



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE SECRETARY
MANILA

MAY 14 2008

DEPARTMENT ORDER)
No. 27)
Series of 2008)
X-X-X-X-X-X-X-X-X-X)

SUBJECT: DPWH Standard Specifications
For SOM Top Seal, Item 316

In line with the continuing efforts to upgrade the construction technology thru adoption of successful research studies, this Department has approved the use of **SOM Top Seal, Item 316** for soil stabilizer, subject to the specifications hereto attached. A Certificate of Conditional Approval had been issued by this Department, accrediting the use of SOM Top Seal in DPWH Projects, from June 2006 until June 2011.

This order shall take effect immediately.

HERMOGENES E. EDDANE, JR.
Secretary



WIN8U00286

Attachment: As stated

DPWH STANDARD SPECIFICATIONS FOR

ITEM 316 – SOIL STABILIZER USING SOM TOP-SEAL

316.1 Description

This item shall consist of application of SOM (Spirit of Marianas) Top-Seal Liquid Soil Sealant and Stabilizer to improve the strength and other properties of ordinary soil for use as base/surfacing materials in roads in accordance with this Specification and in conformity with the requirements shown on the Plans or as directed by the Engineer.

316.2 Material Requirements

316.2.1 SOM Top-Seal Liquid Soil Sealant and Stabilizer

It shall be a polymer based soil additive that is non-hazardous, environmentally safe, and easy to use.

316.2.2 Soil Aggregate

It shall consist of any combination of gravel, sand, silt and clay or other approved combination of materials free from vegetable or other objectionable matter. It may be materials encountered in the construction site or materials obtained from approved sources. It is the intent of this Specification to utilize soils existing on the roadbed if the quality is satisfactory. If the quantity is deficient, the soil aggregate shall be obtained wholly or partly from approved outside sources.

316.2.3 Salvaged Soil Aggregate

Where soil-aggregate required is already in place, the Contractor shall not be responsible for its grading or quality except for removal of oversized materials as directed by the Engineer. In general, salvaged soil-aggregate to be used for soil stabilization shall consist of material meeting the requirements given in Sub-section 316.2.2, Soil Aggregate.

316.2.4 Water

It shall conform to the requirements of Item 714, Water.

316.2.5 Proportioning of Mixture

SOM Top-Seal shall be less than 2% by weight of soil.

316.2.6 Strength of Mixture

The unsoaked CBR value of the SOM Top-Seal treated soil material shall be greater than the unsoaked CBR value of untreated same soil material as determined by AASHTO T 193.

316.3 Construction Requirements

316.3.1 Weather Limitations

SOM Top-Seal and water shall not be mixed and applied during rainy or impending bad weather. In the event rain occurs during the operations, work shall be promptly stopped and the entire section shall be reconstructed in accordance with this Specification.

316.3.2 Construction Equipment

Equipment and tools necessary for handling the material and performing all parts of the works shall be approved by the Engineer as to design, capacity and mechanical condition. The equipment shall be at the jobsite sufficiently ahead of the start of application operation.

316.3.3 Sub-base Preparation

Existing road base materials shall be scarified by use of grader to a depth of 150mm to 200mm and shall be stockpiled on both sides of the road. Rolling of sub-base shall follow until the desired compaction is attained.

If further needed, SOM Top-Seal shall be applied on the sub-base after it was exposed for 24 hours, provided that after applying SOM Top-Seal, first layer of road base materials mixed thoroughly with SOM Top-Seal shall be spread immediately. The dilution rate for sub-base shall be 1 part of SOM Top-Seal and 5 to 9 parts of water depending on the type of soil and application method.

316.3.4 Application, Compacting and Finishing of SOM Top-Seal on Road Base

After the preparation of sub-base, a windrow procedure on stockpiled base course materials shall be carried out in the application of SOM Top-Seal. It shall be mixed thoroughly and spread by a grader in approximately two (2) equal layers. The rate of dilution in each layer shall be 1:5 to 1:9 or one part SOM Top Seal and 5 to 9 parts of water.

Compaction shall be done using steel roller on the first layer and steel and rubber roller on the second layer. Steel roller shall be used to crush

aggregates larger than half inch on the surface of the laid treated base course while rubber roller shall follow to smoothen the surface. Compaction shall continue until the surface has formed a bond and little or no moisture is present. If further needed, after compaction of the second layer, final application of SOM Top-Seal shall be sprayed on the second layer to ensure that the base was totally saturated while compaction is in process. After 48 hours of curing, SOM Top-Seal shall be sprayed on the compacted road base with dilution rate of 1 part SOM Top-Seal and 9 parts water as sealant or coating for the new road base pavement.

316.3.5 Trial Sections

Trial sections of the stabilize base shall be constructed by the contractor at least 2 weeks before actual base construction. These shall conform to the applicable requirements of Subsections 200.3.4, Trial Sections.

316.3.6 Tolerances

The stabilized base course shall be laid to the designed level and transverse slopes on the Plans. The allowable tolerances shall be in accordance with Subsection 201.3.5, Tolerance.

316.3.7 Traffic

The Contractor shall not be permitted to drive heavy equipment over completed portions prior to the end of 24 hours curing period except pneumatic-tired equipment required for constructing adjoining sections.

316.4 Certification

The manufacturer or authorized distributor/dealer shall file with the purchaser a certificate stating the chemical composition and other pertinent information that may be needed for application and use. The manufacturer or authorized distributor/dealer shall include in the certificate of guarantee stating that the SOM Top-Seal meets the requirements of the specification. The certificate shall be attested to by a person having legal authority to bind the company.

316.5 Quality Control

The manufacturer or authorized distributor/dealer shall be responsible for establishing and maintaining a quality control program so as to assure compliance with the requirements of this specification.

316.6 Method of Measurement

SOM Top-Seal shall be measured by the liter. The quantity to be paid for shall be the design volume applied in place as shown on the Plans, and accepted in the completed course.

316.7 Basis of Payment

The accepted quantities, determined as provided above shall be paid for at the contract unit price for SOM Top-Seal incorporated into the soil material.

Payment will be made under:

Pay item Number	Description	Unit of Measurement
1	SOM Top-Seal Liquid Soil Sealant and Stabilizer	Liter



Republic of the Philippines
Department of Public Works and Highways
Office of the Secretary

CERTIFICATE OF CONDITIONAL APPROVAL

Product Accreditation

This is to certify that

SOM TOP SEAL

which is exclusively distributed
in the Philippines by:

Spirit of Marianas Corporation

and

Geo Pacific Trading Corporation

262 Maharlika Highway

Villa Benita Subdivision

Cabanatuan City, Nueva Ecija 3100

is duly accredited for use in DPWH projects as soil stabilizer, subject to its specifications (hereto attached) pursuant to the provisions of DPWH Department Order No. 189, series of 2002.

This accreditation shall remain in force until expiry date printed below, subject to compliance with the requirements of the aforementioned Department Order.

Conditional Approval No.	:	010
Date Issued	:	June 2006
Expiry Date	:	June 2011

HERMOGENES E. ERDANE, JR.
Acting Secretary



WIN6U00091