

DuoLiner **Made by** G²

Innovated Sealing- and Protectionssysteme



DuoLiner MDDS

DuoLiner KBB

DuoLiner MDB

G quadrat – The world of geosynthetics



G quadrat



G quadrat, a company that is able to provide individual advice, independent design and the potential cost saving realization on National and International waterproofing and lining Projects.

The business spirit and methodology of G quadrat represents farsighted project supervision and the close partnering with clients and other design professionals.

The sealing of landfill, groundwater-protection, building structures, Tunnels and Roof water-proofing is the competence of G quadrat and its partner.

The G quadrat team has substantial expertise in environmental and groundwater protection.

G quadrat – The world of geosynthetics



Roof-sealing



Landfill-sealing



Tunnel-sealing

DuoLiner Type MDDS

Mineral
landfill
sealing
protection system

DuoLiner Type KBB

Capillary
sealing
layer

DuoLiner Type MDB

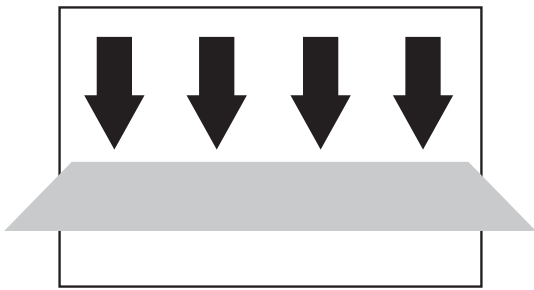
Geosynthetic
Clay
Liners

DuoLiner – Advantages at first sight

- Increased landfill volume
- Cost-effective construction
- Perfect protection for plastic liner (KDB) far below design-limits
- Production length up to 80 m
- Media-resistant
- UV-Resistance according to **BAM** “very high”
- Internal and external quality control
- Computer controlled thickness-measuring
- Installation right after release of the foundation regardless of the weather
- High installation performance
- MDDS is **BAM** approved
- Low overlapping loss due to variable length

DuoLiner MDDS
DuoLiner KBB
DuoLiner MDB





DuoLiner MDDS – protect



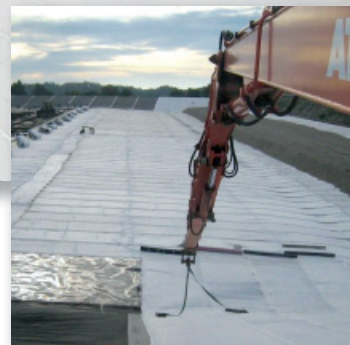
DuoLiner MDDS

Easy protection

- The industrial produced and **BAM** approved MDDS is used as ground protection for landfills between waste categories 1 and 4; it's either been used as basic- or combination sealing.
- The MDDS is a product made of double layered, coated, PE-HD woven fabric and separation fabric that is filled with classified sand.

Your advantage

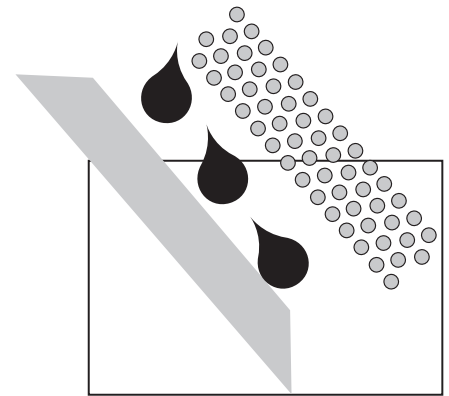
- The single use of MDDS is replacing the combination of 1.200 g/m² **BAM** approved geomembrane and 15 cm mineral protection layer.
- Installation right after release of plastic liner (KDB)
- The installed MDDS additionally supports the pre-installed plastic liner (KDB) in its layer.



DuoLiner KBB

Easy block

- The industrial produced KBB is used as capillary block in a capillary barrier in landfills between waste categories 1 and 4; it's either been used as basic- or combination sealing.
- The KBB is a product made of double layered, coated, PE-HD woven fabric and separation fabric that is filled with classified fine gravel.
- The functional principle of the capillary block is based on the "pore-jump" between capillary layer and capillary block. The thickness of the capillary block is individually designed for optimal use of the entire system.



DuoLiner KBB - block

Your advantage

- The use of KBB can replace the capillary block of the capillary barrier with the thickness of 25 - 30 cm.
- Required material for the sealing purpose can stored place-saving. Due to industrial conditioning the classified fine gravel can be matched individually for the designed capillary layer.



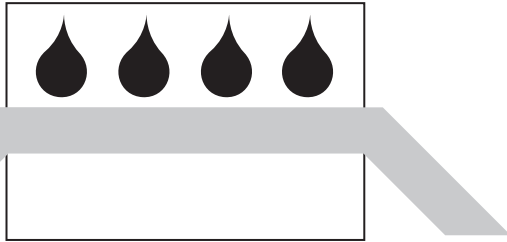
DuoLiner MDB

Easy sealing

- The industrial produced MDB is an alternative sealing layer for landfill covering purposes either been used as basic- or combination sealing.
- The MDB is a product made of double layered, coated, PE-HD woven fabric and separation fabric that is filled with a defined sand-bentonite mixture in order to result in a swelling sealing layer.

Advantages of a MDB-System

- The traditional mineral component of the landfill cover with a thickness of 50cm can be replaced by the MDB.
- Installation right after release of the foundation.
- Constant quality of the sand-bentonite mixture due to optimal industrially conditioned materials.

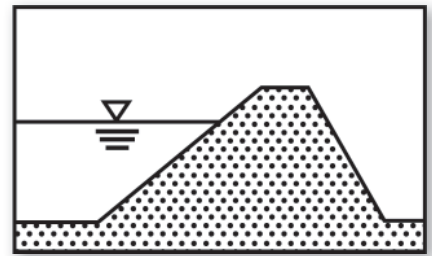


DuoLiner MDB – sealing

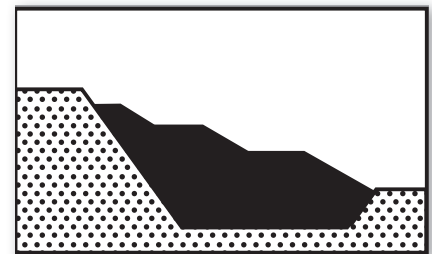


Technical informations

- Delivery on rolls
Width: 2,20m, Length: up to 80 m
- The stockyard has to be dry, plane and free of stones and other sharp items
- Double layered, coated (both sides), PE-HD woven fabric with separation fabric (weight per unit area: 270 g/m²)
- Mineral component:
 - Weight: ca. 30 kg/m²
 - Thickness: 20 mm (filled)
- Technical data sheets, inspection certificates and installation instructions are available at G quadrat or other certificated installation companies.



Rain storage reservoir



Landfill



■ References

DuoLiner MDDS

Deponie Cröbern
139.000 m²

Kirchhoff Leipzig Straßenbau GmbH & Co. KG
Großlehna / Chemnitz

Deponie Dortmund Nordost
43.600 m²

ARGE Organikfeld 9, Trapp/Heitkamp, Wesel

Deponie Niemark/Lübeck
45.000 m²

Hochtief Umwelt, Essen

DuoLiner KBB

Deponie Breinermoor
20.000 m²

Landkreis Leer, Bilfinger Berger AG

Goslar, Harz Metall GmbH
11.000 m²

Matthäi Bauunternehmung GmbH & Co. KG,
Langenhagen

Deponie „Am Lemberg“
44.000 m²

ARGE OFA Deponie „Am Lemberg“ 2.BA

DuoLiner MDB

Deponie Deetz - Versuchsfelder
13.500 m²

Märkische Entsorgungsanlagen
Betriebsgesellschaft mbH, Potsdam

Kraftwerkstreppe Mittlerer Isar
1.200 m²

Hagn Umwelt GmbH, Olching

Ubbena (Niederlands)
30.000 m²

Genap B.V., GA's Heerenberg (Niederlande)

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