HUESKER FORNIT® & DUOGRID® DATA SHEET
FLEXIBLE BIAXIAL POLYESTER GEOGRID FOR SUBGRADE REINFORCEMENT

Fornit® is manufactured from woven polyester fibres with a polymer coating.

Fornit® is a very robust subgrade reinforcement which binds and confines the the aggregate into a restrained bearing layer .

Duogrid® manufactured the same as Fornit® but is laminated to a nonwoven geotextile giving the geogrid the additional properties of separation and filtration .

PRODUCT DATA			FORNIT 20/20-40	DUOGRID 20/20B15 COMPOSITE	FORNIT 30/30-40	DUOGRID 30/30B15 COMPOSITE	FORNIT 40/40-40	DUOGRID 40/40B15 COMPOSITE
MECHANICAL	TEST	UNIT						
Ultimate tensile strength Longitudinal Transverse	EN ISO 10.319	kN/m	≥ 20 ≥ 20	≥ 20 ≥ 20	≥ 30 ≥ 30	≥ 30 ≥ 30	≥ 40 ≥ 40	≥ 40 ≥ 40
Tensile strength @2% strain Longitudinal Transverse	EN ISO 10.319	kN/m	≥ 8 ≥ 8	≥ 8 ≥ 8	≥ 12 ≥ 12	≥ 12 ≥ 12	≥ 16 ≥ 16	≥ 16 ≥ 16
Tensile strength @5% strain Longitudinal Transverse	EN ISO 10.319	kN/m	≥ 18 ≥ 18	≥ 18 ≥ 18	≥ 24 ≥ 24	≥ 24 ≥ 24	≥ 32 ≥ 32	≥ 32 ≥ 32
Strain @ nom. tensile strength Longitudinal Transverse	EN ISO 10.319	%	≤ 7% ≤ 7%	≤ 8% ≤ 8%	≤ 7% ≤ 7%	≤ 8% ≤ 8%	≤ 7% ≤ 7%	≤ 7% ≤ 7%
GEOTEXTILE HYDRAULIC								
Pore size	EN ISO 12956	μm	--	120 ± 20	--	120 ± 20	--	120 ± 20
Water permeability index normal to the plane	EN ISO 11058	m/s	--	100×10^{-3}	--	100×10^{-3}	--	100×10^{-3}
PHYSICAL								
Weight	EN ISO 9864	g/m²	~ 190	~ 350	~ 260	~ 420	~ 330	~ 330
Mesh size (approx.)		mm	40 x 40	40 x 40	40 x 40	40 x 40	40 x 40	40 x 40
PACKAGING								
Roll width x length	NA	m	5.2m x 200m	5.2m x 200m	5.2m x 200m	5.2m x 200m	5.2m x 200m	5.2m x 200m
FORNIT DATA REVISED 02/2007 : DUOGRID DATA REVISED 03/2007								

PRODUCT NOTES
- The information listed in this data sheet is subject to periodic review and could be changed without notice.
- Fornit® and Duogrid®' flexible geogrids are manufactured according to ISO 9001 quality assurance procedures.

The information contained herein is furnished without charge or obligation.

No responsibility is accepted for any change in product properties due to environmental influences and or improper application or handling.

 # HUESKER
Engineering with Geosynthetics

CE

TÜV CERT
EN ISO 9001

Deutscher Akkreditierungs Rat
DAR
DAP-PL-3226.00
Akkreditiert nach DIN EN ISO/IEC 1702

GEOTECH SYSTEMS LTD - Box 6035 - TAURANGA 3146

Rev. March 2012 Sales orders / enquiries - Email sales@gtsl.co.nz - Phone 0800 436 832 www.geotechsystems.co.nz   Page **31** of **50**

Engineering with Geosynthetics
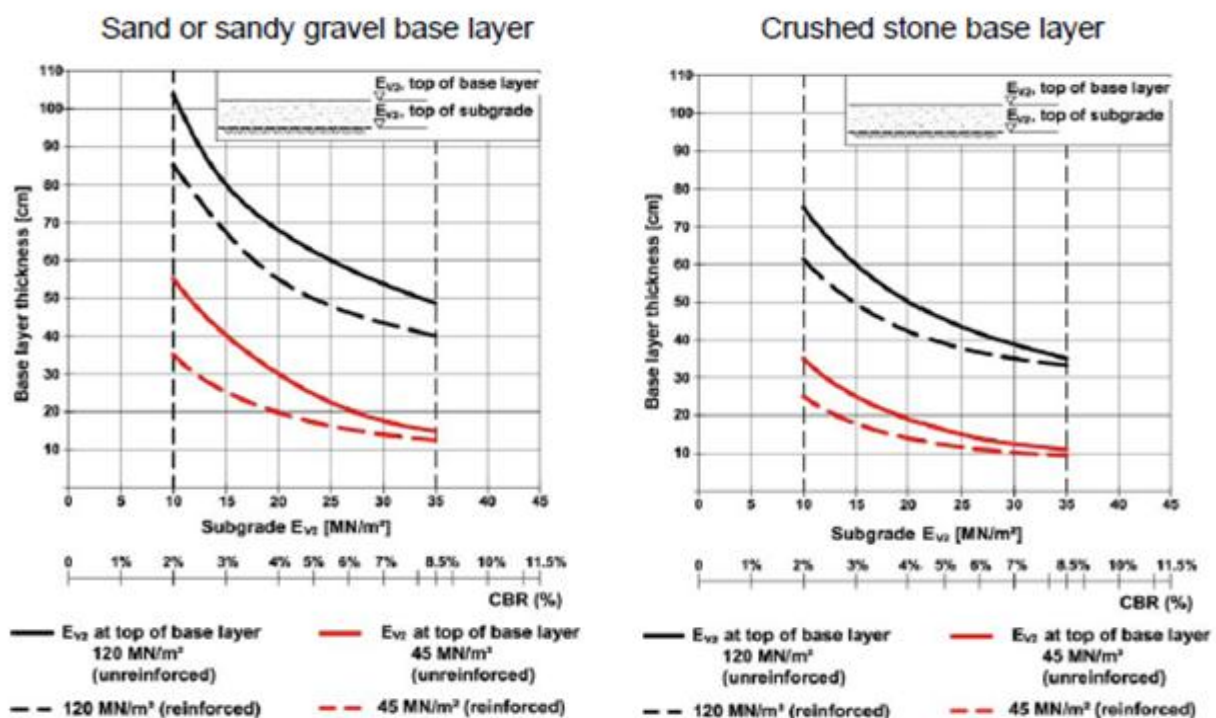
⊞ HUESKER

www.huesker.com

Increasing load-bearing capacity
- Calculation of the required geosynthetic reinforcement -

The objective of reinforcing a load bearing layer with a geosynthetic is to reduce the thickness of the structural basecourse layer and to reduce deformations / rutting of the pavement surface and or increase the permissible applied axel load.

This calculation is based on experience and the evaluation of many previously completed construction projects. The following parameters are mutually interactive and are determinant in the calculation of the required reinforcement:

- Bearing capacity of the subgrade, E_{V2} or CBR value
- Thickness and material of the structural layer
- Loading

Suitable reinforcement can be derived as follows:

Sand or sandy gravel base layer

Crushed stone base layer

The Y-axis indicates the reduction in the required thickness of the basecourse achieved through the use of Fornit reinforcement.

Bearing capacity of the subgrade:
If the bearing capacity of the subgrade $E_{V2} < 10$ MN/m², our engineers will be pleased to calculate the required reinforcement for you free of charge.

If the bearing capacity E_{V2} is in the range $10 - 20$ MN/m², the most suitable reinforcement is **Fornit® D 30/30-40 T** geogrid. In the bearing capacity range $> 20 - 30$ MN/m², the required reinforcement is **Fornit® D 20/20-40 T**.
If material separation is required in addition to a reinforcing function or increased filter stability is called for, we recommend the geocomposite **Duogrid®**, a reinforcement grid with an integral nonwoven. Depending on strength requirements; **Duogrid® 30/30 B15** or **Duogrid® 20/20 B15**. may be appropriate
If other conditions or extreme loads apply, we recommend that a more accurate analysis is carried out by one of our applications engineers. The bearing capacity of the subgrade must be proven before construction begins. We recommend that test sections are completed first to optimise the required unbound geogrid-reinforced construction.
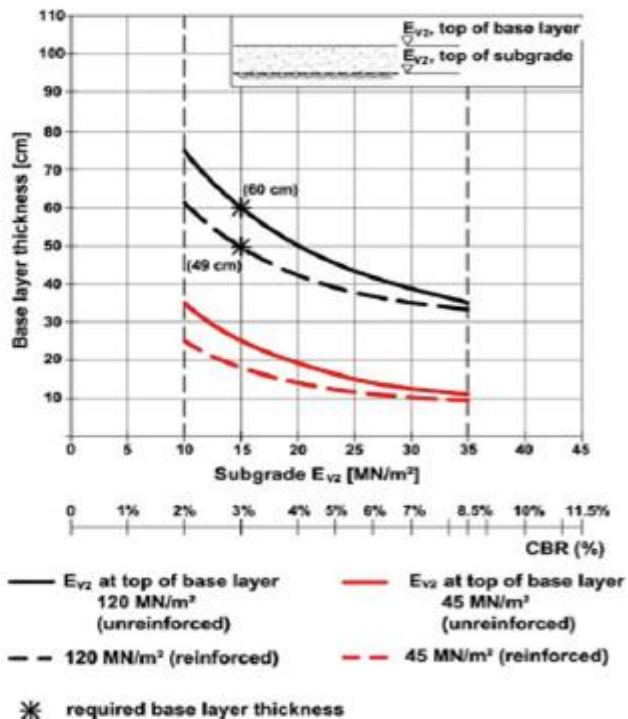
Example calculation:

Bearing capacity of the subgrade:
$E_{V2} = 15$ MN/m²

Required bearing capacity
on the base layer:
$E_{V2} = 120$ MN/m²

Base layer material:
Crushed stone

Required base layer thickness without reinforcement: **600mm**
Required base layer thickness with **Fornit® D 30/30-40 T**: **490mm**
Saving (crushed stone structural layer material): **110mm**

⊞ HUESKER C E
Engineering with Geosynthetics

TÜV CERT
EN ISO 9001

Deutscher Akkreditierungs Rat
DAR
DAP-PL-3226.00
Akkreditiert nach DIN EN ISO/IEC 1702