

# Geocellular Attenuation Storage - Key Information Requirements

## (Excludes Hydraulic Check Information as required for drainage approval)

If your drainage design being submitted with application form SA1-A161 includes the installation of geocellular structure(s) you should submit the following information in addition to the standard drainage assessment requirements.

Please note - this check list should cover the majority of development site scenarios when considering the submitted drainage systems for consideration under Article 161 procedures, however supplementary information may be required for some installations. On these occasions this will be requested in due course.

- failure to provide this information may result in a delay in processing your SA1-A161 application.

- Proposed site drainage layout including proposed levels and services information. Zones of influence should be clearly indicated as per page 45 CIRIA C737
- Geocellular Tank Drawings and Details including general arrangement, detailed plans and sections. Sections should show relevant levels of nearby slopes, structures etc. to allow assessment of the potential influence of adjacent structures. Drawings should include component details for the tank plus details of the geomembrane, geotextile, protection layers/ boards and backfill (initial, main and side).
- BBA Accreditation for the geocellular units to be used to construct the tank..
- Structural calculations to CIRIA Document C680 (until BBA approve required Testing to comply with C737). Applied imposed and other loadings should be clearly detailed. In situ soil angle of shearing resistance should be used in calculations if slope angle of the excavation is greater than 45°. Note calculations are needed for actual minimum and maximum cover depths.
- Name, contact details and Qualifications of the Design Engineer overseeing the calculations (Incorporated or Chartered status required).
- Site Investigation Details at the tank location – to include details of soils present to suitably firm ground below the tank formation level. The site investigation should include the soil properties used in the structural design calculations. Details should include an assessment of the water table level at the tank location to a minimum of 1m depth below the invert level of the tank.
- Construction Method Statement complying with "*PD CEN/TR 17179:2000 Thermoplastics piping and ducting systems - Rainwater infiltration and storage attenuation systems - Practices for underground installation*". Construction Method Statement should include safety measures proposed to protect the tank within the zone of influence from construction traffic and other loading not allowed for in the calculations.
- Maintenance Schedules – specific to the site and taking consideration of silt interception (eg. catch pits sized for silt loadings from Table 8.1 CIRIA C737)

## NI Water - Geocellular Attenuation Storage Check List

CHECK ITEM	YES	NO
Is the proposed Geocellular Attenuation Tank to be constructed within 3m depth below finished ground levels at any point?		
Is the proposed Geocellular Attenuation Tank to be constructed below non-trafficked area?		
Is the ground water table minimum 1m below invert level of the tank?		
Has proposed Geocellular Attenuation Tank a rectangular shape?		
Is the proposed system designed as on-line or off-line parallel format?		
Is the proposed Geocellular Attenuation Tank to be constructed more than $h^* + 2m$ away from foundation or trafficked/loaded pavements?		
Is the proposed Geocellular Attenuation Tank to be constructed more than $h^* + 10m$ away from sloping ground or stockpiles?		
Is the proposed Geocellular Attenuation Tank to be constructed more than $h^* + 5D^{**}$ away from piles supporting vertical loadings and $h^* + 8D^{**}$ for piles supporting horizontal loadings?		
Is the proposed Geocellular Attenuation Tank to be constructed more than $h^* + 2.14H^{***}$ away from the front of any retaining walls?		
Is the appropriate ventilation provided to the Geocellular Attenuation Tank? (Typically 110mm dia vent per 7500m <sup>2</sup> catchment area)		
Is the proposed system provided with maintenance provisions allowing for inspection and cleaning at minimum 15m intervals?		
Is the proposed system equipped with silt interception sized to allow for loadings described by Table 8.1 CIRIA C737?		
Are inlet and outlet pipework arrangements constructed with minimum 150mm dia pipes and providing unrestricted flow?		
Is the system provided with an appropriately sized overflow protecting the site from potential flooding in case the control device is blocked?		
Is the proposed Geocellular Attenuation Tank and all connections sealed with the hot-jointed impermeable heavy duty geo-membrane minimum 1mm thickness installed by certified contractor (UKCAS Certificate Scheme for Welding and Inspection Personnel)?		
Is the proposed Geocellular Attenuation Tank protected by geotextile fleece (minimum 300g/mm <sup>2</sup> ) and minimum 100mm protective layer of sand or non-angular gravel?		

$h^*$  is depth of tank installation

$D^{**}$  is pile diameter

$H^{***}$  is the depth of the retaining wall