Concrete Finishing

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Concrete Quality Issues

**NOTICE**

BE ADVISED: LACK OF PLANNING ON YOUR PART... DOES NOT CONSTITUTE AN EMERGENCY ON MY PART
Ordering the Correct Mix

**SHELBY MATERIALS**

**Customer Service**

**Location:** BEECH GROVE READY MIX - 3421 W. 31st St., 31906-0000 - NAPA SPORT'S COMPOSITE DAMAGE

**Product Description:** CUSTOM ORDERED

**Quantity:** 6

**Cubic Yards:** 0.2

**Price:** $56.00

**Wet Price:** $60.00

**Wet Unit Price:** $30.00

**Shipment Instructions:**

**Property Damage Release**

**Denton:** 512-786-8320

**Order Number:** 2011-220747

**Ticket Date:** 1/2/2013

**Ticket Time:** 1:50 AM

**Vehicle Number:** 632

**Driver Name:** L. VIVETTI

**Order Date:** 1/2/2013

**Load Number:** 281

**Cubic Volume:** 0.4

**Net Weight:** 1,064 lbs

**Net Unit Price:** $748.00

**Net Total:** $1,064.00

**Concretes:**

- **Type:** 80/30
- **Units:** 4
- **Total:** 0.2

**Mix Code:** B08B0-PT

**Design:** 239104

**User:** 165973

**Disp Ticket Num:** 239104

**Material:**

<table>
<thead>
<tr>
<th>Design Qty</th>
<th>Required</th>
<th>Batched</th>
<th>% Var.</th>
<th>Moisture</th>
<th>Actual</th>
<th>Wat</th>
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<tbody>
<tr>
<td>658 lb</td>
<td>658 lb</td>
<td>6560 lb</td>
<td>-0.30%</td>
<td>3.40% M</td>
<td>479 lb</td>
<td>85 lb</td>
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<tr>
<td>1413 lb</td>
<td>14600 lb</td>
<td>14680 lb</td>
<td>-0.30%</td>
<td>0.40% M</td>
<td>54 lb</td>
<td>85 lb</td>
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<tr>
<td>1349 lb</td>
<td>13540 lb</td>
<td>13540 lb</td>
<td>-0.03%</td>
<td>0.30% M</td>
<td>13 lb</td>
<td>0 lb</td>
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<tr>
<td>427 lb</td>
<td>4233 lb</td>
<td>4300 lb</td>
<td>+3.01%</td>
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<td>0 lb</td>
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<tr>
<td>245.0 lb</td>
<td>2153.7 lb</td>
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<td>-0.17%</td>
<td>13 lb</td>
<td>2150.0 lb</td>
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<tr>
<td>26.32 oz</td>
<td>263.20 oz</td>
<td>263.00 oz</td>
<td>-0.83%</td>
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<tr>
<td>4.00 IC</td>
<td>263.20 oz</td>
<td>76.00 oz</td>
<td>-71.12%</td>
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</table>

**Num Batches:** 1

**Design WC:** 0.372

**Water/Cement:** 0.411

**Load Time:** 1:46

**Mix Age:** 5:00

**Used In Load:** 214.0 oz

**Completed Load Time:** 1:48

**Nashes:**

- **Tares**

**B 1 ST:** 0 LB
**B 1 ST:** 0 LB
**ET:** 0 LB
**ET:** -70 LB
**WAT SCALE:** 80 of 40 Sec.
Concrete is Perishable and is The Unfinished Product

The quality of the concrete depends directly on the plan and the workers in the field!
Testing
Consolidation or Placement
Consolidation or Mix Design?
Free Fall and Mix Design
Waiting Period
Bleeding
Consider a Summer Day with an Outdoor Air Temperature of 80°F, an Outdoor Relative Humidity of 60%, a Concrete Temperature of 100°F, and a Wind Velocity of 10 mph.

Table Provides an Estimate of Cracking Potential

Take Caution
Fogging

Don’t drown the surface
Cracking and Control Joints
Trouble Spots for Cracks
Reentrant Corners and Slab Penetrations
ACI 360R Reentrant Corner Plan Detail

Reentrant corner and discontinuous joint detail.
Discontinuous Joint Plant ACI 360R
Discontinuous Joint Plant ACI 325.12R
Prevention

• Place joints at sharp change in direction or change in thickness or width of the slab.
• Avoid L-Shaped panels
• All panels should be square or nearly so. Length should not exceed 1.5x width.
• Saw as soon as possible
• Use early-entry saws
• Break bond(expansion joint material) where slab abuts walls or columns
Under Finish – Over Cure
Curing

Burlap Wet Cure

Winter Time Cure
Blankets or plastic is effective but usually leave permanent marking.
Uneven cure will leave streaks that will permanently mark the concrete.
Slab Finishing

• Make sure all bleed water is gone.
• Do not add water or cement powder to aid in finishing.
• Do not steel-trowel air-entrained mixes.
• The less finishing, the stronger the surface of the concrete.
What does it all boil down to?

- Pre-Plan the project
- Order Good Quality Concrete
- Don’t add water
- Under-finish Concrete
- Timely Jointing
- Cure... Cure... Cure...
Questions and Answer
or
is it Really Quality Assurance?