

ITEM 221

HYDRATED LIME AND LIME SLURRY

221.1 Description. This item establishes the requirements for hydrated lime and commercial lime slurry of the type and grade considered suitable for use in the treatment of natural or processed materials or mixtures for subgrade, sub-base and base construction.

221.2 Materials. The various types and grades are defined and identified as follows:

- A. Hydrated Lime: Shall consist of a dry powder obtained by treating quicklime with enough water to satisfy its chemical affinity for water under the conditions of its hydration. This material is to consist essentially of calcium hydroxide or a mixture of calcium hydroxide and a small allowable percentage of calcium oxide, magnesium oxide and magnesium hydroxide. Hydrated lime shall meet the requirements of ASTM C977.

When sampled and tested according to prescribed TxDOT's procedures, hydrated lime shall conform to the following requirements as to chemical composition:

Hydrate alkalinity, percent by weight $Ca(OH)_2$	Min. 90.0%
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Unhydrated lime content, percent by weight CaO	Max. 5.0%
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"Free Water" content, percent by weight H_2O	Max. 4.0%
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The percent by weight of residue retained shall conform to the following requirements:

Residue retained on a No. 6 sieve	Max. 0.0%
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Residue retained on a No. 10 sieve	Max. 1.0%
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Residue retained on a No. 30 sieve	Max. 2.5%
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Specifications apply specifically to the normal hydrate of lime made from "high-calcium" type limestone. Hydrated Lime for stabilization

purposes shall be applied, as provided in the governing specifications, as a dry powder or mixed with water to form a slurry, at the jobsite.

- B. Commercial Lime Slurry: Shall be pumpable suspension of solids in water. The water or liquid portion of the slurry shall not contain dissolved material in sufficient quantity and/or nature injurious or objectionable for the purpose intended. The solids portion of the mixture, when considered on the basis of "solids content", shall consist principally of hydrated lime of a quality and fineness sufficient to meet the following requirements as to chemical composition, residue and delivered in trucks which shall be equipped with an agitator which will keep the lime and water in a uniform mixture.

Chemical Composition: The "solids content" of the lime slurry shall have a hydrate alkalinity $\text{Ca}(\text{OH})_2$ of not less than 90% by weight.

Residue: The percent by weight of residue retained in the "solids content" of lime slurry shall conform to the following requirements:

Residue retained on a No. 6 sieve	Max. 0.0%
Residue retained on a No. 10 sieve	Max. 1.0%
Residue retained on a No. 30 sieve	Max. 2.5%

Commercial Lime Slurry, shall conform to one of the following grades:

Grade 1: The "Dry Solids Contents", shall be at least 31 percent by weight of the slurry.

Grade 2: The "Dry Solids Contents", shall be at least 35 percent by weight of the slurry.

Grade 3: The "Dry Solids Contents", shall be at least 46 percent by weight.

- 221.3 Sampling and Testing. The sampling and testing of lime slurry shall be as determined by Test Method Tex-600-J, "Lime Testing Procedure".

When Hydrated Lime is used, the quantity of lime will be measured by the ton of 2000 pounds, dry weight.

When Commercial Lime slurry, is used, the quantity of lime shall be calculated from the required minimum percent solids based upon the use of Grade 1, Grade 2, or Grade 3 as follows:

Grade 1: The "Dry Solids Content" shall be at least 31 percent by weight of the slurry and the quantity of lime will be calculated by the ton of 2000 pounds based on the 31 percent dry weight solids.

Grade 2: The "Dry Solids Content" shall be at least 35 percent by weight of the slurry and the quantity of lime will be calculated by the ton of 2000 pounds based on the 35 percent dry weight solids.

Grade 3: The "Dry Solids Content" shall be at least 46 percent by weight of the slurry and the quantity of lime will be calculated by the ton of 2,000 pounds based on the 46 percent dry weight solids.

221.4 Measurement and Payment. Work performed and materials furnished as prescribed by this specifications will be paid for at the unit price bid per ton of 2,000 pounds, dry weight for "Lime", of the type specified, which price shall be full compensation for supplying the lime, for all mixing, spreading, drying, application of the lime, water content of the slurry, for all manipulations required, for all hauling, and freight involved, for all tools, equipment, labor and for all incidentals necessary to satisfactorily complete the work, except as hereinafter specified.

There are line code(s), description(s), and unit(s) for this item.

END OF ITEM 221