

**DIVISION 1000**

**MATERIAL DETAILS**

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#### **1001.00 GENERAL**

*Specification Division 1000 provides detailed descriptions of the materials specified for highway construction. (Refer to the *Standard Specification for Highway Construction Manual Division 100* for further material information.)*

#### **1001.01 MATERIAL CERTIFICATIONS**

Construction materials may required certificates of compliance, certified tests, or reports of inspection from an outside agency for their use and acceptance. These materials will not be incorporated into the work until such information has been received by State Personnel.

After the material information has been received, the following course of action will be taken:

- A. The information will be reviewed by State Personnel to insure that it conforms with the material requirements.
- B. The information will be dated when it is received from the contractor. This can either be initialed and dated or date stamped.
- C. The original copy of the information will be forwarded to the Materials & Research Division immediately. A copy will be kept in the Project Manager's project file.

Material inadvertently incorporated in the work without the required material documentation should not be included for payment on the progress estimate. If an item is on the estimate, it should be removed until proper documentation is received.

#### **1001.02 MATERIAL CERTIFICATION RECEIPT & INTEREST DATE DETERMINATION**

The interest beginning date is normally the sixty first day following tentative acceptance.

If the certifications are not received in a timely manner, then the interest date will be adjusted to the date that the documentation is in NDR possession. This is why it is extremely important to date the information when it is received from the contractor.

**1002.00      APPROVED PRODUCTS LIST**

**1002.01      DESCRIPTION**

Many material items are not described in detail in the plans and specifications but are authorized for use as shown on the NDR Approved Products List. The NDR Approved Products List is on file on the NDOR web page and is updated when a new product is added to the list or when a product is dropped from the list.

**1002.02      ACCESS COMMANDS**

*Moved following paragraph from page 479 and deleted text.*

Contact Terry Masters in the NDR Materials and Research Division at (402) 479-4754 if there are any questions concerning the viewing or printing of the Approved Products List.

**1002.03        ADDITIONS/DELETIONS TO THE APPROVED PRODUCTS LIST**

The Approved Products List is normally updated on Friday. Materials that meet NDR's *Standard Specifications for Highway Construction* may be added to the list at any time. Materials may also be deleted from the list at any time.

Contact the Physical Testing Section in the NDR Materials and Research Division at (402) 479-4746 to obtain information on required certification and documentation that is necessary for a specific product.

*SSHC Subsection 1001.03* identifies details relating to the use of the Approved Products List and the procedure for using a material that is not included on the Approved Products List.

**1003.00 WHITE PIGMENTED CURING COMPOUND AND HOT-POUR JOINT SEALER**

**1003.01 DESCRIPTION**

White pigmented curing compound and hot-pour joint sealer are sampled at the manufacturer's plant and tested in the Lincoln laboratory before being shipped to Nebraska. Test results for curing compound and joint sealer are on file on the computer. When either of these materials arrive at the construction site, it is necessary to identify the manufacturer and lot number of the material, then check the [Approved Products List on the Department's web-site](#) to verify that the material has been tested and approved for use on the project. The possibility always exists that untested material may be shipped to the construction site.

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**1003.02 REPORTING MATERIAL USAGE**

If you use white pigmented curing compound and/or hot-pour joint sealer, Materials and Research needs to know. Send Terry Masters an e-mail note with product name, manufacturer, lot number, approval date and the quantity used.

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**1004.00 PCC REQUIREMENTS**

**1004.01 CEMENT CERTIFICATIONS**

Note 7 in the Materials Sampling Guide, Volume II, requires that the pink copy of the cement certificate of compliance, DR Form 228 or a copy of the mill's own certification form be mailed to the Materials & Research Division. However, Materials & Research does not need the pink copy of the certification mailed to them anymore. The copy at the concrete production facility is enough for Materials & Research records.

The certificate of compliance is needed both for mills that require sampling and those that do not. When a sample is required, normal procedure has been to submit the pink copy with the sample. This is acceptable. For those mills which do not require sampling, please collect and submit the certifications on a routine basis but at a minimum of once each week.

**1004.02 CONCRETE STRENGTH**

The following English and Metric unit “Concrete Strength Variation” table is provided to define the different strengths that may be specified. The specified strength has varied as the Department has converted from English to Metric units and then back to English units. In the following table, the standard strengths are given in pounds per square inch (psi) and the various equivalent units that have been used in the past 5 years to specify this strength are shown. **However, the strength that a contractor is held-to can only be what is contained in the contract. So if the contract calls for 2900-psi, we cannot reject or deduct if he does not provide 3000-psi.**

**Concrete Strength Variation**

| <b>Current<br/>Standard<br/>Strength<br/>(psi)</b> | <b>Actual<br/>Specified<br/>Strength<br/>(psi)</b> | <b>Actual<br/>Specified<br/>Strength<br/>(Mpa)</b> |
|--|--|--|
| 3000   | 3000, 2900   | 20, 20.7, 21                                       |
| 3500   | 3500, 3625   | 25, 24.3, 24                                       |
| 4000   | 4000, 4350   | 30, 27.6, 27                                       |

**@ 1004.03 CONCRETE CYLINDER POLICY**Cylinders

All concrete cylinders applicable to this policy will be 6 inches by 12 inches. All cylinders shall be cast by currently certified technicians, or by new or temporary employees trained and approved by qualified Materials and Research personnel in accordance with the NDR technician training program.

Structures

A set of three cylinders will be made for the first 100 cubic yards placed and an additional set of three cylinders will be made for the remainder of the concrete placed for each day provided at least 50 cubic yards more is placed. A minimum of three cylinders will be made for each day's placement. One cylinder from each set will be tested at 28 days. The other two cores from each set will be tested at the intervals designated by the engineer. If no intervals are designated, the cylinders will be tested at 7 days and 14 days respectively.

Pavements

A set of four cylinders will be made for each day's placement. These cylinders will be tested at the intervals designated by the engineer unless the pavement does not need to be cored. If the pavement will not be cored, at least one cylinder must be tested at 28 days. The other cylinders will be tested at the intervals designated by the engineer.

If the pavement must be cored and no intervals are designated, the cylinders will be tested at 7, 10, and 14 days or until the specified strength is attained. If needed, the fourth cylinder will also be tested at 14 days and the average strength of the two cylinders reported. If the pavement will not be cored and no intervals are designated, the cylinders will be tested at 7, 10, 14, and 28 days or until the specified strength is attained.

Miscellaneous Concrete

Concrete placements requiring five cubic yards or less and which are noncritical, may be accepted by the engineer without testing. Noncritical refers to placements that will not sustain traffic loading and for which failure is not likely to disrupt traffic or pose a threat of harm to the traveling public.

| CONCRETE CYLINDER REQUIREMENTS SUMMARY  |   |                     |         |         |         |       |
|---|---|---------------------|---------|---------|---------|-------|
| CONCRETE PRODUCT  | REQUIRED NUMBER OF CYLINDERS  | REQUIRED BREAK DATE |         |         |         |       |
|   |   | 7-DAYS              | 10-DAYS | 14-DAYS | 28-DAYS | OTHER |
|   |   |                     |         |         |         |       |
| STRUCTURES*   | 3   |                     |         |         | 2       | 2     |
| PAVEMENTS**   | 4   | 1                   | 1       | 1       | 1       |       |
| MISCELLANEOUS CONCRETE  | Concrete placements requiring 5-cubic yards or less which are noncritical, may be accepted without testing. |                     |         |         |         |       |
|   |   |                     |         |         |         |       |
| *3-cylinders are required for the first 100-yd³ each day and another set of 3-cylinders is required if a total of at least 150-yd³ is required in one day. The Engineer may set the date of the third cylinder break as necessary.  |   |                     |         |         |         |       |
| **Four cylinders are required for each day's placement. The Engineer may designate the date the cylinders are to be broken; if the pavement will not be cored at least one cylinder will be broke at 28-days; if the pavement will be cored then cylinders are broke at dates designated by the Engineer or as shown above. |   |                     |         |         |         |       |

@ **1005.00 MATERIAL & RESEARCH DIVISION'S FINAL REVIEW PROCEDURES**

The Materials and Research Division's Final Review Section will perform the following steps:

- The Materials and Research Division will receive notification from the Project Manager that the project is complete and ready for the material review.
- The Materials and Research Division's Final Review Section will make a listing of all materials that need to be reviewed.
- This listing will be routed through the various laboratories in the Materials and Research Division. The individual laboratories will review their areas and note if the material is satisfactory or a deficiency exists (i.e.: required samples or certifications not received, materials not meeting specification requirements, deductions in compensation for failing materials).
- When complete this listing will be returned to the Materials and Research Division's Final Review Section.
- The Materials and Research Division will determine which materials are deemed critical and non-critical.
- Non-Critical Materials will be accepted by a blanket letter of acceptance. This letter will be generated by the Materials and Research Division's Final Review Section and sent to the Project Manager by e-mail or fax. By signing this letter the Project Manager is stating that all of the materials met specification requirements and that the necessary documentation is in their files. The Project Manager can fax or mail the signed letter to the Materials and Research Division (fax number 402-479-3975).
- Critical Materials will require that the necessary certifications and samples are on file in the Materials and Research Division. The Materials and Research Division's Final Review Section will send an e-mail to the Project Manager listing these materials and requesting that the required documentation be submitted.
- Once all of the necessary information is received in the Materials and Research Division a letter will be sent to the Project Manager stating that the material review is complete. (There is the possibility that another material shortage could occur if a subsequent estimate adds an item or increases a quantity. If this happens the Project Manager will be notified).

- The Construction Division will contact the Materials and Research Division when a final estimate is ready for our approval. When all necessary documentation has been received we will release this estimate for final payment. A letter will be sent to the Project Manager stating that the Materials and Research Division has released the final estimate.
- @ ➤ If you have any questions regarding this procedure please contact Rhonda DeButts @ 402-479-4760 or Dave Hall @ 402-479-4837.

## CHAPTER NOTES:

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