**TC250/SC7/EG5: Reinforced Soil**

**(draft) Interim Report** **2014**

**EC 7-1 – General rules**

1. General
2. Basis of geotechnical design
3. Materials
   1. reinforcements
      1. geosynthetics
      2. steel
      3. grout / concrete for soil nails
4. Durability
   1. reinforcements
      1. geosynthetics
      2. steel
      3. grout / concrete for soil nails
5. Geotechnical analysis
6. Ultimate limit states
7. Serviceability limit states
8. Execution
9. Testing
10. Reporting

**Proposed structure for section on reinforced soil**

**EC 7-3 – Geotechnical constructions**

1. General
2. Slopes, cuttings, and embankments
3. Spread foundations
4. Pile foundations
5. Retaining structures
6. Anchors
7. Ground improvement
8. **Reinforced Soil structures**
9. General
   1. Materials
   2. Durability

If Chapters 8.2 and 8.3 could not be accepted

1. Materials
2. Durability

Proposal to include here (preferred)

1. Limit states
   1. ULS
      1. In soil
         1. Stability along slip surface (refer back to sec. 2)
         2. Sliding
         3. Bearing capacity
         4. Squeezing
      2. In reinforcing element
         1. Tensile rupture
         2. Shear rupture
      3. On interface between soil and reinforcing element
         1. Pull-out
         2. Stripping
         3. Sliding
         4. Squeezing
      4. At facing
         1. Connection between facing element and reinforcement
         2. Stability of facing / facing elements
   2. SLS
      1. Whole structure and its subsoil
         1. Total vertical / horizontal displacement
         2. Relative vertical / horizontal deformation in time - post construction
      2. In reinforced structure itself
         1. Total vertical / horizontal deformation
         2. Relative vertical / horizontal deformation in time (creep) - post construction
      3. In reinforcing element
         1. Total strain (elongation)
         2. Creep strain (post construction)
      4. In facing element
         1. Differential settlement along the facing due to subsoil deformation
         2. Differential movement between facing and reinforced soil
         3. Relative deformation of the facing (bulging)
2. Actions and design situations
   1. Actions
      1. Traffic loads
      2. Structural loads
      3. Loads in/from reinforcing elements
      4. Loads from soils
   2. Design situations
      1. retaining structures
      2. embankment base
      3. piled embankment
      4. voids overbridging
      5. veneer stability
      6. reinforcement under shallow foundations.
      7. reinforcement under platforms (traffic areas / industrial floors) *– will be dealt with by ISO TC 221 WG6*.
3. Design methods and design considerations

*Details will be given in later stage, suggestions welcomed*

1. Ultimate limit state design

Matrix between 8.4.1 & 8.5.2

1. Serviceability limit state design

Matrix between 8.4.2 & 8.5.2

1. Structural design
   1. Reduction factors for reinforcing elements
   2. Partial factors for limit states and reinforcing elements
   3. Design strength of reinforcing elements
      1. Geosynthetic (grid, textile, strip)
      2. Steel (grid, strip)
      3. Soil nails
   4. Design limit states situations

as per 8.4

1. Execution

Reference to execution standards

1. Testing
2. Supervision, monitoring & maintenance

# Report prepared by:

Martin Vanicek

25th July 2014