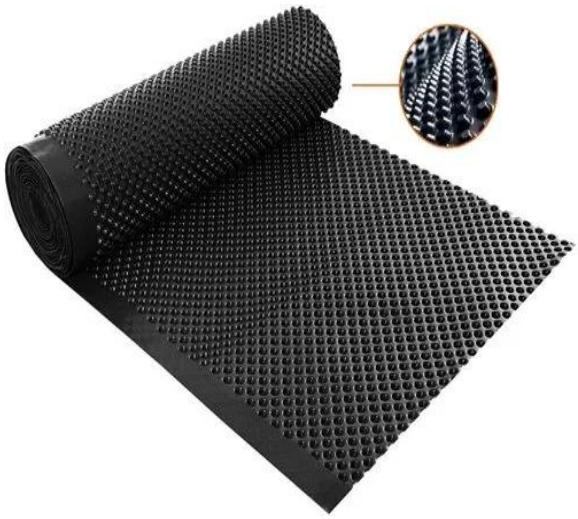
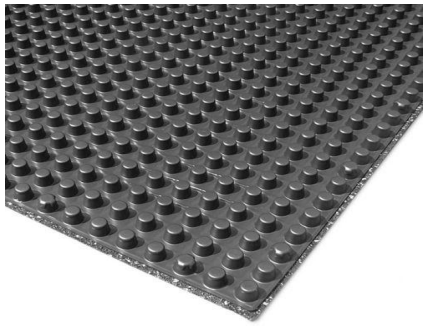


# HIPS (High Impact Polystyrene) Drainage Board

HIPS drainage board refers to the plastic bottom plate made of polystyrene resin as raw materials by stamping conical protruding table or stiffener convex points (or hollow cylindrical porous). HIPS drainage board replaces the traditional drainage method to save time, labor and energy, save investment, and reduce the load of the building. HIPS drainage board has a width of 1-3 meters and a length of 4-10 meters or more.



[HIPS Drainage Board]

HIPS drainage board is made of polystyrene resin as the main raw material, and the surface is concave and convex shape of the protective drainage board, which plays a protective role in the building and waterproof layer. The drainage board is used to assist in waterproofing and its main function is drainage. So we cannot rely solely on drainage boards for waterproofing. When doing these details, we are trying to increase its waterproofing as much as possible.

[HIPS Drainage Board]

A good drainage system plays an important role in the construction cycle of civil engineering and the normal use and lifespan of structures. The drainage board and porous permeable pipe form an effective drainage system, and the cylindrical porous drainage board and geotextile also form a drainage system, forming a system with water seepage, storage, and drainage functions.

## HIPS (High Impact Polystyrene) Drainage Board Features:

- The concave and convex hollow rib structure of HIPS drainage plate can quickly and effectively derive rain water, greatly reduce the hydrostatic pressure of the waterproof layer, and the active waterproof effect can be achieved through this active water conduction principle. HIPS drainage plate material itself is a good waterproof material. By using a reliable connection method, the drainage plate becomes a good auxiliary waterproof material;
- HIPS drainage plate can effectively protect the structure and waterproof layer, and resist all kinds of acid and alkali in the soil and plant thorns. When backfilling the basement exterior wall, it can protect the building and waterproof layer from damage;
- HIPS drainage plate has obvious noise reduction and sound insulation function. When the drainage board is used on the ground or wall, it can also play a good role in ventilation and moisture-proof.

Mobile: +86 15515596408 (WhatsApp/ Wechat/ Viber) Email: miki@glgeosynthetics.com Web: www.glgeosynthetics.com
Add: No. 69 Huanghe East Road, Yanggu County, Liaocheng City, Shandong Province, China 252000

## APPLICATION

HIPS drainage plate is used for garage roof greening, roof garden, football field, golf course and other greening projects, basement inside and outside wall, roof seepage prevention and heat insulation layer, waterproofing system for drainage of roads, tunnels, square decks, earth houses, commercial buildings, retaining walls, underground parking lots and other places. Excellent drainage plays a key role in the construction period of civil construction and the normal operation and life of structures.

## SPECIFICATIONS OF HIPS (HIGH IMPACT POLYSTYRENE) DRAINAGE BOARD

PERFORMANCE PARAMETERS FOR HIPS DRAINAGE BOARD ISO STANDARD

| Technical data | Unit | UltimateDrain 40<br>UltimateDrain 40 mm thick water retention and runoff-delay drainage board |
|---|---|---|
| Length | mm | 2102 |
| Width | mm | 980 |
| Area | $m^2$ | 2.06 |
| Height | mm | 40 |
| Weight | kg/board | 4.65 |
| Weight per unit area | $kg/m^2$ | 2.257 |
| Diameter of the perforations | mm | 2 |
| Colour | | Black |
| Material | | Recycled High Impact Polystyrene (HIPS) |
| Tensile strength - EN ISO 10319 | | |
| Warp (MD) | kN/m | 8.04 |
| Weft (CMD) | kN/m | 5.35 |
| Tensile extension - EN ISO 10319 | | |
| Warp (MD) | % | 43.9 |
| Weft (CMD) | % | 28.9 |
| Compressive strength - EN ISO 802 | | |
| Empty | $kN/m^2$ | 345 |
| Infilled: 4 - 8 mm gravel | $kN/m^2$ | 400 |
| CE marking | | Affixed |
| Boards stackable during delivery | | Yes |
| Packaging | | Palletised |
| Packaging unit | boards/pallet | 218 |
| Packaging unit | $m^2$/pallet | 450 |
| Pallet size (L×W×H) | mm | 2100 x 1000 x 1650 |
| Pallets stackable during delivery | | No |
| Gross weight (full pallet) kg/pallet | | 1055 |

# PROJECTS CASE OF HIPS (HIGH IMPACT POLYSTYRENE) DRAINAGE BOARD

[Building Floor in Zimbabwe]

[Square Ground in Uganda]

## CONSTRUCTION PRECAUTIONS

Installation of HIPS drainage board is an important step in ensuring effective waterproofing and soil retention. Follow these steps for proper installation:

- Prepare the surface: Clean the surface where the drainage board will be installed to ensure it is smooth, clean, and free of protrusions or sharp objects that may damage the board.
- Unroll the board: Roll out the drainage board onto the prepared surface, making sure it is aligned and centered correctly.
- Cut and trim: Use a sharp knife or scissors to cut the board to the required size and shape, taking care to make precise cuts and avoid any damage to the board.
- Overlap the boards: For larger areas, overlap multiple boards by at least 100 mm and use a hot air gun to weld the seams together.
- Fix the board: Fix the board to the surface using mechanical fixings or adhesive, following the manufacturer's instructions.
- Install the waterproofing membrane: Once the drainage board is installed, install the waterproofing membrane on top of it using the appropriate adhesive or mechanical fixings.
- Test the system: Test the system thoroughly to ensure it functions correctly and provides the required level of protection.

### Precautions for drainage board construction:

- In vertical applications, fix the drainage board to the wall with profiles in the subbasement level. Ensure the direction of the dimples is towards the outer side of the wall. Overlap the joints between the plates by at least 20 cm. Fix the overlap parts of the plates to each other by hot air hand welding or glued insulated tape if desired.
- In horizontal applications, lay the drainage board on the ground. Ensure the direction of the dimples is towards the ground. Overlap the joints between the plates by at least 30 cm. Fix the overlap parts of the plates to each other by hot air hand welding or glued insulated tape if desired.
- The ideal application temperature range for drainage board is between +5 to +30 degrees Celsius.

## APPLICATION SCENARIOS

- HIPS drainage board is uesd for sewage-treatment plant;
- HIPS drainage board is uesd for landscaping around public building;
- HIPS drainage board is uesd for sports field;
- HIPS drainage board is uesd for road greening project within the park;
- HIPS drainage board is uesd for greening of underground roof panels;
- HIPS drainage board is uesd for square greening;
- HIPS drainage board is uesd for reservoir seepage prevention;
- HIPS drainage board is uesd for artificial lake anti seepage water;
- HIPS drainage board is uesd for embankment and slope protection layer.

When used on the ground or wall, drainage boards can also play a good role in ventilation and moisture prevention.

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