



HDPE (High Density Polyethylene) Waterstop

HDPE waterstop is a new type of waterstop material made by special processes of high-density polyethylene and various chemical additives. In the design of general large scale engineering buildings, due to the inability to continuously pour or the thermal expansion and contraction of concrete components caused by deformation of the foundation or temperature changes, construction joints, settlement joints, and deformation joints need to be left. Waterstops must be installed at these joints to prevent water leakage.

HDPE waterstop is a plastic water stop similar to PVC waterstop, made of high quality high density polyethylene material, in contact with hydrocarbons, acids, hot oil, solvents and diesel oil has high chemical resistance. However, the HDPE waterstop is harder, more wear resistant and more heat resistant than the PVC waterstop.



[HDPE (High Density Polyethylene) Waterstop]



[HDPE (High Density Polyethylene) Waterstop]

Waterstop plays an important role in waterproofing a concrete structure especially joints, the weakest part which is liable to leakage of water or chemical liquids. So water stops are designed as a fluid-tight diaphragm embedded in or running along the joints to solve these problems. Manufactured from various materials in a range of shapes and sizes.

HDPE (High Density Polyethylene) Waterstop Features:

- HDPE waterstop is sturdy and durable;
- HDPE waterstop is resistant to high and low temperatures;
- HDPE waterstop has excellent wear resistance;
- HDPE waterstop has excellent resistance to chemical liquids, hydrocarbons, acids, solvents, oils, fuels, and other non-polar fluids;
- HDPE waterstop resistant to oxidants and reducing agents;
- HDPE waterstop is not easy to expand and flexible.

- The selection of the water bars shall be made based on the nature of the construction and its applicability. All the types waterstops cannot be used in every concrete structure.
- In addition, different types of waterstops are not used in the same structure due to their compatibility.

Drainage Products: HDPE (HIGH DENSITY POLYETHYLENE) WATERSTOP

APPLICATION

HDPE waterstop can be used in sewage treatment facilities, refueling areas, mining and refining facilities, chemical plants, gasket applications and other fields.

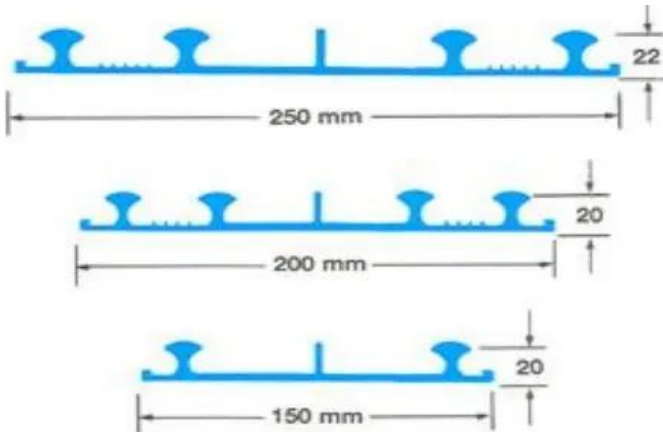
SPECIFICATIONS OF HDPE (HIGH DENSITY POLYETHYLENE) WATERSTOP

Physical properties	Test methods	Minimum value
Specific gravity	ASTM D-792	0.941
Hardness shore A	ASTM D-2240	90 ± 3 at 25 °C (77 °F)
Tensile strength	ASTM D-412	4000 psi
Ultimate elongation	ASTM D-412	7.5
Low temperature brittleness °F (°C)	ASTM D-746	-148 (-100) passed
Chemical resistance	ASTM D-471	Meet even exceed
Softening	-	154 °F

SURFACE WATERSTOPS AT FACE

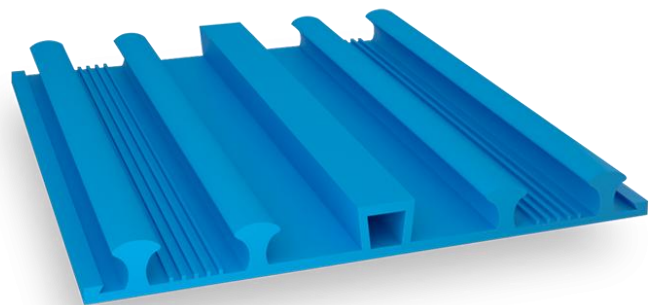
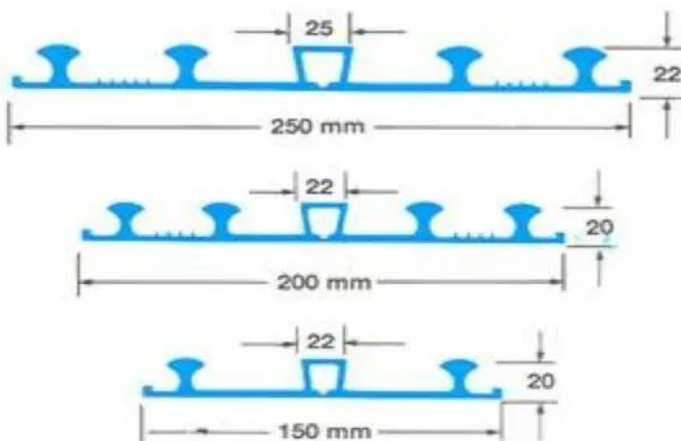
Surface water bars are used to avoid the movement of the water through the construction joints, contraction joints, movement joints, and expansion joints.

The type of water stops used for construction joints is not same as the types used for the expansion and movement joints. The following figure indicates the type of water stops used for contraction and construction joints.



When there are expansion or movement of the structures are required, it shall be allowed by the water bars. The segment in the middle of the water bars is modified to allow the movements.

The following figure indicates the typical type of water bar to be used in expansion and movement joints.



PROJECTS CASE OF HDPE (HIGH DENSITY POLYETHYLENE) WATERSTOP



[Sewage Disposal in Sri Lanka]



[Gas Station in Lebanon]

CONSTRUCTION OF HDPE WATERSTOP

1. During the construction process, due to the presence of many sharp stones and steel bars in the concrete, attention should be paid to avoiding mechanical damage to the waterstop during operation.
2. When positioning the plastic waterstop, it is necessary to ensure that it fits smoothly with the concrete interface, and there should be no flipping or twisting of the waterstop. Otherwise, it should be adjusted in a timely manner.
3. When pouring fixed waterstops, it is necessary to prevent the waterstop from shifting and affecting the waterstop effect.
4. Plastic waterstop joints can be secured by bonding, hot welding, and other methods to ensure their firmness.
5. During the pouring process of concrete, attention should be paid to sufficient vibration to achieve a full bonding between the waterstop and the concrete.

Precautions for construction of waterstops:

During the construction process, users should be careful not to cause mechanical damage to the plastic waterstop due to the presence of many sharp stones and steel bars in the concrete. When positioning the plastic waterstop, it is necessary to ensure that it fits smoothly with the concrete interface, and there should be no flipping or twisting of the waterstop. Otherwise, it should be adjusted in a timely manner. When pouring fixed waterstops, it is necessary to prevent the waterstop from shifting and affecting the waterstop effect. The joint of the waterstop can be secured by bonding, hot welding, and other methods. During the pouring process of concrete, attention should be paid to sufficient vibration to achieve a full bonding between the waterstop and the concrete.

- HDPE waterstop is suitable for water and sewage disposal projects;
- HDPE waterstop is suitable for liquid containments;
- HDPE waterstop is suitable for dams, channels, tunnels and tanks;
- HDPE waterstop is suitable for box culverts and locks;
- HDPE waterstop is suitable for primary and secondary containment structures;
- HDPE waterstop is suitable for wall and slabs;
- HDPE waterstop is suitable for basements and foundations.



In the design of general large-scale construction projects, construction joints, settlement joints, and deformation joints need to be left due to the inability to continuously pour, deformation of the foundation, or thermal expansion and contraction of concrete components caused by temperature changes. Water stops must be installed at these joints to prevent water leakage.