2011 Project Manager Conference

NDOR
Nebraska
Department of Roads

Materials & Research
M&R
Setting the Standard

2011 Project Manager Conference

Concrete Pipe Policy

Lithium Nitrate Admixture

4x8 Cylinders

Blessings of the Concrete

Concrete Pipe

Highlights
New Policy

-Each concrete pipe manufacture will need to be certified by:

- •ACPA (American Concrete Pipe Association)
- •NCPA (National Precast Concrete Association)

-M&R will maintain a list of qualified vendors (NQMV)

Official Nebraska Government Website

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What We Do - Overview of Division Duties & Responsibilities

Mission Statement

We design, research and test highway materials for use in constructing and maintaining a quality highway system that meets the needs of Nebraska.

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Lists, Manuals & Guides

Approved Products List

Materials Sampling Guide

Materials Management Guidance
Coming Soon

SiteManager Active Materials List

Laboratory Quality System Manual

Pavement Condition (Surface Distress) Manual

Nebraska Qualified Material Venders List

- Asphalt Producers List
- Rock & Gravel Producers List
- Ready Mix Producers List
- Reinforced Concrete Pipe and Flared End Section Manufacturers

Nebraska Qualified Consultant & LPA Laboratories/Manual

- Qualified Consultant Laboratories

Reinforced Concrete Pipe and Flared end Section Manufactures

Manufacturer	Location
Concrete Industries, Inc.	Lincoln
Rinker Materials (Hydro Conduit)	Valley
American Concrete	Omaha
Panhandle Concrete Products Co.	Scottsbluff
Cretex	Plattsmouth

Nebraska Department of Roads
Report of Shipment of Reinforced Concrete Pipe

Date Shipped:	Project No.:	Shipment Report No.:
County:	Name of Road:	
Manufactured by:	Manufactured at:	
Contractor:		
Shipped to:		
Culvert or Sewer Pipe:	Type of Joint:	

Description Size of Pipe or Flared-End *(Inches)* *(Diameter or Dimensions)*	AASHTO M170 Class and Wall	Length of Sections *(Feet)*	Number of Sections	Total Length *(Feet)*

- **Verify the shipping report is in a standard NDOR supplied format**
- **Check to see the shipping report accurately reflects the quantity and size of pipe delivered**
- **Check pipe to see if damaged**

Manufacturer's Certification Statement

Supplied material is in full compliance with NDOR project contract requirements, and all steel used in the manufacturer of the pipe or flared end sections (listed on this report) was melted and manufactured in the USA, in compliance with the "Buy America Act". This "Buy America" compliance information is also shown (as required) on the steel manufacturer's mill test reports.

Manufacturer's Signature_____

This form is to be signed by the manufacturer, prior to shipment.

Signed original of this report is to be submitted to the NDOR Project Engineer.

Site Manager-Highlights

Steps to Follow

- Site Manager
  1. Create a sample record for the pipe that was delivered to the project
     a. Each shipment should be represented by creating a new sample record
     b. Each size of pipe within a shipment must have a unique sample record
  2. Record the SiteManager sample record identification number(s) on the shipping report
  3. Send the original shipping report and sample record identification number(s) to the Physical Test Laboratory (Attention to Mark B or Stan K)
  4. Physical Test Lab will authorize the sample

Field Inspector –Highlights Caution

- Verify the shipping report has the Manufacturer Buy America statement

Shipment of Reinforced Concrete Pipe / Flared End Sections

NDOR M&R
Wallace Heyen, Portland Cement Concrete Engineer

Template: PTF006001
Version: 20110121

The reinforced concrete pipe / flared end sections shipping report includes the Buy America statement and is signed by a representative of the concrete pipe manufacturer: ☐

Note: A SiteManager sample record must be created for each shipment of reinforced concrete pipe / flared end sections. If multiple sizes of reinforced concrete pipe / flared end sections are in a shipment, a sample record must be created for each size of reinforced concrete pipe / flared end section.

A copy of the shipping report, along with the SiteManager sample identification number, must be sent to the Materials and Research Division's Physical Tests laboratory. The sample record will be authorized by the laboratory upon receipt of the necessary documentation.

Comments:

ENGLISH
TABLE 1002.02

Concrete Mixes (Cubic Yard Batch)

Class of Concrete (1)	Base Cement Type*	Portland Cement (Min. lb/cy)	Pre-Blended Class Fly Ash (Min. lb/cy) *	GGBF S Slag (Min. lb/cy)	Class C Fly Ash (Min. lb/cy)	Silica Fume (Min. lb/cy)	Total Cementitious Materials (Min. lb/cy)	Total Agg. (Min. lb/cy)	Total Agg. (Max. lb/cy)	Coarse Agg. (%) (3)	Type of Coarse Aggregate ****	Air Content (% Min.-Max.) (2)	Water/Cement Ratio Max. (4)	Required Strength (Min. psi) (7)
47B**	1PF	423	141	0	0	0	564	2850	3150	30±3	Limestone	7.5 – 10.0	0.48	3500
47B***	1PF	423	141	0	0	0	564	2850	3150	30±3	Limestone	6.0 – 8.5	0.48	3500
47BD	1PF	494	164	0	0	0	658	2500	3000	30±3	Limestone	6.0 – 8.5	0.42	4000
PR1	I/II	752	0	0	0	0	752	2500	2950	30±3	Limestone	6.0 – 8.5	0.36	3500
PR3	III	799	0	0	0	0	799	2500	2950	30±3	Limestone	6.0 – 8.5	0.45	3500
SF	I/II	564	0	0	0	25	589	2850	3200	50±3	Limestone	6.0 – 8.5	0.36	4000
47BHE	1PF	564	188	0	0	0	752	2500	3000	30±3	Limestone	6.0 – 8.5	0.40	3500
BX (8)	1PF	423	141	0	0	0	564	2850	3150	0	0 (5)	6.0 – 8.5	0.48	3500
47BFS** (6)	1PF	338	113	113	0	0	564	2850	3150	30±3	Limestone	7.5 – 10.0	0.48	3500
47BFS*** (6)	1PF	338	113	113	0	0	564	2850	3150	30±3	Limestone	6.0 – 8.5	0.48	3500
47BDFS (6)	1PF	396	131	131	0	0	658	2500	3000	30±3	Limestone	6.0 – 8.5	0.42	4000

(1) Each class shall identify the minimum strength requirement. (For example, 47B-3500, where the last four digits indicate the strength in pounds per square inch. In the chart, strength of 3500 psi is indicated fro 47B-3500; however, other strengths may be authorized elsewhere in the contract. The classes shown in the chart are typical examples.)
All classes of concrete shall be air-entrained.
A slump test shall be performed to check for consistency and/or workability. Any increase in slump must be pre-approved by the Engineer.
A water reducer admixture shall be used at the manufacturer's recommendations.

(2) As determined by ASTM C 138 or ASTM C 231.
FOR INFORMATION ONLY. The contractor may develop a Quality Control Program to check the quantity of air content on any given project; such as, checking air content behind the paver.

(3) Coarse aggregate shall be limestone unless otherwise specified.

(4) The Contractor is responsible to adjust the water/cement ratio so that the concrete supplied achieves the required compressive strength without exceeding the maximum water/cement ratio. The minimum water/cement ratio for any slip form concrete pavement is 0.38.

(*) Mixes with Type IPF and Class F fly ash designation are pre-blended or intergound with Class F fly ash by the cement mill producer at a rate of 25%+/-2%, no additional Class F fly ash is added at the batch plant. Lithium Nitrate may be used in place of Class F fly ash, see Section 1007 of the Standard Specifications.

(****) Quartzite aggregate can be used in place of limestone providing the aggregate meets Paragraph 3. b. of subsection 1033.02 of the Standard Specifications.

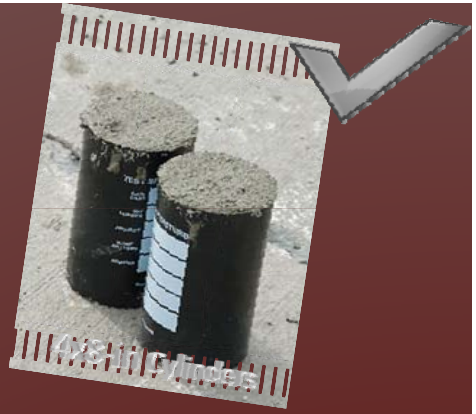
Chemical Admixture Highlights

- J-15-0211 Special Provision states:
  - When Using the Lithium Nitrate Admixture the Contractor shall submit to the Engineer:
    - 5 lbs sample of cement that will be used on the project
    - The Manufactures' method for determining the recommendation for the required dose rate based on the equivalent alkali content
    - Water content of the Lithium Nitrate admixture solution
  - The engineer will report the equivalent alkali content to the Contractor.
  - The contractor shall use the reported equivalent alkali content to determine the required dosage rate.

6x12”
Cylinders

4x8”
Cylinders

4x8-in Cylinders
Highlights



- When fabricating the 4 by 8-in. cylinders, ASTM C 31 requirements shall be followed, which specifies a “small rod” and two equal depth layers, rodded 25 times per layer.
- Large aggregate at the perimeter of cylinder mold.

Blessing of the Concrete

08/12/2010

Questions?