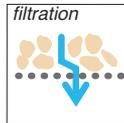
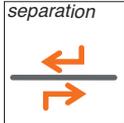




Underground reservoirs, reservoir pavements



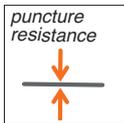
Separation and filtration of material layers

▲ to separate, filter, and improve bearing capacity, the layers of granular material shall be separated by a thermally bonded, needle-punched nonwoven geotextile of the **Bontec NW optim** type, with an optimal 40% to 50% elongation at break, and a modulus of resistance 20 kN/m for 100 grams at failure, as per NFENISO 10319.

▲ thanks to the thermally bonded structure, the pore size in the soil shall be stable for controlled filtration.

▲ the surface of the product shall be slightly rough to increase the “grip” with the soil and improve the bearing capacity.

▲ the manufacturer, with ISO 9001 certification, shall have an engineering department capable of advising the designer and installer.



Geomembrane puncture-resistant protection

▲ in order to protect the geomembrane liner from puncturing and piercing, a needle-punched, nonwoven geotextile such as **Bontec VNW protec** shall be positioned below and on top of the geomembrane.

▲ with a 130% elongation at break, it is needle-punched from 100% virgin polypropylene fibres, and shall have a dynamic puncture resistance value of less than 12 mm and a mass per unit area of 300 g/m².

▲ the manufacturer, with ISO 9001 certification, shall have an engineering department capable of advising the designer and installer.



Geomembrane liner for underground reservoir

▲ waterproofing shall be executed with a heat-sealable geomembrane barrier such as **teraline**, in plasticized PVC, 12/10th mm thick, of light grey colour, UV stabilized and having a health compliance certificate (French “ACS”), of ultimate tensile strength 16 MPa, with 300% elongation at break.

▲ joining shall be performed by a company having ISO certification for the installation of geomembranes, and Asqual-certified welding and site management personnel.

▲ the site report shall demonstrate the conformity of the work with the Asqual references for calibration of welding machines and resistance of test samples.