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STANDARD OPERATING PROCEDURE (SOP) FOR LAYING OF ENVIROTAC STABILIZED LAYER

A. Quantity of Cement and Envirotac for the Stabilized Mix.

Quantity of **ENVIROTAC and OPC** cement to be added to the GSB material (as per the Rural Road Specification Table 400.1-A), shall be 3 ltrs/cum of ENVIROTAC diluted to 1:4 ratio (one part of ENVIROTAC and 4 parts of water) and minimum 50Kg/cum cement (based on mix design given after testing of GSB) respectively. The mix design shall be done to achieve 7 day unconfine compressive strength (UCS) of 1.75MPa. The cement used for stabilization should be Ordinary Portland Cement to comply with requirements of IS:269.

B. List of Equipment Required:

1. Rotovator having minimum blade length of 175mm
2. Empty Drum 200 lifters (2 at least).
3. Vibratory Roller
4. Water Tanker 5000 litre attached with sprinkler qty 2 no's
5. Labour 12
6. Buckets 25 litre (2no's)
7. Motor Grader or Tractor Mounted Grader
8. Crane/ forklift to unload ENVIROTAC material at site.

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C. Steps to be Followed for Construction of ENVIROTAC Stabilized Layer:

1. Preparation of subgrade- soil to be compacted to the minimum of 97% MDD of dry density of the soil.

2. Watering the Subgrade before spreading the GSB material as per the Rural Road Specifications (Table 400.1-A) on the prepared sub grade. The thickness of the loose material should be 25% more than the compacted thickness as per the cross section shown on the drawings or as directed by the Engineer in charge.

3. Pulverising the GSB with 1 or 2 passes using a Rotavator.

4. Spreading ordinary Portland cement (43 or 53 grade) on the pulverized GSB. The dosage of the OPC cement will be minimum 50Kg per cum.

5. Mixing cement with GSB using Rotavator

6. Dosage of ENVIROTAC should be 3 Litres / cum. Dilution rate of ENVIROTAC with water is 1:4 ratio. The water to be used for dilution and stabilization shall be clean and free from injurious substances. Portable water shall be used.

7. Spreading ENVIROTAC using the sprinkler attached to the water tanker on the GSB-OPC Cement material.

8. Mixing thoroughly the GSB-Cement-ENVIROTAC mix using a Rotavator with minimum 5 passes.

9. Providing proper camber using a grader.

10. Compacting the prepared surface using vibratory roller. The moisture content at compaction check vide IS:2720(Part 2) shall not be less than the optimum moisture content corresponding to IS:2720(Part 8) nor more than 2% above it. The compaction of the stabilized material is completed within two hours of mixing or such shorter period as may be found necessary in dry weather.

11. Curing- The subbase course should be suitably cured for 7 days from the second day of laying the GSB layer. No traffic of any kind shall ply over the completed subbase unless permitted by the Engineer in charge.

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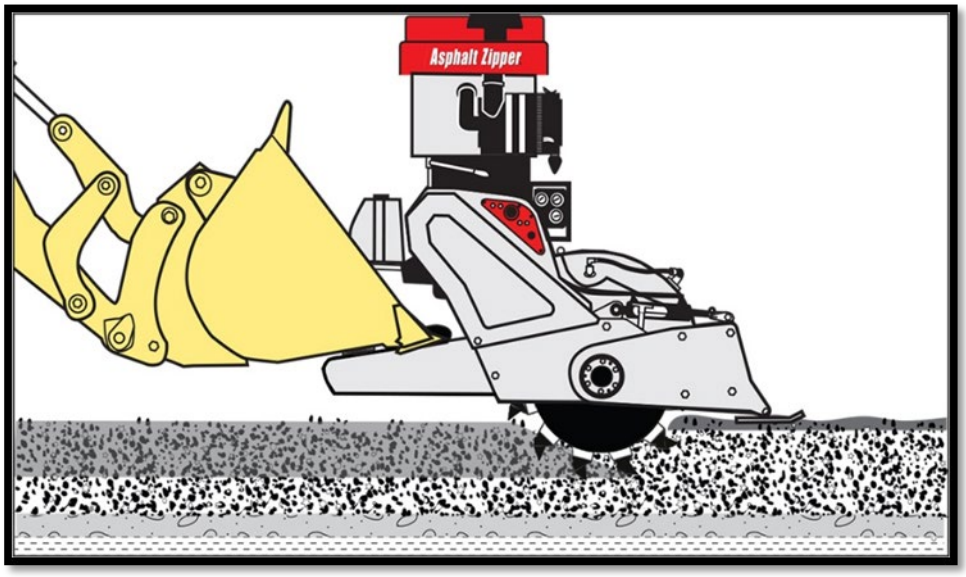
1 Methodology – Construction of Cementitous Base and Sub-Base

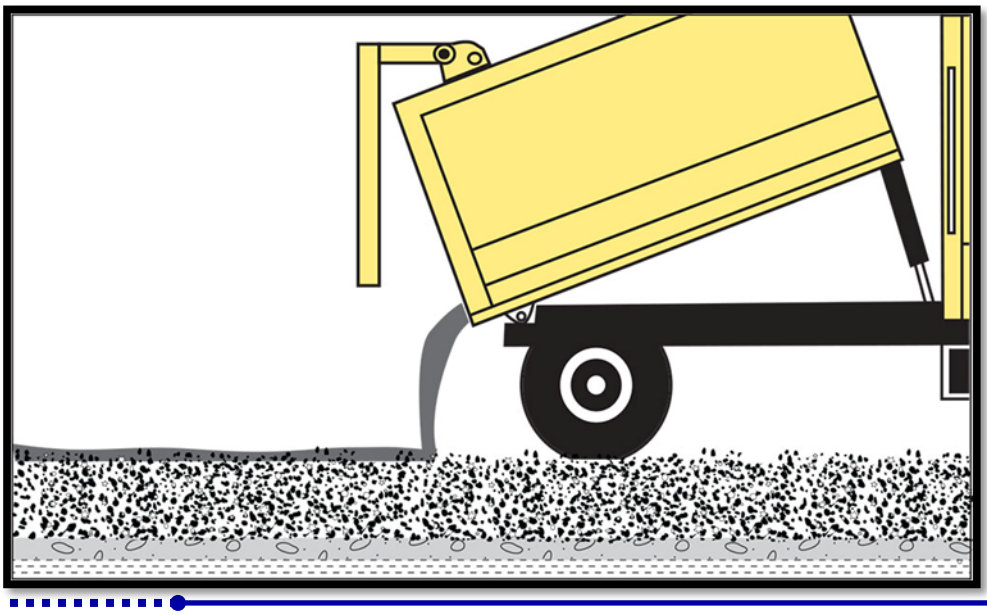
Methodology is depicted hereunder in pictorial way to show the steps involved in construction with ENVIROTAC for cementitious base/sub-base.

STEP 1 – PULVERIZATION



The gravel are laied for the base/sub-base as per the required thickness. Then they are ppulverized the with rototiller/rotavator machine

STEP 2 – LAYING & SPREADING THE CEMENT



Uniformly spread cement. Cement can be spread by a cement spreader or markings can be made and cement bags can be open directly on the base or subbase. Cement can also be mixed in the batching plant along with soil-aggregate mixture and then aid with a paver.

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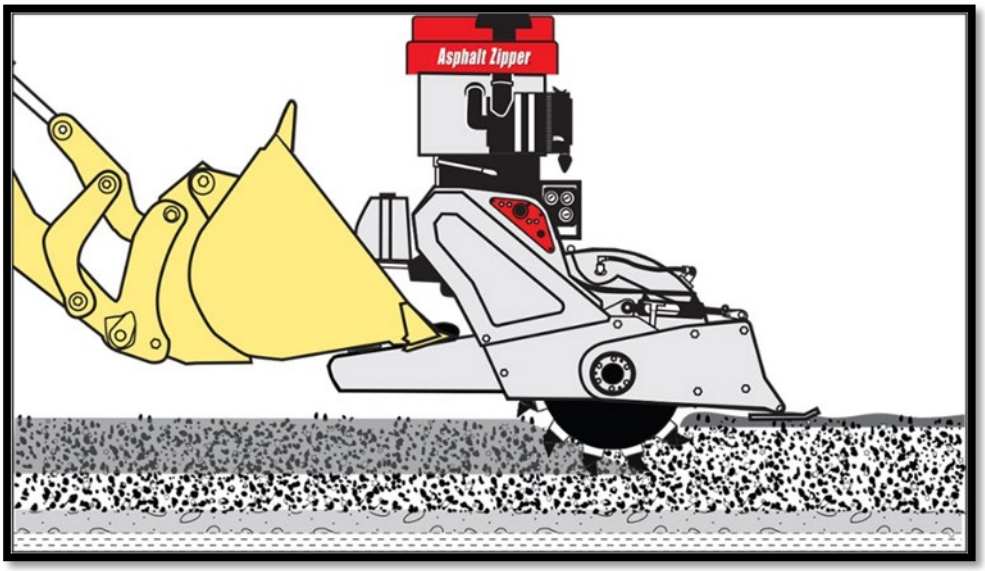
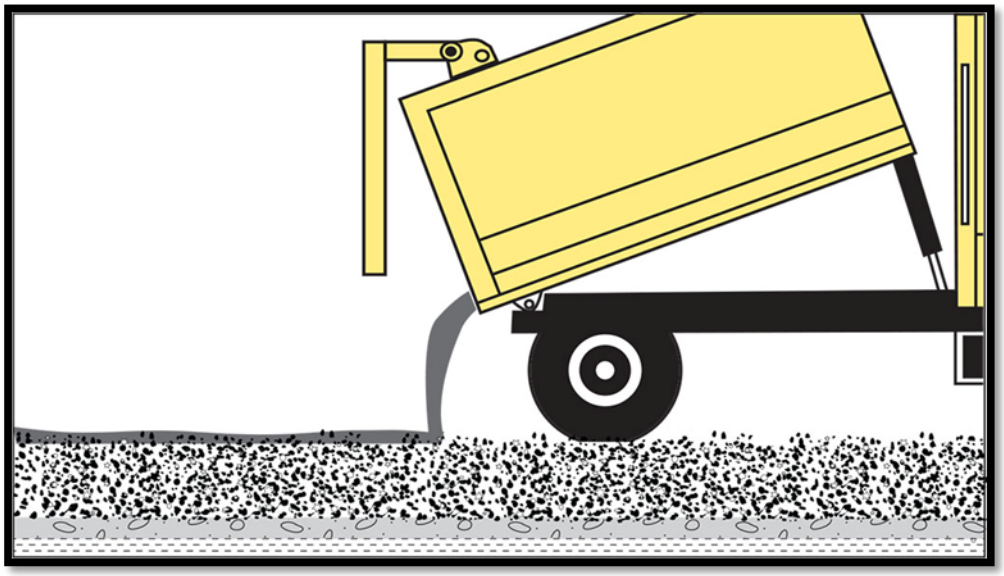
STEP 3 – DRY MIXING



Thoroughly blend material-cement with a predetermined portion of the base/subbase. Hydrate as needed.

STEP 4 – SPRAYING OF ENVIROTAC



Uniformly spray ENVIROTAC diluted with water. It can sprayed using a Water Tanker with spray bar or emulsion pressure distributor on required surface.

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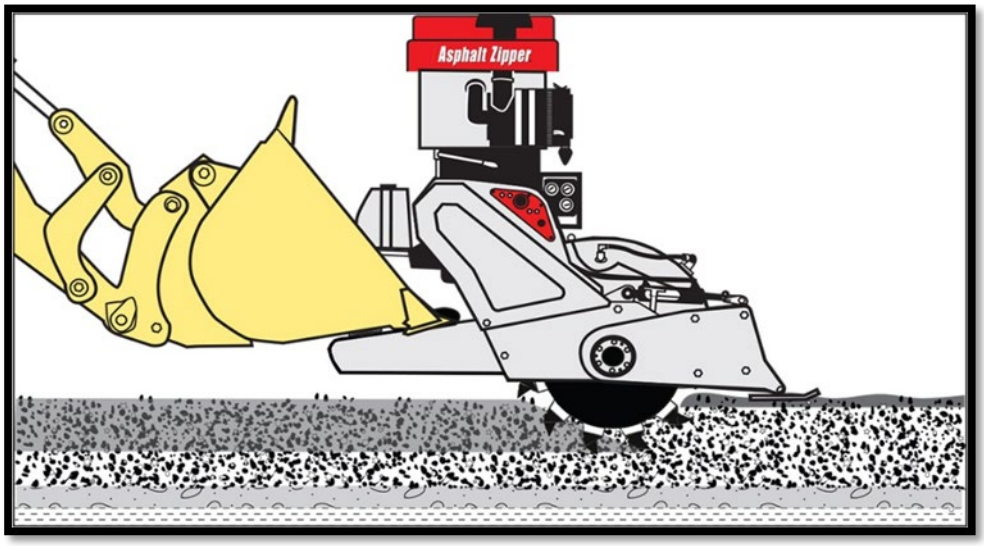
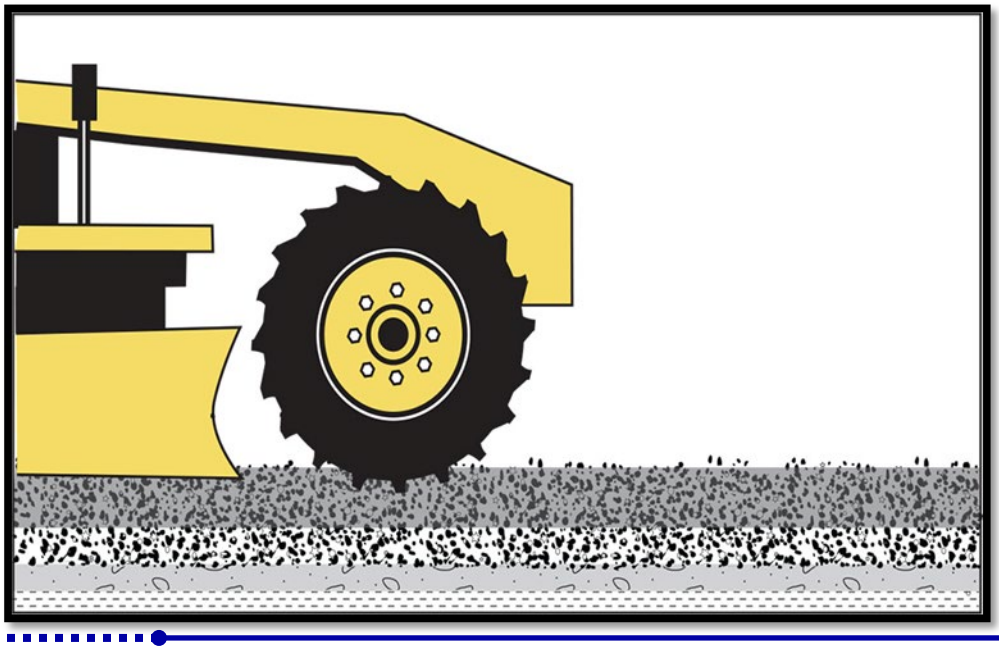
STEP 5 – WET MIXING



Thoroughly blend material-ENVIROTAC with a predetermined portion of the base/sub-base.

STEP 6 – GRADE & SHAPE



Grade to the achieve the desired chamber. Hydrate if needed

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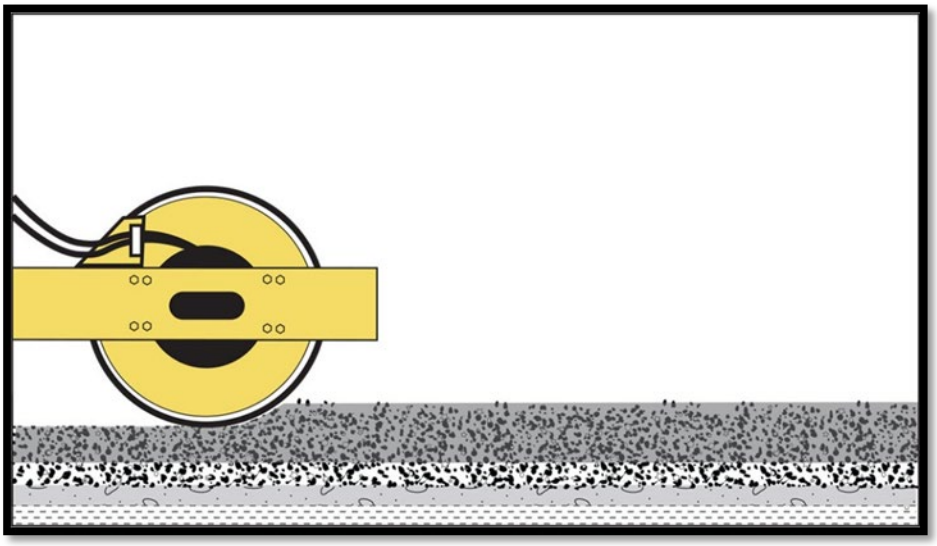
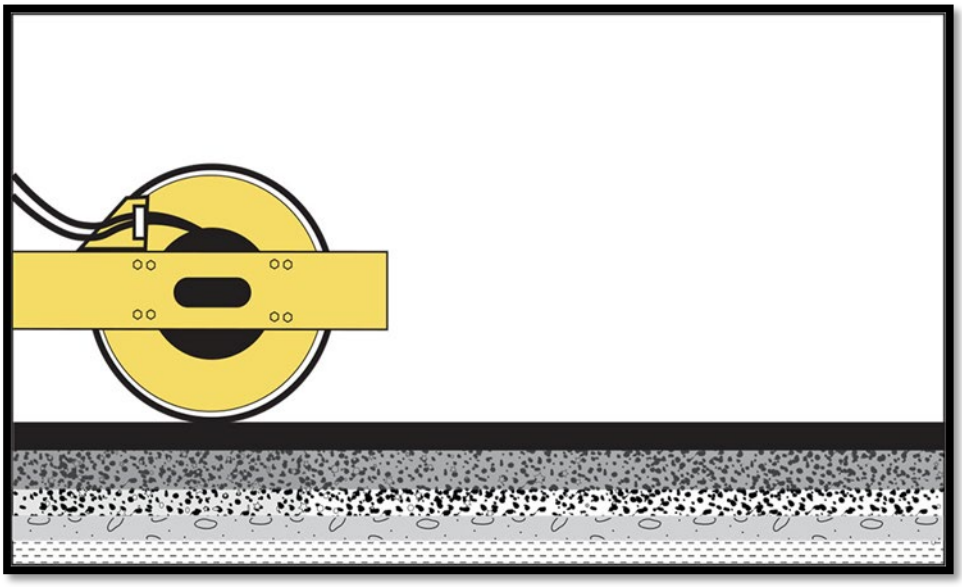
STEP 7- COMPACT WITH A POWER ROLLER



Compact with sufficient moisture to achieve the desired density.

STEP 8 – LAYING OF BITUMINIOUS LAYER



When cured it can be paved with bituminous concrete.

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