DATA REPORT 8401, 8402, 8801 & 8901
Part 2

Lund Sand No 0

Lars Bo Ibsen & Finn Rosendal Jakobsen
July 1996
Lund Sand No 0

Lars Bo Ibsen & Finn Rosendal Jakobsen
July 1996
List of symbols.

Latin letters

- \( d \) = diameter of grain
- \( d_{10} \) = 10% fractile
- \( d_{50} \) = 50% fractile
- \( d_{60} \) = 60% fractile
- \( d_s \) = grain density
- \( e \) = void ratio
- \( e_o \) = void ratio before test
- \( e_f \) = void ratio at failure
- \( e_{max} \) = maximum void ratio
- \( e_{min} \) = minimum void ratio
- \( I_D \) = density index
- \( p \) = mean stress = \( 1/3(\sigma_1+2\sigma_3) \)
- \( q \) = deviatoric stress = \( \sigma_1-\sigma_3 \)
- \( S_w \) = degree of saturation
- \( \sigma \) = effective stress

Greek letters

- \( \varepsilon \) = strain
- \( \varepsilon_1 \) = vertical strain
- \( \varepsilon_v \) = volumetric strain = \( \varepsilon_1+2\varepsilon_3 \)
- \( \varepsilon_q \) = shear strain = \( 2/3(\varepsilon_1-\varepsilon_3) \)
- \( \sigma \) = stress
- \( \sigma_1 \) = vertical stress
- \( \sigma_3 \) = confining pressure
- \( \nu \) = Poisson's ratio = \( \frac{\Delta \varepsilon_1-\Delta \varepsilon_v}{2\Delta \varepsilon_1} \)
- \( \psi \) = angle of dilatation = \( \sin^{-1}\left(\frac{\Delta \varepsilon_v}{\Delta \varepsilon_v-2\Delta \varepsilon_1}\right) \)

= effective stress
CD TRIAXIAL TEST NO 8801.00

Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content</th>
<th>Grain density</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal_tri2</td>
<td>21.09.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.65</td>
<td>0.615</td>
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</table>

TEST-PROGRAM
CD - Triaxial test.
free ends
Drained compression.
1. Isotropic compression.  \( \sigma_3 \) 100-40 kPa
\( \epsilon_1 \), -0.062 %
\( \epsilon_\nu \), -0.152 %
2. Drained compression.
Deformation rate: 7.9 % ph

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Values at failure</th>
<th>Values for ( \Delta \epsilon_\nu = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>177.80 kPa</td>
<td>82.74 kPa</td>
<td></td>
</tr>
<tr>
<td>100.10 kPa</td>
<td>68.92 kPa</td>
<td></td>
</tr>
<tr>
<td>40.83 kPa</td>
<td>41.34 kPa</td>
<td></td>
</tr>
<tr>
<td>5.54 %</td>
<td>0.37 %</td>
<td></td>
</tr>
<tr>
<td>-3.10 %</td>
<td>0.28 %</td>
<td></td>
</tr>
</tbody>
</table>

Jobs:
Lund No 0
Excl. No
Remark:
Preparation [%] \( \Delta \epsilon_1 \) 0.152
Error during saturation.

Exc: Check:
LBI FRJ
Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Water content</th>
<th>%</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>25.3</td>
<td>0.667</td>
</tr>
<tr>
<td>Grain density</td>
<td>2.65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Void ratio</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturation</td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>H mm</td>
</tr>
<tr>
<td></td>
<td>D mm</td>
</tr>
<tr>
<td></td>
<td>71.5</td>
</tr>
<tr>
<td></td>
<td>69.7</td>
</tr>
</tbody>
</table>

TEST-PROGRAM

Drained compression.

1. Isotropic compression.
   - $\sigma_3$ (100-40 kPa)
   - $\varepsilon_1$, $\varepsilon_v$.

2. Drained compression.
   - Deformation rate: 7.8 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>$q'$</th>
<th>177.68 kPa</th>
<th>94.99 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress</td>
<td>$p'$</td>
<td>100.44 kPa</td>
<td>74.41 kPa</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>$\sigma_3$</td>
<td>41.21 kPa</td>
<td>42.75 kPa</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>$\varepsilon_1$</td>
<td>5.94 %</td>
<td>0.45 %</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>$\varepsilon_v$</td>
<td>-3.18 %</td>
<td>0.24 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>$q'/q'^f$</th>
<th>$p'/p'^f$</th>
<th>$\varepsilon_1$</th>
<th>$\varepsilon_v$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>40.83</td>
<td>-0.06</td>
<td>0.00</td>
</tr>
<tr>
<td>1.81</td>
<td>42.84</td>
<td>-0.10</td>
<td>0.12</td>
</tr>
<tr>
<td>2.87</td>
<td>39.75</td>
<td>-0.03</td>
<td>0.15</td>
</tr>
<tr>
<td>17.99</td>
<td>47.21</td>
<td>0.09</td>
<td>0.18</td>
</tr>
<tr>
<td>34.43</td>
<td>52.56</td>
<td>0.22</td>
<td>0.22</td>
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<tr>
<td>64.72</td>
<td>61.51</td>
<td>0.45</td>
<td>0.24</td>
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<tr>
<td>94.99</td>
<td>74.41</td>
<td>0.64</td>
<td>0.20</td>
</tr>
<tr>
<td>129.51</td>
<td>83.62</td>
<td>0.98</td>
<td>0.11</td>
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<tr>
<td>147.39</td>
<td>90.22</td>
<td>1.51</td>
<td>-0.10</td>
</tr>
<tr>
<td>158.80</td>
<td>94.02</td>
<td>2.06</td>
<td>-0.38</td>
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<tr>
<td>163.63</td>
<td>94.86</td>
<td>2.44</td>
<td>-0.65</td>
</tr>
<tr>
<td>167.74</td>
<td>95.98</td>
<td>2.82</td>
<td>-0.94</td>
</tr>
<tr>
<td>170.56</td>
<td>96.41</td>
<td>3.20</td>
<td>-1.19</td>
</tr>
<tr>
<td>172.98</td>
<td>97.22</td>
<td>3.58</td>
<td>-1.49</td>
</tr>
<tr>
<td>174.53</td>
<td>99.78</td>
<td>3.97</td>
<td>-1.76</td>
</tr>
<tr>
<td>176.32</td>
<td>99.73</td>
<td>4.36</td>
<td>-2.04</td>
</tr>
<tr>
<td>177.10</td>
<td>100.37</td>
<td>4.74</td>
<td>-2.32</td>
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<td>177.26</td>
<td>99.79</td>
<td>5.13</td>
<td>-2.62</td>
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<tr>
<td>177.44</td>
<td>98.45</td>
<td>5.51</td>
<td>-2.90</td>
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<td>177.68</td>
<td>100.44</td>
<td>5.94</td>
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<td>177.11</td>
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<td>6.29</td>
<td>-3.45</td>
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<td>175.61</td>
<td>98.86</td>
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<td>-3.95</td>
</tr>
<tr>
<td>174.24</td>
<td>97.76</td>
<td>7.82</td>
<td>-4.46</td>
</tr>
</tbody>
</table>

Job: Lund No 0
Encl. No: 3
Exc: LBI
Check: FRJ

Remark:
Preparation [%] $\Delta \varepsilon_1 = 0.099$
Error during saturation.
### Description of soil

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Water content</th>
<th>%</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Content</td>
<td></td>
<td>24.3</td>
<td>0.663</td>
</tr>
<tr>
<td></td>
<td>Grain density</td>
<td></td>
<td>2.65</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.618</td>
<td>1.04</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

### TEST-PROGRAM

**CD - Triaxial test.**

**Drained compression.**

1. **Isotropic compression.**
   - $\sigma_3$: 100-40 kPa
   - $\varepsilon_1$: -0.048 %
   - $\varepsilon_v$: 0.100 %

2. **Drained compression.**

Deformation rate: 8.8 % ph

### Values at failure

<table>
<thead>
<tr>
<th>Deviator stress $q'$</th>
<th>Mean normal stress $p'$</th>
<th>$\varepsilon_1$</th>
<th>$\varepsilon_v$</th>
</tr>
</thead>
<tbody>
<tr>
<td>184.84 kPa</td>
<td>101.04 kPa</td>
<td>5.18 %</td>
<td>-2.72 %</td>
</tr>
<tr>
<td>103.57 kPa</td>
<td>76.38 kPa</td>
<td>0.44 %</td>
<td>0.19 %</td>
</tr>
</tbody>
</table>

### Values for $\Delta \varepsilon_v = 0$

<table>
<thead>
<tr>
<th>$q'$</th>
<th>$p'$</th>
<th>$\varepsilon_1$</th>
<th>$\varepsilon_v$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.30</td>
<td>40.81</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>12.98</td>
<td>44.90</td>
<td>0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>36.98</td>
<td>53.67</td>
<td>0.06</td>
<td>0.07</td>
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<td>66.55</td>
<td>61.99</td>
<td>0.16</td>
<td>0.16</td>
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<tr>
<td>103.57</td>
<td>76.38</td>
<td>0.44</td>
<td>0.19</td>
</tr>
<tr>
<td>122.74</td>
<td>80.98</td>
<td>0.69</td>
<td>0.12</td>
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<td>139.04</td>
<td>85.39</td>
<td>1.03</td>
<td>-0.00</td>
</tr>
<tr>
<td>159.24</td>
<td>93.27</td>
<td>1.75</td>
<td>-0.38</td>
</tr>
<tr>
<td>171.23</td>
<td>98.16</td>
<td>2.49</td>
<td>-0.81</td>
</tr>
<tr>
<td>175.08</td>
<td>97.15</td>
<td>2.87</td>
<td>-1.05</td>
</tr>
<tr>
<td>177.99</td>
<td>100.80</td>
<td>3.25</td>
<td>-1.31</td>
</tr>
<tr>
<td>180.55</td>
<td>100.63</td>
<td>3.63</td>
<td>-1.57</td>
</tr>
<tr>
<td>182.17</td>
<td>101.17</td>
<td>4.02</td>
<td>-1.85</td>
</tr>
<tr>
<td>183.40</td>
<td>102.48</td>
<td>4.41</td>
<td>-2.17</td>
</tr>
<tr>
<td>184.42</td>
<td>102.69</td>
<td>4.80</td>
<td>-2.44</td>
</tr>
<tr>
<td>184.84</td>
<td>101.04</td>
<td>5.18</td>
<td>-2.72</td>
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<tr>
<td>183.98</td>
<td>102.16</td>
<td>5.56</td>
<td>-3.02</td>
</tr>
<tr>
<td>183.37</td>
<td>102.85</td>
<td>6.34</td>
<td>-3.59</td>
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<td>182.14</td>
<td>100.02</td>
<td>7.12</td>
<td>-4.11</td>
</tr>
<tr>
<td>180.16</td>
<td>101.14</td>
<td>7.88</td>
<td>-4.62</td>
</tr>
<tr>
<td>178.44</td>
<td>100.82</td>
<td>8.66</td>
<td>-5.13</td>
</tr>
<tr>
<td>175.22</td>
<td>100.00</td>
<td>9.42</td>
<td>-5.62</td>
</tr>
<tr>
<td>172.18</td>
<td>97.84</td>
<td>10.20</td>
<td>-6.08</td>
</tr>
<tr>
<td>171.85</td>
<td>97.48</td>
<td>10.28</td>
<td>-6.11</td>
</tr>
</tbody>
</table>

### Job:

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Encl. No</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
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</tbody>
</table>

### Remark:

- Preparation [%] $\Delta \varepsilon_1$: 0.159
- Check: FRJ
CD TRIAXIAL TEST NO 8801.03

Description of soil

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>kal_tri2</td>
<td>26.09.88</td>
<td></td>
</tr>
</tbody>
</table>

Water content %
Grain density
Void ratio
Saturation
Dimension H mm
D mm

TEST-PROGRAM
CD - Triaxial test.
free ends

1. Isotropic compression.

\[ \sigma^3 \quad \varepsilon_1 \quad \varepsilon_v \]

\[ 100-20 \text{ kPa} \quad -0.030 \% \quad -0.080 \% \]

2. Drained compression.

Deformation rate: 8.5 \% ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>q'</th>
<th>85.48 kPa</th>
<th>33.09 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress</td>
<td>p'</td>
<td>52.61 kPa</td>
<td>30.04 kPa</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>σ3</td>
<td>24.12 kPa</td>
<td>19.01 kPa</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>( \varepsilon_1 )</td>
<td>5.56 %</td>
<td>0.24 %</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>( \varepsilon_v )</td>
<td>-3.73 %</td>
<td>0.05 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>q'/q'f</th>
<th>( \varepsilon_1 )</th>
<th>( \varepsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.15</td>
<td>22.79%</td>
<td>0.00%</td>
</tr>
<tr>
<td>0.00</td>
<td>22.14%</td>
<td>0.01%</td>
</tr>
<tr>
<td>0.07</td>
<td>25.38%</td>
<td>0.08%</td>
</tr>
<tr>
<td>0.24</td>
<td>30.04%</td>
<td>0.24%</td>
</tr>
<tr>
<td>0.49</td>
<td>36.17%</td>
<td>0.49%</td>
</tr>
<tr>
<td>0.90</td>
<td>40.06%</td>
<td>0.90%</td>
</tr>
<tr>
<td>1.18</td>
<td>43.61%</td>
<td>1.18%</td>
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<td>1.56</td>
<td>44.12%</td>
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<td>3.02%</td>
</tr>
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<td>3.39</td>
<td>48.81%</td>
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</tr>
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<td>3.77</td>
<td>49.15%</td>
<td>3.77%</td>
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<td>4.16</td>
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<td>8.36%</td>
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<td>9.12</td>
<td>48.49%</td>
<td>9.12%</td>
</tr>
<tr>
<td>9.89</td>
<td>47.00%</td>
<td>9.89%</td>
</tr>
<tr>
<td>9.96</td>
<td>47.38%</td>
<td>9.96%</td>
</tr>
</tbody>
</table>

Job:
Lund No 0
Encl. No 7
Exc: LBI
Check: FRJ

Remark:
Preparation [%] \( \Delta \varepsilon_1 \) 0.093
Void ratio too large.
Description of soil before test at failure

Lund No 0

- Water content: 24.2%
- Grain density: 2.65
- Void ratio: 0.616
- Saturation: 1.04
- Dimension H mm: 71.5
- D mm: 69.7

Calibration file: kal_tri2
Date: 27.09.88

TEST-PROGRAM
1. Isotropic compression.
   - $\sigma_3$: 100-200 kPa
   - $\varepsilon_1$: -0.059%
   - $\varepsilon_v$: -0.024%
2. Drained compression.

Deformation rate: 5.8% ph

<table>
<thead>
<tr>
<th>Property</th>
<th>Values at failure</th>
<th>Values for $\Delta \varepsilon_v = 0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviator stress $q'$</td>
<td>106.47 kPa</td>
<td>25.35 kPa</td>
</tr>
<tr>
<td>Mean normal stress $p'$</td>
<td>56.29 kPa</td>
<td>29.51 kPa</td>
</tr>
<tr>
<td>Confining pressures $\sigma_3$</td>
<td>20.80 kPa</td>
<td>21.05 kPa</td>
</tr>
<tr>
<td>Vertical strain $\varepsilon_1$</td>
<td>4.68 %</td>
<td>0.14 %</td>
</tr>
<tr>
<td>Volumetric strain $\varepsilon_v$</td>
<td>-1.83 %</td>
<td>0.05 %</td>
</tr>
</tbody>
</table>

Job: Lund No 0
Encl. No: 9
Exc: LBI
Check: FRJ

Remark:
Preparation [%] $\Delta \varepsilon_1$: -0.043
The volumetric strain is not measured correctly.
Job:
Lund No 0  
Encl. No 10
Exc:  
Check:  
LBI  
FRJ
CD TRIAXIAL TEST NO 8801.05

Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content</th>
<th>Grain density</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal_tri3</td>
<td>28.09.88</td>
<td>24.2</td>
<td>2.65</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.611</td>
<td>1.05</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

TEST-PROGRAM
CD - Triaxial test. free ends

<table>
<thead>
<tr>
<th>Drained compression.</th>
<th>σ3</th>
<th>ε 1</th>
<th>ε v</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100-20 kPa</td>
<td>-0.089 %</td>
<td>-0.232 %</td>
</tr>
</tbody>
</table>

Deformation rate: 8.6 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>q'</th>
<th>Mean normal stress</th>
<th>p'</th>
<th>Confining pressures</th>
<th>σ3</th>
<th>Vertical strain</th>
<th>ε 1</th>
<th>Volumetric strain</th>
<th>ε v</th>
</tr>
</thead>
<tbody>
<tr>
<td>Values at failure</td>
<td>100.75 kPa</td>
<td>54.76 kPa</td>
<td>21.18 kPa</td>
<td>5.14 %</td>
<td>-3.38 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Values for Δε v = 0</td>
<td>47.67 kPa</td>
<td>36.94 kPa</td>
<td>21.05 kPa</td>
<td>0.32 %</td>
<td>0.16 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>q'/q'f</th>
<th>p'/p'f</th>
<th>ε 1</th>
<th>ε v</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.45</td>
<td>21.33</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>6.93</td>
<td>26.46</td>
<td>0.05</td>
<td>0.10</td>
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<td>15.82</td>
<td>30.12</td>
<td>0.11</td>
<td>0.11</td>
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<td>35.83</td>
<td>36.94</td>
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<td>0.16</td>
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<td>0.07</td>
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<td>-2.10</td>
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<td>-2.38</td>
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<td>-3.63</td>
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<td>-4.97</td>
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<td>52.83</td>
<td>9.18</td>
<td>-5.91</td>
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<td>-6.47</td>
</tr>
<tr>
<td>92.78</td>
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<td>-6.51</td>
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Job: Lund No 0
Encl. No 11
Exc: LBI
Check: FRJ

Remark:
Preparation [%] Δε 1 0.070
CD TRIAXIAL TEST NO 8801.06

<table>
<thead>
<tr>
<th>Description of soil Lund No 0</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
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<tbody>
<tr>
<td>Calibration file</td>
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<td>69.7</td>
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<tr>
<td>Saturation 88</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimension H mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D mm</td>
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<td></td>
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TEST-PROGRAM
CD - Triaxial test. free ends

Drained compression.
1. Isotropic compression. \( \sigma_3 \) 100-10 kPa \( \epsilon_1 \) -0.002 % \( \epsilon_3 \) 0.016 %
2. Drained compression. Deformation rate: 8.5 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>Values at failure</th>
<th>Values for ( \Delta \epsilon ) = 0</th>
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<tbody>
<tr>
<td>( q' )</td>
<td>50.65 kPa</td>
<td>37.69 kPa</td>
</tr>
<tr>
<td>( p' )</td>
<td>26.33 kPa</td>
<td>22.13 kPa</td>
</tr>
<tr>
<td>( \sigma_3 )</td>
<td>9.44 kPa</td>
<td>9.57 kPa</td>
</tr>
<tr>
<td>( \epsilon_1 )</td>
<td>-2.75 %</td>
<td>0.97 %</td>
</tr>
<tr>
<td>( \epsilon_3 )</td>
<td>-2.75 %</td>
<td>0.00 %</td>
</tr>
</tbody>
</table>

\( q'/q'f \) 0.00 0.00 -0.00 -0.00
\( p'/p'f \) 0.00 0.00 -0.00 -0.00
\( \epsilon_1 \) 0.00 0.00 -0.00 -0.00
\( \epsilon_3 \) 0.00 0.00 -0.00 -0.00

Job: Lund No 0
Encl. No 13
Exc. LBI, AMS
Check FRJ

Remark: Preparation [%] \( \Delta \epsilon_1 \) -0.041
CD TRIAXIAL TEST NO 8801.07

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content</th>
<th>Before test</th>
<th>At failure</th>
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</thead>
<tbody>
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<td>Lund No 0</td>
<td>23.9</td>
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<td>0.669</td>
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<td>kal_tri4 6.10.88</td>
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<td>71.5</td>
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<table>
<thead>
<tr>
<th>TEST-PROGRAM</th>
<th>Drained compression.</th>
<th>Drained compression.</th>
</tr>
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<tbody>
<tr>
<td>CD - Triaxial test.</td>
<td>1. Isotropic compression. σ3 100-10 kPa</td>
<td>ε1 0.003 %</td>
</tr>
<tr>
<td>free ends</td>
<td>ετ -0.004 %</td>
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</tr>
<tr>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Deviator stress q'</th>
<th>Values at failure</th>
<th>Values for Δε v = 0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>53.56 kPa</td>
<td>14.68 kPa</td>
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<tr>
<td>Mean normal stress p'</td>
<td>28.06 kPa</td>
<td>15.36 kPa</td>
</tr>
<tr>
<td>Confining pressures σ3</td>
<td>10.21 kPa</td>
<td>10.46 kPa</td>
</tr>
<tr>
<td>Vertical strain ε1</td>
<td>5.36 %</td>
<td>0.01 %</td>
</tr>
<tr>
<td>Volumetric strain ετ</td>
<td>-3.55 %</td>
<td>0.01 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job: Encl. No 15</th>
<th>Remark: Preparation [%] Δε1 0.036</th>
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<tbody>
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<td>Lund No 0</td>
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</tr>
<tr>
<td>Exc: LBI, AMS</td>
<td>Check: FRJ</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>q'/q'f</th>
<th>0</th>
<th>0.2</th>
<th>0.4</th>
<th>0.6</th>
<th>0.8</th>
<th>1</th>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>p'/q'f</th>
<th>0</th>
<th>0.2</th>
<th>0.4</th>
<th>0.6</th>
<th>0.8</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.0</td>
<td>0.036</td>
<td>0.036</td>
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<td>0.036</td>
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<table>
<thead>
<tr>
<th>ε1</th>
<th>0</th>
<th>0.01</th>
<th>0.01</th>
<th>0.01</th>
<th>0.01</th>
<th>0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>ετ</td>
<td>-3.55</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>q'/q'f</th>
<th>0</th>
<th>0.2</th>
<th>0.4</th>
<th>0.6</th>
<th>0.8</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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<td>0.036</td>
<td>0.036</td>
<td>0.036</td>
<td>0.036</td>
<td>0.036</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>p'/q'f</th>
<th>0</th>
<th>0.2</th>
<th>0.4</th>
<th>0.6</th>
<th>0.8</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.0</td>
<td>0.036</td>
<td>0.036</td>
<td>0.036</td>
<td>0.036</td>
<td>0.036</td>
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</table>

<table>
<thead>
<tr>
<th>ε1</th>
<th>0</th>
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<th>0.01</th>
<th>0.01</th>
<th>0.01</th>
<th>0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>ετ</td>
<td>-3.55</td>
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<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
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</table>
CD TRIAXIAL TEST NO 8801.08

Description of soil

<table>
<thead>
<tr>
<th>Lund No</th>
<th>Water content %</th>
<th>Grain density</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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<td>2.65</td>
<td>0.617</td>
<td>0.675</td>
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</table>

Calibration file | Date | Void ratio | Saturation | Dimension H mm | D mm |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>07.10.88</td>
<td>0.617</td>
<td>1.04</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

TEST-PROGRAM

CD - Triaxial test. free ends

Drained compression.

1. Isotropic compression.

| σ3  | 100-5 kPa |
| ε1  | -0.006 %  |
| εv  | 0.000 %   |

2. Drained compression.

Deformation rate: 8.6 % ph

<table>
<thead>
<tr>
<th>Values at failure</th>
<th>Values for Δε v = 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviator stress</td>
<td></td>
</tr>
<tr>
<td>q'</td>
<td>35.14 kPa</td>
</tr>
<tr>
<td>p'</td>
<td>16.69 kPa</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>σ3</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>ε1</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>εv</td>
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Job: Lund No 0  Encl. No 17
Exc: LBI  Check: FRJ

Remark:
Preparation [%] Δε1 -0.055
CD TRIAXIAL TEST NO 8801.09

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
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<th>Calibration file</th>
<th>Date</th>
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<th>Saturation</th>
<th>Dimension</th>
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</table>

TEST-PROGRAM
CD - Triaxial test.
free ends

Drained compression.
1. Isotropic compression. $\sigma_3$ 100-5 kPa
$\varepsilon_1$ -0.115 %
$\varepsilon_\nu$ -0.785 %

Deformation rate: 8.4 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>$q'$</th>
<th>Mean normal stress</th>
<th>$p'$</th>
<th>Confining pressures</th>
<th>$\sigma_3$</th>
<th>Vertical strain</th>
<th>$\varepsilon_1$</th>
<th>Volumetric strain</th>
<th>$\varepsilon_\nu$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Values at failure</td>
<td></td>
<td>Values for $\Delta \varepsilon_\nu = 0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>$q'$</th>
<th>$p'$</th>
<th>$\varepsilon_1$</th>
<th>$\varepsilon_\nu$</th>
</tr>
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<tbody>
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<td>0.01</td>
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<td>-0.05</td>
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Job: Lund No 0
Encl. No: 19
Exc: LBI
Check: FRJ

Remark:
Preparation [%] $\Delta \varepsilon_1$ 0.064
Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal_tri3</td>
<td>03.10.88</td>
<td>24.1</td>
<td>2.65</td>
<td>0.668</td>
</tr>
</tbody>
</table>

TEST-PROGRAM

1. Isotropic compression.
   \( \sigma_3 \) 100-40 kPa
   \( \varepsilon_1 \) 0.000 %
   \( \varepsilon_V \) 0.000 %

2. Drained compression.
   Deformation rate: 10.4 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>( q' )</th>
<th>Values at failure</th>
<th>Values for ( \Delta \varepsilon_V = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress</td>
<td>( p' )</td>
<td>97.83 kPa</td>
<td>50.66 kPa</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>( \sigma_3 )</td>
<td>40.07 kPa</td>
<td>40.07 kPa</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>( \varepsilon_1 )</td>
<td>5.62 %</td>
<td>0.22 %</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>( \varepsilon_V )</td>
<td>-3.48 %</td>
<td>0.00 %</td>
</tr>
</tbody>
</table>

Remark:
Preparation [%] \( \Delta \varepsilon_1 = 0.012 \)
Deformation during isotropic consolidation not measured.
CD TRIAXIAL TEST NO  8801.12

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Kal_tr4</th>
<th>Water content</th>
<th>%</th>
<th>Calibration file</th>
<th>Date</th>
<th>Grain density</th>
<th>2.65</th>
<th>Void ratio</th>
<th>0.618</th>
<th>Before test</th>
<th>24.3</th>
<th>At failure</th>
<th>0.675</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TEST-PROGRAM**

1. Isotropic compression.
   - $\sigma_3$ = 100-5 kPa
   - $\varepsilon_1$ = -0.125 %
   - $\varepsilon_V$ = -0.433 %

2. Drained compression.
   - Deformation rate: 8.4 % ph

| Deviator stress | $q'$ | Mean normal stress | $p'$ | Confining pressures | $\sigma_3$ | Vertical strain | $\varepsilon_1$ | Volumetric strain | $\varepsilon_V$ | Values at failure | Values for $\Delta \varepsilon V = 0$
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Graph 1](image1.png)

![Graph 2](image2.png)

<table>
<thead>
<tr>
<th>Job:</th>
<th>Lund No 0</th>
<th>Encl. No</th>
<th>Remark:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>23</td>
<td>Preparation [%] $\Delta \varepsilon_1$ 0.066</td>
</tr>
<tr>
<td>Exc:</td>
<td>LBI</td>
<td>Check:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRJ</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**CD TRIAXIAL TEST NO 8801.13**

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td></td>
<td>24.5</td>
<td>0.663</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>kal_tri4</td>
<td>13.10.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TEST-PROGRAM**

Drained compression.
1. Isotropic compression. 
   - \( \sigma_3 \) (MPa) 
   - \( \varepsilon_1 \) (\%) 
   - \( \varepsilon_\nu \) (\%)

2. Drained compression.

- Deformation rate: 8.1 % ph

**Values at failure**

<table>
<thead>
<tr>
<th>Deviator stress ( q' ) (kPa)</th>
<th>Mean normal stress ( p' ) (kPa)</th>
<th>Values for ( \Delta \varepsilon_1 = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>304.72</td>
<td>182.47</td>
<td>180.68 (kPa)</td>
</tr>
</tbody>
</table>

**Deviator stress \( q'/q'f \)**

<table>
<thead>
<tr>
<th>( q'/q'f )</th>
<th>( \Delta \varepsilon_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>0.10</td>
<td>0.01</td>
</tr>
<tr>
<td>0.20</td>
<td>0.02</td>
</tr>
<tr>
<td>0.30</td>
<td>0.03</td>
</tr>
<tr>
<td>0.40</td>
<td>0.05</td>
</tr>
</tbody>
</table>

**Deviator stress \( q'/q'g \)**

<table>
<thead>
<tr>
<th>( q'/q'g )</th>
<th>( \Delta \varepsilon_\nu )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>0.10</td>
<td>-0.04</td>
</tr>
<tr>
<td>0.20</td>
<td>-0.19</td>
</tr>
<tr>
<td>0.30</td>
<td>-0.36</td>
</tr>
<tr>
<td>0.40</td>
<td>-0.75</td>
</tr>
</tbody>
</table>

**Job:**
- **Lund No 0**
- **Encl. No:** 25
- **Exc:** LBI, AMS
- **Check:** FRJ

**Remark:**
- Preparation [\%] \( \Delta \varepsilon_1 \) 0.037
CD TRIAXIAL TEST NO  8801.14

Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content</th>
<th>Grain density</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal_tri4</td>
<td>17.10.88</td>
<td>%</td>
<td></td>
<td>2.65</td>
<td>0.613</td>
</tr>
</tbody>
</table>

TEST-PROGRAM
CD - Triaxial test.
Free ends

Drained compression.
1. Isotropic compression.
   \[ \sigma_3 \]
   \[ \epsilon_1 \]
   \[ \epsilon_v \]
   100-80 kPa
   -0.014 %
   -0.080 %

2. Drained compression.
Deformation rate: 7.9 % ph

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Mean normal stress ( p' )</th>
<th>Confining stresses ( \sigma_3 )</th>
<th>Vertical strain ( \epsilon_1 )</th>
<th>Volumetric strain ( \epsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>297.51 kPa</td>
<td>179.43 kPa</td>
<td>80.26 kPa</td>
<td>5.19 %</td>
<td>-2.52 %</td>
</tr>
<tr>
<td>150.92 kPa</td>
<td>130.57 kPa</td>
<td>80.26 kPa</td>
<td>0.47 %</td>
<td>0.20 %</td>
</tr>
</tbody>
</table>

Values at failure: 150.92 kPa, 0.47 %

Values for \( \Delta \epsilon_v = 0 \):

<table>
<thead>
<tr>
<th>( q' )</th>
<th>( p' )</th>
<th>( \epsilon_1 )</th>
<th>( \epsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.60</td>
<td>80.21</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>9.66</td>
<td>83.35</td>
<td>0.01</td>
<td>0.03</td>
</tr>
<tr>
<td>39.04</td>
<td>93.02</td>
<td>0.05</td>
<td>0.08</td>
</tr>
<tr>
<td>67.66</td>
<td>102.43</td>
<td>0.12</td>
<td>0.12</td>
</tr>
<tr>
<td>93.48</td>
<td>111.17</td>
<td>0.20</td>
<td>0.15</td>
</tr>
<tr>
<td>150.92</td>
<td>130.57</td>
<td>0.47</td>
<td>0.20</td>
</tr>
<tr>
<td>175.95</td>
<td>138.78</td>
<td>0.63</td>
<td>0.18</td>
</tr>
<tr>
<td>205.12</td>
<td>148.51</td>
<td>0.90</td>
<td>0.12</td>
</tr>
<tr>
<td>227.34</td>
<td>155.91</td>
<td>1.18</td>
<td>0.03</td>
</tr>
<tr>
<td>243.41</td>
<td>161.14</td>
<td>1.49</td>
<td>-0.12</td>
</tr>
<tr>
<td>256.33</td>
<td>165.58</td>
<td>1.82</td>
<td>-0.28</td>
</tr>
<tr>
<td>265.85</td>
<td>168.62</td>
<td>2.15</td>
<td>-0.47</td>
</tr>
<tr>
<td>272.83</td>
<td>170.82</td>
<td>2.49</td>
<td>-0.69</td>
</tr>
<tr>
<td>278.77</td>
<td>172.80</td>
<td>2.84</td>
<td>-0.91</td>
</tr>
<tr>
<td>284.17</td>
<td>174.73</td>
<td>3.20</td>
<td>-1.15</td>
</tr>
<tr>
<td>288.73</td>
<td>176.25</td>
<td>3.56</td>
<td>-1.39</td>
</tr>
<tr>
<td>291.88</td>
<td>177.17</td>
<td>3.92</td>
<td>-1.63</td>
</tr>
<tr>
<td>295.47</td>
<td>178.24</td>
<td>4.65</td>
<td>-2.16</td>
</tr>
<tr>
<td>297.51</td>
<td>179.43</td>
<td>5.19</td>
<td>-2.52</td>
</tr>
<tr>
<td>295.08</td>
<td>178.24</td>
<td>6.11</td>
<td>-3.17</td>
</tr>
<tr>
<td>292.69</td>
<td>177.44</td>
<td>6.85</td>
<td>-3.67</td>
</tr>
<tr>
<td>289.69</td>
<td>176.44</td>
<td>7.59</td>
<td>-4.13</td>
</tr>
<tr>
<td>286.68</td>
<td>175.69</td>
<td>8.33</td>
<td>-4.59</td>
</tr>
<tr>
<td>282.27</td>
<td>173.97</td>
<td>9.07</td>
<td>-5.02</td>
</tr>
</tbody>
</table>

Job: Lund No 0
Encl. No 27
Exc: LBI
Remark:
Preparation [%]  \( \Delta \epsilon_1 \) 0.074
Saturation not measured.
### Description of soil

| Lund No | 0 |

<table>
<thead>
<tr>
<th>Water content</th>
<th>%</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain density</td>
<td></td>
<td>25.0</td>
<td>2.65</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.610</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturation</td>
<td>1.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimension H (mm)</td>
<td>71.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D (mm)</td>
<td>69.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Calibration file

<table>
<thead>
<tr>
<th>kal_tri4</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.10.88</td>
<td></td>
</tr>
</tbody>
</table>

### TEST-PROGRAM

**CD - Triaxial test. free ends**

- **Drained compression.**
  - 1. Isotropic compression. $\sigma_3 = 100-160$ kPa
  - $\epsilon_l \epsilon_v$, 0.041 %, 0.072 %
  - Deformation rate: 8.4 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>$q'$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress</td>
<td>$p'$</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>$\sigma_3$</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>$\epsilon_l$</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>$\epsilon_v$</td>
</tr>
</tbody>
</table>

**Values at failure**

- $q' = 331.12$ kPa
- $p' = 270.77$ kPa
- $\sigma_3 = 160.39$ kPa
- $\epsilon_l = 0.73$ %
- $\epsilon_v = 0.29$ %

**Values for $\Delta \epsilon_v = 0$**

<table>
<thead>
<tr>
<th>$q'$</th>
<th>$p'$</th>
<th>$\epsilon_l$</th>
<th>$\epsilon_v$</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.05</td>
<td>160.12</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2.60</td>
<td>161.13</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>16.53</td>
<td>165.65</td>
<td>0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>55.43</td>
<td>178.49</td>
<td>0.05</td>
<td>0.09</td>
</tr>
<tr>
<td>93.81</td>
<td>191.41</td>
<td>0.10</td>
<td>0.14</td>
</tr>
<tr>
<td>129.75</td>
<td>203.52</td>
<td>0.16</td>
<td>0.17</td>
</tr>
<tr>
<td>162.48</td>
<td>214.17</td>
<td>0.23</td>
<td>0.19</td>
</tr>
<tr>
<td>193.73</td>
<td>224.71</td>
<td>0.32</td>
<td>0.22</td>
</tr>
<tr>
<td>225.42</td>
<td>235.53</td>
<td>0.40</td>
<td>0.25</td>
</tr>
<tr>
<td>255.98</td>
<td>255.59</td>
<td>0.49</td>
<td>0.26</td>
</tr>
<tr>
<td>285.48</td>
<td>255.68</td>
<td>0.58</td>
<td>0.27</td>
</tr>
<tr>
<td>314.25</td>
<td>265.02</td>
<td>0.68</td>
<td>0.27</td>
</tr>
<tr>
<td>331.12</td>
<td>270.77</td>
<td>0.73</td>
<td>0.29</td>
</tr>
<tr>
<td>341.81</td>
<td>274.20</td>
<td>0.78</td>
<td>0.28</td>
</tr>
<tr>
<td>371.69</td>
<td>284.04</td>
<td>0.91</td>
<td>0.27</td>
</tr>
<tr>
<td>389.98</td>
<td>290.26</td>
<td>1.00</td>
<td>0.25</td>
</tr>
<tr>
<td>410.83</td>
<td>297.21</td>
<td>1.12</td>
<td>0.22</td>
</tr>
<tr>
<td>429.66</td>
<td>303.36</td>
<td>1.25</td>
<td>0.20</td>
</tr>
<tr>
<td>446.92</td>
<td>309.24</td>
<td>1.38</td>
<td>0.16</td>
</tr>
<tr>
<td>462.12</td>
<td>314.30</td>
<td>1.52</td>
<td>0.09</td>
</tr>
<tr>
<td>475.85</td>
<td>318.63</td>
<td>1.66</td>
<td>0.04</td>
</tr>
<tr>
<td>488.47</td>
<td>322.96</td>
<td>1.81</td>
<td>-0.06</td>
</tr>
<tr>
<td>499.95</td>
<td>326.92</td>
<td>1.96</td>
<td>-0.12</td>
</tr>
<tr>
<td>509.78</td>
<td>330.07</td>
<td>2.12</td>
<td>-0.18</td>
</tr>
</tbody>
</table>

### Job:

<table>
<thead>
<tr>
<th>Lund No</th>
<th>0</th>
</tr>
</thead>
</table>

| Encl. No | 29 |

<table>
<thead>
<tr>
<th>Exc:</th>
<th>LBI</th>
</tr>
</thead>
</table>

| Check: | FRJ |

**Remark:**

Preparation [%] $\Delta \epsilon_1$ 0.072

The test was stopped before failure.
CD TRIAXIAL TEST NO 8801.16

Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content %</th>
<th>Grain density</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal_tri3</td>
<td>19.10.88</td>
<td>24.4</td>
<td>2.65</td>
<td>0.614</td>
<td>1.05</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

TEST-PROGRAM

CD - Triaxial test.
free ends

Drained compression.
1. Isotropic compression.
\[ \sigma_3 = 100-160 \text{ kPa} \]
\[ \varepsilon_1 = 0.036 \% \]
\[ \varepsilon_v = 0.168 \% \]

2. Drained compression.
Deformation rate: 7.3 \% ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>Values at failure</th>
<th>Values for $\Delta \varepsilon_v = 0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$q'$</td>
<td>592.09 kPa</td>
<td>345.10 kPa</td>
</tr>
<tr>
<td>$p'$</td>
<td>357.63 kPa</td>
<td>275.81 kPa</td>
</tr>
<tr>
<td>$\sigma_3$</td>
<td>160.27 kPa</td>
<td>160.78 kPa</td>
</tr>
<tr>
<td>$\varepsilon_1$</td>
<td>6.76 %</td>
<td>0.70 %</td>
</tr>
<tr>
<td>$\varepsilon_v$</td>
<td>-2.90 %</td>
<td>0.40 %</td>
</tr>
</tbody>
</table>

Job:
Lund No 0
Exc: LBI
Encl. No 31
Check: FRJ

Remark:
Preparation [%] $\Delta \varepsilon_1$ 0.067
## CD TRIAXIAL TEST NO 8801.17

### Description of soil

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>24.1</td>
<td>0.649</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Grain density</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>Dimension D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.65</td>
<td>0.614</td>
<td>1.05</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

### Calibration file

- kal_tri3
- Date: 19.10.88

### TEST-PROGRAM

**CD - Triaxial test.**

**free ends**

<table>
<thead>
<tr>
<th>Drained compression.</th>
<th>σ3</th>
<th>100-160 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>ε l</td>
<td>0.034 %</td>
<td></td>
</tr>
<tr>
<td>ε v</td>
<td>0.120 %</td>
<td></td>
</tr>
</tbody>
</table>

**2. Drained compression.**

Deformation rate: 8.0 % ph

### Values at failure

<table>
<thead>
<tr>
<th>Deviator stress q'</th>
<th>Mean normal stress p'</th>
<th>Confining pressures σ3</th>
<th>Vertical strain ε l</th>
<th>Volumetric strain ε v</th>
</tr>
</thead>
<tbody>
<tr>
<td>606.84 kPa</td>
<td>363.31 kPa</td>
<td>161.03 kPa</td>
<td>6.15 %</td>
<td>-2.39 %</td>
</tr>
</tbody>
</table>

### Values for Δε v = 0

<table>
<thead>
<tr>
<th>q'</th>
<th>p'</th>
<th>ε l</th>
<th>ε v</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>160.90</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>17.96</td>
<td>166.89</td>
<td>0.01</td>
<td>0.03</td>
</tr>
<tr>
<td>65.19</td>
<td>182.38</td>
<td>0.07</td>
<td>0.06</td>
</tr>
<tr>
<td>114.21</td>
<td>198.98</td>
<td>0.15</td>
<td>0.12</td>
</tr>
<tr>
<td>159.22</td>
<td>213.85</td>
<td>0.25</td>
<td>0.15</td>
</tr>
<tr>
<td>239.91</td>
<td>241.00</td>
<td>0.48</td>
<td>0.20</td>
</tr>
<tr>
<td>313.45</td>
<td>265.26</td>
<td>0.73</td>
<td>0.24</td>
</tr>
<tr>
<td>376.83</td>
<td>286.51</td>
<td>1.00</td>
<td>0.23</td>
</tr>
<tr>
<td>441.19</td>
<td>308.22</td>
<td>1.39</td>
<td>0.24</td>
</tr>
<tr>
<td>467.83</td>
<td>316.85</td>
<td>1.61</td>
<td>0.23</td>
</tr>
<tr>
<td>498.50</td>
<td>327.07</td>
<td>1.94</td>
<td>0.15</td>
</tr>
<tr>
<td>523.15</td>
<td>335.54</td>
<td>2.28</td>
<td>-0.03</td>
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<tr>
<td>542.23</td>
<td>341.65</td>
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<tr>
<td>557.39</td>
<td>346.83</td>
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<td>-0.41</td>
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<tr>
<td>569.42</td>
<td>350.58</td>
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<td>-0.61</td>
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<td>580.24</td>
<td>354.57</td>
<td>3.70</td>
<td>-0.83</td>
</tr>
<tr>
<td>588.60</td>
<td>357.49</td>
<td>4.06</td>
<td>-1.03</td>
</tr>
<tr>
<td>599.04</td>
<td>360.71</td>
<td>4.79</td>
<td>-1.56</td>
</tr>
<tr>
<td>604.98</td>
<td>362.56</td>
<td>5.52</td>
<td>-1.98</td>
</tr>
<tr>
<td>606.84</td>
<td>363.31</td>
<td>6.15</td>
<td>-2.39</td>
</tr>
<tr>
<td>601.00</td>
<td>361.11</td>
<td>7.00</td>
<td>-2.94</td>
</tr>
<tr>
<td>596.67</td>
<td>359.67</td>
<td>7.55</td>
<td>-3.30</td>
</tr>
<tr>
<td>584.14</td>
<td>355.36</td>
<td>8.48</td>
<td>-3.86</td>
</tr>
<tr>
<td>570.25</td>
<td>350.99</td>
<td>9.23</td>
<td>-4.27</td>
</tr>
</tbody>
</table>

### Graphs

1. Deviator stress q' vs q'/q'f
2. Mean normal stress p' vs p'/p'f
3. Confining pressures σ3 vs σ3/σ3f
4. Vertical strain ε l vs ε l/ε 1
5. Volumetric strain ε v vs ε v/ε v

### Job:

- Lund No 0
- Encl. No 33

### Remark:

- Preparation [%]: 0.085
- Δε1: 0.085

### Exec:

- LBI
- Check: FRJ
**CD TRIAXIAL TEST NO** 8801.18

**Description of soil**

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Water content</th>
<th>24.6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grain density</td>
<td>2.65</td>
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<tr>
<td></td>
<td>Void ratio</td>
<td>0.609</td>
</tr>
<tr>
<td></td>
<td>Saturation</td>
<td>1.07</td>
</tr>
<tr>
<td></td>
<td>Dimension H mm</td>
<td>71.5</td>
</tr>
<tr>
<td></td>
<td>Dimension D mm</td>
<td>69.7</td>
</tr>
</tbody>
</table>

**Calibration file**

<table>
<thead>
<tr>
<th>kal_tri3</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>21.10.88</td>
</tr>
</tbody>
</table>

**TEST-PROGRAM**

Drained compression.

1. Isotropic compression.
   - $\sigma_3$ = 100-320 kPa
   - $\varepsilon_1$ = 0.127 %
   - $\varepsilon_v$ = 0.028 %

2. Drained compression.
   - Deformation rate: 7.4 % ph

| Deviator stress $q'$ | Values at failure | Values for $|\varepsilon_1|=0$ |
|----------------------|--------------------|-----------------------------|
| 1094.33 kPa          | 683.83 kPa         | 683.83 kPa                  |

<table>
<thead>
<tr>
<th>Mean normal stress $p'$</th>
<th>683.91 kPa</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Confining pressures $\sigma_3$</th>
<th>319.13 kPa</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Vertical strain $\varepsilon_1$</th>
<th>6.74 %</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Volumetric strain $\varepsilon_v$</th>
<th>-2.50 %</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>$q'$</th>
<th>$p'$</th>
<th>$\varepsilon_1$</th>
<th>$\varepsilon_v$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>318.49</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>22.75</td>
<td>327.09</td>
<td>0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>84.80</td>
<td>347.14</td>
<td>0.08</td>
<td>0.05</td>
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<td>146.99</td>
<td>368.25</td>
<td>0.15</td>
<td>0.11</td>
</tr>
<tr>
<td>203.52</td>
<td>386.84</td>
<td>0.24</td>
<td>0.15</td>
</tr>
<tr>
<td>309.23</td>
<td>422.08</td>
<td>0.44</td>
<td>0.22</td>
</tr>
<tr>
<td>416.39</td>
<td>457.67</td>
<td>0.65</td>
<td>0.24</td>
</tr>
<tr>
<td>521.08</td>
<td>492.82</td>
<td>0.87</td>
<td>0.28</td>
</tr>
<tr>
<td>613.32</td>
<td>523.44</td>
<td>1.12</td>
<td>0.31</td>
</tr>
<tr>
<td>683.83</td>
<td>546.81</td>
<td>1.32</td>
<td>0.31</td>
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<tr>
<td>771.36</td>
<td>576.12</td>
<td>1.65</td>
<td>0.28</td>
</tr>
<tr>
<td>833.57</td>
<td>596.73</td>
<td>1.93</td>
<td>0.22</td>
</tr>
<tr>
<td>885.64</td>
<td>614.21</td>
<td>2.23</td>
<td>0.11</td>
</tr>
<tr>
<td>928.10</td>
<td>628.11</td>
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<td>0.02</td>
</tr>
<tr>
<td>853.86</td>
<td>553.09</td>
<td>3.01</td>
<td>-0.28</td>
</tr>
<tr>
<td>933.71</td>
<td>604.97</td>
<td>3.27</td>
<td>-0.43</td>
</tr>
<tr>
<td>958.02</td>
<td>614.23</td>
<td>3.61</td>
<td>-0.59</td>
</tr>
<tr>
<td>988.25</td>
<td>623.15</td>
<td>4.30</td>
<td>-1.01</td>
</tr>
<tr>
<td>1071.93</td>
<td>676.57</td>
<td>4.92</td>
<td>-1.35</td>
</tr>
<tr>
<td>1085.85</td>
<td>680.82</td>
<td>5.63</td>
<td>-1.79</td>
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<td>1092.83</td>
<td>683.28</td>
<td>6.35</td>
<td>-2.25</td>
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<td>1094.33</td>
<td>683.91</td>
<td>6.74</td>
<td>-2.50</td>
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<td>1087.90</td>
<td>681.63</td>
<td>7.80</td>
<td>-3.17</td>
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<td>1079.32</td>
<td>679.03</td>
<td>8.54</td>
<td>-3.63</td>
</tr>
</tbody>
</table>

**Remark:**

Preparation [%] $\Delta \varepsilon_1 = 0.076$

**Job:**

- Lund No 0 35

**Exc.:**

- LBI

**Check:**

- FRJ
CD TRIAXIAL TEST NO 8801.19

### Description of soil

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Water content (%)</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>25.6</td>
<td>0.648</td>
</tr>
<tr>
<td></td>
<td>Grain density</td>
<td>2.65</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Void ratio</td>
<td>0.612</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Saturation</td>
<td>1.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dimension H mm</td>
<td>71.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D mm</td>
<td>69.7</td>
<td></td>
</tr>
</tbody>
</table>

### Calibration file

<table>
<thead>
<tr>
<th>kal_tri3</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25.10.89</td>
</tr>
</tbody>
</table>

### TEST-PROGRAM

**Drained compression.**

1. **Isotropic compression.**

   - $\sigma_3 = 100-320$ kPa
   - $\varepsilon_1 = 0.132\%$
   - $\varepsilon_\nu = 0.068\%$

2. **Drained compression.**

   Deformation rate: $7.5\%$ ph

### Values at failure and for $\Delta\varepsilon_\nu = 0$

<table>
<thead>
<tr>
<th>Deviator stress $q'$</th>
<th>Values at failure</th>
<th>Mean normal stress $p'$</th>
<th>Values for $\Delta\varepsilon_\nu = 0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1037.52 kPa</td>
<td>600.56 kPa</td>
<td>318.62 kPa</td>
<td>318.87 kPa</td>
</tr>
<tr>
<td>664.46 kPa</td>
<td>519.06 kPa</td>
<td>7.16</td>
<td>1.11</td>
</tr>
<tr>
<td>-2.23 %</td>
<td>0.35 %</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Graphs

1. **Graph 1:**

   - $q'/q'_f$ vs. $\varepsilon_1$
   - $q'/q'_f$ vs. $\varepsilon_\nu$

2. **Graph 2:**

   - $p'$ vs. $q'$
   - $p'$ vs. $\varepsilon_1$
   - $p'$ vs. $\varepsilon_\nu$

### Job and Remark

<table>
<thead>
<tr>
<th>Job: Lund No 0</th>
<th>Encl. No</th>
<th>Remark:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td>37</td>
<td>Preparation [%] $\Delta\varepsilon_1 = 0.098$</td>
</tr>
<tr>
<td>Exc: LBI</td>
<td>Check: FRJ</td>
<td></td>
</tr>
</tbody>
</table>
## Description of soil

<table>
<thead>
<tr>
<th>Lund No</th>
<th>0</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water content</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grain density</th>
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</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Void ratio</th>
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</table>

<table>
<thead>
<tr>
<th>Saturation</th>
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</table>

<table>
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<tr>
<th>Dimension</th>
<th>H mm D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

### TEST-PROGRAM

**CD - Triaxial test.**

<table>
<thead>
<tr>
<th>Drained compression.</th>
</tr>
</thead>
</table>

1. **Isotropic compression.**

<table>
<thead>
<tr>
<th>( \sigma_3 )</th>
<th>100-46 kPa</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>( \varepsilon_1 )</th>
<th>-0.056 %</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>( \varepsilon_v )</th>
<th>0.132 %</th>
</tr>
</thead>
</table>

2. **Drained compression.**

| Deformation rate: | 7.8 % ph |

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>190.63 kPa</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Mean normal stress ( p' )</th>
<th>110.63 kPa</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Confining pressures ( \sigma_3 )</th>
<th>47.08 kPa</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Vertical strain ( \varepsilon_1 )</th>
<th>6.40 %</th>
</tr>
</thead>
</table>

| Volumetric strain \( \varepsilon_v \) | -2.62 % |

| q'/q'f | 0.00 | 0.00 |
|---|---|

| \( p'/p'f \) | 46.96 | 0.00 |
|---|---|

| Values at failure | 131.89 | 1.03 |
|---|---|

| \( \varepsilon_1 \) | 0.00 | 0.00 |
|---|---|

| \( \varepsilon_v \) | 0.00 | 0.00 |
|---|---|

### Diagrams

- **Graph 1:**
  - q'/q'f vs. q
  - Values range from 0 to 1.2

- **Graph 2:**
  - q'/q'f vs. p'/p'f
  - Values range from 0 to 1.2

<table>
<thead>
<tr>
<th>Job:</th>
<th>Lund No 0</th>
</tr>
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<table>
<thead>
<tr>
<th>Encl. No</th>
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<table>
<thead>
<tr>
<th>Exc:</th>
<th>LBI</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Check:</th>
<th>FRJ</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Remark:</th>
</tr>
</thead>
</table>

**Preparation [\%] \( \Delta \varepsilon_1 \):** 0.066

**Error during saturation.**
**CD TRIAXIAL TEST NO** 8901.00

### Description of soil
- **Lund No:** 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>Dimension D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal200_891</td>
<td>08.06.89</td>
<td>0.576</td>
<td>1.09</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

### TEST-PROGRAM
- **CD - Triaxial test. free ends**

1. **Isotropic compression.**
   - \( \sigma_3 \) = 10-5 kPa
   - \( \varepsilon_1 \) = 0.003 %
   - \( \varepsilon_v \) = 0.162 %

2. **Drained compression.**

### Deformation rate:
- 8.9 % ph

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Values at failure</th>
<th>Values for ( \Delta \varepsilon v = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress ( p' )</td>
<td>37.44 kPa</td>
<td>14.75 kPa</td>
</tr>
<tr>
<td>Confining pressures ( \sigma_3 )</td>
<td>17.23 kPa</td>
<td>9.67 kPa</td>
</tr>
<tr>
<td>Vertical strain ( \varepsilon_1 )</td>
<td>4.75 kPa</td>
<td>4.75 kPa</td>
</tr>
<tr>
<td>Volumetric strain ( \varepsilon_v )</td>
<td>5.12 %</td>
<td>0.41 %</td>
</tr>
<tr>
<td>-3.25 %</td>
<td>0.22 %</td>
<td></td>
</tr>
</tbody>
</table>

### Remark:
- Preparation [%] \( \Delta \varepsilon_1 \) = -0.315

---

**Exc:** LBI, AMS  
**Check:** FRJ
Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content %</th>
<th>Grain density</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal200_891</td>
<td>09.06.89</td>
<td>22.7</td>
<td>2.65</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Test-Program</th>
<th>Drained compression.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD - Triaxial test.</td>
<td></td>
</tr>
<tr>
<td>free ends</td>
<td></td>
</tr>
</tbody>
</table>

1. Isotropic compression.  
\[ \sigma_3 = 100-5 \text{ kPa} \]
\[ \varepsilon_1 = -0.136 \% \]
\[ \varepsilon_v = -0.691 \% \]

2. Drained compression.

Deformation rate: 9.0 \% ph

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Values at failure</th>
<th>Values for ( \Delta \varepsilon_1 = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>38.34 kPa</td>
<td>14.06 kPa</td>
<td></td>
</tr>
</tbody>
</table>

| Mean normal stress \( p' \) | 17.66 kPa | 9.57 kPa |

| Confining pressures \( \sigma_3 \) | 4.88 kPa | 4.88 kPa |

| Vertical strain \( \varepsilon_1 \) | 5.82 \% | 0.19 \% |

| Volumetric strain \( \varepsilon_v \) | -4.42 \% | 0.16 \% |

Job:
Lund No 0
Exc:
LBI, AMS
Remark:
Preparation [%] \( \Delta \varepsilon_1 \) 0.082

Encl. No
43
Check:
FRJ
CD TRIAXIAL TEST NO 8901.02

Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content</th>
<th>Grain density</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal200_891</td>
<td>07.06.89</td>
<td>22.6</td>
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<td>0.573</td>
<td>1.05</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

TEST-PROGRAM
CD - Triaxial test.
free ends

1. Isotropic compression.

\[
\begin{align*}
\sigma & = 100-10 \text{ kPa} \\
\epsilon_i & = -0.110 \% \\
\epsilon_v & = -0.279 \%
\end{align*}
\]

2. Drained compression.

Deformation rate: 8.8 \% ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>Values at failure</th>
<th>Values for ( \Delta \epsilon_v = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( q' )</td>
<td>61.27 kPa</td>
<td>25.68 kPa</td>
</tr>
<tr>
<td>( p' )</td>
<td>30.31 kPa</td>
<td>18.32 kPa</td>
</tr>
<tr>
<td>( \sigma_3 )</td>
<td>9.88 kPa</td>
<td>9.96 kPa</td>
</tr>
<tr>
<td>( \epsilon_i )</td>
<td>4.77 %</td>
<td>0.32 %</td>
</tr>
<tr>
<td>( \epsilon_v )</td>
<td>-3.49 %</td>
<td>0.03 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>( q'/q'f )</th>
<th>( p'/p'f )</th>
<th>( \epsilon_i )</th>
<th>( \epsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>9.88</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>4.27</td>
<td>11.18</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>11.75</td>
<td>13.68</td>
<td>0.05</td>
<td>0.01</td>
</tr>
<tr>
<td>19.43</td>
<td>16.23</td>
<td>0.11</td>
<td>0.02</td>
</tr>
<tr>
<td>25.68</td>
<td>18.32</td>
<td>0.23</td>
<td>0.03</td>
</tr>
<tr>
<td>30.04</td>
<td>19.90</td>
<td>0.34</td>
<td>-0.02</td>
</tr>
<tr>
<td>37.64</td>
<td>22.30</td>
<td>0.67</td>
<td>-0.13</td>
</tr>
<tr>
<td>42.88</td>
<td>24.18</td>
<td>1.02</td>
<td>-0.34</td>
</tr>
<tr>
<td>46.91</td>
<td>25.52</td>
<td>1.37</td>
<td>-0.57</td>
</tr>
<tr>
<td>50.30</td>
<td>26.52</td>
<td>1.74</td>
<td>-0.83</td>
</tr>
<tr>
<td>55.42</td>
<td>28.36</td>
<td>2.49</td>
<td>-1.42</td>
</tr>
<tr>
<td>57.13</td>
<td>28.80</td>
<td>2.87</td>
<td>-1.76</td>
</tr>
<tr>
<td>58.48</td>
<td>29.25</td>
<td>3.24</td>
<td>-2.10</td>
</tr>
<tr>
<td>59.56</td>
<td>29.74</td>
<td>3.63</td>
<td>-2.45</td>
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<tr>
<td>60.53</td>
<td>29.93</td>
<td>4.01</td>
<td>-2.81</td>
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<tr>
<td>60.98</td>
<td>30.08</td>
<td>4.39</td>
<td>-3.14</td>
</tr>
<tr>
<td>61.27</td>
<td>30.31</td>
<td>4.77</td>
<td>-3.49</td>
</tr>
<tr>
<td>60.99</td>
<td>30.21</td>
<td>5.62</td>
<td>-4.29</td>
</tr>
<tr>
<td>60.68</td>
<td>30.11</td>
<td>6.30</td>
<td>-4.92</td>
</tr>
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<td>59.89</td>
<td>29.97</td>
<td>7.07</td>
<td>-5.58</td>
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<tr>
<td>59.00</td>
<td>29.42</td>
<td>7.84</td>
<td>-6.22</td>
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<td>28.77</td>
<td>8.89</td>
<td>-7.03</td>
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<td>28.55</td>
<td>9.39</td>
<td>-7.37</td>
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<tr>
<td>54.65</td>
<td>27.97</td>
<td>10.18</td>
<td>-7.90</td>
</tr>
</tbody>
</table>

Job:
Lund No 0
Encl. No 45
Exc: LBI, AMS
Check: FRJ

Remark:
Preparation [%] \( \Delta \epsilon_i \) 0.073
**Description of soil**

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>22.7</td>
<td>0.636</td>
</tr>
<tr>
<td></td>
<td>Grain density</td>
<td>2.65</td>
<td></td>
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<tr>
<td></td>
<td>Void ratio</td>
<td>0.575</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Saturation</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dimension H mm</td>
<td>71.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D mm</td>
<td>69.7</td>
<td></td>
</tr>
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**Calibration file**

<table>
<thead>
<tr>
<th>kal200_891</th>
<th>Date</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.06.89</td>
<td></td>
</tr>
</tbody>
</table>

**TEST-PROGRAM**

**CD - Triaxial test. free ends**

**Drained compression.**

1. Isotropic compression.
   - \( \sigma_3 \) = 100-10 kPa
   - \( \epsilon_1 \) = -0.112 %
   - \( \epsilon_\nu \) = -0.291 %

2. Drained compression.
   - Deformation rate: 8.8 % ph

**Deformation rate:**

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Mean normal stress ( p' )</th>
<th>Values at failure</th>
<th>Values for ( \Delta \epsilon_\nu = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.07 kPa</td>
<td>29.66 kPa</td>
<td>25.65 kPa</td>
<td>18.31 kPa</td>
</tr>
<tr>
<td>14.38 kPa</td>
<td>14.68 kPa</td>
<td>0.08 kPa</td>
<td>0.15 kPa</td>
</tr>
<tr>
<td>20.35 kPa</td>
<td>16.67 kPa</td>
<td>0.17 kPa</td>
<td>0.19 kPa</td>
</tr>
<tr>
<td>25.65 kPa</td>
<td>18.31 kPa</td>
<td>0.30 kPa</td>
<td>0.19 kPa</td>
</tr>
<tr>
<td>35.01 kPa</td>
<td>21.43 kPa</td>
<td>0.66 kPa</td>
<td>0.07 kPa</td>
</tr>
<tr>
<td>40.78 kPa</td>
<td>23.35 kPa</td>
<td>1.01 kPa</td>
<td>-0.13 kPa</td>
</tr>
<tr>
<td>45.09 kPa</td>
<td>24.91 kPa</td>
<td>1.37 kPa</td>
<td>-0.34 kPa</td>
</tr>
<tr>
<td>48.35 kPa</td>
<td>26.00 kPa</td>
<td>1.74 kPa</td>
<td>-0.59 kPa</td>
</tr>
<tr>
<td>53.27 kPa</td>
<td>27.39 kPa</td>
<td>2.49 kPa</td>
<td>-1.18 kPa</td>
</tr>
<tr>
<td>55.06 kPa</td>
<td>28.11 kPa</td>
<td>2.87 kPa</td>
<td>-1.49 kPa</td>
</tr>
<tr>
<td>56.50 kPa</td>
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<td>3.25 kPa</td>
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<tr>
<td>57.74 kPa</td>
<td>29.25 kPa</td>
<td>3.63 kPa</td>
<td>-2.14 kPa</td>
</tr>
<tr>
<td>58.60 kPa</td>
<td>29.41 kPa</td>
<td>4.02 kPa</td>
<td>-2.47 kPa</td>
</tr>
<tr>
<td>59.01 kPa</td>
<td>29.43 kPa</td>
<td>4.40 kPa</td>
<td>-2.82 kPa</td>
</tr>
<tr>
<td>59.46 kPa</td>
<td>29.58 kPa</td>
<td>4.78 kPa</td>
<td>-3.16 kPa</td>
</tr>
<tr>
<td>60.07 kPa</td>
<td>29.66 kPa</td>
<td>5.59 kPa</td>
<td>-3.85 kPa</td>
</tr>
<tr>
<td>59.24 kPa</td>
<td>29.38 kPa</td>
<td>6.32 kPa</td>
<td>-4.49 kPa</td>
</tr>
<tr>
<td>58.23 kPa</td>
<td>28.92 kPa</td>
<td>7.09 kPa</td>
<td>-5.12 kPa</td>
</tr>
<tr>
<td>56.93 kPa</td>
<td>28.74 kPa</td>
<td>7.86 kPa</td>
<td>-5.72 kPa</td>
</tr>
<tr>
<td>55.46 kPa</td>
<td>28.24 kPa</td>
<td>8.63 kPa</td>
<td>-6.30 kPa</td>
</tr>
<tr>
<td>54.15 kPa</td>
<td>27.81 kPa</td>
<td>9.42 kPa</td>
<td>-6.85 kPa</td>
</tr>
<tr>
<td>52.63 kPa</td>
<td>27.18 kPa</td>
<td>10.20 kPa</td>
<td>-7.35 kPa</td>
</tr>
</tbody>
</table>

**Graphs**

- Graph 1: Deviator stress vs. Mean normal stress
- Graph 2: Vertical strain vs. Volumetric strain

**Remark:**

- Preparation [%] \( \Delta \epsilon_1 \) 0.078
- Lund No 0: 47
- Exc: LBI, AMS
- Check: FRJ
**Description of soil**

<table>
<thead>
<tr>
<th>Lund No</th>
<th>0</th>
</tr>
</thead>
</table>

**Calibration file**

<table>
<thead>
<tr>
<th>Date</th>
<th>01.06.89</th>
</tr>
</thead>
</table>

**TEST-PROGRAM**

**Drained compression.**

1. **Isotropic compression.**
   - \( \sigma_3 \) 100-20 kPa
   - \( \varepsilon_1 \) -0.122 %
   - \( \varepsilon_v \) -0.004 %

2. **Drained compression.**

**Deformation rate:** 8.5 % ph

**Values at failure**

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>104.47 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress ( p' )</td>
<td>55.71 kPa</td>
</tr>
<tr>
<td>Confining pressures ( \sigma_3 )</td>
<td>20.89 kPa</td>
</tr>
<tr>
<td>Vertical strain ( \varepsilon_1 )</td>
<td>5.57 %</td>
</tr>
<tr>
<td>Volumetric strain ( \varepsilon_v )</td>
<td>-4.17 %</td>
</tr>
</tbody>
</table>

**Values for \( \Delta \varepsilon_v = 0 \)**

<table>
<thead>
<tr>
<th>( q' )</th>
<th>44.39 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>( p' )</td>
<td>35.69 kPa</td>
</tr>
<tr>
<td>( \varepsilon_1 )</td>
<td>0.28 %</td>
</tr>
<tr>
<td>( \varepsilon_v )</td>
<td>0.05 %</td>
</tr>
</tbody>
</table>

**Job:**

<table>
<thead>
<tr>
<th>Lund No</th>
<th>0</th>
</tr>
</thead>
</table>

**Encl. No:**

| 49 |

**Remark:**

| Preparation [%] | \( \Delta \varepsilon_1 \) | 0.086 |

**Exc:**

| LBI, AMS |

**Check:**

| FRJ |
Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content</th>
<th>Grain density</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H (mm)</th>
<th>D (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal200_891</td>
<td>13.06.89</td>
<td>23.1</td>
<td>2.65</td>
<td>0.577</td>
<td>1.06</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

TEST-PROGRAM
CD - Triaxial test.
free ends

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Values at failure</th>
<th>Values for $\Delta \varepsilon = 0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviator stress</td>
<td>$q'$</td>
<td>$p'$</td>
</tr>
<tr>
<td>Mean normal stress</td>
<td>$q'$</td>
<td>$p'$</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>$\sigma_3$</td>
<td>$\varepsilon_1$</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>$\varepsilon_1$</td>
<td>$\varepsilon_v$</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>$\varepsilon_v$</td>
<td></td>
</tr>
</tbody>
</table>

\[
\begin{array}{cccc}
\text{q'} & \text{p'} & \varepsilon_1 & \varepsilon_v \\
0.05 & 20.41 & 0.00 & 0.00 \\
0.40 & 20.65 & 0.00 & 0.05 \\
12.83 & 24.67 & 0.03 & 0.12 \\
34.34 & 31.96 & 0.12 & 0.15 \\
46.90 & 36.15 & 0.24 & 0.14 \\
55.78 & 39.11 & 0.39 & 0.11 \\
62.77 & 41.31 & 0.55 & 0.06 \\
73.36 & 44.97 & 0.88 & -0.10 \\
81.11 & 47.55 & 1.22 & -0.31 \\
87.02 & 49.40 & 1.58 & -0.56 \\
95.04 & 52.07 & 2.32 & -1.15 \\
97.57 & 53.04 & 2.69 & -1.46 \\
99.66 & 53.86 & 3.07 & -1.78 \\
101.29 & 54.15 & 3.45 & -2.10 \\
102.81 & 54.91 & 3.82 & -2.45 \\
103.82 & 55.00 & 4.21 & -2.82 \\
104.14 & 55.10 & 4.59 & -3.15 \\
104.92 & 55.49 & 5.62 & -4.09 \\
104.69 & 55.54 & 6.12 & -4.53 \\
104.04 & 55.20 & 6.89 & -5.23 \\
102.94 & 54.96 & 7.66 & -5.92 \\
101.09 & 54.34 & 8.44 & -6.49 \\
98.99 & 53.39 & 9.21 & -7.09 \\
95.42 & 52.20 & 10.01 & -7.67 \\
\end{array}
\]

Job:     
Lund No 0

Encl. No:  
51

Exc:     
LBI, AMS

Check:   
FRJ

Remark: 
Preparation [%] $\Delta \varepsilon_1$ 0.071
Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal200_891</td>
<td>06.06.89</td>
<td>22.4</td>
<td>0.576</td>
<td>0.631</td>
</tr>
</tbody>
</table>

TEST-PROGRAM
Drained compression.
1. Isotropic compression. \( \sigma_3 \) 100-40 kPa
   \( \varepsilon_1 \), -0.074 %
   \( \varepsilon_v \), -0.159 %

2. Drained compression.
Deformation rate: 8.2 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>Values at failure</th>
<th>Values for ( \Delta \varepsilon_1 ) ( \Delta \varepsilon_v ) = 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>( q' )</td>
<td>184.55 kPa</td>
<td>81.73 kPa</td>
</tr>
<tr>
<td>( p' )</td>
<td>101.67 kPa</td>
<td>67.40 kPa</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>( \sigma_3 )</td>
<td>40.16 kPa</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>( \varepsilon_1 )</td>
<td>5.27 %</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>( \varepsilon_v )</td>
<td>-3.48 %</td>
</tr>
</tbody>
</table>

Job: Encl. No
Lund No 0 53
Exc: Check:
LBI, AMS FRJ

Remark:
Preparation [%] \( \Delta \varepsilon_1 \) 0.071
# CD TRIAXIAL TEST NO 8901.07

## Description of soil

<table>
<thead>
<tr>
<th>Lund No</th>
<th>Water content</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>22.3</td>
<td>2.65</td>
<td>0.565</td>
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<tr>
<td></td>
<td>Grain density</td>
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</tr>
<tr>
<td></td>
<td>1.04</td>
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## Calibration file

<table>
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<tr>
<th>kal200_891</th>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.08.89</td>
<td>0.565</td>
<td>1.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## TEST-PROGRAM

### Drained compression.

1. Isotropic compression.
   - $\sigma_3$ = 100-40 kPa
   - $\varepsilon_1$ = -0.062 %
   - $\varepsilon_v$ = -0.136 %

2. Drained compression.
   - Deformation rate: 7.8 % ph

### Values at failure

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviator stress q'</td>
<td>82.84 kPa</td>
</tr>
<tr>
<td>Mean normal stress p'</td>
<td>68.14 kPa</td>
</tr>
<tr>
<td>Confining pressures $\sigma_3$</td>
<td>40.53 kPa</td>
</tr>
<tr>
<td>Vertical strain $\varepsilon_1$</td>
<td>0.32 %</td>
</tr>
<tr>
<td>Volumetric strain $\varepsilon_v$</td>
<td>0.23 %</td>
</tr>
</tbody>
</table>

## Diagrams

- q'/q'f vs $\varepsilon_1$
- $\psi$ vs q'/q'f

## Job:

- Lund No 0
- Exc: LBI, AMS

## Remark:

Preparation [%] $\Delta \varepsilon_1$ 0.108

The specimen slipped out.
Job:  
Lund No 0  Encl. No 56  
Exc:  Check:  
LBI, AMS  FRJ
CD TRIAXIAL TEST NO 8901.08

Description of soil

<table>
<thead>
<tr>
<th>Description</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td></td>
<td>22.0</td>
<td>0.630</td>
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</table>

Calibration file

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
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</thead>
<tbody>
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<td>08.06.89</td>
<td>0.570</td>
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<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

TEST-PROGRAM

CD - Triaxial test. free ends

1. Isotropic compression.
   \( \sigma_3 \) kg/cm\(^2\) 100-80
   \( \varepsilon_1 \) \% -0.015
   \( \varepsilon_v \) \% -0.166

2. Drained compression.
   Deformation rate: 8.0 \% ph

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>336.70 kPa</th>
<th>171.90 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress ( p' )</td>
<td>190.90 kPa</td>
<td>136.00 kPa</td>
</tr>
<tr>
<td>Confining pressures ( \sigma_3 )</td>
<td>78.70 kPa</td>
<td>78.70 kPa</td>
</tr>
<tr>
<td>Vertical strain ( \varepsilon_1 )</td>
<td>6.55 %</td>
<td>0.49 %</td>
</tr>
<tr>
<td>Volumetric strain ( \varepsilon_v )</td>
<td>-3.62 %</td>
<td>0.18 %</td>
</tr>
</tbody>
</table>

Values at failure

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>336.70 kPa</th>
<th>171.90 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress ( p' )</td>
<td>190.90 kPa</td>
<td>136.00 kPa</td>
</tr>
<tr>
<td>Confining pressures ( \sigma_3 )</td>
<td>78.70 kPa</td>
<td>78.70 kPa</td>
</tr>
<tr>
<td>Vertical strain ( \varepsilon_1 )</td>
<td>6.55 %</td>
<td>0.49 %</td>
</tr>
<tr>
<td>Volumetric strain ( \varepsilon_v )</td>
<td>-3.62 %</td>
<td>0.18 %</td>
</tr>
</tbody>
</table>

Values for \( \Delta \varepsilon_v = 0 \)

<table>
<thead>
<tr>
<th>( q' )</th>
<th>( p' )</th>
<th>( \varepsilon_1 )</th>
<th>( \varepsilon_v )</th>
</tr>
</thead>
</table>

Job:

Lund No 0

Encl. No 69

Exc: LBI, AMS

Check: FRJ

Remark:

Preparation [%] \( \Delta \varepsilon_1 = 0.071 \)
Data-file has been lost.
CD TRIAXIAL TEST NO 8901.09

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td></td>
<td>21.4</td>
<td>0.613</td>
</tr>
<tr>
<td></td>
<td>Grain density</td>
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<td></td>
</tr>
<tr>
<td>Calibration file</td>
<td>Void ratio</td>
<td>0.565</td>
<td></td>
</tr>
<tr>
<td>kal200_891</td>
<td>Saturation</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Date 15.08.89</td>
<td>Dimension H mm</td>
<td>71.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D mm</td>
<td>69.7</td>
<td></td>
</tr>
</tbody>
</table>

**TEST-PROGRAM**

CD - Triaxial test. free ends

Drained compression.

1. Isotropic compression. \( \sigma_3 \) 100-80 kPa
   \( \varepsilon_1 \) -0.022 \% 
   \( \varepsilon_v \) -0.034 \%

2. Drained compression.
   Deformation rate: 8.2 \% ph

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Values at failure</th>
<th>Values for ( \Delta \varepsilon_v = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress ( p' )</td>
<td>334.98 kPa</td>
<td>189.15 kPa</td>
</tr>
<tr>
<td>Confining pressures ( \sigma_3 )</td>
<td>190.72 kPa</td>
<td>141.74 kPa</td>
</tr>
<tr>
<td>Vertical strain ( \varepsilon_1 )</td>
<td>79.06 kPa</td>
<td>78.69 kPa</td>
</tr>
<tr>
<td>Volumetric strain ( \varepsilon_v )</td>
<td>6.17 %</td>
<td>0.70 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>q'/q'f</th>
<th>0.2</th>
<th>0.4</th>
<th>0.6</th>
<th>0.8</th>
<th>1</th>
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<tr>
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</tr>
<tr>
<td>0.03</td>
<td>0.13</td>
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<td>0.08</td>
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<td></td>
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</tr>
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<tr>
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<tr>
<td>7.14</td>
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<tr>
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<td>-4.48</td>
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<td>-5.84</td>
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</tbody>
</table>

**Job: Encl. No Remark:**

Lund No 0 59 Preparation [%] \( \Delta \varepsilon_1 \) 0.106

Exc: Check:

LBI, AMS FRJ
### CD TRIAXIAL TEST NO 8901.10

#### Description of soil

| Lund No | 0 |

<table>
<thead>
<tr>
<th>Water content</th>
<th>%</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21.3</td>
<td>0.611</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Grain density</th>
<th>2.65</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Void ratio</th>
<th>0.559</th>
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</table>

<table>
<thead>
<tr>
<th>Saturation</th>
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</table>

<table>
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<th>Dimension</th>
<th>H mm</th>
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</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D mm</th>
<th>69.7</th>
</tr>
</thead>
</table>

#### Calibration file

| kal500_891 | 16.08.89 |

#### TEST-PROGRAM

**CD - Triaxial test.**

**free ends**

<table>
<thead>
<tr>
<th>Drained compression.</th>
<th>σ3</th>
<th>100-160 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>εl</td>
<td>0.034 %</td>
<td></td>
</tr>
<tr>
<td>εv</td>
<td>0.109 %</td>
<td></td>
</tr>
</tbody>
</table>

| 2. Drained compression. |

**Deformation rate:** 8.2 % ph

#### Values at failure

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>q'</th>
<th>614.96 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress</td>
<td>p'</td>
<td>362.99 kPa</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>σ3</td>
<td>158.00 kPa</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>εl</td>
<td>6.37 %</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>εv</td>
<td>-0.31 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>q'/q'f</th>
<th>0.15</th>
<th>0.00</th>
<th>0.00</th>
</tr>
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<tbody>
<tr>
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<td>10.27</td>
<td>0.01</td>
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<td>76.41</td>
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<td>0.17</td>
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</tr>
<tr>
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<td>598.48</td>
<td>9.41</td>
<td>-5.60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>q'/q'f</th>
<th>0.00</th>
<th>0.61</th>
</tr>
</thead>
<tbody>
<tr>
<td>p'/p'f</td>
<td>0.15</td>
<td>2.21</td>
</tr>
<tr>
<td></td>
<td>38.51</td>
<td>2.57</td>
</tr>
<tr>
<td></td>
<td>76.41</td>
<td>2.94</td>
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<td>123.49</td>
<td>3.31</td>
</tr>
<tr>
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<td>162.65</td>
<td>3.68</td>
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<tr>
<td></td>
<td>260.71</td>
<td>4.06</td>
</tr>
<tr>
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</tr>
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<td></td>
<td>371.47</td>
<td>5.57</td>
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<td>422.78</td>
<td>6.37</td>
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<td>11.02</td>
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#### Job:

| Lund No | 0 |

| Encl. No | 61 |

<table>
<thead>
<tr>
<th>Exc:</th>
<th>LBI, AMS</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Remark:</th>
<th>Preparation [%]</th>
<th>Δεl</th>
<th>0.061</th>
</tr>
</thead>
</table>

| Check: | FRJ |

---

"CD TRIAXIAL TEST NO 8901.10" and "PAGE 1" are annotations.
kPa

ε₁

εᵥ

Job: LBI, AMS
Encl. No 62
Exc: Check:
Lund No 0  FRJ
CD TRIAXIAL TEST NO 8901.11

### Description of soil

| Lund No | 0 |

| Calibration file | kal500_891 |
| Date | 17.08.89 |

| Water content | % |
| 22.2 |

| Grain density | |
| 2.65 |

| Void ratio | |
| 0.559 |

| Saturation | % |
| 1.05 |

| Dimension H mm | |
| 71.5 |

| D mm | |
| 69.7 |

### TEST-PROGRAM

**CD - Triaxial test.**

| Drained compression. |
| 1. Isotropic compression. |
| σ3 | 100-160 kPa |
| ε1 | 0.034 % |
| εν | 0.109 % |

| 2. Drained compression. |
| Deformation rate: | 7.9 % ph |

| Deviator stress | q' |
| 618.43 kPa |

| Mean normal stress | p' |
| 363.89 kPa |

| Confining pressures | σ3 |
| 157.75 kPa |

| Vertical strain | ε1 |
| 7.41 % |

| Volumetric strain | εν |
| -3.74 % |

| Values at failure | Values for Δεν = 0 |
| 270.42 kPa | |

### Graphs

#### Graph 1

- y-axis: q'/q'f
- x-axis: q'/q'f

#### Graph 2

- y-axis: ϵ
- x-axis: q'/q'f

### Job:

| Lund No | 0 |
| Encl. No | 63 |

### Remark:

<table>
<thead>
<tr>
<th>Preparation [%] Δε1</th>
<th>0.090</th>
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<table>
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<tr>
<th>Remark:</th>
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</thead>
<tbody>
<tr>
<td>Preparation [%] Δε1</td>
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**Exc:**

<table>
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**Check:**

| FRJ |
CD TRIAXIAL TEST NO 8901.12

Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Water content</th>
<th>%</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.3</td>
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<td>2.65</td>
<td>0.601</td>
</tr>
</tbody>
</table>

Calibration file
k2000_891
Date
22.08.89

TEST-PROGRAM
CD - Triaxial test.

Free ends

Drained compression.

1. Isotropic compression.  \( \sigma_3 \) 100-320 kPa
\( \varepsilon_1 \), 0.119 %
\( \varepsilon_v \), 0.238 %

2. Drained compression.

Deformation rate: 8.7 % ph

<table>
<thead>
<tr>
<th>Values at failure</th>
<th>Values for ( \Delta \varepsilon_v = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviator stress</td>
<td>q'</td>
</tr>
<tr>
<td>1061.47 kPa</td>
<td>521.70 kPa</td>
</tr>
<tr>
<td>Mean normal stress</td>
<td>p'</td>
</tr>
<tr>
<td>665.07 kPa</td>
<td>486.90 kPa</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>( \sigma_3 )</td>
</tr>
<tr>
<td>311.25 kPa</td>
<td>313.00 kPa</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>( \varepsilon_1 )</td>
</tr>
<tr>
<td>7.34 %</td>
<td>0.76 %</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>( \varepsilon_v )</td>
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<tr>
<td>-2.80 %</td>
<td>0.29 %</td>
</tr>
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</table>

Graphs:
- q'/q'f vs. \( \psi \)
- q'/q'f vs. \( \theta \)

Job:
Lund No 0

Encl. No
65

Exc: Check:
LBI, AMS  FRJ

Remark:
Preparation [%] \( \Delta \varepsilon_1 \) 0.050
### CD TRIAXIAL TEST NO  8901.13

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
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<td>0.610</td>
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</table>

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
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<tbody>
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<td>71.5</td>
<td>69.7</td>
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<table>
<thead>
<tr>
<th>TEST-PROGRAM</th>
<th>Drained compression.</th>
<th>( \sigma_3 )</th>
<th>( \varepsilon_1 )</th>
<th>( \varepsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD - Triaxial test.</td>
<td>1. Isotropic compression.</td>
<td>100-320 kPa</td>
<td>0.111 %</td>
<td>0.272 %</td>
</tr>
<tr>
<td>free ends</td>
<td>2. Drained compression.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deformation rate:</td>
<td></td>
<td>8.8 % ph</td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Mean normal stress ( p' )</th>
<th>Vertical strain ( \varepsilon_1 )</th>
<th>Volumetric strain ( \varepsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1018.26 kPa</td>
<td>651.54 kPa</td>
<td>8.23 %</td>
<td>-3.05 %</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Values at failure</th>
<th>Values for ( \Delta \varepsilon_v = 0 )</th>
</tr>
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<tr>
<td>( q' )</td>
<td>p'</td>
</tr>
<tr>
<td>0.58</td>
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<td>44.00</td>
<td>325.79 kPa</td>
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<tr>
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</tr>
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<td>187.96</td>
<td>373.03 kPa</td>
</tr>
<tr>
<td>249.54</td>
<td>394.05 kPa</td>
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<td>316.78</td>
<td>417.47 kPa</td>
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<td>435.02</td>
<td>457.01 kPa</td>
</tr>
<tr>
<td>521.35</td>
<td>485.03 kPa</td>
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<tr>
<td>568.47</td>
<td>499.86 kPa</td>
</tr>
<tr>
<td>649.54</td>
<td>528.14 kPa</td>
</tr>
<tr>
<td>717.68</td>
<td>551.35 kPa</td>
</tr>
<tr>
<td>820.03</td>
<td>584.97 kPa</td>
</tr>
<tr>
<td>859.81</td>
<td>598.35 kPa</td>
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<tr>
<td>891.06</td>
<td>608.52 kPa</td>
</tr>
<tr>
<td>918.43</td>
<td>617.64 kPa</td>
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<td>941.50</td>
<td>625.96 kPa</td>
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<tr>
<td>958.22</td>
<td>630.78 kPa</td>
</tr>
<tr>
<td>986.73</td>
<td>640.91 kPa</td>
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<tr>
<td>1002.01</td>
<td>645.88 kPa</td>
</tr>
<tr>
<td>1012.53</td>
<td>648.76 kPa</td>
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<tr>
<td>1018.26</td>
<td>651.54 kPa</td>
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<td>1016.07</td>
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<td>1012.44</td>
<td>649.73 kPa</td>
</tr>
<tr>
<td>1002.17</td>
<td>645.81 kPa</td>
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### Chart

- **q' / q'_f** vs **\( \varepsilon_1 \)**
- **q' / q'_f** vs **\( \varepsilon_v \)**

### Job:
- Lund No 0
- Exc: LBI, AMS
- Encl. No: 67
- Check: FRJ

### Remark:
- Preparation [%] \( \Delta \varepsilon_1 \): 0.500
### Description of soil

| Lund No | 0 |

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<tr>
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<th>Water content %</th>
<th>Grain density</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
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### TEST-PROGRAM

**CD - Triaxial test.**

**Free ends**

Drained compression.

1. Isotropic compression.

\[
\sigma_3 = 100-620 \text{ kPa} \\
\epsilon_1 = 0.194 \% \\
\epsilon_v = 0.502 \%
\]

2. Drained compression.

Deformation rate:

8.1 \% ph

### Values at failure

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Mean normal stress ( p' )</th>
<th>Vertical strain ( \epsilon_1 )</th>
<th>Volumetric strain ( \epsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 881.37 kPa</td>
<td>1 251.12 kPa</td>
<td>9.01 %</td>
<td>-2.76 %</td>
</tr>
</tbody>
</table>

### Values for \( \Delta \varepsilon_v = 0 \)

<table>
<thead>
<tr>
<th>( q' )</th>
<th>( p' )</th>
<th>( \epsilon_1 )</th>
<th>( \epsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>622.50 kPa</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>16.88</td>
<td>628.88 kPa</td>
<td>0.01</td>
<td>0.00</td>
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<td>82.04</td>
<td>648.35 kPa</td>
<td>0.05</td>
<td>0.03</td>
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<tr>
<td>190.75</td>
<td>686.08 kPa</td>
<td>0.14</td>
<td>0.06</td>
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<td>304.46</td>
<td>722.74 kPa</td>
<td>0.26</td>
<td>0.09</td>
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<tr>
<td>409.84</td>
<td>759.36 kPa</td>
<td>0.39</td>
<td>0.14</td>
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<td>511.45</td>
<td>792.48 kPa</td>
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<td>0.16</td>
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<td>701.76</td>
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<td>0.22</td>
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<td>957.61 kPa</td>
<td>1.43</td>
<td>0.29</td>
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<td>1.81</td>
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<td>1 136.56 kPa</td>
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<td>0.06</td>
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<td>1 597.84</td>
<td>1 155.86 kPa</td>
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<td>1 881.37</td>
<td>1 251.12 kPa</td>
<td>9.01</td>
<td>-2.76</td>
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<tr>
<td>1 878.75</td>
<td>1 250.25 kPa</td>
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<td>-2.96</td>
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</tbody>
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### Graphs

- Graph 1: Deviator stress \( q' \) vs. Mean normal stress \( p' \)
- Graph 2: Vertical strain \( \epsilon_1 \) vs. Volumetric strain \( \epsilon_v \)

### Remark

Preparation [%] \( \Delta \varepsilon_1 = 0.085 \)
<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
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<th>Saturation</th>
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<th>D mm</th>
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</table>

**TEST-PROGRAM**

Drained compression.
1. Isotropic compression. \( \sigma_3 \) 100-620 kPa
\( \epsilon_1 \) 0.287 %
\( \epsilon_v \) 0.642 %
2. Drained compression.
Deformation rate: 8.4 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>Mean normal stress</th>
<th>Confining pressures</th>
<th>Vertical strain</th>
<th>Volumetric strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>( q' ) 1 869.48 kPa</td>
<td>( p' ) 1 249.91 kPa</td>
<td>( \sigma_3 ) 626.75 kPa</td>
<td>( \epsilon_1 ) 8.04 %</td>
<td>( \epsilon_v ) -2.15 %</td>
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</tbody>
</table>

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<th>Values for ( \Delta \epsilon_v = 0 )</th>
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<tr>
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**Remark:**
Preparation [%] \( \Delta \epsilon_1 \) 0.088
### Description of Soil

<table>
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<th>Water content</th>
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<th>At failure</th>
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### TEST-PROGRAM

**CD - Triaxial test.** 1. Isotropic compression. 2. Drained compression.

- **Deformation rate:** 8.9 % ph

### Values at Failure

<table>
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<tr>
<th>Deviator stress $q'$</th>
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<th>$\varepsilon_l$</th>
<th>$\varepsilon_v$</th>
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<tr>
<td>103.64 kPa</td>
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<td>0.093 %</td>
<td>-0.076 %</td>
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<table>
<thead>
<tr>
<th>Values for $\Delta \varepsilon_v = 0$</th>
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<tr>
<td>------</td>
</tr>
<tr>
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<td>94.11</td>
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### Diagrams

1. Deviator stress $q'$ vs. $q'/q'_f$  
2. Volumetric strain $\varepsilon_v$ vs. $q'/q'_f$

### Job Information

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<tr>
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<th>Encl. No</th>
<th>Remark:</th>
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<td>FRJ</td>
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CD TRIAXIAL TEST NO  8901.19  PAGE 1

Description of soil
Lund No 0

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<th>At failure</th>
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<th>D mm</th>
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<td>0.611</td>
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TEST-PROGRAM
CD - Triaxial test.
free ends

1. Isotropic compression.
   \( \sigma_3 \) 100-620 kPa

2. Drained compression.
   Deformation rate: 8.4 % ph

<table>
<thead>
<tr>
<th>Values at failure</th>
<th>Values for ( \Delta \varepsilon \varepsilon = 0 )</th>
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</thead>
<tbody>
<tr>
<td>Deviator stress</td>
<td>( q' )</td>
</tr>
<tr>
<td>Mean normal stress</td>
<td>( p' )</td>
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<tr>
<td>Confining pressures</td>
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<tr>
<td>Vertical strain</td>
<td>( \varepsilon _1 )</td>
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<tr>
<td>Volumetric strain</td>
<td>( \varepsilon _\nu )</td>
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<table>
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<th>( \varepsilon _\nu )</th>
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Job: Lund No 0  Encl. No 75
Exc: LBI, AMS  Check: FRJ

Remark:
Preparation [%] \( \Delta \varepsilon _1 \) 0.099
CD TRIAXIAL TEST NO 8901.20

Description of soil
Lund No 0

<table>
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<th>Water content %</th>
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<td>23.6</td>
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<tr>
<td>2.65</td>
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<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>k2000_892</td>
<td>05.09.89</td>
<td>0.610</td>
<td>1.02</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

TEST-PROGRAM
CD - Triaxial test.
free ends

<table>
<thead>
<tr>
<th>Drained compression.</th>
<th>Isoelastic compression.</th>
<th>( \sigma_3 )</th>
<th>100-620 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \epsilon_1 )</td>
<td>0.257 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( \epsilon_v )</td>
<td>0.521 %</td>
<td></td>
</tr>
</tbody>
</table>

Deformation rate: 8.4 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>( q' )</th>
<th>Values at failure</th>
<th>Values for ( \Delta \epsilon v = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress</td>
<td>( p' )</td>
<td>1 732.90 kPa</td>
<td>1 083.19 kPa</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>( \sigma_3 )</td>
<td>1 203.13 kPa</td>
<td>984.56 kPa</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>( \epsilon_1 )</td>
<td>625.50 kPa</td>
<td>623.50 kPa</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>( \epsilon_v )</td>
<td>8.68 %</td>
<td>1.89 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>( q' )</th>
<th>Mean normal stress</th>
<th>( p' )</th>
<th>Isoelastic compression</th>
<th>( \sigma_3 )</th>
<th>Deformation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( \epsilon_1 )</td>
<td>( \epsilon_v )</td>
</tr>
<tr>
<td>0.00</td>
<td>0.00</td>
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</tr>
<tr>
<td>12.80</td>
<td>12.80</td>
<td></td>
<td>12.80</td>
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<td>0.521 %</td>
</tr>
<tr>
<td>100.05</td>
<td>100.05</td>
<td></td>
<td>100.05</td>
<td></td>
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<td>0.521 %</td>
</tr>
<tr>
<td>181.35</td>
<td>181.35</td>
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<td>0.521 %</td>
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<td>0.521 %</td>
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<tr>
<td>453.05</td>
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<tr>
<td>613.74</td>
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<tr>
<td>763.42</td>
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<tr>
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<td>0.521 %</td>
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<tr>
<td>1083.19</td>
<td>1083.19</td>
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<td>1083.19</td>
<td></td>
<td>0.257 %</td>
<td>0.521 %</td>
</tr>
<tr>
<td>1199.08</td>
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<td>0.521 %</td>
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<td>1302.61</td>
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<tr>
<td>1385.52</td>
<td>1385.52</td>
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<td>1385.52</td>
<td></td>
<td>0.257 %</td>
<td>0.521 %</td>
</tr>
<tr>
<td>1452.77</td>
<td>1452.77</td>
<td></td>
<td>1452.77</td>
<td></td>
<td>0.257 %</td>
<td>0.521 %</td>
</tr>
<tr>
<td>1508.07</td>
<td>1508.07</td>
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<td>1508.07</td>
<td></td>
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<td>0.521 %</td>
</tr>
<tr>
<td>1552.78</td>
<td>1552.78</td>
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<td></td>
<td>0.257 %</td>
<td>0.521 %</td>
</tr>
<tr>
<td>1591.30</td>
<td>1591.30</td>
<td></td>
<td>1591.30</td>
<td></td>
<td>0.257 %</td>
<td>0.521 %</td>
</tr>
<tr>
<td>1646.67</td>
<td>1646.67</td>
<td></td>
<td>1646.67</td>
<td></td>
<td>0.257 %</td>
<td>0.521 %</td>
</tr>
<tr>
<td>1685.00</td>
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<td>1685.00</td>
<td></td>
<td>0.257 %</td>
<td>0.521 %</td>
</tr>
<tr>
<td>1708.41</td>
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<td>0.521 %</td>
</tr>
<tr>
<td>1724.28</td>
<td>1724.28</td>
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<td>1724.28</td>
<td></td>
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<td>0.521 %</td>
</tr>
<tr>
<td>1729.46</td>
<td>1729.46</td>
<td></td>
<td>1729.46</td>
<td></td>
<td>0.257 %</td>
<td>0.521 %</td>
</tr>
<tr>
<td>1732.90</td>
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<td></td>
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<td>0.521 %</td>
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<tr>
<td>1726.16</td>
<td>1726.16</td>
<td></td>
<td>1726.16</td>
<td></td>
<td>0.257 %</td>
<td>0.521 %</td>
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</table>

Job: Lund No 0
Encl. No: 77

Remark:
Preparation [%] \( \Delta \epsilon 1 \) 0.115

Exc: LBI, AMS
Check: FRJ
CD TRIAXIAL TEST NO 8901.23

Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Water content</th>
<th>%</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.3</td>
<td></td>
<td>2.65</td>
<td>0.600</td>
</tr>
<tr>
<td>2.65</td>
<td></td>
<td>0.635</td>
<td></td>
</tr>
</tbody>
</table>

Calibration file
k2000_892

<table>
<thead>
<tr>
<th>Date</th>
<th>06.09.89</th>
</tr>
</thead>
</table>

TEST-PROGRAM
CD - Triaxial test.
free ends

Drained compression.
1. Isotropic compression.
   \( \sigma_3 \) 100-310 kPa
   \( \varepsilon_1 \) 0.096 %
   \( \varepsilon_v \) 0.378 %

2. Drained compression.
Deformation rate: 8.7 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>( q' )</th>
<th>976.73 kPa</th>
<th>( p' )</th>
<th>634.20 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress</td>
<td>( p' )</td>
<td>634.20 kPa</td>
<td>( \sigma_3 )</td>
<td>308.63 kPa</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>( \sigma_3 )</td>
<td>308.63 kPa</td>
<td>( \varepsilon_1 )</td>
<td>7.05 %</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>( \varepsilon_1 )</td>
<td>7.05 %</td>
<td>( \varepsilon_v )</td>
<td>-2.17 %</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>( \varepsilon_v )</td>
<td>-2.17 %</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Before test

<table>
<thead>
<tr>
<th>Values at failure</th>
<th>Values for ( \Delta \varepsilon_v = 0 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( q' )</td>
<td>976.73 kPa</td>
</tr>
<tr>
<td>( p' )</td>
<td>634.20 kPa</td>
</tr>
<tr>
<td>( \sigma_3 )</td>
<td>308.63 kPa</td>
</tr>
<tr>
<td>( \varepsilon_1 )</td>
<td>7.05 %</td>
</tr>
<tr>
<td>( \varepsilon_v )</td>
<td>-2.17 %</td>
</tr>
</tbody>
</table>

Job: Lund No 0
Encl. No 79
Exc: LBI, AMS
Remark: Preparation [%] \( \Delta \varepsilon_1 \) 0.051
### Description of soil

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22.2</td>
<td>2.65</td>
<td>0.629</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>k2000_892</td>
<td>18.09.89</td>
<td>0.603</td>
<td>0.98</td>
<td>71.5</td>
<td>69.7</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Value</th>
<th>kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>q'</td>
<td>1006.93</td>
</tr>
<tr>
<td>p'</td>
<td>648.02</td>
</tr>
<tr>
<td>σ3</td>
<td>312.38</td>
</tr>
<tr>
<td>ε1</td>
<td>5.98</td>
</tr>
<tr>
<td>εν</td>
<td>-1.62</td>
</tr>
</tbody>
</table>

#### TEST-PROGRAM

- **CD - Triaxial test.**
  - **free ends**

**Drained compression.**

1. **Isotropic compression.**
   - σ3 = 100-310 kPa
   - ε1 = 0.115 %
   - εν = 0.257 %

2. **Drained compression.**
   - Deformation rate: 8.5 % ph

<table>
<thead>
<tr>
<th>Deviator stress (q')</th>
<th>Mean normal stress (p')</th>
<th>Vertical strain (ε1)</th>
<th>Volumetric strain (εν)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Values at failure</td>
<td>Values for Δε ν = 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- q' | p' | ε1 | εν |
-0.58 | 308.93 | 0.00 | 0.00 |
10.46 | 313.61 | 0.01 | 0.02 |
108.63 | 347.08 | 0.07 | 0.07 |
200.31 | 379.65 | 0.16 | 0.12 |
279.61 | 403.58 | 0.28 | 0.14 |
435.34 | 455.99 | 0.53 | 0.19 |
580.83 | 504.24 | 0.82 | 0.21 |
656.76 | 528.29 | 1.04 | 0.22 |
762.06 | 563.65 | 1.47 | 0.19 |
825.10 | 587.41 | 1.82 | 0.12 |
870.97 | 602.45 | 2.18 | 0.05 |
903.58 | 612.32 | 2.54 | -0.05 |
927.58 | 620.32 | 2.91 | -0.19 |
946.24 | 625.79 | 3.29 | -0.33 |
960.46 | 630.28 | 3.67 | -0.49 |
973.28 | 635.55 | 4.05 | -0.67 |
983.46 | 638.69 | 4.42 | -0.87 |
999.60 | 644.57 | 5.18 | -1.20 |
1006.93 | 648.02 | 5.98 | -1.62 |
1004.97 | 646.87 | 6.71 | -2.00 |
1000.78 | 645.47 | 7.47 | -2.39 |
992.23 | 641.87 | 8.24 | -2.79 |
978.23 | 636.70 | 9.02 | -3.16 |
965.87 | 632.33 | 9.80 | -3.53 |

### Remark

- Preparation [%] Δε1 = 0.108

<table>
<thead>
<tr>
<th>Job</th>
<th>Encl. No</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td>81</td>
<td>Preparation [%] Δε1 = 0.108</td>
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<table>
<thead>
<tr>
<th>Exe</th>
<th>Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBI, AMS</td>
<td>FRJ</td>
</tr>
<tr>
<td>Description of soil</td>
<td>Water content %</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Lund No 0</td>
<td>23.1</td>
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<tr>
<td></td>
<td>2.65</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>k2000_892</td>
<td>11.09.89</td>
<td>0.617</td>
<td>0.99</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

**TEST-PROGRAM**

**Drained compression.**

1. Isotropic compression.

2. Drained compression.

Deformation rate: 8.8 % ph

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>Values at failure</th>
<th>Values for (\Delta \varepsilon_v = 0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(q')</td>
<td>499.98 kPa</td>
<td>162.85 kPa</td>
</tr>
<tr>
<td>(p')</td>
<td>325.10 kPa</td>
<td>211.47 kPa</td>
</tr>
<tr>
<td>(\sigma_3)</td>
<td>158.44 kPa</td>
<td>157.19 kPa</td>
</tr>
<tr>
<td>(\varepsilon_1)</td>
<td>6.77 %</td>
<td>0.53 %</td>
</tr>
<tr>
<td>(\varepsilon_v)</td>
<td>-2.73 %</td>
<td>0.10 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(q'/q'_f)</th>
<th>(\varepsilon_1)</th>
<th>(\varepsilon_v)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>3.48</td>
<td>158.60</td>
<td>0.06</td>
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<td>70.68</td>
<td>180.75</td>
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<td>104.16</td>
<td>191.41</td>
<td>0.28</td>
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<td>162.85</td>
<td>211.47</td>
<td>0.53</td>
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<td>237.68</td>
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<td>1.28</td>
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<td>351.10</td>
<td>274.22</td>
<td>1.65</td>
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<td>383.39</td>
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<td>446.09</td>
<td>305.64</td>
<td>3.17</td>
</tr>
<tr>
<td>460.12</td>
<td>310.56</td>
<td>3.56</td>
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<tr>
<td>469.97</td>
<td>313.84</td>
<td>3.94</td>
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<td>478.01</td>
<td>316.52</td>
<td>4.33</td>
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<td>484.30</td>
<td>318.87</td>
<td>4.72</td>
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<td>492.77</td>
<td>321.69</td>
<td>5.49</td>
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<tr>
<td>499.98</td>
<td>325.10</td>
<td>6.77</td>
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<td>497.17</td>
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<td>492.21</td>
<td>320.51</td>
<td>8.59</td>
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<tr>
<td>488.26</td>
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<td>9.37</td>
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<td>480.32</td>
<td>317.04</td>
<td>10.16</td>
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</table>

**Job:** Lund No 0
**Encl. No:** 83
**Exec:** LBI, AMS
**Remark:** Preparation [%] \(\Delta \varepsilon_1\) 0.147
<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td>22.2</td>
<td></td>
<td>0.642</td>
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<tr>
<td>Calibration file</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k2000_892</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>19.09.89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TEST-PROGRAM

CD - Triaxial test.
free ends

Drained compression.

1. Isotropic compression.

\[ \sigma^3 \quad 100-160 \text{ kPa} \]

\[ \epsilon_1 \quad 0.040 \% \]

\[ \epsilon_v \quad 0.034 \% \]

2. Drained compression.

Deformation rate: 8.8 % ph

<table>
<thead>
<tr>
<th>Values at failure</th>
<th>Values for $\Delta \epsilon \nu = 0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviator stress: $q'$</td>
<td>$525.28 \text{ kPa}$</td>
</tr>
<tr>
<td>Mean normal stress: $p'$</td>
<td>$332.03 \text{ kPa}$</td>
</tr>
<tr>
<td>Confining pressures: $\sigma^3$</td>
<td>$156.94 \text{ kPa}$</td>
</tr>
<tr>
<td>Vertical strain: $\epsilon_1$</td>
<td>$6.27 %$</td>
</tr>
<tr>
<td>Volumetric strain: $\epsilon_v$</td>
<td>$-2.29 %$</td>
</tr>
</tbody>
</table>

Remark:
Preparation [%] $\Delta \epsilon_1$ 0.165
## CD TRIAXIAL TEST NO 8901.27

### Description of soil

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Water content %</th>
<th>Grain density</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25.6</td>
<td>2.65</td>
<td></td>
<td>0.617</td>
</tr>
</tbody>
</table>

### Calibration file

<table>
<thead>
<tr>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.09.89</td>
<td>0.567</td>
<td>1.19</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

### TEST-PROGRAM

**CD - Triaxial test.**

Free ends

**Drained compression.**

1. Isotropic compression.

\[
\sigma_3 = 100-160 \text{ kPa} \\
\epsilon_1 = 0.036 \% \\
\epsilon_v = 0.079 \%
\]

2. Drained compression.

Deformation rate: 7.9 % ph

### Values at failure

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Mean normal stress ( p' )</th>
<th>Vertical strain ( \epsilon_1 )</th>
<th>Volumetric strain ( \epsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>549.03 kPa</td>
<td>341.20 kPa</td>
<td>7.27 %</td>
<td>-3.13 %</td>
</tr>
<tr>
<td>336.99 kPa</td>
<td>269.77 kPa</td>
<td>0.00 0.00</td>
<td>0.21 0.21</td>
</tr>
</tbody>
</table>

### Graphs

- Graph 1: \( q'/q'f \) vs. \( \epsilon \)
- Graph 2: \( q'/q'f \) vs. \( \epsilon_v \)

### Job:

Lund No 0

Encl. No 87

Exc: LBI, AMS

Check: FRJ

### Remark:

Preparation [%] \( \Delta \epsilon_1 \) 0.165
CD TRIAXIAL TEST NO  8901.28

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td></td>
<td>20.9</td>
<td>0.617</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>Saturation</th>
<th>Dimension D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>k2000_892</td>
<td>20.09.89</td>
<td>0.566</td>
<td>0.98</td>
<td>71.5</td>
<td>0.566</td>
<td>69.7</td>
</tr>
</tbody>
</table>

**TEST-PROGRAM**

Drained compression.

1. Isotropic compression.
   - Deviator stress \( \sigma_3 \): 100-160 kPa
   - Mean normal stress \( \sigma_1 \): 0.031 %
   - Volumetric strain \( \varepsilon_V \): 0.068 %

2. Drained compression.
   - Deformation rate: 8.6 % ph

### Values at failure

- Deviator stress \( q' \): 584.02 kPa
- Mean normal stress \( p' \): 353.11 kPa
- Confining pressures \( \sigma_3 \): 158.44 kPa
- Vertical strain \( \varepsilon_I \): 6.40 %
- Volumetric strain \( \varepsilon_V \): -3.23 %

### Values for \( \Delta \varepsilon_V = 0 \)

- Deviator stress \( q' \): 284.01 kPa
- Mean normal stress \( p' \): 251.36 kPa

### Graphs

- Graph of \( q'/q'_f \) vs. vertical strain \( \varepsilon_I \)
- Graph of \( q'/q'_f \) vs. volumetric strain \( \varepsilon_V \)

<table>
<thead>
<tr>
<th>Job:</th>
<th>Encl. No:</th>
<th>Remark:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td>89</td>
<td>Preparation [%] ( \Delta \varepsilon_I ): 0.092</td>
</tr>
<tr>
<td>Exc:</td>
<td>Check:</td>
<td></td>
</tr>
<tr>
<td>LBI, AMS</td>
<td>FRJ</td>
<td></td>
</tr>
</tbody>
</table>
Description of soil

Lund No 0

<table>
<thead>
<tr>
<th>Water content</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>23</td>
<td>0.555</td>
</tr>
</tbody>
</table>

Grain density

<table>
<thead>
<tr>
<th>Void ratio</th>
<th>Saturation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.555</td>
<td>1.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension</th>
<th>H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>71.5</td>
<td>69.7</td>
<td></td>
</tr>
</tbody>
</table>

Calibration file

k2000_891

Date

25.09.89

TEST-PROGRAM

Drained compression.

1. Isotropic compression.

<table>
<thead>
<tr>
<th>σ3</th>
<th>5 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>εl</td>
<td>0.000 %</td>
</tr>
<tr>
<td>εv</td>
<td>0.000 %</td>
</tr>
</tbody>
</table>

Deformation rate:

9.1 % ph

CU - Triaxial test.

free ends

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>Maximum values</th>
<th>Minimum values for σ</th>
</tr>
</thead>
<tbody>
<tr>
<td>q'</td>
<td>1 816.04 kPa</td>
<td>10.44 kPa</td>
</tr>
<tr>
<td>p'</td>
<td>1 296.90 kPa</td>
<td>8.11 kPa</td>
</tr>
<tr>
<td>σ3</td>
<td>691.55 kPa</td>
<td>4.63 kPa</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>εl 4.91 %</td>
<td>0.08 %</td>
</tr>
<tr>
<td>Volumetric strain</td>
<td>εv 0.00 %</td>
<td>0.00 %</td>
</tr>
</tbody>
</table>

Job:

Lund No 0

Exc:

LBI

Encl. No

1

Remark:

Preparation [%] Δεl = 0.000
No isotropic consolidation.
CUu=0 TRIAXIAL TEST NO  8901.17

<table>
<thead>
<tr>
<th>Job:</th>
<th>Encl. No</th>
<th>Lund No 0</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exc:</td>
<td>Check:</td>
<td>LBI</td>
<td>FRJ</td>
</tr>
</tbody>
</table>
### Description of soil

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Water content</th>
<th>%</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>22.3</td>
<td>0.551</td>
</tr>
<tr>
<td></td>
<td>Grain density</td>
<td></td>
<td>2.65</td>
<td>0.551</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.551</td>
<td>1.07</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

### Calibration file

<table>
<thead>
<tr>
<th>kal9</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26.09.89</td>
</tr>
</tbody>
</table>

### TEST-PROGRAM

1. Isotropic compression.
   - \( \sigma_3 \) = 100-5 kPa
   - \( \epsilon_\ell \) = -0.071 %
   - \( \epsilon_v \) = -0.461 %

2. Undrained compression.
   - Deformation rate: 7.5 % ph

### Maximum values

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Mean normal stress ( p' )</th>
<th>Confining pressures ( \sigma_3 )</th>
<th>Vertical strain ( \epsilon_\ell )</th>
<th>Volumetric strain ( \epsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 286.04 kPa</td>
<td>907.94 kPa</td>
<td>479.26 kPa</td>
<td>4.32 %</td>
<td>0.00 %</td>
</tr>
</tbody>
</table>

### Minimum values for \( \sigma_3 \)

<table>
<thead>
<tr>
<th>q'</th>
<th>p'</th>
<th>( \epsilon_\ell )</th>
<th>( \epsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.58</td>
<td>4.56</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>8.71</td>
<td>6.16</td>
<td>0.09</td>
<td>0.00</td>
</tr>
<tr>
<td>12.18</td>
<td>8.94</td>
<td>0.17</td>
<td>0.00</td>
</tr>
<tr>
<td>30.08</td>
<td>20.91</td>
<td>0.46</td>
<td>0.00</td>
</tr>
<tr>
<td>62.84</td>
<td>42.71</td>
<td>0.79</td>
<td>0.00</td>
</tr>
<tr>
<td>116.64</td>
<td>78.29</td>
<td>1.13</td>
<td>0.00</td>
</tr>
<tr>
<td>186.68</td>
<td>125.78</td>
<td>1.46</td>
<td>0.00</td>
</tr>
<tr>
<td>272.23</td>
<td>184.94</td>
<td>1.79</td>
<td>0.00</td>
</tr>
<tr>
<td>374.29</td>
<td>253.87</td>
<td>2.12</td>
<td>0.00</td>
</tr>
<tr>
<td>487.56</td>
<td>332.78</td>
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<td>0.00</td>
</tr>
<tr>
<td>608.00</td>
<td>417.71</td>
<td>2.76</td>
<td>0.00</td>
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<tr>
<td>728.74</td>
<td>502.50</td>
<td>3.09</td>
<td>0.00</td>
</tr>
<tr>
<td>854.29</td>
<td>593.14</td>
<td>3.41</td>
<td>0.00</td>
</tr>
<tr>
<td>991.89</td>
<td>692.17</td>
<td>3.73</td>
<td>0.00</td>
</tr>
<tr>
<td>1143.69</td>
<td>801.94</td>
<td>4.04</td>
<td>0.00</td>
</tr>
<tr>
<td>1286.04</td>
<td>907.94</td>
<td>4.32</td>
<td>0.00</td>
</tr>
<tr>
<td>1472.18</td>
<td>1079.20</td>
<td>4.66</td>
<td>0.00</td>
</tr>
<tr>
<td>1649.72</td>
<td>1186.29</td>
<td>4.96</td>
<td>0.00</td>
</tr>
<tr>
<td>1618.04</td>
<td>1140.70</td>
<td>5.39</td>
<td>0.00</td>
</tr>
<tr>
<td>1573.79</td>
<td>1116.32</td>
<td>5.41</td>
<td>0.00</td>
</tr>
<tr>
<td>1549.98</td>
<td>1095.37</td>
<td>5.42</td>
<td>0.00</td>
</tr>
<tr>
<td>1532.31</td>
<td>1089.36</td>
<td>5.42</td>
<td>0.00</td>
</tr>
<tr>
<td>1523.44</td>
<td>1074.89</td>
<td>5.43</td>
<td>0.00</td>
</tr>
<tr>
<td>1508.00</td>
<td>1092.14</td>
<td>5.43</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Deformation rate:

- Maximum values
- Minimum values for \( \sigma_3 \)

### Remark:

- Preparation [%] \( \Delta \epsilon_\ell = -0.084 \)
CUu=0 TRIAXIAL TEST NO 8901.21 PAGE 1

<table>
<thead>
<tr>
<th>Description of soil</th>
<th></th>
<th></th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td>Water content %</td>
<td>25.4</td>
<td>2.65</td>
<td></td>
</tr>
<tr>
<td>Calibration file</td>
<td>Grain density</td>
<td>0.611</td>
<td>1.10</td>
<td></td>
</tr>
<tr>
<td>k2000_891</td>
<td>Void ratio</td>
<td>71.5</td>
<td>69.7</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Saturation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.09.89</td>
<td>Dimension H mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D mm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TEST-PROGRAM

1. Isotropic compression.  
   σ3 = 100-0 kPa  
   ε3 = -0.082 %  
   εv = -0.355 %

2. Undrained compression.
   Deformation rate: 5.5 % ph

<table>
<thead>
<tr>
<th>Deviator stress q'</th>
<th>Mean normal stress p'</th>
<th>Minimum values for σ3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 315.19 kPa</td>
<td>941.17 kPa</td>
<td>1.74 kPa</td>
</tr>
<tr>
<td>1.74 kPa</td>
<td>941.17 kPa</td>
<td>-0.54 kPa</td>
</tr>
<tr>
<td>3.49 kPa</td>
<td>941.17 kPa</td>
<td>-1.13 kPa</td>
</tr>
<tr>
<td>8.71 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>17.39 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>28.94 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>46.21 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
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<tr>
<td>70.33 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
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<tr>
<td>99.50 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>134.84 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>174.02 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
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<td>217.57 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>264.33 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>315.40 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>369.64 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>536.92 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>650.69 kPa</td>
<td>941.17 kPa</td>
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<td>770.73 kPa</td>
<td>941.17 kPa</td>
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<td>884.96 kPa</td>
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<td>0.00 kPa</td>
</tr>
<tr>
<td>1007.28 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>1121.56 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>1230.12 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
<tr>
<td>1315.19 kPa</td>
<td>941.17 kPa</td>
<td>0.00 kPa</td>
</tr>
</tbody>
</table>

Job: Lund No 0 Encl. No 5
Exc: LBI, AMS Check: FRJ

Remark:
Preparation [%] Δεl = -0.058
CUu=0 TRIAXIAL TEST NO 8901.22

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td></td>
<td>24.7</td>
<td>0.617</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>k2000_891</td>
<td>28.09.89</td>
<td>0.617</td>
<td>1.06</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST-PROGRAM</th>
<th>Drained compression.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU - Triaxial test. free ends</td>
<td>1. Isotropic compression.</td>
</tr>
<tr>
<td></td>
<td>( \sigma_3 ) 100-5 kPa</td>
</tr>
<tr>
<td></td>
<td>( \varepsilon_1 ) -0.104 %</td>
</tr>
<tr>
<td></td>
<td>( \varepsilon_v ) -0.374 %</td>
</tr>
</tbody>
</table>

| Deformation rate: 5.5 % ph |

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>Mean normal stress</th>
<th>Confining pressures</th>
<th>Vertical strain</th>
<th>Volumetric strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>( q' )</td>
<td>( p' )</td>
<td>( \sigma_3 )</td>
<td>( \varepsilon_1 )</td>
<td>( \varepsilon_v )</td>
</tr>
<tr>
<td>1 628.69 kPa</td>
<td>1 256.09 kPa</td>
<td>713.20 kPa</td>
<td>6.43 %</td>
<td>0.00 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maximum values</th>
<th>Minimum values for ( \sigma_3 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 628.69 kPa</td>
<td>8.13 kPa</td>
</tr>
<tr>
<td>1 256.09 kPa</td>
<td>6.96 kPa</td>
</tr>
<tr>
<td>713.20 kPa</td>
<td>4.25 kPa</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Job: Lund No 0 8901.22</th>
<th>Encl. No 7</th>
<th>Remark: Preparation [%]</th>
<th>( \Delta \varepsilon_1 = -0.044 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exc: LBI, AMS</td>
<td>Check: FRJ</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Description of Soil

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Water content (%)</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>23</td>
<td>0.613</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grain density</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.613</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.01</td>
<td>71.5</td>
<td>69.7</td>
</tr>
</tbody>
</table>

### Calibration File

- kal90_01
- Date: 11.12.90

### TEST-PROGRAM

**CU - Triaxial test.**

- Drained compression.
  1. Isotropic compression.
    - $\sigma_3$: 40-20 kPa
    - $\varepsilon_1$: -0.087 %
    - $\varepsilon_v$: 0.000 %

- Undrained compression.
  - Deformation rate: 3.1 % ph

### Maximum Values

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>Mean normal stress</th>
<th>Confining pressures</th>
<th>Vertical strain</th>
<th>Volumetric strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>$q'$</td>
<td>$p'$</td>
<td>$\sigma_3$</td>
<td>$\varepsilon_1$</td>
<td>$\varepsilon_v$</td>
</tr>
<tr>
<td>2.311.31 kPa</td>
<td>1.767.34 kPa</td>
<td>996.90 kPa</td>
<td>6.99 %</td>
<td>0.00 %</td>
</tr>
<tr>
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<td>22.94 kPa</td>
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### Minimum Values for $\sigma_3$

<table>
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<th>Deviator stress</th>
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<th>Confining pressures</th>
<th>Vertical strain</th>
<th>Volumetric strain</th>
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<td>$q'$</td>
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<td>$\varepsilon_1$</td>
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<tr>
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<td>0.00</td>
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### Job:
- Lund No 0
- Encl. No 9

### Remark:
- Preparation [%] $\Delta \varepsilon_1 = -0.110$
- Volumetric strain not measured during isotropic consolidation.
CUu=0 TRIAXIAL TEST NO 8901.P02

Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Water content</th>
<th>Before test</th>
<th>At failure</th>
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<th>Grain density</th>
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<table>
<thead>
<tr>
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</table>

<table>
<thead>
<tr>
<th>D mm</th>
<th>69.7</th>
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TEST-PROGRAM
CU - Triaxial test.
free ends

<table>
<thead>
<tr>
<th>Drained compression.</th>
<th>σ3</th>
<th>80-20 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ε1</td>
<td>-0.064 %</td>
</tr>
<tr>
<td></td>
<td>εv</td>
<td>-0.173 %</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Undrained compression.</th>
<th>Deformation rate:</th>
<th>3.4 % ph</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>q'</th>
<th>Maximum values</th>
<th>Minimum values for σ3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 244.34 kPa</td>
<td></td>
<td>23.27 kPa</td>
<td></td>
</tr>
<tr>
<td>1 722.01 kPa</td>
<td></td>
<td>23.26 kPa</td>
<td></td>
</tr>
<tr>
<td>973.90 kPa</td>
<td></td>
<td>15.50 kPa</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean normal stress</th>
<th>p'</th>
<th>Maximum values</th>
<th>Minimum values for σ3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 722.01 kPa</td>
<td></td>
<td>23.26 kPa</td>
<td></td>
</tr>
<tr>
<td>973.90 kPa</td>
<td></td>
<td>15.50 kPa</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Confining pressures</th>
<th>σ3</th>
<th>Maximum values</th>
<th>Minimum values for σ3</th>
</tr>
</thead>
<tbody>
<tr>
<td>973.90 kPa</td>
<td></td>
<td>15.50 kPa</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vertical strain</th>
<th>ε1</th>
<th>Maximum values</th>
<th>Minimum values for σ3</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.29 %</td>
<td></td>
<td>0.10 %</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volumetric strain</th>
<th>εv</th>
<th>Maximum values</th>
<th>Minimum values for σ3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 %</td>
<td></td>
<td>0.00 %</td>
<td></td>
</tr>
</tbody>
</table>

Job: Encl. No
Lund No 0 11

Exc: Check:
LBI, AMS FRJ

Remark:
Preparation [%] Δ ε1 = -0.128
CUu=0 TRIAXIAL TEST NO 8901.P03  PAGE 1

Table:

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
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<tr>
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<td>0.611</td>
</tr>
<tr>
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<td>Saturation</td>
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<td></td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>D mm</td>
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<table>
<thead>
<tr>
<th>TEST-PROGRAM</th>
<th>Drained compression.</th>
<th>σ3</th>
<th>80-500 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU - Triaxial test.</td>
<td>1. Isotropic compression.</td>
<td>ε1</td>
<td>0.225 %</td>
</tr>
<tr>
<td>free ends</td>
<td></td>
<td>εv</td>
<td>0.671 %</td>
</tr>
<tr>
<td></td>
<td>2. Undrained compression.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deformation rate:</td>
<td>3.4 % ph</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Maximum values</th>
<th>Minimum values for σ3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviator stress</td>
<td>q'</td>
</tr>
<tr>
<td>Mean normal stress</td>
<td>p'</td>
</tr>
<tr>
<td>Confining pressures</td>
<td>σ3</td>
</tr>
<tr>
<td>Vertical strain</td>
<td>ε1</td>
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<tr>
<td>Volumetric strain</td>
<td>εv</td>
</tr>
<tr>
<td>2 051.65 kPa</td>
<td>427.08 kPa</td>
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<tr>
<td>1 575.18 kPa</td>
<td>381.36 kPa</td>
</tr>
<tr>
<td>891.30 kPa</td>
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<tr>
<td>5.59 %</td>
<td>0.98 %</td>
</tr>
<tr>
<td>0.00 %</td>
<td>0.00 %</td>
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Graphs:

1. q'/q'f vs. q'/q'f
2. q'/q'f vs. q'/q'f

Job: Lund No 0
Encl. No 13
Remain: Preparation [%] Δε1 = -0.114

Exc: LBI, AMS
Check: FRJ
Description of soil
Lund No 0

<table>
<thead>
<tr>
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<th>Date</th>
<th>Water content</th>
<th>Grain density</th>
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</thead>
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<tr>
<td></td>
<td></td>
<td>69.7</td>
</tr>
</tbody>
</table>

**TEST-PROGRAM**

Drained compression.
1. Isotropic compression. \( \sigma_3 \) 80-1000 kPa
\( \epsilon_1 \), -0.013 %
\( \epsilon_v \) 1.001 %

Deformation rate: 3.1 % ph

**Deformation rate:**

<table>
<thead>
<tr>
<th>Deviator stress</th>
<th>Mean normal stress</th>
<th>Confining pressures</th>
<th>Vertical strain</th>
<th>Volumetric strain</th>
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</thead>
<tbody>
<tr>
<td>( q' )</td>
<td>( p' )</td>
<td>( \sigma_3 )</td>
<td>( \epsilon_1 )</td>
<td>( \epsilon_v )</td>
</tr>
<tr>
<td>2 194.83 kPa</td>
<td>1 735.91 kPa</td>
<td>1 004.30 kPa</td>
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Maximum values

Minimum values for \( \sigma_3 \)

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**Remark:**
Preparation [%] \( \Delta \epsilon_1 = 0.020 \)

Lund No 15
Exc: LBI, AMS
Check: FRJ
Description of soil
Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content</th>
<th>Grain density</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
<th>Before test</th>
<th>At failure</th>
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</thead>
<tbody>
<tr>
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<td>09.01.91</td>
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<td>0.602%</td>
<td>71.5%</td>
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TEST-PROGRAM
Drained compression.
1. Isotropic compression. \( \sigma_3 \) 80-100 kPa \( \varepsilon_1 \) 0.069 \% \( \varepsilon_v \) -0.036 \%

2. Undrained compression.
Deformation rate: 3.9 \% ph

Maximum values

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>Mean normal stress ( p' )</th>
<th>Confining pressures ( \sigma_3 )</th>
<th>Vertical strain ( \varepsilon_1 )</th>
<th>Volumetric strain ( \varepsilon_v )</th>
</tr>
</thead>
<tbody>
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<td>1014.90 kPa</td>
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<td>0.00%</td>
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</table>

Minimum values for \( \sigma_3 \)

<table>
<thead>
<tr>
<th>( q' )</th>
<th>( p' )</th>
<th>( \varepsilon_1 )</th>
<th>( \varepsilon_v )</th>
</tr>
</thead>
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<td>728.67</td>
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<tr>
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<td>1265.11</td>
<td>920.80</td>
<td>3.83</td>
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<tr>
<td>1864.57</td>
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<td>0.00</td>
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<tr>
<td>2024.04</td>
<td>1513.58</td>
<td>5.68</td>
<td>0.00</td>
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<tr>
<td>2213.25</td>
<td>1669.15</td>
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<td>0.00</td>
</tr>
<tr>
<td>2383.20</td>
<td>1809.30</td>
<td>6.71</td>
<td>0.00</td>
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Job: Lund No 0
Encl. No: 17
Check: FRJ

Remark:
Preparation [%] \( \Delta \varepsilon_1 = -0.003 \%
Saturation not measured.
CUu=0 TRIAXIAL TEST NO 8901.P08  PAGE 1

<table>
<thead>
<tr>
<th>Description of soil</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td>20.9</td>
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<td>0.553</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Void ratio</th>
<th>Saturation</th>
</tr>
</thead>
<tbody>
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<td>kal90_01</td>
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<tr>
<th>Dimension H mm</th>
<th>D mm</th>
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</thead>
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<tr>
<td></td>
<td>71.5</td>
</tr>
<tr>
<td></td>
<td>69.7</td>
</tr>
</tbody>
</table>

TEST-PROGRAM

CU - Triaxial test.
free ends

Drained compression.

1. Isotropic compression. 
   \( \sigma_3 \) 100-100 kPa 
   \( \epsilon_1 \) -0.154 % 
   \( \epsilon_v \) 0.000 %

2. Undrained compression.
   Deformation rate: 3.1 % ph

<table>
<thead>
<tr>
<th>Deviator stress ( \sigma' )</th>
<th>Maximum values</th>
<th>Minimum values for ( \sigma_3 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.581.35 kPa</td>
<td>102.79 kPa</td>
<td></td>
</tr>
<tr>
<td>1.897.75 kPa</td>
<td>95.96 kPa</td>
<td></td>
</tr>
<tr>
<td>1.037.30 kPa</td>
<td>61.70 kPa</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean normal stress ( \sigma' )</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.42 %</td>
</tr>
<tr>
<td>0.00 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Confining pressures ( \sigma_3 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 %</td>
</tr>
<tr>
<td>0.00 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vertical strain ( \epsilon_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 %</td>
</tr>
<tr>
<td>0.00 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volumetric strain ( \epsilon_v )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 %</td>
</tr>
<tr>
<td>0.00 %</td>
</tr>
</tbody>
</table>

Job: Lund No 0

Encl. No: 19

Exc: LBI, AMS
Check: FRJ

Remark:
Preparation [%] \( \Delta \epsilon_1 = -0.019 \)
Volumetric strain not measured during isotropic consolidation.
### Description of soil

**Lund No 0**

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content %</th>
<th>Grain density</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal90_01</td>
<td>02.03.91</td>
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<td></td>
<td></td>
<td></td>
<td>2.65</td>
<td>0.560</td>
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</tbody>
</table>

### TEST-PROGRAM

**CU - Triaxial test.**

- Drained compression.
- 1. Isotropic compression. \( \sigma_3 \) 100-250 kPa
- \( \epsilon_1 \) 0.153 %
- \( \epsilon_v \) 0.264 %
- 2. Undrained compression.
- Deformation rate: 3.0 % ph

### Maximum and minimum values

<table>
<thead>
<tr>
<th>Deviator stress ( q' )</th>
<th>2.430.65 kPa</th>
<th>2.514.7 kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean normal stress ( p' )</td>
<td>1.783.62 kPa</td>
<td>2.314.2 kPa</td>
</tr>
<tr>
<td>Confining pressures ( \sigma_3 )</td>
<td>973.40 kPa</td>
<td>1.476.0 kPa</td>
</tr>
<tr>
<td>Vertical strain ( \epsilon_1 )</td>
<td>4.56 %</td>
<td>0.38 %</td>
</tr>
<tr>
<td>Volumetric strain ( \epsilon_v )</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
</tbody>
</table>

### Diagrams

- Graphs showing deviator stress \( q'/q'_f \) and mean normal stress \( p'/p'_f \) vs. vertical strain \( \epsilon_1 \) and volumetric strain \( \epsilon_v \).

### Job:

<table>
<thead>
<tr>
<th>Lund No 0</th>
<th>Encl. No</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>21</td>
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</tbody>
</table>

### Remark:

- Preparation [%] \( \Delta \epsilon_1 = -0.010 \)
- Error during saturation.

**Exc:** LBI, AMS

**Check:** FRJ
Description of soil

Lund No 0

<table>
<thead>
<tr>
<th>Calibration file</th>
<th>Date</th>
<th>Water content %</th>
<th>Grain density</th>
<th>Void ratio</th>
<th>Saturation</th>
<th>Dimension H mm</th>
<th>D mm</th>
<th>Before test</th>
<th>At failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>kal90.01</td>
<td>04.03.91</td>
<td>21.2</td>
<td>2.65</td>
<td>0.553</td>
<td>1.02</td>
<td>71.5</td>
<td>69.7</td>
<td></td>
<td>0.553</td>
</tr>
</tbody>
</table>

TEST-PROGRAM

Drained compression.

1. Isotropic compression. \( \sigma_3 \) 100-500 kPa
   \( \varepsilon_1 \) 0.132 %
   \( \varepsilon_v \) 0.508 %

2. Undrained compression.

Deformation rate: 3.0 % ph

Deviator stress \( q' \)
Mean normal stress \( p' \)
Confining pressures \( \sigma_3 \)
Vertical strain \( \varepsilon_1 \)
Volumetric strain \( \varepsilon_v \)

<table>
<thead>
<tr>
<th>Maximum values</th>
<th>Minimum values for ( \sigma_3 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( q' )</td>
<td>( p' )</td>
</tr>
<tr>
<td>2487.34 kPa</td>
<td>521.80 kPa</td>
</tr>
<tr>
<td>1837.01 kPa</td>
<td>455.93 kPa</td>
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<tr>
<td>1007.90 kPa</td>
<td>282.00 kPa</td>
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</table>

Deformation rate:

<table>
<thead>
<tr>
<th>Job:</th>
<th>Encl. No</th>
<th>Remark:</th>
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</thead>
<tbody>
<tr>
<td>Lund No 0</td>
<td>23</td>
<td>Preparation [%] ( \Delta \varepsilon_1 = 0.051 )</td>
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<tr>
<td>Exc:</td>
<td>Check:</td>
<td>LBI, AMS FRJ</td>
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CUu=0 TRIAXIAL TEST NO 8901.P11 PAGE 1

**Description of soil**

<table>
<thead>
<tr>
<th>Lund No</th>
<th>Water content %</th>
<th>Before test</th>
<th>At failure</th>
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<tr>
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**Calibration file**

<table>
<thead>
<tr>
<th>kal90_01</th>
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</table>

**TEST-PROGRAM**

Drained compression.

1. Isotropic compression. $\sigma_3$, $\epsilon_l$, $\epsilon_v$

2. Undrained compression.

Deformation rate: 3.1 % ph

**Maximum values**

<table>
<thead>
<tr>
<th>Deviator stress $q'$</th>
<th>Mean normal stress $p'$</th>
<th>Confining pressures $\sigma_3$</th>
<th>Vertical strain $\epsilon_l$</th>
<th>Volumetric strain $\epsilon_v$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.720.00 kPa</td>
<td>1.913.67 kPa</td>
<td>1.007.00 kPa</td>
<td>5.93 %</td>
<td>0.00 %</td>
</tr>
</tbody>
</table>

**Minimum values for $\sigma_3$**

<table>
<thead>
<tr>
<th>$q'$</th>
<th>$p'$</th>
<th>$\epsilon_l$</th>
<th>$\epsilon_v$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.68</td>
<td>20.23</td>
<td>0.02</td>
<td>0.00</td>
</tr>
<tr>
<td>3.30</td>
<td>21.10</td>
<td>0.03</td>
<td>0.00</td>
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<tr>
<td>11.14</td>
<td>20.11</td>
<td>0.06</td>
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<td>15.53</td>
<td>20.88</td>
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<td>0.00</td>
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</table>

**Graphs**

- Deviator stress vs. Normal stress
- Volumetric strain vs. Normal stress

**Job:**

- Lund No 0
- Encl. No 25

**Exc:**

- Check:
  - LBI, AMS, FRJ

**Remark:**

Preparation [%] $\Delta \epsilon_l = 0.000$