ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Illinois Department of Natural Resources

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Bruce Rauner, Governor
Wayne A. Rosenthal, Director

Operator Memorandum 2016-04

To: All Coal Mine Operators/Consultants

From: Scott K. Fowler, Supervisor
Land Reclamation Division

Date: September 26, 2016

RE: Use of Non-IDOT Approved Riprap Sources for Erosion Control

The purpose of this memorandum is to establish acceptable standards for material used as riprap in erosion control plans and to ensure compliance with 62 Ill. Adm. Code 1816/1817.43(a)(4)(A) and 1816/1817.41(d)(1). The standards apply to riprap that will be placed at the outlet of pond and impoundment spillways, embankment down drains, ditch check dams, shorelines, and any other uses intended to control flow or wave action for the prevention of erosion.

If an operator uses riprap supplied by an Illinois Department of Transportation (IDOT) approved/qualified producer of aggregate sources, the only required criteria to meet will be the appropriate sizing for the expected design flow. A list of qualified aggregate producers can be found through the IDOT website (http://www.idot.illinois.gov/Assets/uploads/files/Doing-Business/Specialty-Lists/Highways/Materials/Materials-&-Physical-Research/Aggregate/approvedaggregatesources.pdf) or by contacting the Bureau of Materials and Physical Research.

If an operator wishes to use any other material not supplied by an IDOT approved/qualified producer of aggregate sources, additional justification will be required as detailed in the attached "CRITERIA FOR NON-IDOT APPROVED RIPRAP SOURCES."

CRITERIA FOR NON-IDOT APPROVED RIPRAP SOURCES

The following guidelines describe the acceptable materials and testing required by the Department for the use of riprap **not** supplied by an IDOT approved/qualified producer of aggregate sources. Specifications issued by an Illinois licensed engineer that differ from these guidelines may be permitted; however, ample justification will be required.

Quality Sampling

1. All proposed riprap shall be sound, durable, and angular in shape.

2. The riprap shall be free of seams, cracks, or other defects that would compromise its structural integrity or increase its deterioration from weathering or water action.

3. No shale or organic material will be allowed.

4. Rubble concrete may be used provided it has no protruding metal bars.

Testing Procedure

At a minimum, any proposed material shall meet the following requirements:

1. Bulk specific gravity (saturated surface-dry condition) – Not less than 2.3 (ASTM C127)

2. Water absorption (24 hour immersion) – Not more than 4.0% (ASTM C127)

3. Soundness – Weight loss in 5 cycles shall be not more than 20% when sodium sulfate is used or 25% when magnesium sulfate is used. (ASTM C88)

Gradation

1. The proposed riprap shall be composed of a well-graded mixture such that 50% of the mixture by weight shall be larger than the d50 size as determined from the design. The proposed mixture shall also have a sufficient mixture of various sizes to fill voids, and the diameter of the largest stone size shall be 1.5 times the d50 size.

2. Elongated pieces having width or thickness less than one-third the length shall not exceed 10% percent of the total. The material shall be of shapes that will form a stable protection structure of required depth.

Certification

The attached engineering certification entitled "CRITERIA FOR NON-IDOT APPROVED RIPRAP SOURCES" must be submitted **within 30 days** of placement.

CERTIFICATION

CRITERIA FOR NON-IDOT APPROVED RIPRAP SOURCES

I hereby certify that, in my professional judgment, riprap material placed as part of _____ (state whether it is part of a pond, ditch, impoundment, etc. and provide the structures specific name or number designation) within Permit No. _____ conforms to the minimum requirements, as detailed in Operator Memorandum 2016-04, to ensure erosion control and compliance with 62 Ill. Adm. Code 1816/1817.43(a)(4)(A) and 1816/1817.41(d)(1).

INDIVIDUAL P.E. CERTIFICATION

Name	Illinois Registration Number (Seal)
Firm	Signature
Address	Date
City, State Zip Code	Phone Number

PROFESSIONAL DESIGN FIRM CERTIFICATION

Provide professional design firm name and number, if applicable. If not, respond N/A in the space below.

_____ As an employee of a Professional Design Firm, as defined by the Illinois Department of Financial and Professional Regulation, I certify that the professional design firm is registered and in good standing with the Illinois Department of Financial and Professional Regulation.

Professional Design Firm Name	Professional Design Firm Number