

## **SUMMARY from the workshop on Stabilization Function of Geosynthetics**

held 10-12 November, 2019 , Hotel GRANDIUM, Prague, Czech Republic

Organized by IGS TC-Stabilization

The below statements represent what has been agreed with a varied degree of consensus during the workshop. The following is based on the pre-existing ISO definition of Stabilisation.

### **1. GENERAL**

- 1.1. The market wants a 'stabilised' layer that works and that it understands.
- 1.2. The market is generally not interested in product features.
- 1.3. In a stabilised layer the geosynthetic and aggregate form a stiffened composite.
- 1.4. Specifying and measuring the performance of the stiffened composite layer is appealing to the market.
- 1.5. The market associates reinforcement with strength.
- 1.6. Compaction effort is reduced via the aggregate/geosynthetic interaction.
- 1.7. Stabilisation can be effective over soft (<3% CBR) and firm (>3% CBR) subgrades.
- 1.8. Stabilised systems can be designed to avoid significant deformation i.e. for serviceability limit state (SLS).
- 1.9. Different products appear to work in different ways.
- 1.10. Strengthening and stiffening are both relevant in geosynthetic design and performance and are required to address different issues.



## **2. MECHANISMS**

- 2.1. Lateral restraint is the principle mechanism governing stabilisation.
- 2.2. Tensioned membrane is a valid reinforcement mechanism and is generally applicable in situations where deformation is not a key issue (eg temporary roadways).
- 2.3. Limiting particle movements is a key feature of lateral restraint (confinement).
- 2.4. There are fully confined, partially confined and unconfined zones dependent on the distance from the geosynthetic.
- 2.5. Strain levels in laterally restrained systems will be small – typically < 0.5 to 1.0%.
- 2.6. Soil/geosynthetic interaction occurs via interlock or friction or a combination of both.
- 2.7. At small deformations the membrane effect is very limited.
- 2.8. Tensioned membrane requires significant particle movement and therefore does not meet the definition of stabilisation (as defined by ISO).

## **3. PARAMETERS**

- 3.1 Tensile strength is not a significant influence on performance of laterally restrained (confined) systems.
- 3.2 Tensile stiffness and soil/geosynthetic interaction are the key parameters governing lateral restraint performance.
- 3.3 Tensile strength is the key parameter in tensioned membrane systems.
- 3.4 Relationship between aggregate and geogrid aperture is important.
- 3.5 Different parameters may be relevant to different products.
- 3.6 Modulus (resilient) or stiffness of composite layer is key.
- 3.7 We should test products in soil to determine parameters for the composite.

TC-Stabilisation Chair

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