Material and Application Guide

21AA Blast Furnace Slag – Levy Plant #1

Material: Blast Furnace Slag
Product: MDOT – 21AA
Location: Levy #1 – State Pit #82-19

Applications:
- Structural base under portland cement concrete pavements
- Structural base under asphaltic concrete pavements
- Structural base under portland cement concrete slabs and foundations
- Structural base under interlocking paving units
- Structural fill
- Surfacing for unpaved driveways, roads and parking lots

Description:
A dense graded base aggregate, produced by crushing and screening air-cooled iron Blast Furnace Slag. A light brown to gray crystalline aggregate formed simultaneously with the production of iron in a blast furnace. The particles are sized from 1½” (37.5mm) to zero (dust).
Specifications: Michigan Department of Transportation

21AA Blast Furnace Slag conforms to all the requirements of Michigan Department of Transportation “2003 Standard Specifications for Construction”, section 902 “Aggregates”

Gradation:

<table>
<thead>
<tr>
<th>U.S. Sieve</th>
<th>2½”</th>
<th>1”</th>
<th>¾”</th>
<th>⅝”</th>
<th>⅝”</th>
<th>#4</th>
<th>#8</th>
<th>LBW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric Sieve</td>
<td>37.5mm</td>
<td>25.0mm</td>
<td>19.0mm</td>
<td>12.5mm</td>
<td>9.5mm</td>
<td>4.75mm</td>
<td>2.36mm</td>
<td></td>
</tr>
<tr>
<td>Specification</td>
<td>100</td>
<td>85-100</td>
<td>-</td>
<td>50-75</td>
<td>-</td>
<td>-</td>
<td>20-45</td>
<td>4-10</td>
</tr>
<tr>
<td>2008 Average</td>
<td>100</td>
<td>94</td>
<td>82</td>
<td>65</td>
<td>55</td>
<td>38</td>
<td>27</td>
<td>4</td>
</tr>
</tbody>
</table>

Physical Properties:

- Shipping Moisture (2008 Average) – 3.5%
- ASTM C 29, Loose Unit Weight (2008 Average) – 94 lb/ft³
- ASTM C 29, Rodded Unit Weight (2008 Average) – 104 lb/ft³
- ASTM C 131, Abrasion and Impact in the Los Angeles Machine ∗

∗ Not applicable to Blast Furnace Slag, see Michigan Department of Transportation “2003 Standard Specifications for Construction” Table 902-2

General Usage Guide:

The 21AA Blast Furnace Slag should be placed 6” to 18” thick, depending upon ground conditions and design loadings, in lifts not exceeding 8”. Prior to the placement of any base material, the grade should be compacted and trimmed to the design density & elevations and be free of any standing water and not in a frozen condition. Base material should be compacted at optimum moisture content (approximately 8% to 10%) to 95% to 100% relative density or to the compaction level as specified in the design plans.

Field Estimating Quantities (Compacted in Place):

<table>
<thead>
<tr>
<th>100 sq. yd.</th>
<th>200 sq. yd.</th>
<th>500 sq. yd.</th>
<th>1,000 sq. yd.</th>
<th>2,000 sq. yd.</th>
<th>5,000 sq. yd.</th>
<th>10,000 sq. yd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6” Deep</td>
<td>28 tons</td>
<td>57 tons</td>
<td>142 tons</td>
<td>283 tons</td>
<td>567 tons</td>
<td>1,417 tons</td>
</tr>
<tr>
<td>8” Deep</td>
<td>38 tons</td>
<td>76 tons</td>
<td>189 tons</td>
<td>378 tons</td>
<td>756 tons</td>
<td>1,889 tons</td>
</tr>
<tr>
<td>10” Deep</td>
<td>47 tons</td>
<td>94 tons</td>
<td>236 tons</td>
<td>472 tons</td>
<td>944 tons</td>
<td>2,361 tons</td>
</tr>
<tr>
<td>12” Deep</td>
<td>57 tons</td>
<td>113 tons</td>
<td>283 tons</td>
<td>567 tons</td>
<td>1,133 tons</td>
<td>2,833 tons</td>
</tr>
</tbody>
</table>