Material Testing Results

Date: July 11, 2000
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Manufacturer: Fosroc Inc. (Mining Division)
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Material: Ultracem
Lot #: N/A

Material Application: Ultra fine cement for sealing small rock fissures

Mfg. Plant
N/A

Std. Bag Weight: 30 lbs.

Testing Conditions:
Outside Temperature 80*F
Humidity 65%

Equipment Used:
Model CG570/H Pump: 2TJ6 Progressing Cavity
Mixer Paddle Power: Hydraulic

Std. Mix Ratios:
18 lbs. water per 50 lb. bag

Batching Method:
Quantity Material: 90 lbs.
Quantity Water: 54 lbs

Mixing Time:
20-30 Seconds

Batch Temp:
82 *F

Specific Gravity:
SG = 1.67

Flow Cone
13 Seconds

Pumping Method:
Recirculated through hose, recorded pressures at various flow rates.

Flow Rate/Pressure:

<table>
<thead>
<tr>
<th>Hose (50' L x 1 1/4&quot; I.D.)</th>
<th>Flow rate</th>
<th>Pressure</th>
<th>Flow Rate</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0 GPM</td>
<td>0.5 PSI</td>
<td>GPM</td>
<td>PSI</td>
<td></td>
</tr>
<tr>
<td>10.0 GPM</td>
<td>2.0 PSI</td>
<td>GPM</td>
<td>PSI</td>
<td></td>
</tr>
<tr>
<td>15.0 GPM</td>
<td>4.5 PSI</td>
<td>GPM</td>
<td>PSI</td>
<td></td>
</tr>
<tr>
<td>20.0 GPM</td>
<td>6.0 PSI</td>
<td>GPM</td>
<td>PSI</td>
<td></td>
</tr>
</tbody>
</table>

Observations:
Very smooth, creamy looking product, Very easy to mix and pump. Discharge pressures less than water at the same flow rates.

Results:
ChemGrout rates the pumpability of this material as “excellent” with a rating of “A”. All ChemGrout models can mix and pump this material.