Creating an excellent playing surface
Managing the Rootzone

Micah Woods, Ph.D.
8 March 2010
“optimising the playing quality of the golf course in harmony with the conservation of its natural environment under economically sound and socially responsible management”
Pore Space
Pore Space

Water Content

Organic Matter
Pore Space
Water Content
Air Content
Organic Matter
Pore Space
<table>
<thead>
<tr>
<th>Porosity Type</th>
<th>Recommendation</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeration Porosity</td>
<td>15 to 30%</td>
<td>4%</td>
</tr>
<tr>
<td>Capillary Porosity</td>
<td>15 to 25%</td>
<td>37%</td>
</tr>
<tr>
<td>Total Porosity</td>
<td>35 to 55%</td>
<td>41%</td>
</tr>
<tr>
<td></td>
<td>Recommendation</td>
<td>Original Material</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Aeration Porosity</td>
<td>15 to 30%</td>
<td>31%</td>
</tr>
<tr>
<td>Capillary Porosity</td>
<td>15 to 25%</td>
<td>14%</td>
</tr>
<tr>
<td>Total Porosity</td>
<td>35 to 55%</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>Recommendation</td>
<td>Original Material</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------</td>
<td>-------------------</td>
</tr>
<tr>
<td><strong>Aeration Porosity</strong></td>
<td>15 to 30%</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Capillary Porosity</strong></td>
<td>15 to 25%</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Total Porosity</strong></td>
<td>35 to 55%</td>
<td>45%</td>
</tr>
</tbody>
</table>
Organic Matter
Annual Recommendation for Organic Matter Management

Sand Topdressing:

0.015 m³/m² = 15 L/m² = 1.5 cm
Annual Recommendation for Organic Matter Management

Sand Topdressing:

\[0.015 \text{ m}^3/\text{m}^2 = 15 \text{ L/m}^2 = 1.5 \text{ cm}\]

Coring: remove 20% of the green surface area
Water Content
Water Content Recommendation
10 to 25%
Air Content
Air Content Recommendation
More than 25%
Root Growth
Soil Chemical Properties
Soil pH: more than 5.5

Phosphorus: 35 ppm

Potassium: 50 ppm

Soluble salts: know if you have a potential problem

Nitrogen: apply the right amount
Thank you!

micah@asianturfgrass.com

www.asianturfgrass.com