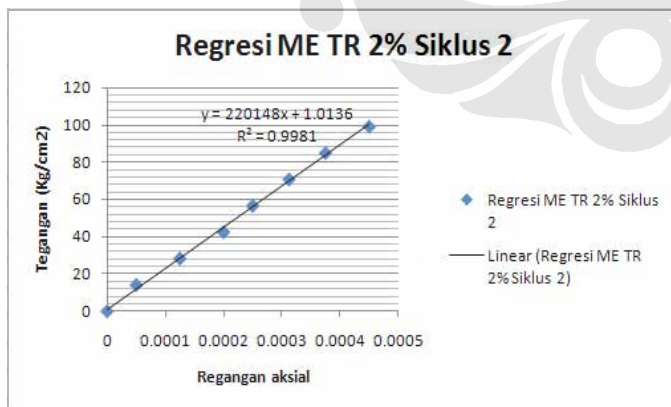
Balok Tanpa Rendam 2% (Siklus 2)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0.01 | 0.000357143 | 0.00005 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.025 | 0.001785714 | 0.000125 | 1.19048E-05 |
| 7500 | 42.44145908 | 0.04 | 0.003571429 | 0.0002 | 2.38095E-05 |
| 10000 | 56.58861211 | 0.05 | 0.005357143 | 0.00025 | 3.57143E-05 |
| 12500 | 70.73576513 | 0.0625 | 0.007142857 | 0.0003125 | 4.7619E-05 |
| 15000 | 84.88291816 | 0.075 | 0.008928571 | 0.000375 | 5.95238E-05 |
| 17500 | 99.03007119 | 0.09 | 0.011071429 | 0.00045 | 7.38095E-05 |
| 15000 | 84.88291816 | 0.08 | 0.010714286 | 0.0004 | 7.14286E-05 |
| 12500 | 70.73576513 | 0.065 | 0.007142857 | 0.000325 | 4.7619E-05 |
| 10000 | 56.58861211 | 0.055 | 0.007142857 | 0.000275 | 4.7619E-05 |
| 7500 | 42.44145908 | 0.045 | 0.003571429 | 0.000225 | 2.38095E-05 |
| 5000 | 28.29430605 | 0.03 | 0.003571429 | 0.00015 | 2.38095E-05 |
| 2500 | 14.14715303 | 0.02 | 0.000714286 | 0.0001 | 4.7619E-06 |
| 0 | 0 | 0 | 0 | 0 | 0 |



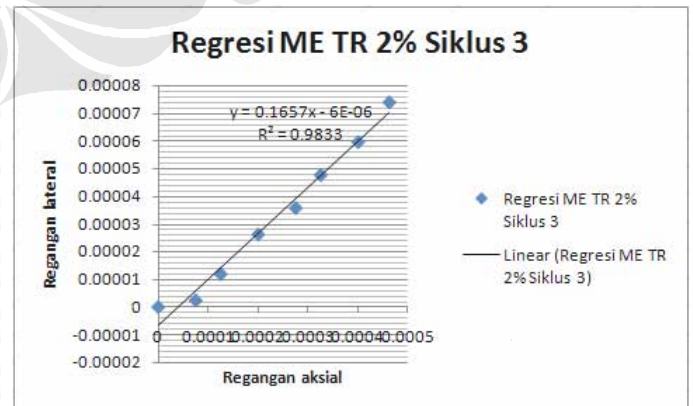
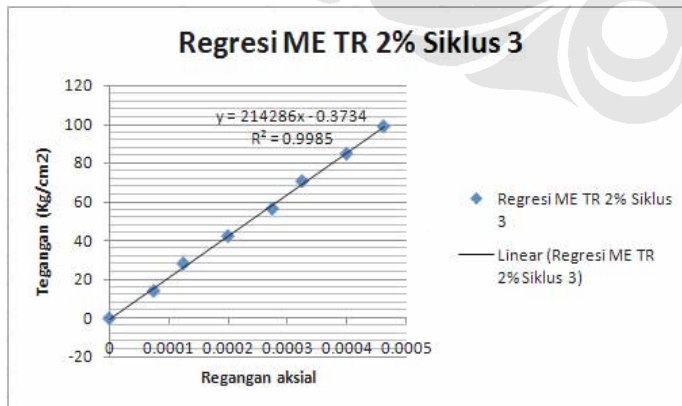
Balok Tanpa Rendam 2% (Siklus 3)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0.015 | 0.000357143 | 0.000075 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.025 | 0.001785714 | 0.000125 | 1.19048E-05 |
| 7500 | 42.44145908 | 0.04 | 0.003928571 | 0.0002 | 2.61905E-05 |
| 10000 | 56.58861211 | 0.055 | 0.005357143 | 0.000275 | 3.57143E-05 |
| 12500 | 70.73576513 | 0.065 | 0.007142857 | 0.000325 | 4.7619E-05 |
| 15000 | 84.88291816 | 0.08 | 0.008928571 | 0.0004 | 5.95238E-05 |
| 17500 | 99.03007119 | 0.0925 | 0.011071429 | 0.0004625 | 7.38095E-05 |
| 15000 | 84.88291816 | 0.08 | 0.011071429 | 0.0004 | 7.38095E-05 |
| 12500 | 70.73576513 | 0.0725 | 0.009821429 | 0.0003625 | 6.54762E-05 |
| 10000 | 56.58861211 | 0.055 | 0.007142857 | 0.000275 | 4.7619E-05 |
| 7500 | 42.44145908 | 0.045 | 0.00625 | 0.000225 | 4.16667E-05 |
| 5000 | 28.29430605 | 0.03 | 0.003571429 | 0.00015 | 2.38095E-05 |
| 2500 | 14.14715303 | 0.02 | 0.001785714 | 0.0001 | 1.19048E-05 |
| 0 | 0 | 0 | 0 | 0 | 0 |



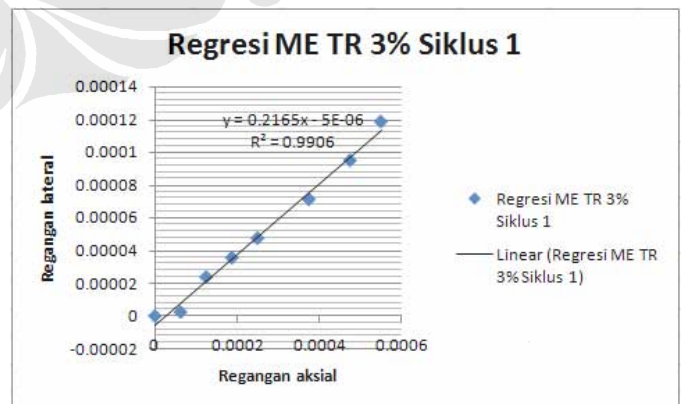
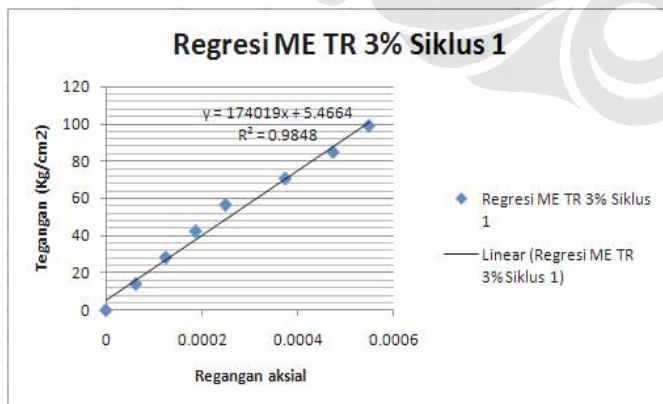
Balok Tanpa Rendam 3% (Siklus 1)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0.0125 | 0.000357143 | 0.0000625 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.025 | 0.003571429 | 0.000125 | 2.38095E-05 |
| 7500 | 42.44145908 | 0.0375 | 0.005357143 | 0.0001875 | 3.57143E-05 |
| 10000 | 56.58861211 | 0.05 | 0.007142857 | 0.00025 | 4.7619E-05 |
| 12500 | 70.73576513 | 0.075 | 0.010714286 | 0.000375 | 7.14286E-05 |
| 15000 | 84.88291816 | 0.095 | 0.014285714 | 0.000475 | 9.52381E-05 |
| 17500 | 99.03007119 | 0.11 | 0.017857143 | 0.00055 | 0.000119048 |
| 15000 | 84.88291816 | 0.11 | 0.017857143 | 0.00055 | 0.000119048 |
| 12500 | 70.73576513 | 0.095 | 0.017857143 | 0.000475 | 0.000119048 |
| 10000 | 56.58861211 | 0.085 | 0.014285714 | 0.000425 | 9.52381E-05 |
| 7500 | 42.44145908 | 0.07 | 0.0125 | 0.00035 | 8.33333E-05 |
| 5000 | 28.29430605 | 0.05 | 0.010357143 | 0.00025 | 6.90476E-05 |
| 2500 | 14.14715303 | 0.045 | 0.007142857 | 0.000225 | 4.7619E-05 |
| 0 | 0 | 0 | 0.003928571 | 0 | 2.61905E-05 |



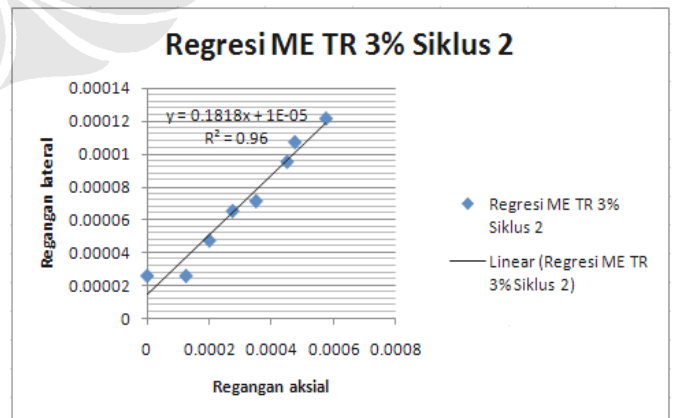
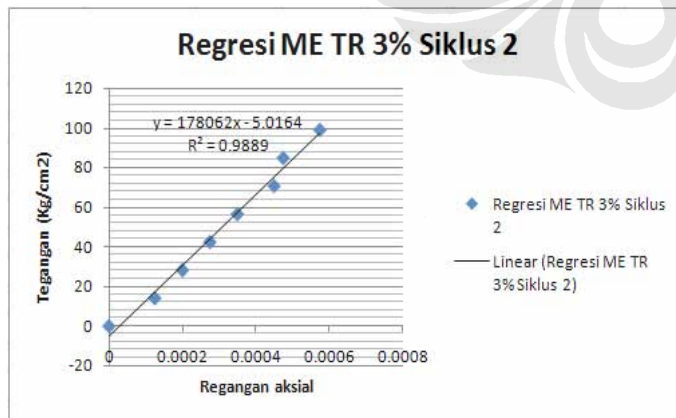
Balok Tanpa Rendam 3% (Siklus 2)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|----------|-------------|
| 0 | 0 | 0 | 0.003928571 | 0 | 2.61905E-05 |
| 2500 | 14.14715303 | 0.025 | 0.003928571 | 0.000125 | 2.61905E-05 |
| 5000 | 28.29430605 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 7500 | 42.44145908 | 0.055 | 0.009821429 | 0.000275 | 6.54762E-05 |
| 10000 | 56.58861211 | 0.07 | 0.010714286 | 0.00035 | 7.14286E-05 |
| 12500 | 70.73576513 | 0.09 | 0.014285714 | 0.00045 | 9.52381E-05 |
| 15000 | 84.88291816 | 0.095 | 0.016071429 | 0.000475 | 0.000107143 |
| 17500 | 99.03007119 | 0.115 | 0.018214286 | 0.000575 | 0.000121429 |
| 15000 | 84.88291816 | 0.11 | 0.018214286 | 0.00055 | 0.000121429 |
| 12500 | 70.73576513 | 0.095 | 0.017857143 | 0.000475 | 0.000119048 |
| 10000 | 56.58861211 | 0.085 | 0.016071429 | 0.000425 | 0.000107143 |
| 7500 | 42.44145908 | 0.07 | 0.0125 | 0.00035 | 8.33333E-05 |
| 5000 | 28.29430605 | 0.055 | 0.010357143 | 0.000275 | 6.90476E-05 |
| 2500 | 14.14715303 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 0 | 0 | 0 | 0.003928571 | 0 | 2.61905E-05 |



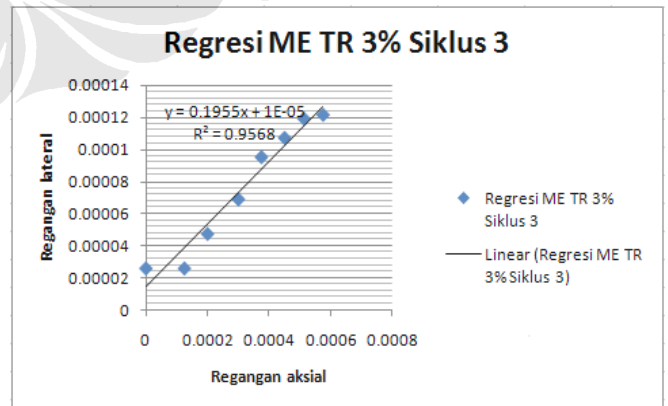
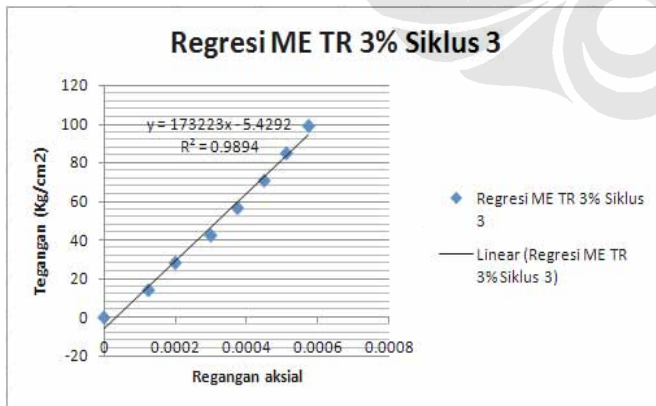
Balok Tanpa Rendam 3% (Siklus 3)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0.003928571 | 0 | 2.61905E-05 |
| 2500 | 14.14715303 | 0.025 | 0.003928571 | 0.000125 | 2.61905E-05 |
| 5000 | 28.29430605 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 7500 | 42.44145908 | 0.06 | 0.010357143 | 0.0003 | 6.90476E-05 |
| 10000 | 56.58861211 | 0.075 | 0.014285714 | 0.000375 | 9.52381E-05 |
| 12500 | 70.73576513 | 0.09 | 0.016071429 | 0.00045 | 0.000107143 |
| 15000 | 84.88291816 | 0.1025 | 0.017857143 | 0.0005125 | 0.000119048 |
| 17500 | 99.03007119 | 0.115 | 0.018214286 | 0.000575 | 0.000121429 |
| 15000 | 84.88291816 | 0.11 | 0.018214286 | 0.00055 | 0.000121429 |
| 12500 | 70.73576513 | 0.095 | 0.017857143 | 0.000475 | 0.000119048 |
| 10000 | 56.58861211 | 0.0825 | 0.016071429 | 0.0004125 | 0.000107143 |
| 7500 | 42.44145908 | 0.07 | 0.0125 | 0.00035 | 8.33333E-05 |
| 5000 | 28.29430605 | 0.055 | 0.010714286 | 0.000275 | 7.14286E-05 |
| 2500 | 14.14715303 | 0.045 | 0.007142857 | 0.000225 | 4.7619E-05 |
| 0 | 0 | 0 | 0.003928571 | 0 | 2.61905E-05 |



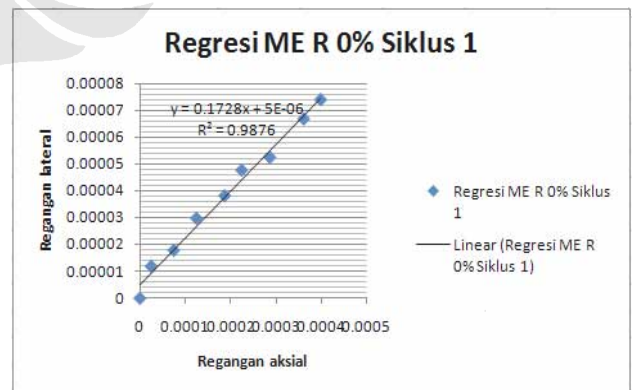
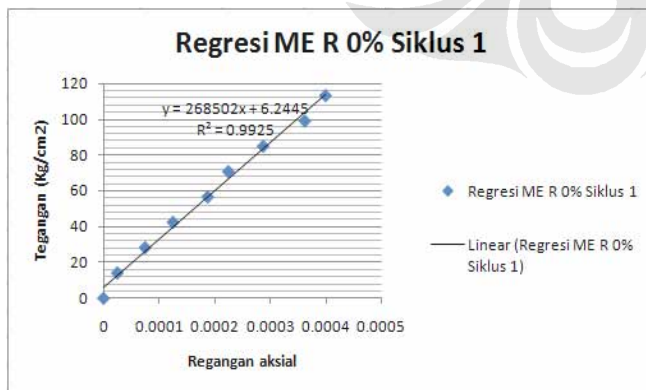
Balok Rendam 0% (Siklus 1)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0.005 | 0.001785714 | 0.000025 | 1.19048E-05 |
| 5000 | 28.29430605 | 0.015 | 0.002678571 | 0.000075 | 1.78571E-05 |
| 7500 | 42.44145908 | 0.025 | 0.004464286 | 0.000125 | 2.97619E-05 |
| 10000 | 56.58861211 | 0.0375 | 0.005714286 | 0.0001875 | 3.80952E-05 |
| 12500 | 70.73576513 | 0.045 | 0.007142857 | 0.000225 | 4.7619E-05 |
| 15000 | 84.88291816 | 0.0575 | 0.007857143 | 0.0002875 | 5.2381E-05 |
| 17500 | 99.03007119 | 0.0725 | 0.01 | 0.0003625 | 6.66667E-05 |
| 20000 | 113.1772242 | 0.08 | 0.011071429 | 0.0004 | 7.38095E-05 |
| 17500 | 99.03007119 | 0.075 | 0.011071429 | 0.000375 | 7.38095E-05 |
| 15000 | 84.88291816 | 0.07 | 0.011071429 | 0.00035 | 7.38095E-05 |
| 12500 | 70.73576513 | 0.055 | 0.010714286 | 0.000275 | 7.14286E-05 |
| 10000 | 56.58861211 | 0.0475 | 0.008928571 | 0.0002375 | 5.95238E-05 |
| 7500 | 42.44145908 | 0.035 | 0.007857143 | 0.000175 | 5.2381E-05 |
| 5000 | 28.29430605 | 0.025 | 0.00625 | 0.000125 | 4.16667E-05 |
| 2500 | 14.14715303 | 0.015 | 0.003571429 | 0.000075 | 2.38095E-05 |
| 0 | 0 | 0 | 0.001785714 | 0 | 1.19048E-05 |



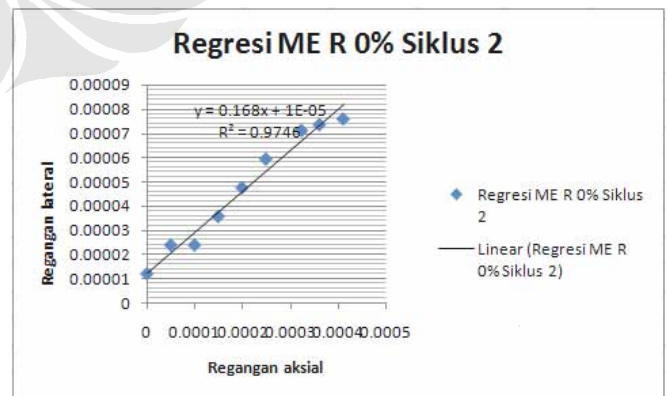
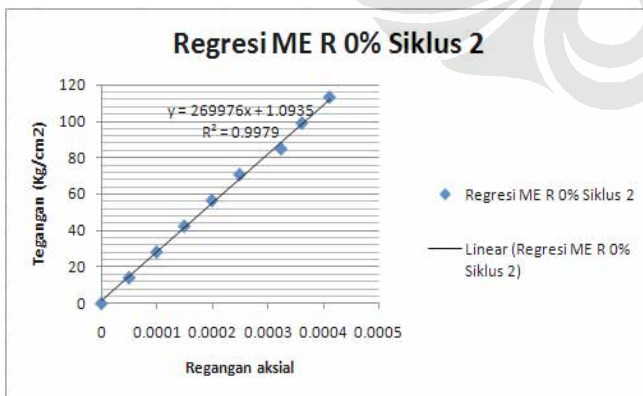
Balok Rendam 0% (Siklus 2)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0.001785714 | 0 | 1.19048E-05 |
| 2500 | 14.14715303 | 0.01 | 0.003571429 | 0.00005 | 2.38095E-05 |
| 5000 | 28.29430605 | 0.02 | 0.003571429 | 0.0001 | 2.38095E-05 |
| 7500 | 42.44145908 | 0.03 | 0.005357143 | 0.00015 | 3.57143E-05 |
| 10000 | 56.58861211 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 12500 | 70.73576513 | 0.05 | 0.008928571 | 0.00025 | 5.95238E-05 |
| 15000 | 84.88291816 | 0.065 | 0.010714286 | 0.000325 | 7.14286E-05 |
| 17500 | 99.03007119 | 0.0725 | 0.011071429 | 0.0003625 | 7.38095E-05 |
| 20000 | 113.1772242 | 0.0825 | 0.011428571 | 0.0004125 | 7.61905E-05 |
| 17500 | 99.03007119 | 0.075 | 0.011428571 | 0.000375 | 7.61905E-05 |
| 15000 | 84.88291816 | 0.07 | 0.011428571 | 0.00035 | 7.61905E-05 |
| 12500 | 70.73576513 | 0.055 | 0.010714286 | 0.000275 | 7.14286E-05 |
| 10000 | 56.58861211 | 0.0425 | 0.01 | 0.0002125 | 6.66667E-05 |
| 7500 | 42.44145908 | 0.035 | 0.007857143 | 0.000175 | 5.2381E-05 |
| 5000 | 28.29430605 | 0.025 | 0.007142857 | 0.000125 | 4.7619E-05 |
| 2500 | 14.14715303 | 0.015 | 0.005357143 | 0.000075 | 3.57143E-05 |
| 0 | 0 | 0 | 0.001785714 | 0 | 1.19048E-05 |



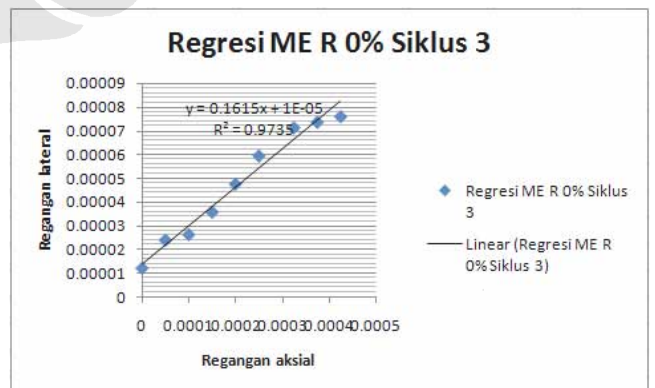
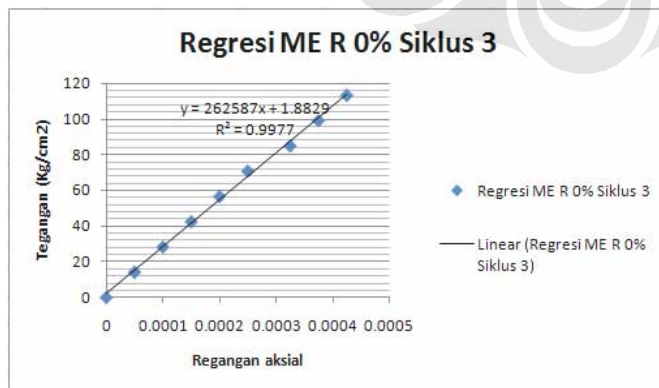
Balok Rendam 0% (Siklus 3)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|----------|-------------|
| 0 | 0 | 0 | 0.001785714 | 0 | 1.19048E-05 |
| 2500 | 14.14715303 | 0.01 | 0.003571429 | 0.00005 | 2.38095E-05 |
| 5000 | 28.29430605 | 0.02 | 0.003928571 | 0.0001 | 2.61905E-05 |
| 7500 | 42.44145908 | 0.03 | 0.005357143 | 0.00015 | 3.57143E-05 |
| 10000 | 56.58861211 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 12500 | 70.73576513 | 0.05 | 0.008928571 | 0.00025 | 5.95238E-05 |
| 15000 | 84.88291816 | 0.065 | 0.010714286 | 0.000325 | 7.14286E-05 |
| 17500 | 99.03007119 | 0.075 | 0.011071429 | 0.000375 | 7.38095E-05 |
| 20000 | 113.1772242 | 0.085 | 0.011428571 | 0.000425 | 7.61905E-05 |
| 17500 | 99.03007119 | 0.075 | 0.011428571 | 0.000375 | 7.61905E-05 |
| 15000 | 84.88291816 | 0.065 | 0.011428571 | 0.000325 | 7.61905E-05 |
| 12500 | 70.73576513 | 0.045 | 0.010714286 | 0.000225 | 7.14286E-05 |
| 10000 | 56.58861211 | 0.045 | 0.01 | 0.000225 | 6.66667E-05 |
| 7500 | 42.44145908 | 0.035 | 0.007857143 | 0.000175 | 5.2381E-05 |
| 5000 | 28.29430605 | 0.025 | 0.007142857 | 0.000125 | 4.7619E-05 |
| 2500 | 14.14715303 | 0.015 | 0.005357143 | 0.000075 | 3.57143E-05 |
| 0 | 0 | 0 | 0.001785714 | 0 | 1.19048E-05 |



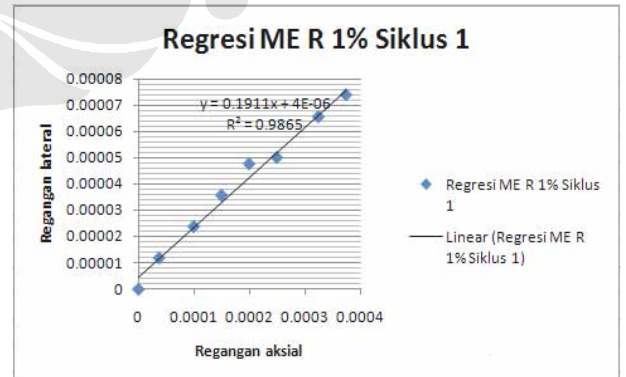
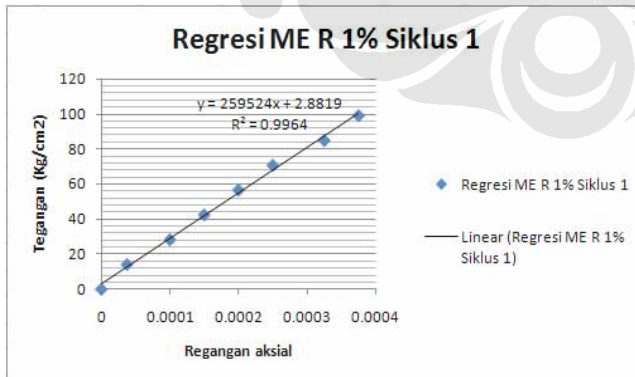
Balok Rendam 1% (Siklus 1)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0.0075 | 0.001785714 | 0.0000375 | 1.19048E-05 |
| 5000 | 28.29430605 | 0.02 | 0.003571429 | 0.0001 | 2.38095E-05 |
| 7500 | 42.44145908 | 0.03 | 0.005357143 | 0.00015 | 3.57143E-05 |
| 10000 | 56.58861211 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 12500 | 70.73576513 | 0.05 | 0.0075 | 0.00025 | 0.00005 |
| 15000 | 84.88291816 | 0.065 | 0.009821429 | 0.000325 | 6.54762E-05 |
| 17500 | 99.03007119 | 0.075 | 0.011071429 | 0.000375 | 7.38095E-05 |
| 15000 | 84.88291816 | 0.07 | 0.011071429 | 0.00035 | 7.38095E-05 |
| 12500 | 70.73576513 | 0.055 | 0.0075 | 0.000275 | 0.00005 |
| 10000 | 56.58861211 | 0.045 | 0.007142857 | 0.000225 | 4.7619E-05 |
| 7500 | 42.44145908 | 0.04 | 0.00625 | 0.0002 | 4.16667E-05 |
| 5000 | 28.29430605 | 0.0325 | 0.005357143 | 0.0001625 | 3.57143E-05 |
| 2500 | 14.14715303 | 0.02 | 0.003571429 | 0.0001 | 2.38095E-05 |
| | | 0 | 0.000357143 | 0 | 2.38095E-06 |



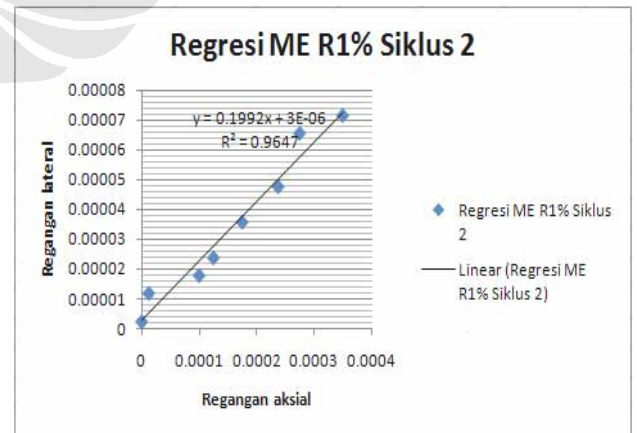
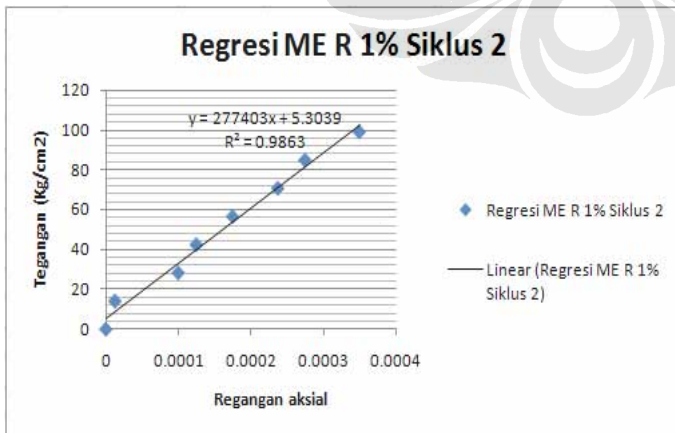
Balok Rendam 1% (Siklus 2)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0.000357143 | 0 | 2.38095E-06 |
| 2500 | 14.14715303 | 0.0025 | 0.001785714 | 0.0000125 | 1.19048E-05 |
| 5000 | 28.29430605 | 0.02 | 0.002678571 | 0.0001 | 1.78571E-05 |
| 7500 | 42.44145908 | 0.025 | 0.003571429 | 0.000125 | 2.38095E-05 |
| 10000 | 56.58861211 | 0.035 | 0.005357143 | 0.000175 | 3.57143E-05 |
| 12500 | 70.73576513 | 0.0475 | 0.007142857 | 0.0002375 | 4.7619E-05 |
| 15000 | 84.88291816 | 0.055 | 0.009821429 | 0.000275 | 6.54762E-05 |
| 17500 | 99.03007119 | 0.07 | 0.010714286 | 0.00035 | 7.14286E-05 |
| 15000 | 84.88291816 | 0.07 | 0.010714286 | 0.00035 | 7.14286E-05 |
| 12500 | 70.73576513 | 0.065 | 0.010357143 | 0.000325 | 6.90476E-05 |
| 10000 | 56.58861211 | 0.055 | 0.008928571 | 0.000275 | 5.95238E-05 |
| 7500 | 42.44145908 | 0.04 | 0.006785714 | 0.0002 | 4.52381E-05 |
| 5000 | 28.29430605 | 0.03 | 0.004464286 | 0.00015 | 2.97619E-05 |
| 2500 | 14.14715303 | 0.02 | 0.003571429 | 0.0001 | 2.38095E-05 |
| 0 | 0 | 0 | 0.000357143 | 0 | 2.38095E-06 |



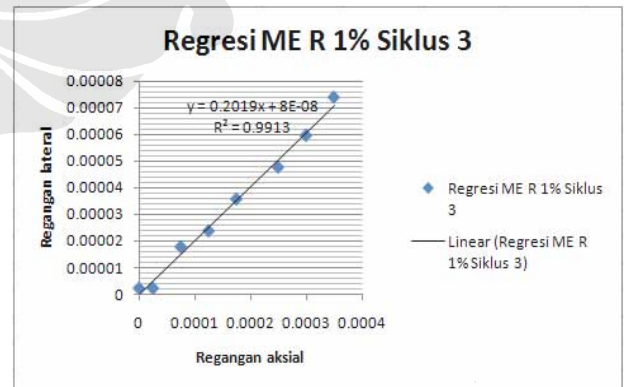
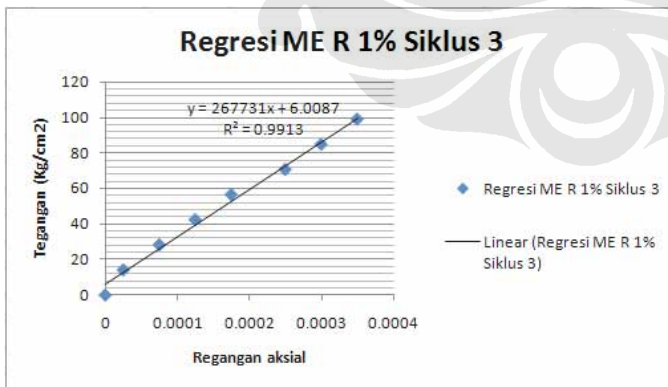
Balok Rendam 1% (Siklus 3)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|----------|-------------|
| 0 | 0 | 0 | 0.000357143 | 0 | 2.38095E-06 |
| 2500 | 14.14715303 | 0.005 | 0.000357143 | 0.000025 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.015 | 0.002678571 | 0.000075 | 1.78571E-05 |
| 7500 | 42.44145908 | 0.025 | 0.003571429 | 0.000125 | 2.38095E-05 |
| 10000 | 56.58861211 | 0.035 | 0.005357143 | 0.000175 | 3.57143E-05 |
| 12500 | 70.73576513 | 0.05 | 0.007142857 | 0.00025 | 4.7619E-05 |
| 15000 | 84.88291816 | 0.06 | 0.008928571 | 0.0003 | 5.95238E-05 |
| 17500 | 99.03007119 | 0.07 | 0.011071429 | 0.00035 | 7.38095E-05 |
| 15000 | 84.88291816 | 0.07 | 0.011071429 | 0.00035 | 7.38095E-05 |
| 12500 | 70.73576513 | 0.065 | 0.010714286 | 0.000325 | 7.14286E-05 |
| 10000 | 56.58861211 | 0.055 | 0.008928571 | 0.000275 | 5.95238E-05 |
| 7500 | 42.44145908 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 5000 | 28.29430605 | 0.035 | 0.005357143 | 0.000175 | 3.57143E-05 |
| 2500 | 14.14715303 | 0.02 | 0.003571429 | 0.0001 | 2.38095E-05 |
| 0 | 0 | 0 | 0.000357143 | 0 | 2.38095E-06 |



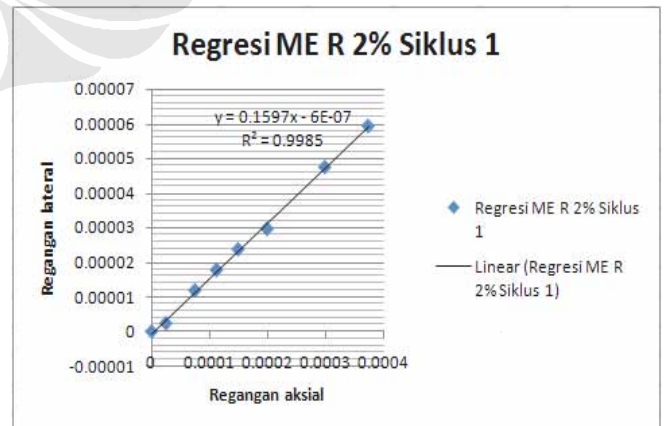
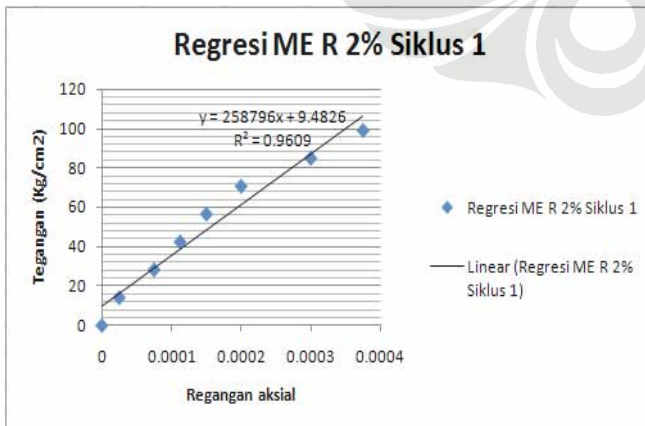
Balok Rendam 2% (Siklus 1)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0.005 | 0.000357143 | 0.000025 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.015 | 0.001785714 | 0.000075 | 1.19048E-05 |
| 7500 | 42.44145908 | 0.0225 | 0.002678571 | 0.0001125 | 1.78571E-05 |
| 10000 | 56.58861211 | 0.03 | 0.003571429 | 0.00015 | 2.38095E-05 |
| 12500 | 70.73576513 | 0.04 | 0.004464286 | 0.0002 | 2.97619E-05 |
| 15000 | 84.88291816 | 0.06 | 0.007142857 | 0.0003 | 4.7619E-05 |
| 17500 | 99.03007119 | 0.075 | 0.008928571 | 0.000375 | 5.95238E-05 |
| 15000 | 84.88291816 | 0.08 | 0.009821429 | 0.0004 | 6.54762E-05 |
| 12500 | 70.73576513 | 0.075 | 0.009821429 | 0.000375 | 6.54762E-05 |
| 10000 | 56.58861211 | 0.0675 | 0.009821429 | 0.0003375 | 6.54762E-05 |
| 7500 | 42.44145908 | 0.055 | 0.008035714 | 0.000275 | 5.35714E-05 |
| 5000 | 28.29430605 | 0.04 | 0.00625 | 0.0002 | 4.16667E-05 |
| 2500 | 14.14715303 | 0.025 | 0.003571429 | 0.000125 | 2.38095E-05 |
| 0 | 0 | 0 | 0.000357143 | 0 | 2.38095E-06 |



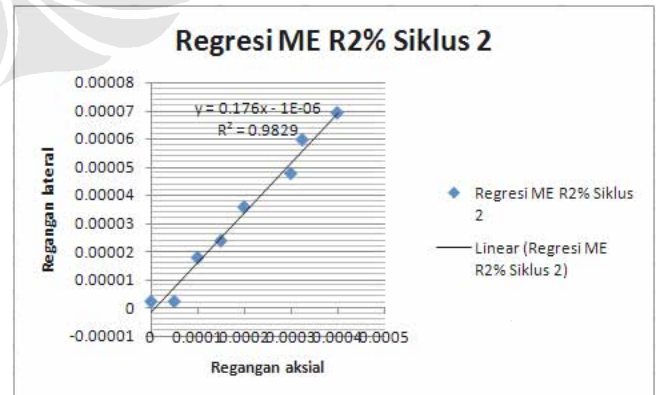
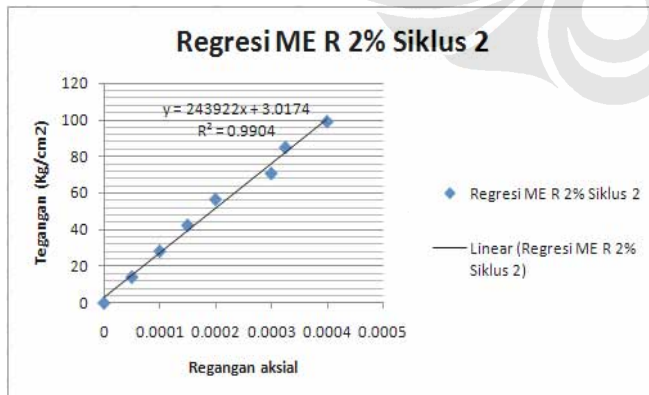
Balok Rendam 2% (Siklus 2)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0.000357143 | 0 | 2.38095E-06 |
| 2500 | 14.14715303 | 0.01 | 0.000357143 | 0.00005 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.02 | 0.002678571 | 0.0001 | 1.78571E-05 |
| 7500 | 42.44145908 | 0.03 | 0.003571429 | 0.00015 | 2.38095E-05 |
| 10000 | 56.58861211 | 0.04 | 0.005357143 | 0.0002 | 3.57143E-05 |
| 12500 | 70.73576513 | 0.06 | 0.007142857 | 0.0003 | 4.7619E-05 |
| 15000 | 84.88291816 | 0.065 | 0.008928571 | 0.000325 | 5.95238E-05 |
| 17500 | 99.03007119 | 0.08 | 0.010357143 | 0.0004 | 6.90476E-05 |
| 15000 | 84.88291816 | 0.0825 | 0.010357143 | 0.0004125 | 6.90476E-05 |
| 12500 | 70.73576513 | 0.08 | 0.010357143 | 0.0004 | 6.90476E-05 |
| 10000 | 56.58861211 | 0.07 | 0.009821429 | 0.00035 | 6.54762E-05 |
| 7500 | 42.44145908 | 0.055 | 0.007857143 | 0.000275 | 5.2381E-05 |
| 5000 | 28.29430605 | 0.045 | 0.00625 | 0.000225 | 4.16667E-05 |
| 2500 | 14.14715303 | 0.025 | 0.003571429 | 0.000125 | 2.38095E-05 |
| 0 | 0 | 0 | 0.000357143 | 0 | 2.38095E-06 |



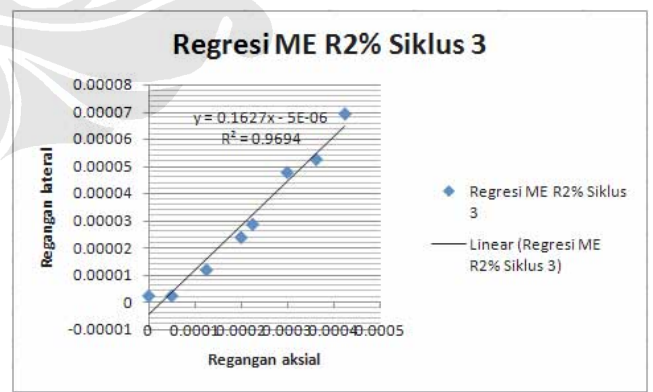
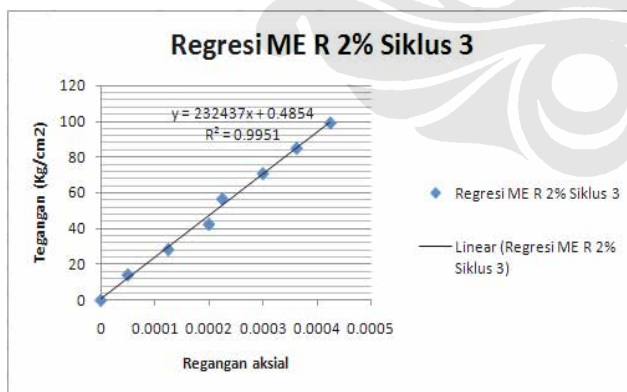
Balok Rendam 2% (Siklus 3)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0.000357143 | 0 | 2.38095E-06 |
| 2500 | 14.14715303 | 0.01 | 0.000357143 | 0.00005 | 2.38095E-06 |
| 5000 | 28.29430605 | 0.025 | 0.001785714 | 0.000125 | 1.19048E-05 |
| 7500 | 42.44145908 | 0.04 | 0.003571429 | 0.0002 | 2.38095E-05 |
| 10000 | 56.58861211 | 0.045 | 0.004285714 | 0.000225 | 2.85714E-05 |
| 12500 | 70.73576513 | 0.06 | 0.007142857 | 0.0003 | 4.7619E-05 |
| 15000 | 84.88291816 | 0.0725 | 0.007857143 | 0.0003625 | 5.2381E-05 |
| 17500 | 99.03007119 | 0.085 | 0.010357143 | 0.000425 | 6.90476E-05 |
| 15000 | 84.88291816 | 0.085 | 0.010357143 | 0.000425 | 6.90476E-05 |
| 12500 | 70.73576513 | 0.08 | 0.010357143 | 0.0004 | 6.90476E-05 |
| 10000 | 56.58861211 | 0.07 | 0.009821429 | 0.00035 | 6.54762E-05 |
| 7500 | 42.44145908 | 0.0625 | 0.007142857 | 0.0003125 | 4.7619E-05 |
| 5000 | 28.29430605 | 0.04 | 0.005357143 | 0.0002 | 3.57143E-05 |
| 2500 | 14.14715303 | 0.025 | 0.003571429 | 0.000125 | 2.38095E-05 |
| 0 | 0 | 0 | 0.000357143 | 0 | 2.38095E-06 |



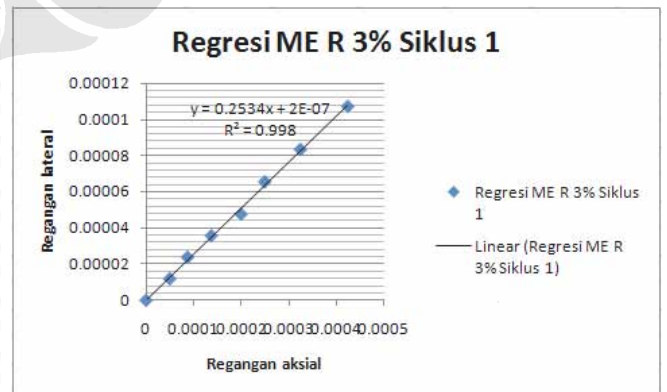
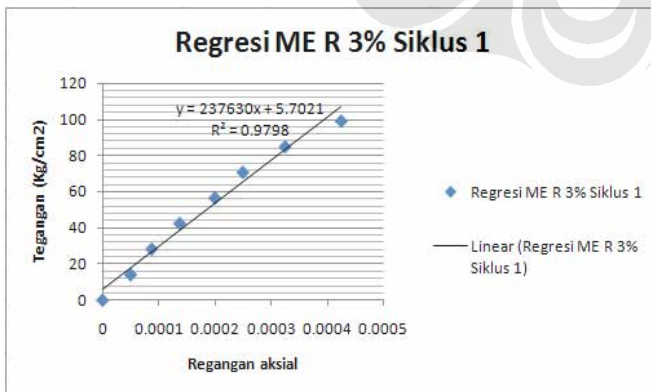
Balok Rendam 3% (Siklus 1)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 2500 | 14.14715303 | 0.01 | 0.001785714 | 0.00005 | 1.19048E-05 |
| 5000 | 28.29430605 | 0.0175 | 0.003571429 | 0.0000875 | 2.38095E-05 |
| 7500 | 42.44145908 | 0.0275 | 0.005357143 | 0.0001375 | 3.57143E-05 |
| 10000 | 56.58861211 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 12500 | 70.73576513 | 0.05 | 0.009821429 | 0.00025 | 6.54762E-05 |
| 15000 | 84.88291816 | 0.065 | 0.0125 | 0.000325 | 8.33333E-05 |
| 17500 | 99.03007119 | 0.085 | 0.016071429 | 0.000425 | 0.000107143 |
| 15000 | 84.88291816 | 0.0975 | 0.016071429 | 0.0004875 | 0.000107143 |
| 12500 | 70.73576513 | 0.095 | 0.016071429 | 0.000475 | 0.000107143 |
| 10000 | 56.58861211 | 0.095 | 0.016071429 | 0.000475 | 0.000107143 |
| 7500 | 42.44145908 | 0.0825 | 0.014285714 | 0.0004125 | 9.52381E-05 |
| 5000 | 28.29430605 | 0.07 | 0.010714286 | 0.00035 | 7.14286E-05 |
| 2500 | 14.14715303 | 0.045 | 0.007142857 | 0.000225 | 4.7619E-05 |
| 0 | 0 | 0 | 0.001785714 | 0 | 1.19048E-05 |



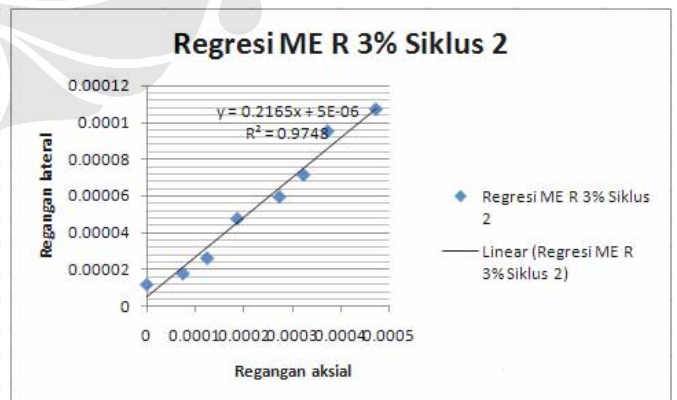
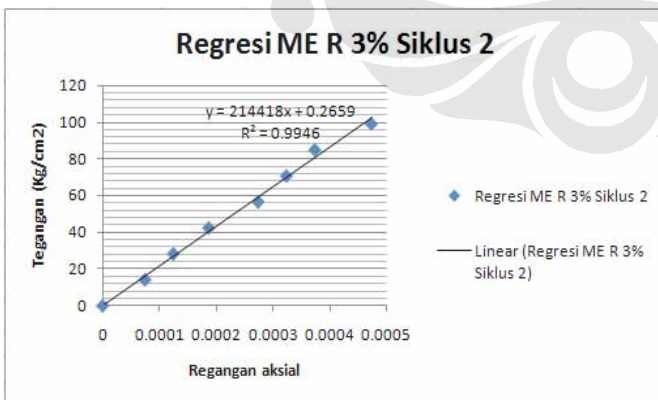
Balok Rendam 3% (Siklus 2)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0.001785714 | 0 | 1.19048E-05 |
| 2500 | 14.14715303 | 0.015 | 0.002678571 | 0.000075 | 1.78571E-05 |
| 5000 | 28.29430605 | 0.025 | 0.003928571 | 0.000125 | 2.61905E-05 |
| 7500 | 42.44145908 | 0.0375 | 0.007142857 | 0.0001875 | 4.7619E-05 |
| 10000 | 56.58861211 | 0.055 | 0.008928571 | 0.000275 | 5.95238E-05 |
| 12500 | 70.73576513 | 0.065 | 0.010714286 | 0.000325 | 7.14286E-05 |
| 15000 | 84.88291816 | 0.075 | 0.014285714 | 0.000375 | 9.52381E-05 |
| 17500 | 99.03007119 | 0.095 | 0.016071429 | 0.000475 | 0.000107143 |
| 15000 | 84.88291816 | 0.1 | 0.016071429 | 0.0005 | 0.000107143 |
| 12500 | 70.73576513 | 0.1 | 0.016071429 | 0.0005 | 0.000107143 |
| 10000 | 56.58861211 | 0.0975 | 0.016071429 | 0.0004875 | 0.000107143 |
| 7500 | 42.44145908 | 0.0825 | 0.014285714 | 0.0004125 | 9.52381E-05 |
| 5000 | 28.29430605 | 0.07 | 0.0125 | 0.00035 | 8.33333E-05 |
| 2500 | 14.14715303 | 0.05 | 0.007142857 | 0.00025 | 4.7619E-05 |
| 0 | 0 | 0 | 0.001785714 | 0 | 1.19048E-05 |



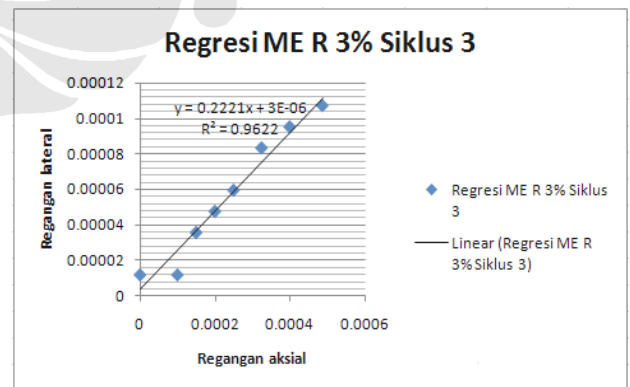
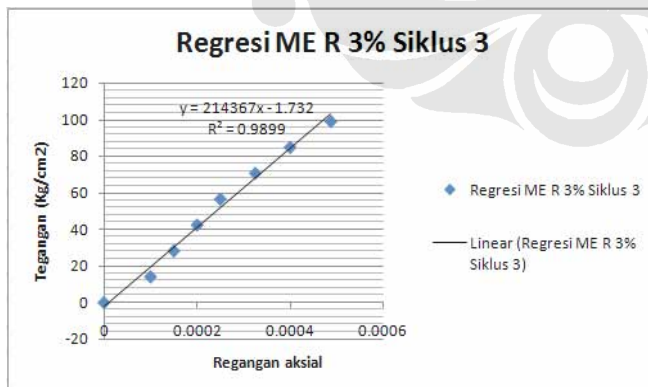
Balok Rendam 3% (Siklus 3)

Diameter silinder = 150 mm Faktor koreksi aksial = 29 cm (14,5 cm dan 14,5 cm)

Panjang silinder = 200 mm Faktor koreksi lateral = 28 cm (10 cm dan 18 cm)

Tabel. Modulus Elastisitas dan Poisson ratio

| P (Kg) | Tegangan (Kg/cm ²) | d aksial(mm) | d lateral (mm) | ε aksial | ε lateral |
|--------|--------------------------------|--------------|----------------|-----------|-------------|
| 0 | 0 | 0 | 0.001785714 | 0 | 1.19048E-05 |
| 2500 | 14.14715303 | 0.02 | 0.001785714 | 0.0001 | 1.19048E-05 |
| 5000 | 28.29430605 | 0.03 | 0.005357143 | 0.00015 | 3.57143E-05 |
| 7500 | 42.44145908 | 0.04 | 0.007142857 | 0.0002 | 4.7619E-05 |
| 10000 | 56.58861211 | 0.05 | 0.008928571 | 0.00025 | 5.95238E-05 |
| 12500 | 70.73576513 | 0.065 | 0.0125 | 0.000325 | 8.33333E-05 |
| 15000 | 84.88291816 | 0.08 | 0.014285714 | 0.0004 | 9.52381E-05 |
| 17500 | 99.03007119 | 0.0975 | 0.016071429 | 0.0004875 | 0.000107143 |
| 15000 | 84.88291816 | 0.0975 | 0.016071429 | 0.0004875 | 0.000107143 |
| 12500 | 70.73576513 | 0.0975 | 0.016071429 | 0.0004875 | 0.000107143 |
| 10000 | 56.58861211 | 0.095 | 0.016071429 | 0.000475 | 0.000107143 |
| 7500 | 42.44145908 | 0.09 | 0.014285714 | 0.00045 | 9.52381E-05 |
| 5000 | 28.29430605 | 0.07 | 0.011428571 | 0.00035 | 7.61905E-05 |
| 2500 | 14.14715303 | 0.05 | 0.007142857 | 0.00025 | 4.7619E-05 |
| 0 | 0 | 0 | 0.001785714 | 0 | 1.19048E-05 |



LAMPIRAN 2

Perbandingan Periode Bebas Alami dengan Perhitungan SAP 2000 V.10

Balok Tanpa Rendam 0%

| TABLE: Modal Periods And Frequencies | | | | | | |
|--------------------------------------|----------|----------|----------|-----------|----------|------------|
| OutputCase | StepType | StepNum | Period | Frequency | CircFreq | Eigenvalue |
| Text | Text | Unitless | Sec | Cyc/sec | rad/sec | rad2/sec2 |
| MODAL | Mode | 1 | 0.008195 | 122.02 | 766.68 | 587790 |
| MODAL | Mode | 2 | 0.002099 | 476.33 | 2992.9 | 8957300 |
| MODAL | Mode | 3 | 0.000969 | 1031.5 | 6481.3 | 42007000 |
| MODAL | Mode | 4 | 0.000614 | 1627.9 | 10228 | 104620000 |
| MODAL | Mode | 5 | 0.000573 | 1745.7 | 10969 | 120310000 |
| MODAL | Mode | 6 | 0.000388 | 2576 | 16185 | 261960000 |
| MODAL | Mode | 7 | 0.000307 | 3254.2 | 20447 | 418060000 |
| MODAL | Mode | 8 | 0.000287 | 3484.8 | 21896 | 479430000 |
| MODAL | Mode | 9 | 0.000225 | 4442.7 | 27914 | 779220000 |
| MODAL | Mode | 10 | 0.000205 | 4877.2 | 30645 | 939090000 |

Balok Tanpa Rendam 1%

| TABLE: Modal Periods And Frequencies | | | | | | |
|--------------------------------------|----------|----------|----------|-----------|----------|------------|
| OutputCase | StepType | StepNum | Period | Frequency | CircFreq | Eigenvalue |
| Text | Text | Unitless | Sec | Cyc/sec | rad/sec | rad2/sec2 |
| MODAL | Mode | 1 | 0.008583 | 116.51 | 732.02 | 535860 |
| MODAL | Mode | 2 | 0.002195 | 455.61 | 2862.7 | 8195000 |
| MODAL | Mode | 3 | 0.001011 | 989.26 | 6215.7 | 38635000 |
| MODAL | Mode | 4 | 0.000644 | 1553.3 | 9759.8 | 95254000 |
| MODAL | Mode | 5 | 0.000595 | 1679.4 | 10552 | 111350000 |
| MODAL | Mode | 6 | 0.000402 | 2486.3 | 15622 | 244050000 |
| MODAL | Mode | 7 | 0.000322 | 3105.1 | 19510 | 380640000 |
| MODAL | Mode | 8 | 0.000296 | 3374.4 | 21202 | 449520000 |
| MODAL | Mode | 9 | 0.000232 | 4314.7 | 27110 | 734970000 |
| MODAL | Mode | 10 | 0.000215 | 4653.8 | 29241 | 855040000 |

Balok Tanpa Rendam 2%

| TABLE: Modal Periods And Frequencies | | | | | | |
|--------------------------------------|----------|----------|----------|-----------|----------|------------|
| OutputCase | StepType | StepNum | Period | Frequency | CircFreq | Eigenvalue |
| Text | Text | Unitless | Sec | Cyc/sec | rad/sec | rad2/sec2 |
| MODAL | Mode | 1 | 0.010613 | 94.222 | 592.01 | 350480 |
| MODAL | Mode | 2 | 0.002716 | 368.19 | 2313.4 | 5351800 |
| MODAL | Mode | 3 | 0.001252 | 798.53 | 5017.3 | 25174000 |
| MODAL | Mode | 4 | 0.000796 | 1256.6 | 7895.3 | 62336000 |
| MODAL | Mode | 5 | 0.000739 | 1353.8 | 8506.2 | 72355000 |
| MODAL | Mode | 6 | 0.0005 | 2001.4 | 12575 | 158130000 |
| MODAL | Mode | 7 | 0.000398 | 2511.9 | 15783 | 249100000 |
| MODAL | Mode | 8 | 0.000369 | 2712.4 | 17043 | 290460000 |
| MODAL | Mode | 9 | 0.000289 | 3463.8 | 21764 | 473660000 |
| MODAL | Mode | 10 | 0.000266 | 3764.8 | 23655 | 559540000 |

Balok Tanpa Rendam 3%

| TABLE: Modal Periods And Frequencies | | | | | | |
|--------------------------------------|----------|----------|----------|-----------|----------|------------|
| OutputCase | StepType | StepNum | Period | Frequency | CircFreq | Eigenvalue |
| Text | Text | Unitless | Sec | Cyc/sec | rad/sec | rad2/sec2 |
| MODAL | Mode | 1 | 0.011602 | 86.189 | 541.54 | 293270 |
| MODAL | Mode | 2 | 0.00297 | 336.67 | 2115.4 | 4474800 |
| MODAL | Mode | 3 | 0.00137 | 729.79 | 4585.4 | 21026000 |
| MODAL | Mode | 4 | 0.00087 | 1149.6 | 7223.1 | 52173000 |
| MODAL | Mode | 5 | 0.000809 | 1236.5 | 7768.8 | 60355000 |
| MODAL | Mode | 6 | 0.000547 | 1826.7 | 11477 | 131730000 |
| MODAL | Mode | 7 | 0.000435 | 2298 | 14439 | 208490000 |
| MODAL | Mode | 8 | 0.000404 | 2474 | 15545 | 241640000 |
| MODAL | Mode | 9 | 0.000317 | 3157.4 | 19839 | 393570000 |
| MODAL | Mode | 10 | 0.00029 | 3444.2 | 21641 | 468320000 |

Balok Rendam 0%

| TABLE: Modal Periods And Frequencies | | | | | | |
|--------------------------------------|----------|----------|----------|-----------|----------|------------|
| OutputCase | StepType | StepNum | Period | Frequency | CircFreq | Eigenvalue |
| Text | Text | Unitless | Sec | Cyc/sec | rad/sec | rad2/sec2 |
| MODAL | Mode | 1 | 0.009511 | 105.14 | 660.59 | 436390 |
| MODAL | Mode | 2 | 0.002433 | 411.06 | 2582.8 | 6670800 |
| MODAL | Mode | 3 | 0.001121 | 892.25 | 5606.2 | 31429000 |
| MODAL | Mode | 4 | 0.000713 | 1401.9 | 8808.2 | 77584000 |
| MODAL | Mode | 5 | 0.000666 | 1514.1 | 9513.7 | 90510000 |
| MODAL | Mode | 6 | 0.000446 | 2240.7 | 14079 | 198220000 |
| MODAL | Mode | 7 | 0.000357 | 2802.3 | 17608 | 310030000 |
| MODAL | Mode | 8 | 0.000329 | 3039.9 | 19100 | 364810000 |
| MODAL | Mode | 9 | 0.000257 | 3885.5 | 24414 | 596020000 |
| MODAL | Mode | 10 | 0.000238 | 4200.1 | 26390 | 696420000 |

Balok Rendam 1%

| TABLE: Modal Periods And Frequencies | | | | | | |
|--------------------------------------|----------|----------|----------|-----------|----------|------------|
| OutputCase | StepType | StepNum | Period | Frequency | CircFreq | Eigenvalue |
| Text | Text | Unitless | Sec | Cyc/sec | rad/sec | rad2/sec2 |
| MODAL | Mode | 1 | 0.009745 | 102.62 | 644.77 | 415730 |
| MODAL | Mode | 2 | 0.002495 | 400.88 | 2518.8 | 6344400 |
| MODAL | Mode | 3 | 0.001151 | 869.06 | 5460.5 | 29817000 |
| MODAL | Mode | 4 | 0.000731 | 1368.7 | 8599.8 | 73956000 |
| MODAL | Mode | 5 | 0.000679 | 1472.6 | 9252.7 | 85612000 |
| MODAL | Mode | 6 | 0.00046 | 2175.9 | 13671 | 186910000 |
| MODAL | Mode | 7 | 0.000365 | 2736 | 17191 | 295530000 |
| MODAL | Mode | 8 | 0.000339 | 2947.3 | 18519 | 342940000 |
| MODAL | Mode | 9 | 0.000266 | 3761.9 | 23637 | 558710000 |
| MODAL | Mode | 10 | 0.000244 | 4100.7 | 25765 | 663850000 |

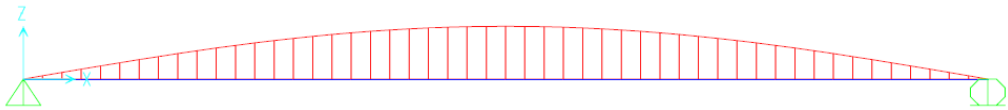
Balok Rendam 2%

| TABLE: Modal Periods And Frequencies | | | | | | |
|--------------------------------------|----------|----------|----------|-----------|----------|------------|
| OutputCase | StepType | StepNum | Period | Frequency | CircFreq | Eigenvalue |
| Text | Text | Unitless | Sec | Cyc/sec | rad/sec | rad2/sec2 |
| MODAL | Mode | 1 | 0.010255 | 97.512 | 612.69 | 375390 |
| MODAL | Mode | 2 | 0.002624 | 381.07 | 2394.3 | 5732800 |
| MODAL | Mode | 3 | 0.00121 | 826.54 | 5193.3 | 26971000 |
| MODAL | Mode | 4 | 0.000769 | 1300.4 | 8170.8 | 66762000 |
| MODAL | Mode | 5 | 0.000714 | 1401.4 | 8805.5 | 77536000 |
| MODAL | Mode | 6 | 0.000483 | 2072.1 | 13019 | 169500000 |
| MODAL | Mode | 7 | 0.000385 | 2599.6 | 16334 | 266790000 |
| MODAL | Mode | 8 | 0.000356 | 2808.5 | 17646 | 311400000 |
| MODAL | Mode | 9 | 0.000279 | 3586.9 | 22537 | 507910000 |
| MODAL | Mode | 10 | 0.000257 | 3896.1 | 24480 | 599280000 |

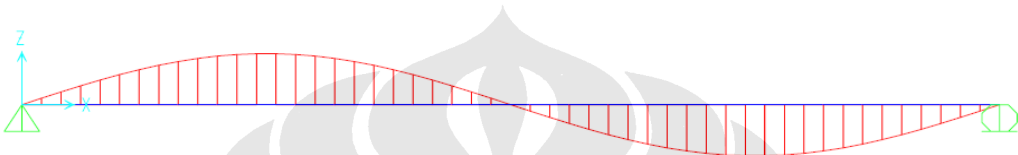
Balok Rendam 3%

| TABLE: Modal Periods And Frequencies | | | | | | |
|--------------------------------------|----------|----------|----------|-----------|----------|------------|
| OutputCase | StepType | StepNum | Period | Frequency | CircFreq | Eigenvalue |
| Text | Text | Unitless | Sec | Cyc/sec | rad/sec | rad2/sec2 |
| MODAL | Mode | 1 | 0.010759 | 92.942 | 583.97 | 341020 |
| MODAL | Mode | 2 | 0.002756 | 362.85 | 2279.8 | 5197700 |
| MODAL | Mode | 3 | 0.001272 | 785.86 | 4937.7 | 24381000 |
| MODAL | Mode | 4 | 0.000807 | 1239.9 | 7790.6 | 60694000 |
| MODAL | Mode | 5 | 0.000752 | 1330.1 | 8357.6 | 69849000 |
| MODAL | Mode | 6 | 0.000509 | 1963.1 | 12334 | 152130000 |
| MODAL | Mode | 7 | 0.000403 | 2478.6 | 15574 | 242530000 |
| MODAL | Mode | 8 | 0.000376 | 2656.1 | 16689 | 278510000 |
| MODAL | Mode | 9 | 0.000295 | 3386.6 | 21279 | 452780000 |
| MODAL | Mode | 10 | 0.000269 | 3714.8 | 23341 | 544810000 |

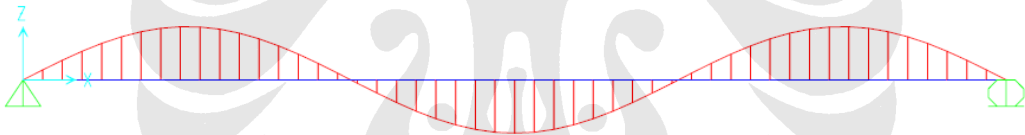
Bentuk 3 Ragam Pertama



Ragam 1



Ragam 2

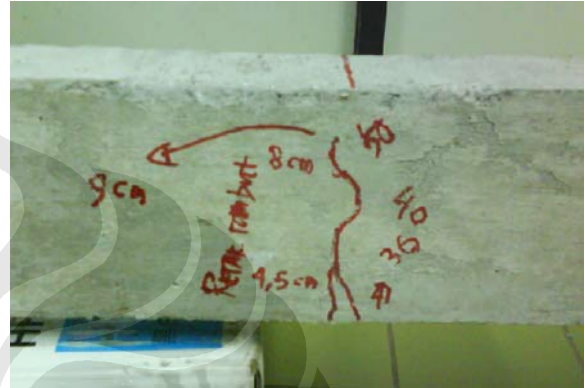


Ragam 3

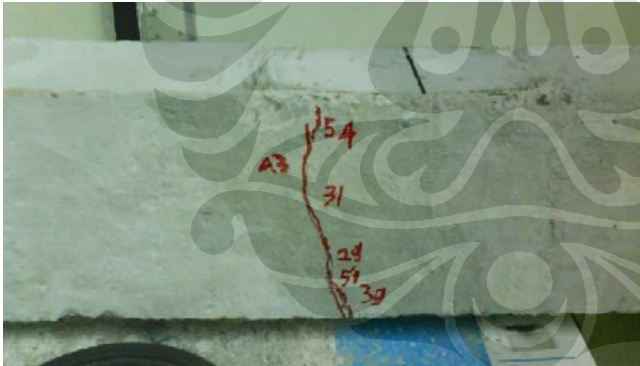
LAMPIRAN 3

FOTO-FOTO RETAK

BALOK TR 1%



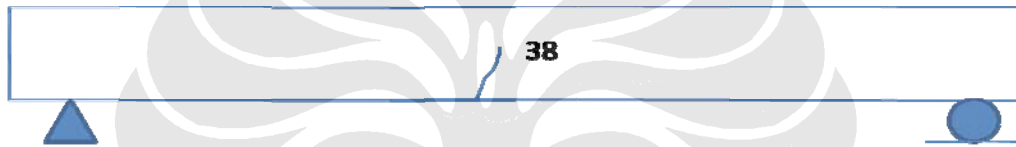
BALOK TR 2%



BALOK TR 3%



BALOK TR 0%

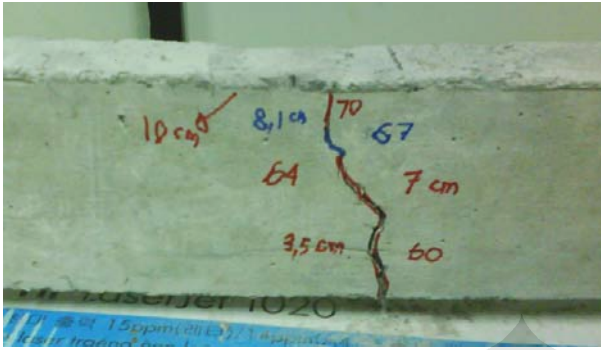


Sketsa Retak Balok NC 0%

BALOK R 0%



BALOK R 1%



BALOK R 2%



Balok R 3%



FOTO-FOTO PRAKTIKUM BAHAN

