

## 23<sup>rd</sup> TECHNICAL COMMITTEE MEETING

23<sup>rd</sup> Technical Committee meeting for the clarification of CTSSB used in estimates prepared by PMU

Meeting No. 23

Date – 3<sup>rd</sup> August 2021, 02.30 pm

Venue: Online (Google meet)

### AGENDA

1. In the DPR presentation done by RKI-PMU it was mentioned to provide cement stabilisation of soil as CTSSB. But in most of the estimates submitted by PMU for TS, it was mentioned to provide CTSSB using crushed aggregate.
2. The necessity of providing CTSSB over cement stabilised subgrade needs to be discussed.

### PRESENT

S. No	Name	Designation and Office Address	Signature
1	Sri Johnson	Chief Engineer, LSGD	
2	Dr. B.G.Sreedevi	Former Director, NATPAC	
3	Dr Neethu Roy	Professor, Mar Baselios College of Engineering and Technology	
4	Dr. Vishnu R	Assistant Professor, NIT, Waranagal	
5	Dr. Nivin Philip	Professor, Saint Gits College of Engineering	
6	Dr Ashalatha R	Professor CET	
7	Smt. Sreela S	Rtd. Superintending Engineer, KSRRDA	
8	Sri. Vishnukumar G	Project Director, PMU RKI LSGD	
9	Sri Sajish R	Executive Engineer, PMU RKI LSGD	
10	Sri Shiju Chandran	Assistant Executive Engineer, PMU RKI LSGD	

The Chief Engineer explained the necessity of calling the committee regarding the DPR presentation done by RKI-PMU giving the provision of cement stabilisation of soil as CTSSB. But in most of the estimates submitted by PMU for TS, it was mentioned to provide CTSSB using crushed aggregate. When cost comparison done with CTSSB using crushed aggregate and CTSSB 33% cost difference is coming.

And also, whether it is necessary for providing cement treated subbase above cement stabilised subgrade. Draft DPR prepared by consultant is presented before the technical committee to show that the only CTSB is mentioned in DPR without mentioning any usage of crushed aggregates.

Project Engineer from PMU explained that while presenting DPR they itself mentioned the CTSB using aggregates as intermediate layer and it's their fault that materials used in CTSB are not mentioned in DPR. When they compared the cost using granular layer + PQC and CTSB using crushed aggregate +PQC only 3% cost difference is coming.

Dr. Vishnu opined that when comparing CTSB using soil- cement mixture and crushed aggregate- cement mixture, cement content will be more in case of soil-cement mixture than crushed aggregate- cement mixture. It will also affect the permeability. So recommended to use CTSB using crushed aggregate.

The Chief Engineer commented that in case of stabilised soil subgrade either stabilised sub base or granular sub base could be provided. But here in projects cement stabilised sub base is given. The need for which is not included in DPRs. Dr. Vishnu opined that CTSB using granular material with cementitious material layer could impact more k value than granular layer as sub base.

Project Engineer from PMU RKI explained that the CTSB is provided as subbase for producing a resilient pavement to resist flood in future (design was done for cement treated on aggregate to get modulus value of 600 MPa).

Dr. Ashalatha commented that cement stabilisation of subgrade is provided to enhance the CBR of soil to 10%. Above the stabilised subgrade an additional layer of sub base as cement treated granular layer is provided to make an unbound layer to a bound one and also to enhance the permeability.

Dr. Sreedevi commented that the clarification regarding the terminology used in DPR is needed, PMU have to mention the usage of CTSB with crushed aggregate in relevant DPRs.

Project Engineer from PMU explained that they are following RKI principles to make the flood affected roads to most resilient to future floods. They are mainly following the principles for improving resilience, using innovative and modern technologies for enhancing the life cycle cost of the roads. While considering the initial cost only 3% cost increase will be coming but life cycle cost

subgrade only will be enhanced considerably in line with RKI principles.

Dr. Neethu Roy opined that specification are to be detailed in DPRs in order to avoid confusion. As per discussion it is understood that to make sub base layer more permeable CTSB using crushed aggregate is more efficient than CTSB as soil-cement mixture. Also, PMU has to design the road as flood resilient whether it is flexible or rigid pavement.

### DECISIONS

RKI-PMU has to clearly mention the specification of materials used in pavement layers in DPRs in order to avoid future confusions. Technical members approve the usage of CTSB with crushed aggregates as sub base layer for producing resilient pavement to resist flood in future. Design was also done for cement treated sub base using aggregate to get modulus value of 600 MPa and also for enhancing the life cycle cost of roads in line with RKI principles. Cement treated sub base layer can also be provided over the stabilised subgrade in order to make an unbound layer a bound one and also to enhance the permeability.

Meeting ended by 4.00 PM

**Chief Engineer**