



**Product Description**

GSE HyperNet is a three-dimensional synthetic drainage geonet providing long-lasting drainage function – even at high normal loads. GSE HyperNet is produced from virgin premium grade high density polyethylene (HDPE). This polyethylene resin is designed specifically for durable applications. GSE HyperNet geonets are formulated to resist chemical and microbiological attack as well as UV-radiation and thermal ageing and provides outstanding durability. Due to the raw material selection and the structure GSE HyperNet provides long-term resistance to compressive creep stress and fluids are transmitted uniformly under a variety of field conditions. GSE HyperNet geonets are available in various thicknesses. The tables below contain index characteristics. Please contact GSE for information regarding performance of the product under site-specific load, gradient, and boundary conditions.

**Technical Characteristics**

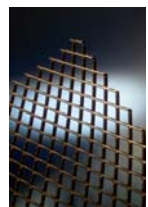
Property	Test Method	Unit	Values (*)					
Product Type	---	---	CN-E		ST-E		HF-E	
Product Code	---	---	XL0500N004S		XL0650N004S		XL0900N004S	
Polymer Type	---	---	High Density Polyethylene (HDPE)					
Density	DIN ISO 1183-1/A	g/cm <sup>3</sup>	≥ 0.940		≥ 0.940		≥ 0.940	
Thickness at 20 kPa (d)	DIN EN ISO 9863-1	mm	3.8		5		6	
Tensile Strength MD (T <sub>max</sub> )	DIN EN ISO 10319	kN/m	5.0		7.0		9.0	
In-plane Flow Capacity (q <sub>p</sub> ); MD (rigid/rigid)	DIN EN ISO 12958	l/(m x s)	i = 1	i = 0.1	i = 1	i = 0.1	i = 1	i = 0.1
20 kPa			2.1	0.5	2.5	0.55	2.7	0.6
50 kPa			2.0	0.45	2.4	0.5	2.6	0.55
100 kPa			1.6	0.35	2.3	0.45	2.4	0.5
200 kPa					2.0	0.25	2.0	0.45
500 kPa							1.5	0.3

**Durability Characteristics**

Property	Test Method	Unit	Values (*)		
Carbon Black Content	ASTM D 1603	%	2.0 – 3.0	2.0 – 3.0	2.0 – 3.0
Oxidative Induction Time (OIT)	ASTM D 3895 (190°C; Pure O <sub>2</sub> ; 1 atm)	min	≥ 100	≥ 100	≥ 100
Resistance to Oxidation at elevated Oxygen Pressure Tensile Strength and Tensile Elongation – retained values after 14 days	EN ISO 13438 (C1; pH 10; 80°C; 5 MPa)	%	no significant change of initial properties		

The product information set forth herein contains guiding values, achieved in our laboratories and/or independent testing institutes on basis of valid test standards and reflects our best knowledge at the time of issue. The values are subject to usual variation in production. The constant quality is verified according to ISO 9001:2000.

This information is provided for reference purposes only and is not intended as a warranty or guarantee. GSE assumes no liability in connection with the use of this information. Please check with GSE for current, standard minimum quality assurance procedures. This information is subject to change without prior notice. Please contact GSE for updated information.



**Europe, CIS & Africa Headquarters**  
**GSE Lining Technology GmbH**  
Normannenweg 28  
20537 Hamburg  
Germany  
Tel.: +49 40 76742-0  
Fax.: +49 40 76742-34  
e-mail: europe@gseworld.de

**Corporate Headquarters**  
**GSE Lining Technology, Inc.**  
19103 Gundle Road  
Houston, Texas 77073  
USA  
Tel: +1 281 443-8564  
Fax: +1 281 875-6010

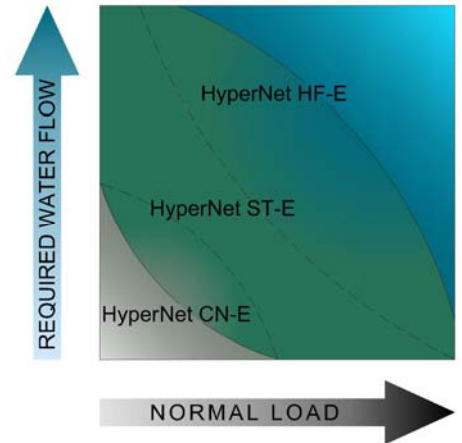
**Other Production Facilities & Sales Offices**  
United Kingdom  
Russia  
Turkey  
Australia  
Thailand  
Egypt  
Chile



1213-CPD-4166

**Typical Applications**

GSE HyperNet geonets have been developed to provide drainage function over a broad range of anticipated site loads and gradients, to replace thick mineral drainage layers. The x-shaped geonet structure is ideal for the in-plane conveyance of liquids and/or gases. GSE HyperNet can be used in different applications in the environmental civil engineering and building construction sector. GSE HyperNet geonets are used for horizontal and vertical collection and drainage of water, leachate and gases in the following fields of application: landfills, roads, railways, tunnels, bridges, park decks, foundations, canals, dams, water reservoirs, airfields and sportfields.



**Roll Dimensions**

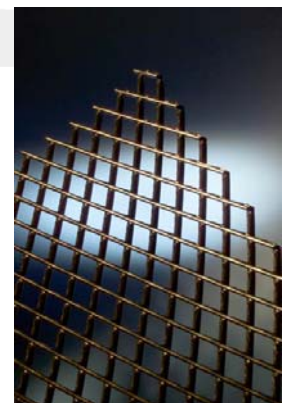
	Unit	Truck Load			Container Load		
		CN-E	ST-E	HF-E	CN-E	ST-E	HF-E
Roll Width (approx.) (b) <sup>(a)</sup>	m	4.1	4.3	4.3	4.1	4.3	4.3
Roll Length (approx.) (l) <sup>(a)</sup>	m	100	80	70	90	75	70
Roll Area (approx.)	m <sup>2</sup>	410	344	301	369	322.5	301

(\*): All values unless otherwise noted are guiding values. Minimum values are within the 95% confidence interval in connection with the use of this information. Please check with GSE for current, standard minimum quality assurance procedures. This information is subject to change without prior notice. Please contact GSE for updated information.

(a): Roll width and lengths have a tolerance of -1%

*The product information set forth herein contains guiding values, achieved in our laboratories and/or independent testing institutes on basis of valid test standards and reflects our best knowledge at the time of issue. The values are subject to usual variation in production. The constant quality is verified according to ISO 9001:2000.*

*This information is provided for reference purposes only and is not intended as a warranty or guarantee. GSE assumes no liability in connection with the use of this information. Please check with GSE for current, standard minimum quality assurance procedures. This information is subject to change without prior notice. Please contact GSE for updated information.*



**Europe, CIS & Africa Headquarters**  
**GSE Lining Technology GmbH**  
 Normannenweg 28  
 20537 Hamburg  
 Germany  
 Tel.: +49 40 76742-0  
 Fax.: +49 40 76742-34  
 e-mail: europe@gseworld.de

**Corporate Headquarters**  
**GSE Lining Technology, Inc.**  
 19103 Gundle Road  
 Houston, Texas 77073  
 USA  
 Tel: +1 281 443-8564  
 Fax: +1 281 875-6010

**Other Production Facilities & Sales Offices**  
 United Kingdom  
 Russia  
 Turkey  
 Australia  
 Thailand  
 Egypt  
 Chile



1213-CPD-4166