Ohio Aggregate Certification and Quality Aggregate Availability in the Future

Pat Jacomet, OAIMA
Flexible Pavements Annual Meeting
2006
Brief History of Training for Aggregate Technicians

• 1998 ODOT and Ohio Aggregate Association formed committee to develop the “Aggregate Sampling and Testing Technician” program.

• May 1999 we conducted the first training session including 225 ODOT and supplier personnel
Driving Forces:

• Federal Regulations
• Warranties
• Design/Build Contracting
• ODOT & Industries Desire to Improve It’s Products, Quality and Image
Code of Federal Regulations
23 Part 637
Calls For:

• Qualified Technicians

• Acceptance Program

• Independent Assurance Program
A Cooperative Effort

Ohio Department of Transportation

Federal Highway Administration

Ohio Aggregates and Industrial Minerals Association
Planning is Everything!

Suppliers, Contractors and Owners need to be on the “Same Page”
New training was needed to meet FHWA/ODOT and suppliers needs

• Level 1 Ohio Aggregate Technician
• Person who obtains this certificate will be trained in stockpile management processes, load out procedures and how to take a sample properly. Must pass written test.
Level I Format

• Classroom Setting (Portable Program)
Level I

- Visual Training
- Video
- Slides
- Live Segregation Model
- Written Manual
- Written Test
Level I Aggregate Technician
Focus On Stockpile Management & Material Recovery

*Stresses Safety*
Level I Topics

• *Segregation of Aggregates* - The Separation of Coarse and Fine Particles

FHWA Stockpile Video
Level I (cont.)

- **Stockpiles**
  - Types
  - Influencing Factors
  - Corrective Actions
  - Load-Out - Sampling
  - Safety Concerns
  - Consequences
Proper Material Load-Out & Sampling
Real-Life Segregation Models
Proper Sampling Techniques
Level I-Hands-On Learning
Stress Consequences of Poor Techniques
Load-Out & Sampling

- Shut Down
- Time
- New Mix Design
- Downtime
- Lane Closures
- Penalties
- Litigation
• **Level II Ohio Aggregate Technician**

• Level 1 is a prerequisite

• Person who obtains this certificate will be trained in basic Aggregate tests Gradation, Decant, Unit Weight and % Fractured in gravels. Must pass written test and then show physical proficiency in each test.
Level II Topics
All AASHTO Based - ODOT Modified
FHWA-M-TRAC Training Materials
Review of Sampling - Sample Reduction

• Minus No. 200 (Decant)
• Sieve Analysis
• Unit Weights
• Fractured Particles
• Visual Deleterious
ODNR-Geological Survey, Alum Creek
Level II Format

Day 1
• Classroom Setting & Written Testing

Day 2
• Hands-On Examination
• Monitored by Qualified/Experienced Trainers.
Ohio Level III Aggregate Technician

• Prerequisites – Level I & Level II
• First Classes Held in January/February, 2006
• Industry Roll-Out in June 2006
• Covers basic quality control tests including Sodium Sulfate Soundness, L.A. Abrasion, Deleterious, Specific Gravity, Sand Equivalent, Fine Aggregate Angularity & Micro Deval

• 2 Day Classroom Training with written test.

• Individual Proficiency testing for quality tests chosen by the technician.
Results So Far

A True Win:Win
Progress Report: Intangibles

• Increased Quality Awareness

• Co-operation between Agency, Contractors & Industry

• Partnering in Developing QC/QA Program
Improved Communication & Partnering

Producers

Contractors

ODOT & FHWA
By-The-Numbers

Measurable Results

ODOT 57 [703.02] Comparison

Lower Standard Deviation – Raised Average
[703.17] 304 Comparison

Lower Standard Deviation and Raised Average
Training So Far:

**Level I**
3,683  ODOT & Industry Personnel Trained & Active

**Level II**
1,200  Trained & Active

**Level III**
33 Trained
Consistency + Reproducibility + Safety = Improved Quality
Welcome to OAIMA

Teachers/Students Click Apple

The Ohio Aggregates & Industrial Minerals Association is the trade association in Ohio that represents all of the state's mining operations, except coal. These commodities include mostly construction materials, both natural and manmade, such as aggregates (which are sand, gravel, slag, and crushed limestone, dolomite, and sandstone), salt, clay, shale, gypsum, industrial sand, building stone, lime, cement, and recycled concrete.

Environmental Compliance Manual

<table>
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<tr>
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<tr>
<td>Aggregate QC/QA S5 1069</td>
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Aggregate QC/QA

- Aggregate QC/QA SS 1069
- Supplemental 1005 revised 4/12/02
- Generic ODOT QCP, July '02
- QC/QA Use Guidelines
- QC Checklist May 2002
- Supplemental Specification 1069
- Supplemental Specification 1069 - Color Coded
- Percent Within Limits Worksheet
- Download Worksheet
- Level I Technician List
- Level II Technician List
- Level III Technician List

Aggregate Specifications

Quick Links

- MSE Wall Specifications
- Calendar of Events (.pdf)
- Facts Sheet (.pdf)
- Senate Bill 63 As Passed By The House of Representatives
- Down Load Official Logo
- PowerPoint Presentations
- MSHA'S FINAL HAZARD COMMUNICATION RULE (30 CFR 47)
- Print Registration Form: Level I Ohio Aggregate Technician Training
- Print Registration Form: Level II Ohio Aggregate Technician Training
- Print Registration Form: Level III Ohio Aggregate Technician Training
- Level I & Level II Recertification Dates
Construction Central

Project Information

BuckeyeTraffic.org

Featuring Information on:

Road Activity Information
Snow & Ice Information
RWIS Roadway Condition Sensors
Web Cams

Statewide Construction Overview:

2006 Ohio Road Construction Online Brochure
Dynamic online brochure with information on major highway projects for the 2006 construction
Aggregate Information List

- Specific Gravities List 2006 (Updated on 3/23/06)
- Freeze-Thaw Results (Updated on 3/4/06) Format change—only most recent tests shown
- Coarse Aggregate Round Robin Results
- Natural Sand Sources that Meet the SiO2 Requirements of 424 (Updated on 12/1/05)
- Fine Aggregate Angularity Test Results (Updated on 3/23/06) New format
- Guidelines for Evaluating Aggregate for SR Designation
Contracts Home --> Construction --> Certified Producers/Suppliers

Certified Producers and Suppliers

513, 516, 517, 518 - Structural Steel Fabricators
711.12 - Certified Iron Castings Producers

Supplement 1019 - Certified Metal Pipe Suppliers
Supplement 1022 - Certified Seed Suppliers
Supplement 1026 - Certified Fly Ash Sources and Suppliers
Supplement 1028 - Certified Cement Producers
Supplement 1032 - Certified Asphalt Binder Suppliers
Supplement 1034 - Certified GGBF Slag Suppliers
Supplement 1042 - Certified Guardrail Suppliers
Supplement 1045 - Certified Micro-Silica Suppliers
Supplement 1056 - Certified Plastic Pipe Suppliers
Supplement 1057 - Certified Fencing Suppliers
Supplement 1059 - Certified Reinforcing Steel/Wire Mesh Suppliers
Supplement 1059 - Aggregate Producers/Suppliers
Supplement 1072 - Certified Lumber Suppliers
Supplement 1073 - Certified Precast Concrete Producers
Supplement 1074 - Certified Concrete Pipe Producers
Supplement 1079 - Prestressed Concrete Bridge Member Fabricators
### Belpre Sand & Gravel Co.

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<tr>
<th>P/S Number</th>
<th>City</th>
<th>State</th>
<th>District</th>
<th>Material Type</th>
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<tr>
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<td>Ohio</td>
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### Bowman, D. H., & Sons

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Factors Influencing Future Aggregate Availability

• SiO2
• Fracture Counts
• SR Designations
Silicon Dioxide Contents for Item 424 “Fine Graded Polymer Asphalt Concrete”

Specification calls for at least 50% SiO2 by Weight

Much More Stringent than Acid Insoluble Residue Test called for in 703.02 which specifies 25% minimum

92 Listed Sources 21 of these out-of-state
# ODOT Office of Materials Management

List of Natural Sand Sources that meet the Silicon Dioxide Requirement of ODOT item 424 "Fine Graded Polymer Asphalt Concrete"

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<th>PS_CD</th>
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<tr>
<td>04120</td>
<td>52</td>
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<td>04121</td>
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<th>ZIP</th>
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<tr>
<td>HILLSDALE-RIANKOMNI</td>
<td>FUL</td>
<td>PO BOX 223</td>
<td>RANSOM</td>
<td>MI</td>
<td>43502</td>
<td>12/17/2004</td>
<td>51.8</td>
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<tr>
<td>MICHIGAN-JEROME/MMI</td>
<td>XXX</td>
<td>098 EAST CHICAGO ROAD</td>
<td>JEROME</td>
<td>MI</td>
<td>40240</td>
<td>12/22/2004</td>
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<td>ROUND LAKE-ADDISON</td>
<td>XXX</td>
<td>8707 ROUND LAKE HIGHWAY</td>
<td>ADDISON</td>
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<td>49220</td>
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Fractured Pieces

ODOT proposal to replace SS1021,

“Method of Test for Determination of the Percent of Fractured Pieces in Gravel”

With

With ASTM D5821, “Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate”
Fractured Pieces

Industry Concerns:

• Is a 40% a 40%?

• 703.04 & 703.05 specify 40% minimum fractured pieces

• ODOT’s internal research comparing the three methods does not give much guidance.

• Moving to D5821 without changing the specification limits will severely impact availability of Natural Aggregates for 703.04 and 703.05
SR Designation Changes

• Addition of the SRH Designation

• This designation acknowledges that some aggregates may polish rapidly under Heavy Traffic Conditions

• This designation allows these sources to be utilized when Heavy traffic conditions are not a concern.
New Statewide Awareness Campaign
More Information at:

WWW.OAIMA.ORG

1-800 OH ROCKS