

Ohio EPA Policy	Use of Blast Furnace and Steel Slag	
DSW-0400.027 Removed	Statutory reference: Rule reference:	Ohio EPA, Division of Surface Water Revision 0, June 1, 1995 Removed, April 30, 2003
THIS POLICY DOES NOT HAVE THE FORCE OF LAW Pursuant to Section 3745.30 of the Revised Code, this policy was reviewed and removed.		

This policy does not meet the definition of policy contained in Section 3745.30 of the Ohio Revised Code. Ohio EPA is removing this document from the Division of Surface Water Policy Manual and is considering addressing this topic in a future rulemaking.

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DIVISION: DSW
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Use of Blast Furnace and Steel Slag

PURPOSE: This policy is intended to cover the use of slag generated by the iron and steel making industry and recognizes a distinction between blast furnace slag and steel slag.

BACKGROUND: The iron and steel making industry generates large volumes of blast furnace slag and steel slag. It is environmentally preferred to avoid disposal of these materials in landfills, and to beneficially use them. To date steel slag use on construction projects has not represented significant environmental problems.

SCOPE: This interim policy addresses beneficial use of blast furnace and steel slag generated during iron and steel making. It has been developed with input from the Ohio Steel Industry Advisory Committee. Ohio EPA recommends immediate implementation of this Interim Final policy. The Agency reserves the right to revise this policy as more information becomes available. This interim policy shall expire on May 31, 1996.

Nothing in this Interim slag policy shall be construed to relieve parties of their rights and obligations to comply with applicable federal, state or local statutes, regulations or ordinances nor shall it be construed to limit the authority of the State of Ohio to seek relief for claims or conditions arising from violations thereof. Specifically, processing, stockpiling and storage of steel slag and blast furnace slag must meet applicable environmental regulations pertaining to dust control and storm water runoff.

POLICY:

1. Use of steel slag and blast furnace slag in asphalt is encouraged from an environmental perspective.
2. Use of blast furnace slag in concrete is encouraged from an environmental perspective.
3. Generally, blast furnace slag does not represent significant environmental problems when used as a construction material above the ground water table. However, certain blast furnace slag may cause some problems when used for bedding and backfill in storm sewer and sanitary sewer projects or used as a base material in poor drainage conditions. Blast furnace slag used in bedding and backfill for storm sewer and sanitary sewer projects or used as a base material in poor drainage conditions must pass the Illinois Testing and Acceptance Procedure of Crushed Slag Samples for Leachate Determination (paragraphs I.1.a - I.1.d., II, III) as certified by the company supplying the materials. Documentation of stockpile location and test results shall be maintained at the slag processing facility and shall be available upon request.
4. Processing, stockpiling, and storage of steel slag and blast furnace slag must meet applicable environmental regulation pertaining to dust control and storm water runoff (ORC 3704 and 6111).

State of Illinois
Department of Transportation
Bureau of Materials and Physical Research

TESTING AND ACCEPTANCE PROCEDURE
OF CRUSHED SLAG SAMPLES
FOR LEACHATE DETERMINATION

I. SAMPLING PROCEDURE

The following sampling method for obtaining samples of air-cooled blast furnace slag for leachate test shall be used

1. PROCEDURE

- a. Sampling. The material to be shipped should be sampled as the stockpile is being built. Each sample be taken in random increments over 1500 tons stockpiled.
- b. Obtaining the sample after the stockpile built. The sample may be taken by shovel or hand. The sample shall be selected randomly from both the exterior and interior of the stockpile. The producer must use the services of heavy equipment for the excavation of interior material.
- c. Sample size and sample reduction. The field sample should be 80-100 lbs. in mass. From this field sample, a test sample of 20-25 lbs. shall be quartered out.
- d. Sampling frequency. The sampling frequency should be a minimum of one sample per 1500 tons of material with a 5-sample minimum per stockpile.
- e. Documentation. Stockpile location and test results shall be maintained at the plant and shall be available to the Illinois Department of Transportation inspector.

II. SULFUR LEACHATE TEST PROCEDURE

The test procedure involves soaking the slag material in water for a specified period of time and then observing the color the water. A greenish-yellow coloration indicates a problem. The smell of H₂S usually accompanies the observation of colored water.

1. EQUIPMENT NEEDED

- a. A five-gallon bucket for soaking the sample
- b. Filter paper for filtering the water
- c. A funnel through which to filter the water
- d. A glass container for observing the water
- e. The rock color chart used for color comparisons is distributed by the Geological Society of America

2. TEST PROCEDURES

- a. Prepare a test sample of approximately 20-25 lbs. from field sample of approximately 100 lbs.
- b. The test sample should then be rinsed over a #4 sieve to remove any

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finer particles that may be clinging to the larger particles. If the material to be tested is a densely graded material, eliminate this step.

- c. Next, place the test sample in a bucket and fill with water until the sample is covered by at least 1/2 inch of water. Allow the sample to soak for 25 hours.
- d. After soaking for 24 hours, thoroughly mix the water and collect a water sample of approximately 100 ml.
- e. Filter the water sample to remove any suspended solids which may interfere with the color observations.
- f. If the color of the filtered water is equal to or darker than the moderate greenish-yellow color from the rock chart (HUE 10 Y), this material fails. If the water appears clear, then allow the sample to soak for another 24 hours and repeat steps "d" thru "f".
- g. If after 48 hours no color appears, the material is assumed to have aged long enough to eliminate any leachate problems and the sample is acceptable.

III. ACCEPTANCE OF MATERIAL

Acceptance is based on a stockpile-by-stockpile method. Each stockpile is acceptable and may be shipped if its failure rate is 10% or less. The number of samples used for the determination of its failure rate shall be in accordance with the sampling frequency described in Section I.l.d. of this procedure.