

STATUS OF CAPP

Ronald P. Walker
Quality Assurance Engineer
INDOT

As of September 1, 1997 all aggregates that are supplied to INDOT projects or INDOT locations will be required to originate from a Certified Aggregate producer. By setting this standard INDOT is making a further commitment to providing a Quality Control/Quality Assurance approach to the paving industry.

The Indiana Certified Aggregate Producer Program provides for a Certified producer to ship materials on demand without the previous requirement for INDOT pre-ship gradation testing. The program focuses on production testing by the producer and a site specific Quality Control Plan. In order to become certified a producer must:

1. Make a commitment to product quality management.
2. Have suitable materials in the deposit being mined.
3. Have facilities capable of consistently processing uniform materials.
4. Have a source Quality Control Plan that will ensure that the mineral aggregates have a 95% assurance of being in accordance with the Departments quality and uniformity requirements.
5. Have laboratory facilities that meet the requirements of the program.
6. Have in employment a Department Certified Aggregate Technician.

The producer is required to proceed through a Coordinated Testing phase and a Trial phase before becoming Certified. The Coordinated Testing phase is the initial phase whereby the producer develops the details of the Quality Control Plan and demonstrates the ability to produce to the 95 percent compliance standard. Mean test values and standard deviations for the Certified Materials are developed during this period, which is required to be at least 3 months.

The Trial phase is the second phase for Certification. This phase is started when the producer has successfully completed the Coordinated Testing phase and the Quality Control Plan has been approved. During this phase the producer demonstrates the ability to follow the Quality Control Plan. This phase is normally at least one month in length.

When the producer and INDOT are satisfied with the trial phase an audit is scheduled. The audit verifies that the producer is following the Quality Control Plan and additional checks on sampling and testing procedures are made. Upon resolution of any problems arising during the audit and with a favorable recommendation from the District the producer becomes Certified.

A Certified producer is permitted to ship material without INDOT pre-ship testing. Each Certified producer is assigned an approval number (Q number) that is entered on each weigh ticket representing material for Department use. Acceptance of material sent directly to each project is based on this Q number.

INDOT will maintain control of the quality testing of the aggregates and monitor compliance with the program by an audit system. At least once a year an audit, similar to the audit conducted during the Trial phase, will be conducted on each Certified producer. Additional audits or partial audits may be done on a random basis to address specific problems that may occur.

Although pre-ship approval by INDOT of material for Certified producers is no longer required there are several controls contained in the Quality Control Plan to assure a uniform material. These include the following:

1. Production Flow Diagram. The production flow diagram is a step-by-step chart showing all the points involved with mining and processing from the natural deposit to the finished product. This chart is used to locate areas in the processing that may be improved to provide a more consistent material. Changes in the process are recorded and the resulting possible change in gradation can be easily documented.
2. Stockpiling Procedures. The stockpiling procedures are documented and monitored during production. Loader operators thus become an integral part in the overall control of the product.
3. Load-out Procedures. Procedures for loading trucks are also documented and monitored during production.
4. Sampling Methods. The proper techniques for sampling materials are required.
5. Testing Methods. Testing procedures are required to follow INDOT standards and be conducted with proper equipment.
6. Control Limits. Gradations on critical sieves for some materials are required to be within established control limits that are much more restrictive than the Standard Specification limits. Provisions are required to isolate non-complying materials from the production stockpile when processes are not in control.

The obvious benefit of the Certified Aggregate Producer Program is that the producer is providing material that has a consistent gradation. Additional benefits include improved customer service, more plant control and better documentation.

Improved customer service is obtained by being able to ship materials on demand. With the present pre-ship approval system, delays for shipment are unavoidable with the requirements of sampling and testing.

Improved plant control is realized when actual production is related to it's effect on gradation. Plant changes are documented and subsequent testing of aggregates resulting from that change can be analyzed. With a history of these events it becomes evident which plant changes have the greatest effect on the end product.

Finally, by documentation of test results for both during production and as the aggregate is loaded out, the producer is able to provide the customer with valuable information of what he is able to supply. Mix producers can save time and money in designing their mixtures and have access to test data during actual production. Problems that may occur due to inconsistent gradations can be quickly traced with information readily available not only on the gradation of the product but also stockpiling procedures, load-out procedures or any specific problems that may have occurred at the aggregate source.

As we approach increased Quality Control for all transportation materials, more and more emphasis will be placed on the raw components that comprise those materials. When you realize that 95% of a ton of asphalt mixture is aggregate and 75% of the volume of a yard of concrete is aggregate it becomes obvious what the impact of this product will be.