INTERNATIONAL STANDARD

ISO 10318-2

First edition
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Geosynthetics —

Part 2: Symbols and pictograms

Géosynthétiques —

Partie 2: Symboles et pictogrammes

Reference number
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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 221, *Geosynthetics*.

This second edition cancels and replaces the first edition (ISO 10318:2005), which has been technically revised.

ISO 10318 consists of the following parts, under the general title *Geosynthetics*:

— *Part 1: Terms and definitions*

— *Part 2: Symbols and pictograms*

Geosynthetics —

Part 2:
Symbols and pictograms

1 Scope

The intent of this part of ISO 10318 is to define property symbols, graphical symbols, and pictograms used in EN and ISO geosynthetics standards. Definitions of particular or specific symbols and pictograms terms not included in this this part of ISO 10318 can be found in the International Standards describing appropriate test methods.

2 Symbols

2.1 Property symbols

2.1.1 Physical properties

Symbols	Units	References	Properties
d	mm	ISO 10318-1, 2.3.2.1	Thickness
b	m	—	Width
l	m	—	Length
ρ_A	g/m^2	ISO 10318-1, 2.3.2.2	Mass per unit area

2.1.2 Hydraulic properties of GTX and of GTP

Symbols	Units	References	Properties
k_n	m/s	ISO 10318-1, 2.3.3.3	Coefficient of permeability normal to the plane
ψ	s^{-1}	ISO 10318-1, 2.3.3.6	Permittivity ($\psi = k_n/d$)
θ	l/(m · s)	ISO 10318-1, 2.3.3.8	Transmissivity ($\theta = k_p \cdot d$)
v-index	mm/s	ISO 10318-1, 2.3.3.5	Velocity index
q_p	l/(m · s)	ISO 10318-1, 2.3.3.7	In-plane flow capacity
q_n	l/(m^2 · s)	ISO 10318-1, 2.3.3.4	Flux normal to the plane
O_{90}	µm	ISO 10318-1, 2.3.3.1	Characteristic opening size

2.1.3 Mechanical properties

2.1.3.1 Tensile characteristics

Symbols	Units	References	Properties
σ_y	MPa	ISO 10318-1, 2.3.4.1.2	Tensile stress at yield point

Symbols	Units	References	Properties
T_ε	kN/m	ISO 10318-1, 2.3.4.2	Tensile strength at a given strain ε (e.g. T_3 is the tensile strength at 3 % strain)
σ_f	MPa	ISO 10318-1, 2.3.4.1.3	Tensile stress at failure
T_f	kN/m	ISO 10318-1, 2.3.4.2.1	Tensile strength (related to the specimen width) at failure
σ_{max}	MPa	ISO 10318-1, 2.3.4.1.4	Maximum tensile stress
T_{max}	kN/m	ISO 10318-1, 2.3.4.2.2	Maximum tensile strength (related to the specimen width)
T_{Jmax}	kN/m	ISO 10318-1, 2.3.4.4.4	Maximum seam or joint strength
ξ_s	%	ISO 10318-1, 2.3.5.5	Joint or seam efficiency
J	kN/m or kPa	ISO 10318-1, 2.3.4.2.3	Tensile modulus

2.1.3.2 Frictional characteristics

Symbols	References	Properties
$\phi_{s,GSY}$	ISO 10318-1, 2.3.6.1	Friction angle between soil and GSY
$\phi_{GSY,GSY}$	ISO 10318-1, 2.3.6.1	Friction angle between GSY and GSY
$f_{s,GSY}$	ISO 10318-1, 2.3.6.2	Friction interaction (efficiency) coefficient between soil and GSY

2.1.3.3 Loading characteristics

Symbols	Units	References	Properties
F_f	kN	—	Load recorded at failure in a tensile test
F_{max}	kN	—	Maximum load recorded in a tensile test
F_p	kN	—	Puncture force in a static puncture test
P_n	kN	—	Normal load in a compressive creep test
P_s	kN	—	Shear load in a direct shear test

2.1.3.4 Other characteristics

Symbols	Units	Properties
D_C	mm	Diameter of the hole, if any, expressed in mm, obtained in the cone drop test

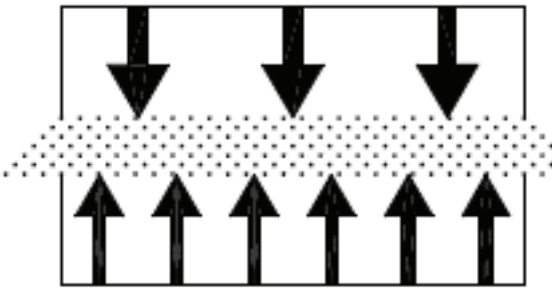
2.2 Graphical symbols and pictograms

2.2.1 Products

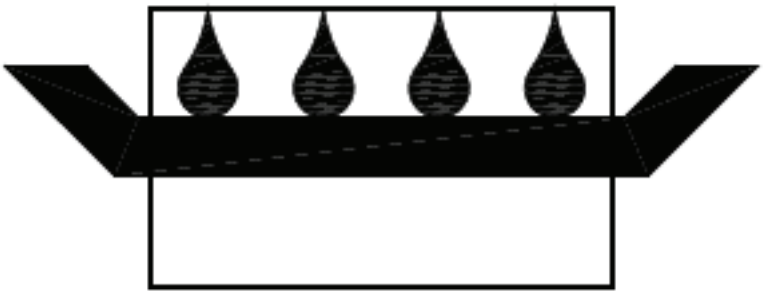
GTX		Geotextile
GBR		Geosynthetic barrier
GGR		Geogrid
GCO		Geocomposite
GNT		Geonet
GBR-C		Clay geosynthetic barrier
GCE		Geocell
GMA		Geomat

2.2.2 Functions

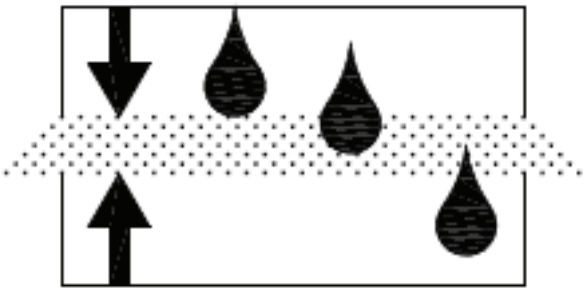
Separation



Barrier

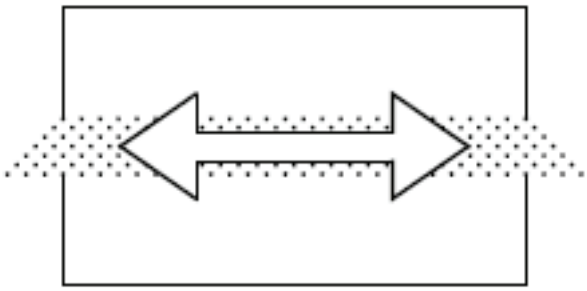


Filtration

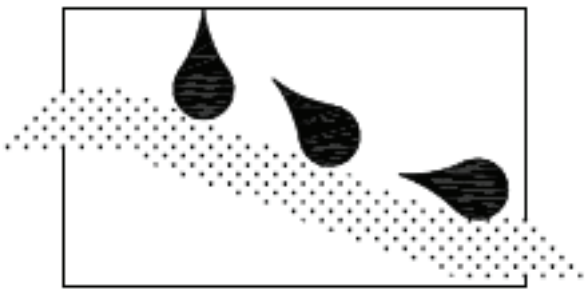


Drainage

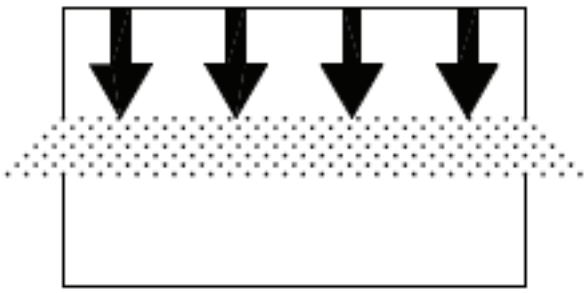
Reinforcement



Surface erosion control



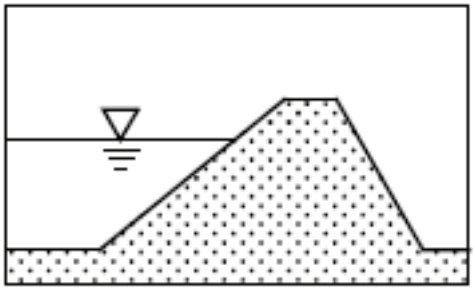
Protection



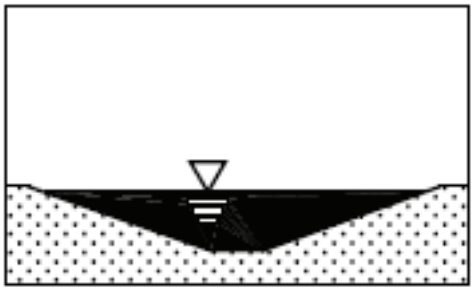
Stress Relief (for asphalt interlayer)

2.2.3 Applications

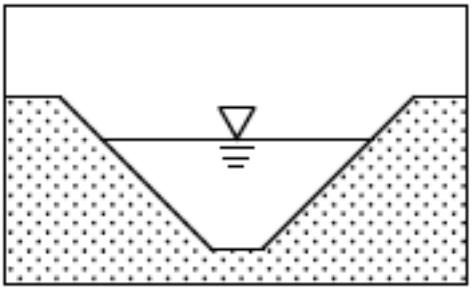
Reservoirs and dams



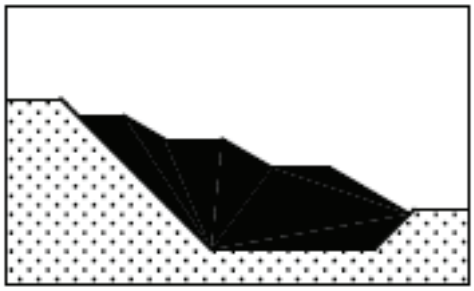
Liquid waste



Canals

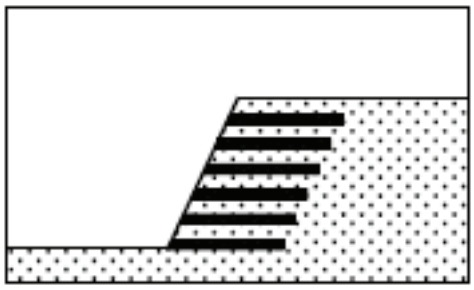


Solid waste

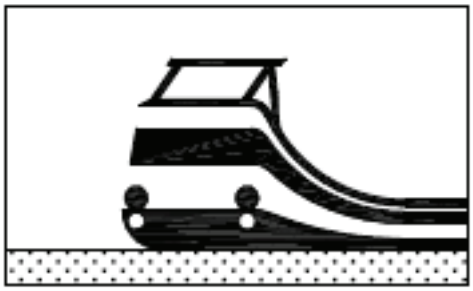


Transportation infrastructure and roads

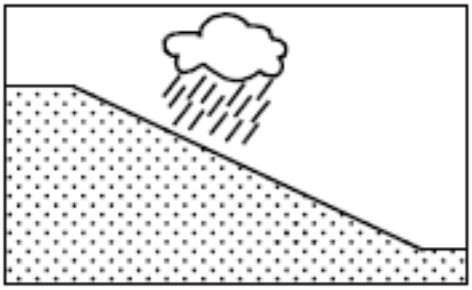
Foundations and retaining walls



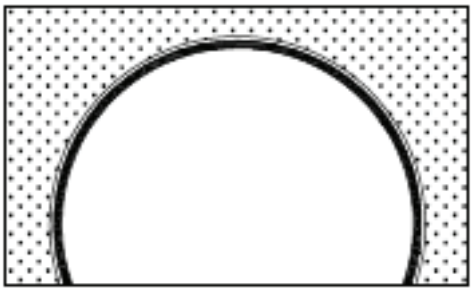
Railways



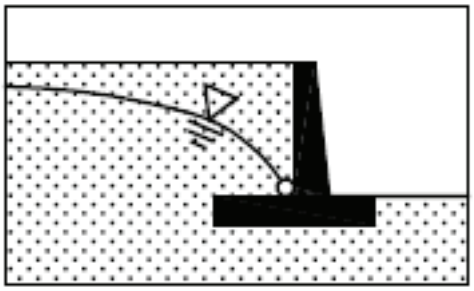
Surface erosion-control systems



Tunnels and underground structures



Drainage systems



Coastal erosion control

Asphalt reinforcement

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[1] ISO 9863-1:2005, *Geosynthetics — Determination of thickness at specified pressures — Part 1: Single layers*

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