Basal Stabilisation Options: Initial Guidance Notes

Using basal stabilisation of a structural stone fill reduces the volume of stone required in construction, and consequently reduces the volume of excavation and imported fill. This reduces construction costs and CO₂ emissions which is more sustainable and environmentally friendly. The stabilisation provides a long lasting effect, but it is often the temporary loading during construction (before the surfacing) that determines the critical design condition. The following “rules of thumb” provide a guide for comparison of the options available. For a more detailed assessment ABG provides a complementary design calculation service based on the soil conditions (e.g. CBR), stone grading, and traffic conditions.

**STONE ONLY**
Basal stone layer of specified depth ‘Dₛ’ (with no geosynthetic stabilisation). Up to 150mm of ‘lost stone’ on soft ground as stone layer pushes into soft ground.

**SEPARATION GEOTEXTILE**
Reduced stone layer ‘D’ (≈Dₛ -150mm on soft ground) with inclusion of ABG Terrex NW9 or ABG Abtex SG18/9 separator geotextiles for well graded stone. Textile grade must be higher for coarse stone.

**WOVEN GEOTEXTILE**
Basal Stone Layer of depth ‘⅔D’ with inclusion of woven ABG Gridtex Type 2 ground stabilisation and separation geotextile.

**GEOGRID**
Basal Stone Layer of depth ‘⅔D’ with inclusion of ABG Abgrid 30/30 ground stabilisation grid (on soft ground add ABG Terrex NW9 separator geotextile).

**GEOCELL**
Basal Stone Layer of depth ‘½D’ with inclusion of ABG Abweb GW 200/300 (on soft ground add ABG Terrex NW9 separator geotextile).

Note: For Figures B, C & D the use of an upper ground stabilisation grid will provide further strength and reduce rutting.