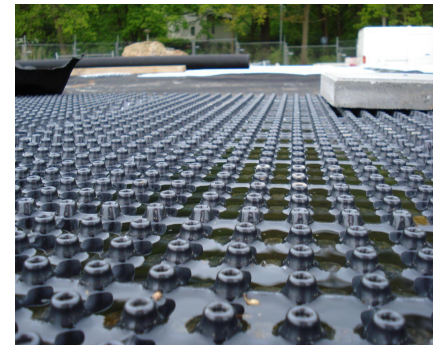


## HDPE (High Density Polyethylene) Storage And Drainage Board



High density polyethylene (HDPE) storage and drainage board is a kind of light plate which can not only create a drainage channel with a certain three-dimensional space support stiffness, but also water storage. High-density polyethylene storage and drainage board is block, waterproof, water storage, mostly used for roof greening, garage roof and indoor planting.

High density polyethylene storage and drainage board instead of traditional drainage materials such as ceramic, play a green storage and drainage effect, make the construction simpler, faster, better effect, the product has high compressive strength (suitable for mechanized operation), can withstand more than 400KPL high compressive load, and can withstand the extreme load of mechanical rolling in the planting roof backfill process. It is light weight, load resistance, simple construction, brief environmental protection, long life, good drainage effect, water storage function, low cost, is the best choice for roof green storage and drainage materials.



[HDPE Storage And Drainage Board]



[HDPE Storage And Drainage Board]

The difference between water storage and drainage boards:

Drainage boards do not have the function of storing water and their drainage effect is second to that of water storage and drainage boards. However, drainage boards can play a waterproof role, which is an advantage over water storage and drainage boards. Most drainage boards are used in waterproofing projects. Storage and drainage boards can serve the purpose of storing water, with a storage capacity of approximately 4kg per square meter. The drainage effect of water storage and drainage boards is slightly better than that of drainage boards. The specific difference between the two depends on the actual situation. For example, in some areas with very high precipitation (such as the southern region), water storage and drainage boards should be considered.

### HDPE (High Density Polyethylene) Storage And Drainage Board Features:

- The use of high-quality raw materials, according to the characteristics of raw materials and mechanical engineering design, strong compression resistance, strong load-bearing force;
- Good water storage, large cup design high capacity water storage, can provide water and oxygen for plant growth, protect plants from water shortage and wilt, roof rental heat insulation function is good;
- It has two comprehensive functions of water storage and drainage, and the cross design has good drainage performance;
- Convenient transportation and construction, can be directly buckled on. Strong operability, no technology, short construction period, reduce costs.

## APPLICATION

HDPE storage and drainage board has many functions such as water storage, drainage, air permeability, heat preservation and heat insulation, and root resistance (preventing plant roots from destroying concrete structures). Combined with geotextiles, it can avoid the fine particle matrix blocking the water storage tank and drainage channels, maintain smooth drainage and air circulation, and form a complete, new storage and drainage system, which is widely used in roof greening, underground car roof greening, city square, golf course, sports field, sewage treatment plant, public building greening, square greening, park road greening.

## SPECIFICATIONS OF HDPE (HIGH DENSITY POLYETHYLENE) STORAGE AND DRAINAGE BOARD

Model Number	DK-H08	DK-H10	DK-H12	DK-H16	DK-H20	DK-H25	DK-H30
Material	HDPE						
Convex Hull Height(mm)	8	10	12	16	20	25	30
Weight(g/m <sup>2</sup> )	1000	1100	1200	1400	1500	1600	1800
Board Thickness(mm)	0.7	0.8	0.9	1	1.1	1.1	1.2
Tensile Strength(N/100mm)	350						
Anti-Pression Strength(kpa)	300						
ElongationRate(%)≥	80						
Flow(cm <sup>3</sup> ·s)	10						
CBR Puncture Sterngth(N)	350						

## COMPARED TO THE PREVIOUS GENERATION OF DRAINAGE PRODUCTS

It has functions such as creating drainage within the layer, discharging permeable water from the soil, and storing partially permeable water. Compared to the previous generation of drainage products, it has the following advantages and disadvantages:

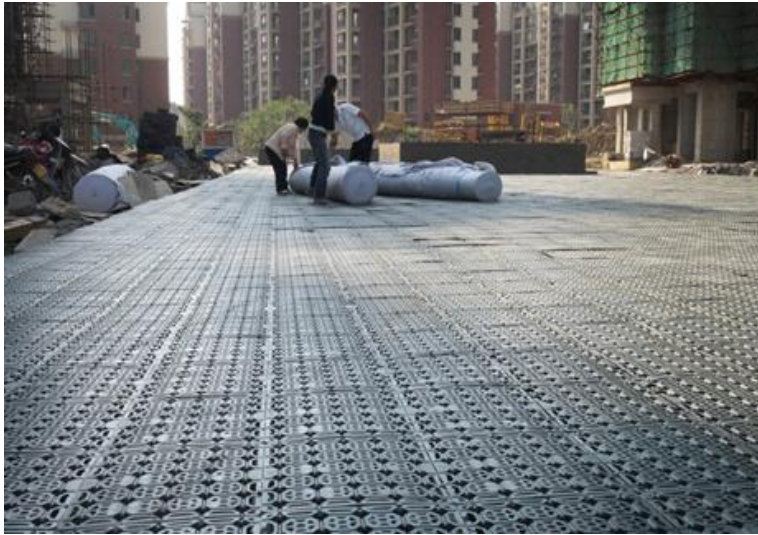
1. In northern China, there is drought and less rainfall, and drainage boards can store water, which is beneficial for the growth of vegetation;
2. The convex side wall of the water storage and drainage board is thick, so the compressive strength is relatively high, which can reach over 40T, far greater than plastic convex sheets (high-density polyethylene drainage board, high impact polystyrene drainage board), plastic drainage mesh pads and other similar products (which can be actually rolled and tested), and can meet the construction and normal operation requirements during backfilling;
3. The support surface of the water storage and drainage board is relatively large, which will not block the drainage channel due to the sinking of the overlying non-woven fabric (as shown in the figure below), nor will it block the drainage channel due to the insufficient tension of the non-woven fabric tearing and soil entering. The water storage and drainage board can fully retain the drainage space, completely avoiding the occurrence of poor drainage caused by the sinking of plastic protrusions due to non-woven fabric, and will never cause vegetation withering or death due to poor drainage.

## WORKING PRINCIPLE OF STORAGE AND DRAINAGE BOARD

The water storage and drainage board has a dual function of water storage and drainage, especially in terms of water storage. According to the size of rainfall, it can timely eliminate waterlogging caused by a large amount of precipitation. At the same time, it can also store the water required for plant growth, with a water storage capacity of 10-90%, ensuring that the water stored can evaporate to the planting layer during drought, supply water to the plants above, and form a cavity between the impermeable layer of the structure and the soil, allowing air to flow in it, ensuring soil permeability and normal plant growth. In the basic construction of building greening, any form of garden and landscape construction can be carried out on the basis of the water storage and drainage layer, which can effectively ensure the safety of the building greening project.



## PROJECTS CASE OF HDPE (HIGH DENSITY POLYETHYLENE) STORAGE AND DRAINAGE BOARD



[Ground Waterproofing in Puerto Rico]



[Garage Roof Greening in Venezuela]

### CONSTRUCTION PRECAUTIONS

1. When used in flower ponds, flower beds, and flower beds in gardens, water storage boards and filter geotextiles are directly used instead of conventional materials (such as filter layers composed of ceramic particles, pebbles, or shells).
2. When used for greening hard interfaces such as new and old roofs or underground engineering roofs, before laying the water storage and drainage boards, the debris on site should be cleaned first, and a waterproof layer should be set according to the design drawings. Then, cement mortar should be used to slope the surface to ensure that there are no obvious bumps or depressions. The water storage and drainage boards should be arranged in an orderly manner, and there is no need to set up additional drainage blind ditches within the laying range.
3. When used for building sandwich panels, the water storage and drainage board is laid on the roof concrete slab, and a single wall is built outside the water storage and drainage board, or concrete is used to protect it, so that underground seepage flows into the blind ditch and collection pit through the overhead space of the drainage board.
4. The water storage and drainage boards should be spliced together around each other, and the gaps during laying should be used as the lower drainage channel. The geotextile filtering and moisturizing layer on top of it should also be overlapped well.
5. After the installation of the water storage and drainage board is completed, the next layer of work can be carried out. The filter geotextile and substrate layer should be laid as soon as possible to prevent soil, cement, and yellow sand from blocking the pores or entering the water storage, water tank, and drainage channels of the water storage and drainage board. To ensure that the water storage and drainage board fully plays its role, an operation board can be laid on the filter geotextile to facilitate greening construction.

### CONSTRUCTION LAYING

- After the construction of the waterproof layer and its protective layer is completed, start laying the drainage board. Require the slope of grassroots drainage to meet a range of 2% to 5%;
- Lay the drainage board with the cup shaped mouth facing upwards and the teeth interlocked;
- Cover the drainage board with geotextile, overlapping 10-20cm to prevent mud and water from passing through the geotextile, clogging the water storage and drainage system, causing poor drainage and reduced water storage capacity;
- Lay 10-20mm medium coarse sand on the geotextile to form a permeable filter layer, which can prevent the loss of planting soil;
- Cover with appropriate thickness of planting soil;
- It is necessary to ensure the protection of finished drainage boards. After the installation of the drainage board, it should not be allowed to directly push hand carts on the drainage board. When transporting materials, wooden boards and horse paths should be laid. Ensure that the soil is filled as soon as it is laid.

