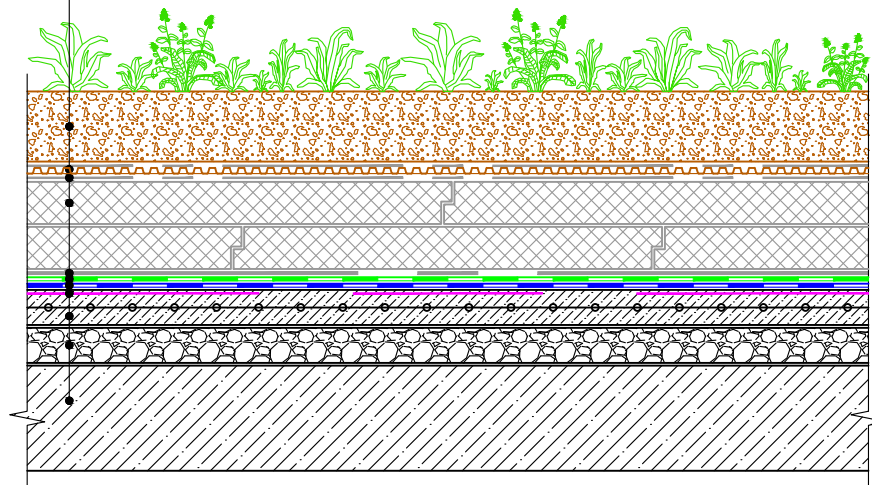




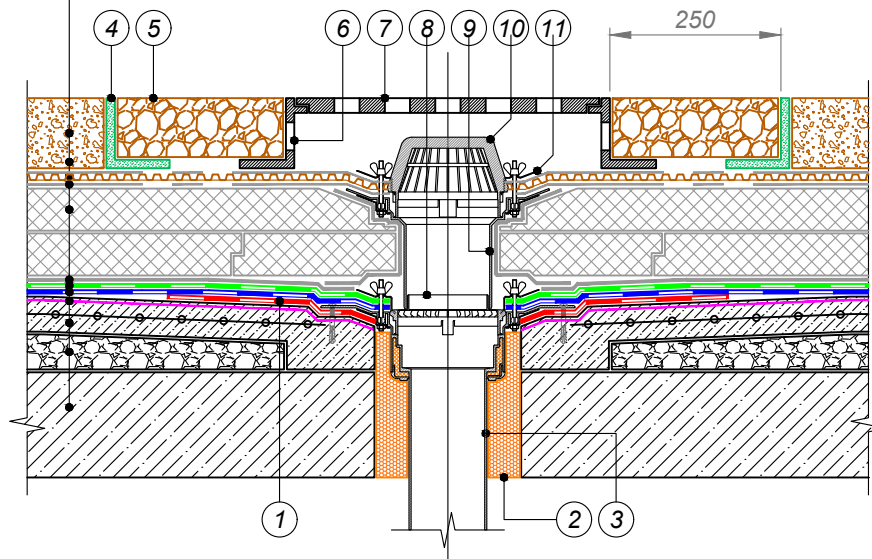
Plant substrate with green planting
Drainage membrane with geotextile
Heat-treated needle-punched
geotextile 150 g/sq.m
Extruded polystyrene
TECHNONICOL CARBON PROF 300
Heat-treated needle-punched
geotextile 300 g/sq.m
Anti-root waterproofing bitumen membrane
Underlay waterproofing bitumen membrane
Bitumen primer
TECHNONICOL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation



				GREEN ROOF	DESIGN	APPROVED
				STRUCTURE OF ROOFING SOLUTIONS	SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED		DWG No.	REV.



Plant substrate with green planting
Drainage membrane with geotextile
Heat-treated needle-punched geotextile 150 g/sq.m
Extruded polystyrene
TECHNICOL CARBON PROF 300
Heat-treated needle-punched geotextile 300 g/sq.m
Anti-root waterproofing bitumen membrane
Underlay waterproofing bitumen membrane
Bitumen primer
TECHNICOL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation

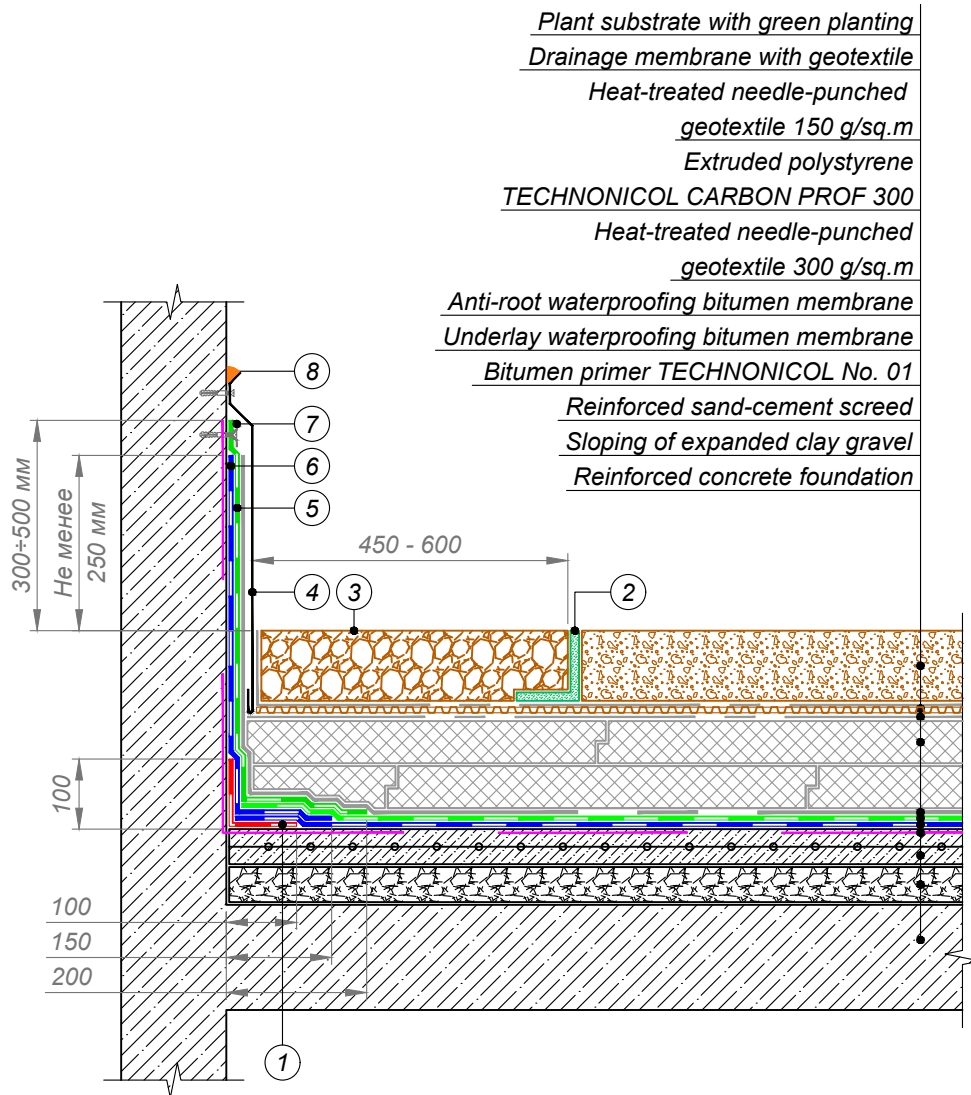


- | | |
|---|-----------------------------|
| ① Additional layer of waterproofing membrane -
Underlay waterproofing bitumen membrane | ①⑦ Drainage nozzle |
| ② Sealing foam | ①⑧ Drainage grating |
| ③ Rainwater funnel | ①⑨ Drainage ring |
| ④ L-shaped plastic element | ①⑩ Funnel extension element |
| ⑤ Washed gravel of big fraction | ①⑪ Gutter leaf debris trap |
| | ①⑫ Compression flange |

NOTES

* To provide for increase in slope to the funnel up to 5% within radius of not less than 500 mm around it. It is recommended to provide for the funnel deepening by 20-30 mm relative to the roof level.

				GREEN ROOF	DESIGN	APPROVED
				RAINWATER FUNNEL	SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED		DWG No.	REV.



Plant substrate with green planting
Drainage membrane with geotextile
 Heat-treated needle-punched
geotextile 150 g/sq.m
 Extruded polystyrene
TECHNONICOL CARBON PROF 300
 Heat-treated needle-punched
geotextile 300 g/sq.m
Anti-root waterproofing bitumen membrane
Underlay waterproofing bitumen membrane
Bitumen primer TECHNONICOL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation

- | | |
|---|--|
| <p>① Strengthening layer - Underlay bitumen membrane</p> <p>② L-shaped plastic element</p> <p>③ Washed gravel</p> <p>④ Protective flashing of galvanized steel to be fastened by roofing self-tapping screws with rubber washer at intervals not more than 500 mm</p> <p>⑤ Top layer of waterproofing system on vertical surface - Cap sheet bitumen membrane</p> | <p>⑥ Bottom layer of waterproofing system on vertical surface - Underlay bitumen membrane</p> <p>⑦ Waterproofing membrane edge to be fastened by self-tapping screws with metal washer not less than 50 mm in diameter at intervals not less than 250 mm</p> <p>⑧ Sealing mastic</p> |
|---|--|

				GREEN ROOF	DESIGN	APPROVED
				JUNCTION TO WALL	SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED		DWG No.	REV.



Plant substrate with green planting

Drainage membrane with geotextile

Heat-treated needle-punched

geotextile 150 g/sq.m

Extruded polystyrene

TECHNONICOL CARBON PROF 300

Heat-treated needle-punched

geotextile 300 g/sq.m

Anti-root waterproofing bitumen membrane

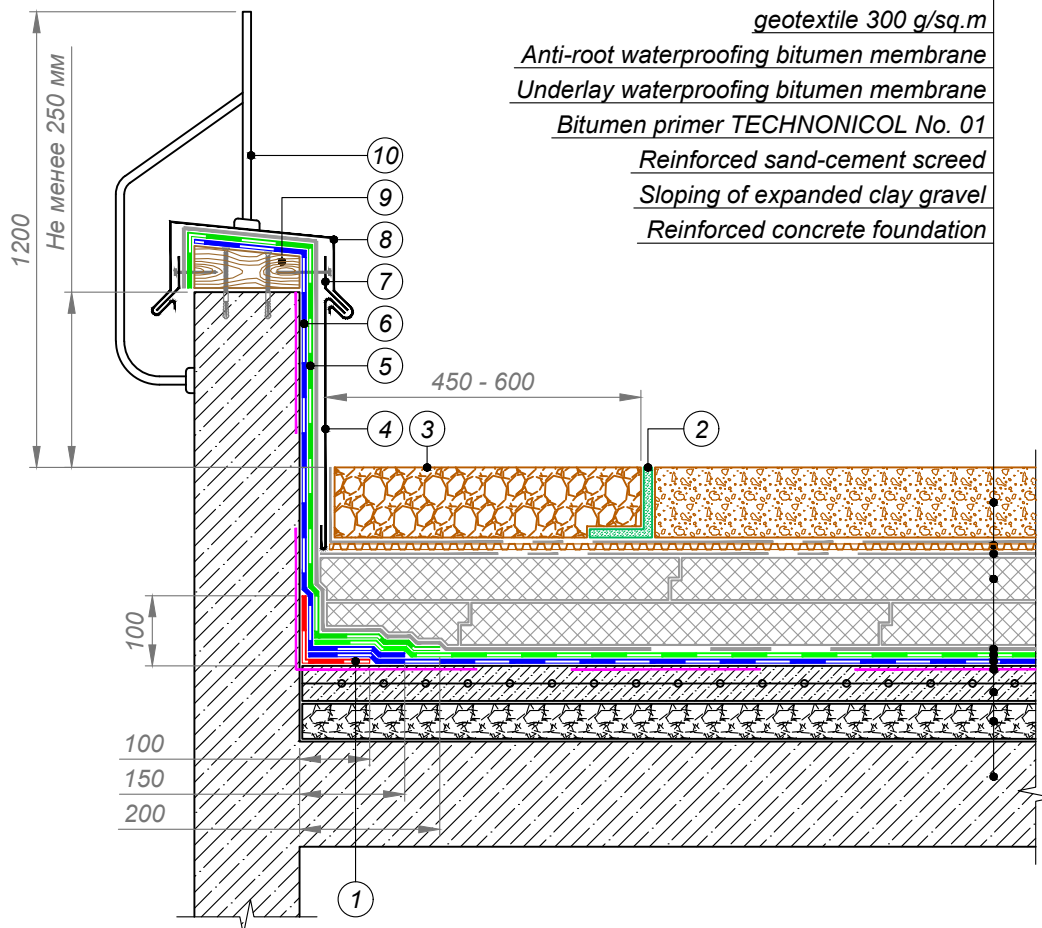
Underlay waterproofing bitumen membrane

Bitumen primer TECHNICAL No. 01

Reinforced sand-cement screed

Sloping of expanded clay gravel

Reinforced concrete foundation

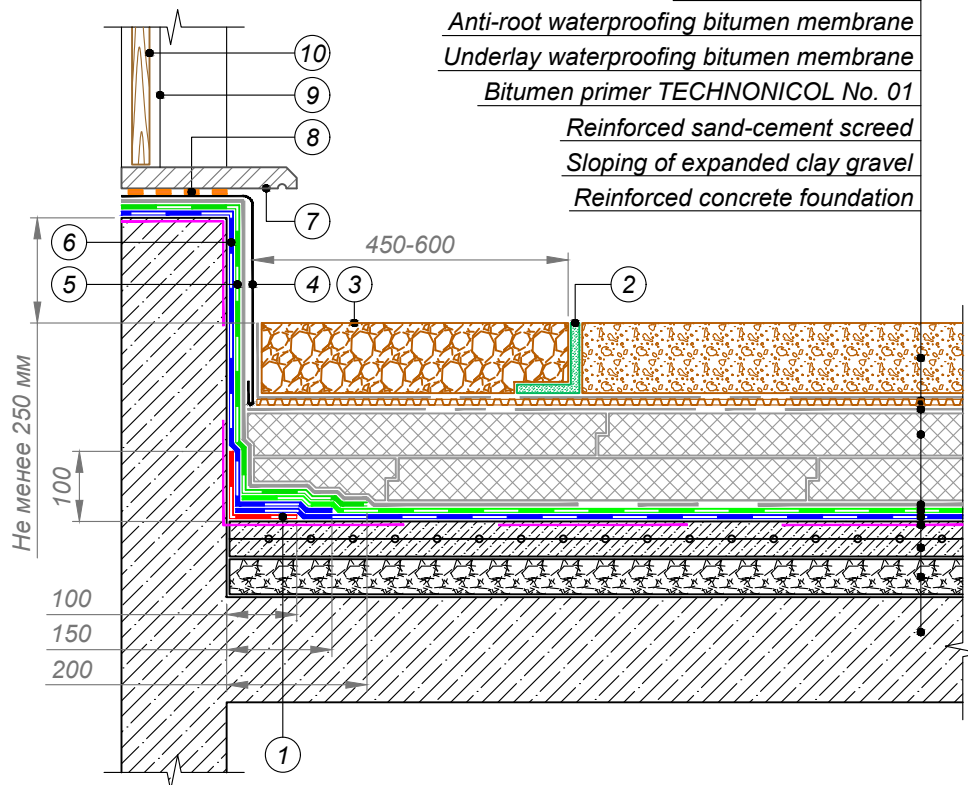


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|--|--|
| ① Strengthening layer - Underlay bitumen membrane | ⑥ Bottom layer of waterproofing system on vertical surface - Underlay bitumen membrane |
| ② L-shaped plastic element | ⑦ Fastening element |
| ③ Washed gravel | ⑧ Galvanized steel flashing |
| ④ Protective galvanized steel flashing | ⑨ Antiseptic treated timber |
| ⑤ Top layer of waterproofing system on vertical surface - Cap sheet bitumen membrane | ⑩ Roof edge railing |

				GREEN ROOF	DESIGN	APPROVED
					SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED	JUNCTION TO PARAPET	DWG No.	REV.

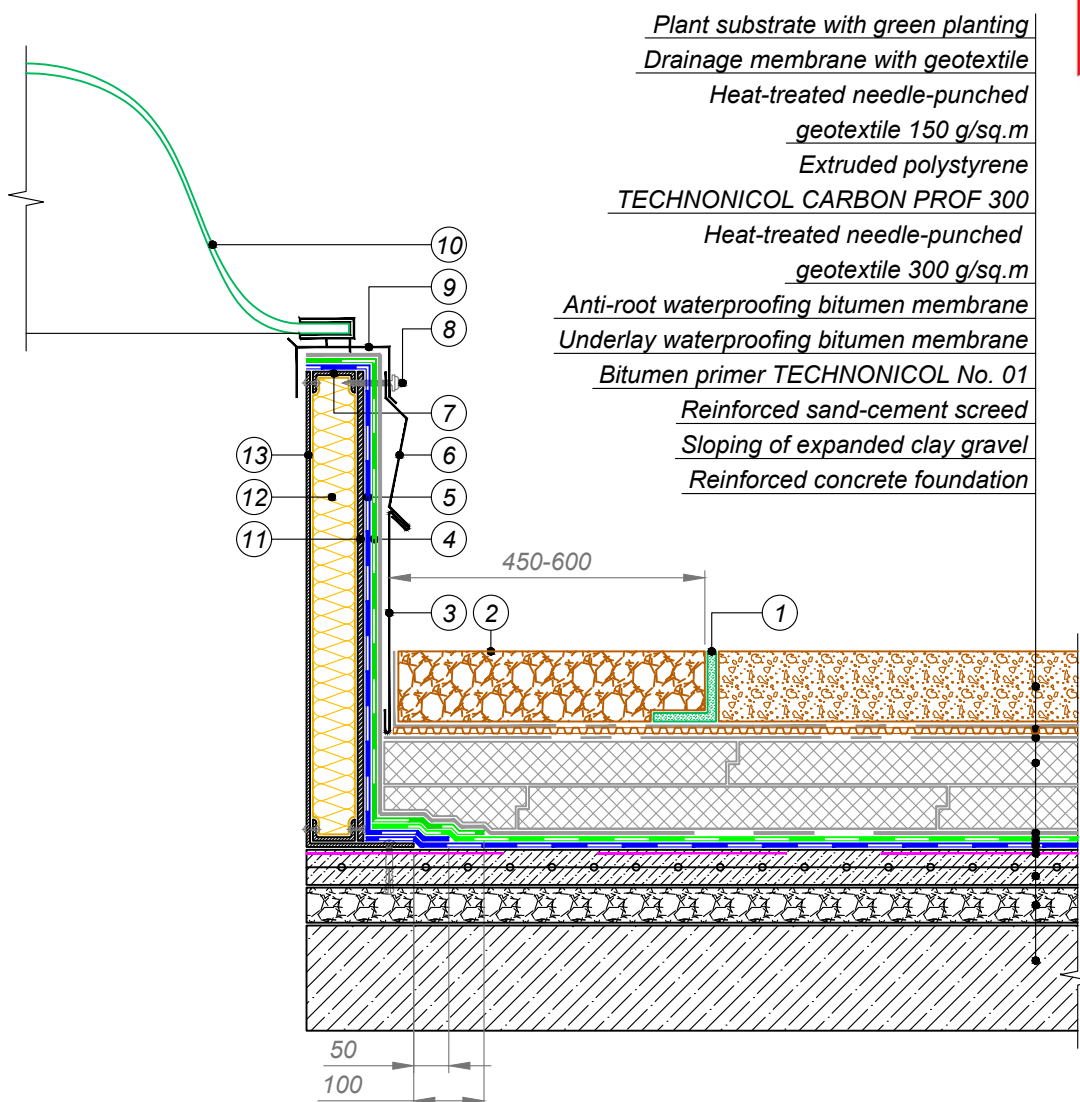


- Plant substrate with green planting
- Drainage membrane with geotextile
- Heat-treated needle-punched geotextile 150 g/sq.m
- Extruded polystyrene
- TECHNONICOL CARBON PROF 300
- Heat-treated needle-punched geotextile 300 g/sq.m
- Anti-root waterproofing bitumen membrane
- Underlay waterproofing bitumen membrane
- Bitumen primer TECHNOCOL No. 01
- Reinforced sand-cement screed
- Sloping of expanded clay gravel
- Reinforced concrete foundation



- | | |
|--|--|
| ① Strengthening layer - Underlay bitumen membrane | ⑥ Bottom layer of waterproofing system on vertical surface - Underlay bitumen membrane |
| ② L-shaped plastic element | ⑦ Sill plate |
| ③ Washed gravel | ⑧ Sealing mastic |
| ④ Protective galvanized steel flashing | ⑨ Door frame |
| ⑤ Top layer of waterproofing system on vertical surface - Anti-root bitumen membrane | ⑩ Door |

				GREEN ROOF	DESIGN	APPROVED
				JUNCTION TO EXIT ON THE ROOF	SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED		DWG No.	REV.



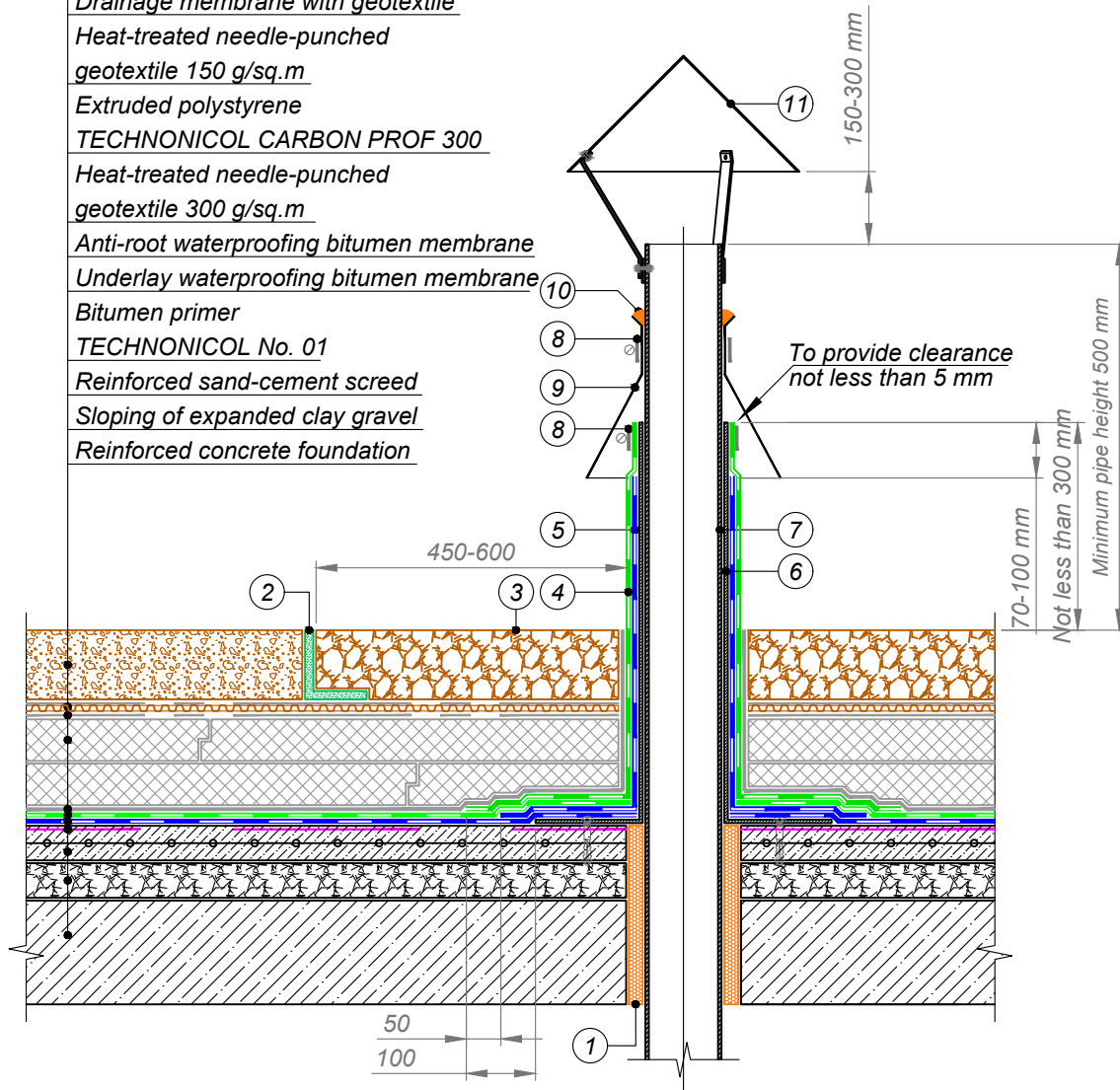
Plant substrate with green planting
Drainage membrane with geotextile
 Heat-treated needle-punched
geotextile 150 g/sq.m
 Extruded polystyrene
TECHNICOL CARBON PROF 300
 Heat-treated needle-punched
geotextile 300 g/sq.m
Anti-root waterproofing bitumen membrane
Underlay waterproofing bitumen membrane
Bitumen primer TECHNICOL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation

- ① L-shaped plastic element
- ② Washed gravel
- ③ Removable metal flashing
- ④ Top layer of waterproofing system on vertical surface - Cap sheet bitumen membrane
- ⑤ Bottom layer of waterproofing system on vertical surface - Underlay bitumen membrane
- ⑥ Protective flashing of galvanized steel to be fastened by roofing self-tapping screws with rubber washer at intervals not more than 500 mm
- ⑦ Galvanized steel profile to be fastened by rivets
- ⑧ Fasten the metal cap base with intervals not more than 500 mm, depending on wind load, but not less than 2 fastening elements per one side
- ⑨ Metal cap
- ⑩ Skylight translucent dome
- ⑪ CBPB or ACB
- ⑫ Stone wool thermal insulation
- ⑬ Galvanized steel sheet not less than 3 mm in thickness

				GREEN ROOF	DESIGN	APPROVED
					SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED	JUNCTION TO SKYLIGHT	DWG No.	REV.



- Plant substrate with green planting
- Drainage membrane with geotextile
- Heat-treated needle-punched geotextile 150 g/sq.m
- Extruded polystyrene
- TECHNONICOL CARBON PROF 300
- Heat-treated needle-punched geotextile 300 g/sq.m
- Anti-root waterproofing bitumen membrane
- Underlay waterproofing bitumen membrane
- Bitumen primer
- TECHNONICOL No. 01
- Reinforced sand-cement screed
- Sloping of expanded clay gravel
- Reinforced concrete foundation



- | | |
|--|--|
| <ul style="list-style-type: none"> ① Sealing foam ② L-shaped plastic element ③ Washed gravel ④ Cap sheet bitumen membrane ⑤ Underlay bitumen membrane | <ul style="list-style-type: none"> ⑥ Galvanized steel sleeve
not less than 1 mm in thickness ⑦ Pipe ⑧ Compression metal clamp ⑨ Metal rain collar ⑩ Sealing mastic ⑪ Roof cowl |
|--|--|

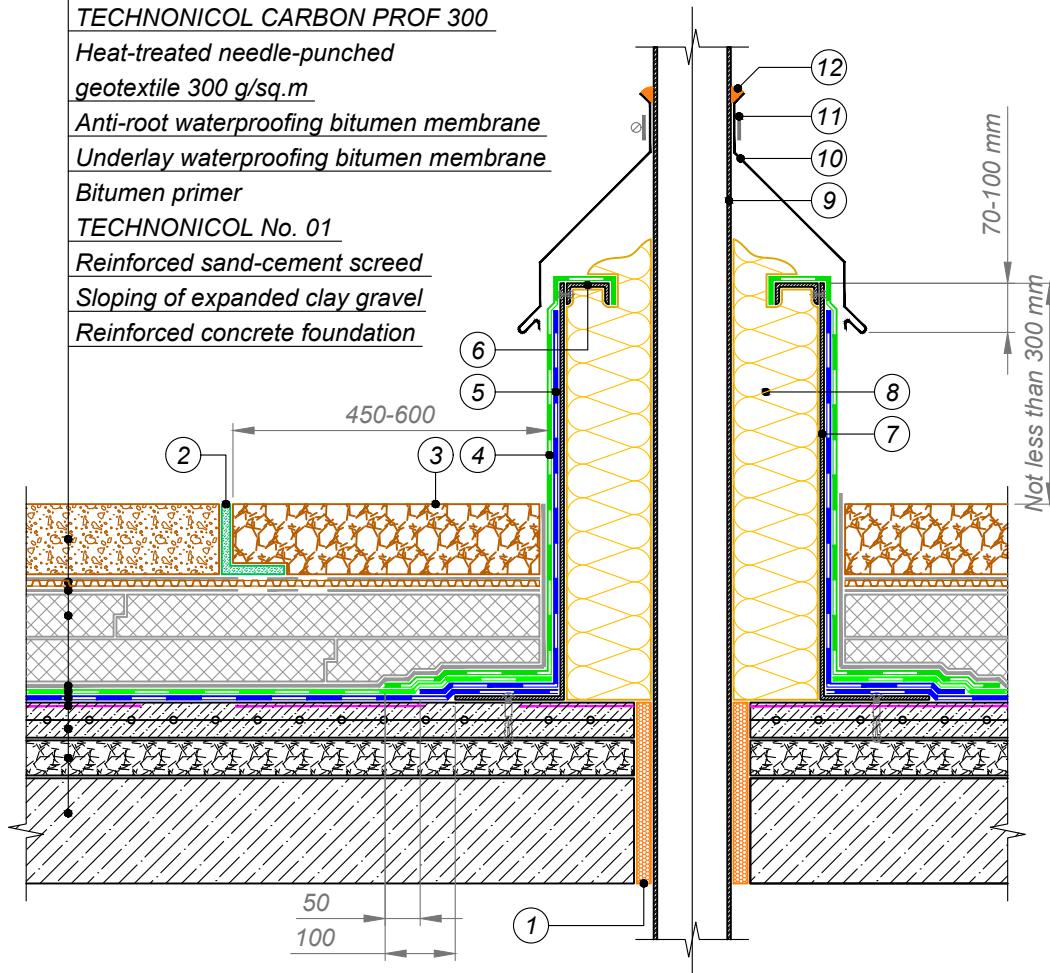
NOTES

The solution is used for single cold pipes up to 250 mm in diameter, anchors, antenna bracings

				GREEN ROOF	DESIGN	APPROVED
				JUNCTION TO COLD PIPE	SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED		DWG No.	REV.



Plant substrate with green planting
Drainage membrane with geotextile
Heat-treated needle-punched geotextile 150 g/sq.m
Extruded polystyrene
TECHNICOL CARBON PROF 300
Heat-treated needle-punched geotextile 300 g/sq.m
Anti-root waterproofing bitumen membrane
Underlay waterproofing bitumen membrane
Bitumen primer
TECHNICOL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation



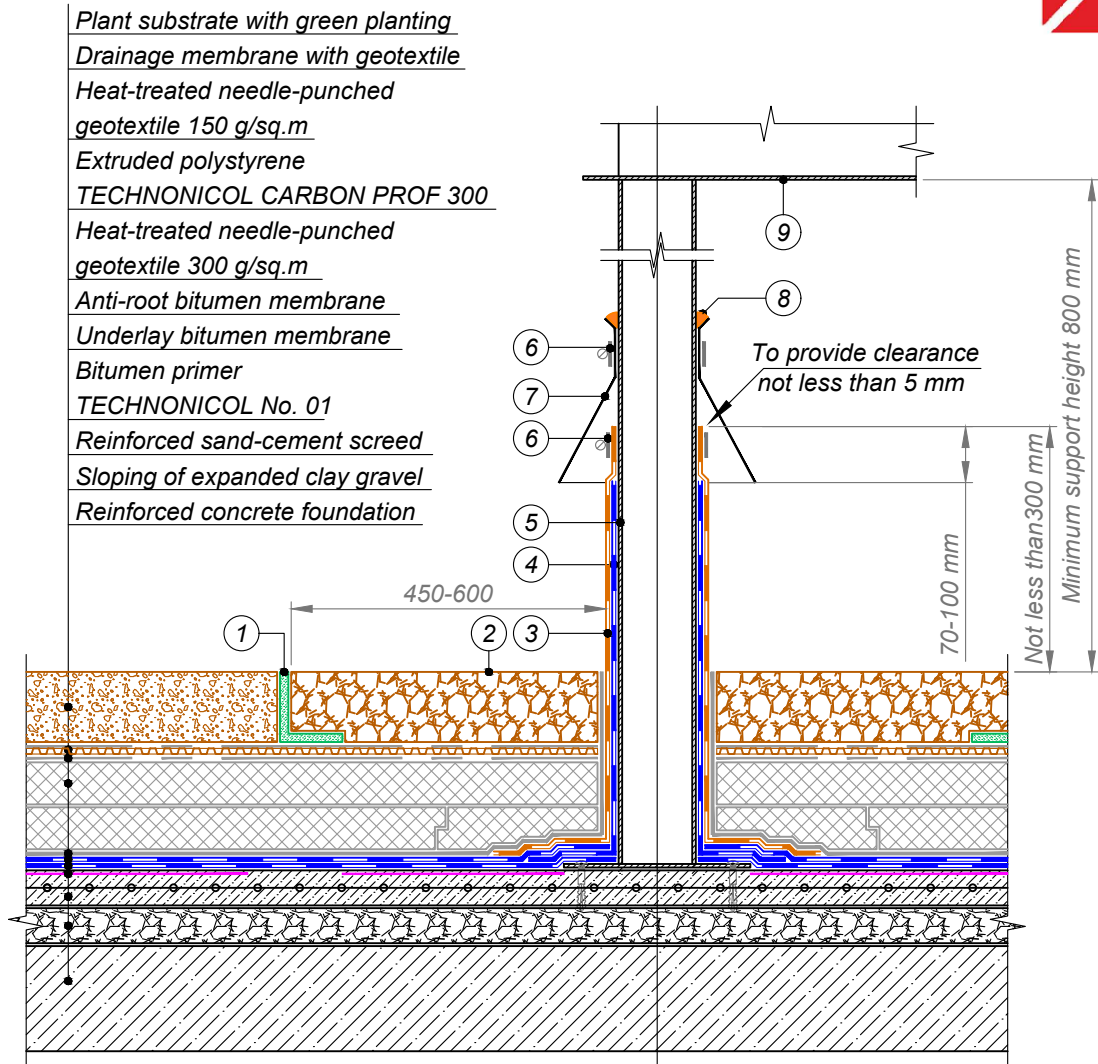
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|---|---|
| <ul style="list-style-type: none"> ① Sealing foam ② L-shaped plastic element ③ Washed gravel ④ Cap sheet bitumen membrane ⑤ Underlay bitumen membrane ⑥ Galvanized steel to be fastened by rivets | <ul style="list-style-type: none"> ⑦ Galvanized steel sheet not less than 3 mm in thickness ⑧ Stone wool thermal insulation not less than 120 mm in thickness ⑨ Pipe ⑩ Galvanized steel flashing ⑪ Compression metal clamp ⑫ Polyurethane sealant * |
|---|---|

NOTES

* Polyurethane sealant to be applied at temperatures up to 80°C.

At high temperatures use specialized high-temperature sealants.

				GREEN ROOF	DESIGN	APPROVED
					SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED	JUNCTION TO HOT PIPE	DWG No.	REV.



- | | |
|---|---------------------------|
| ① L-shaped plastic element | ⑤ Support |
| ② Washed gravel | ⑥ Compression metal clamp |
| ③ Top layer of waterproofing system
at junction - Cap sheet bitumen membrane | ⑦ Metal rain collar |
| ④ Bottom layer of waterproofing system
at junction - Underlay bitumen membrane | ⑧ Sealing mastic |
| | ⑨ Equipment support |

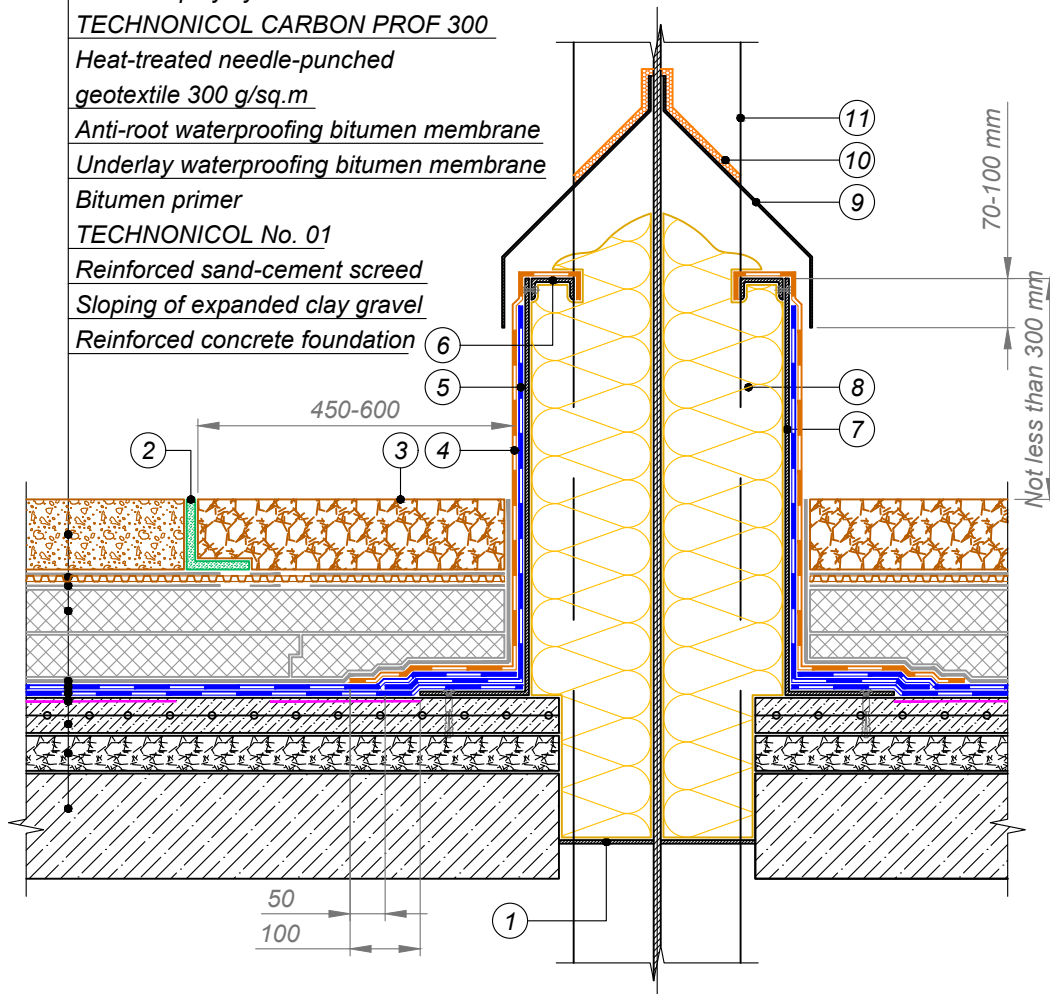
NOTES

Height of support above the roof surface should be not less than 800 mm to allow for possibility of roofing works and repairs.

				GREEN ROOF	DESIGN	APPROVED
					SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED	SUPPORT FOR EQUIPMENT	DWG No.	REV.



Plant substrate with green planting
Drainage membrane with geotextile
Heat-treated needle-punched geotextile 150 g/sq.m
Extruded polystyrene
TECHNICOL CARBON PROF 300
Heat-treated needle-punched geotextile 300 g/sq.m
Anti-root waterproofing bitumen membrane
Underlay waterproofing bitumen membrane
Bitumen primer
TECHNICOL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation

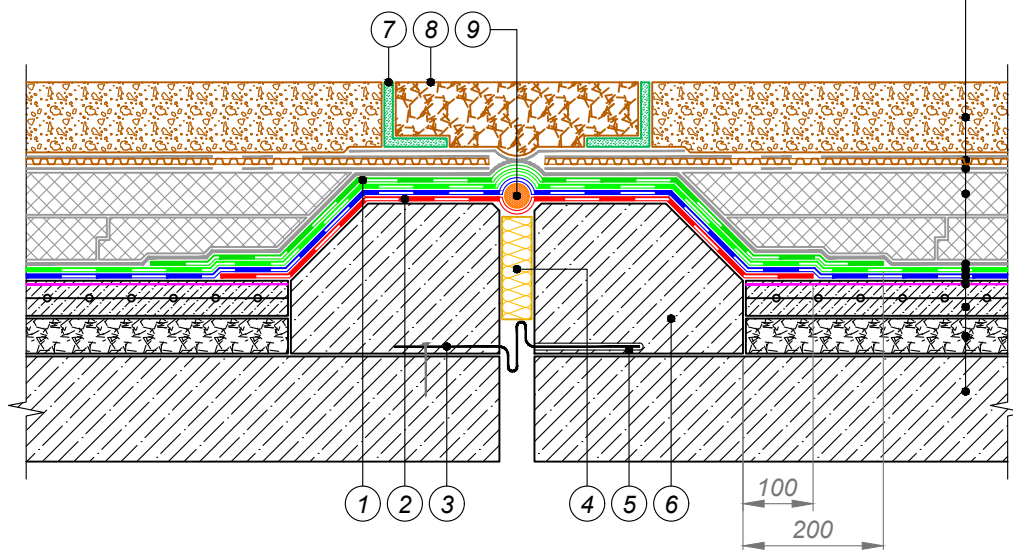


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|--|---|
| <p>① Weld the metal plate and apply sealant around the perimeter</p> <p>② L-shaped plastic element</p> <p>③ Washed gravel</p> <p>④ Top layer of waterproofing system at junction - Cap sheet bitumen membrane</p> <p>⑤ Bottom layer of waterproofing system at junction - Underlay bitumen membrane</p> <p>⑥ Galvanized steel profile to be fastened by rivets</p> | <p>⑦ Galvanized steel duct not less than 3 mm in thickness</p> <p>⑧ Non-combustible thermal insulation</p> <p>⑨ Metal flashing not less than 3 mm in thickness should overlap the duct by 70-100 mm</p> <p>⑩ Weld flashing to the column and treat the joint with sealing mastic</p> <p>⑪ Rolled metal column</p> |
|--|---|

				GREEN ROOF	DESIGN	APPROVED
				ROLLED METAL COLUMN PASSING THROUGH THE ROOF	SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED		DWG No.	REV.



Plant substrate with green planting
Drainage membrane with geotextile
Heat-treated needle-punched geotextile 150 g/sq.m
Extruded polystyrene
TECHNONICOL CARBON PROF 300
Heat-treated needle-punched geotextile 300 g/sq.m
Anti-root waterproofing bitumen membrane
Underlay waterproofing bitumen membrane
Bitumen primer TECHNOCOL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation

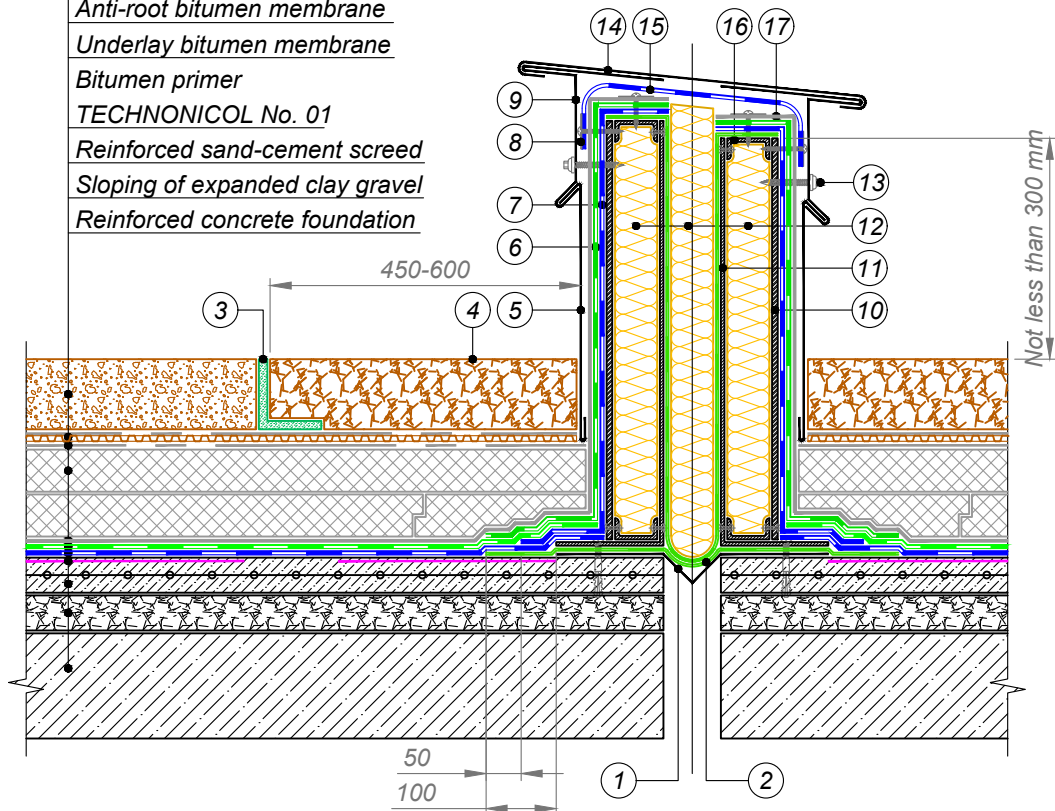


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| <ul style="list-style-type: none"> ① Additional layer of waterproofing system - Cap sheet bitumen membrane ② Strengthening layer - Underlay bitumen membrane ③ Steel compensator ④ Stone wool thermal insulation | <ul style="list-style-type: none"> ⑤ Polyethylene film ⑥ Lightweight concrete ⑦ L-shaped plastic element ⑧ Washed gravel ⑨ Elastic bundle $\varnothing > 30$ mm |
|--|--|

				GREEN ROOF	DESIGN	APPROVED
					SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED	EXPANSION JOINT	DWG No.	REV.



Plant substrate with green planting
Drainage membrane with geotextile
Heat-treated needle-punched geotextile 150 g/sq.m
Extruded polystyrene
TECHNICOL CARBON PROF 300
Heat-treated needle-punched geotextile 300 g/sq.m
Anti-root bitumen membrane
Underlay bitumen membrane
Bitumen primer
TECHNICOL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation

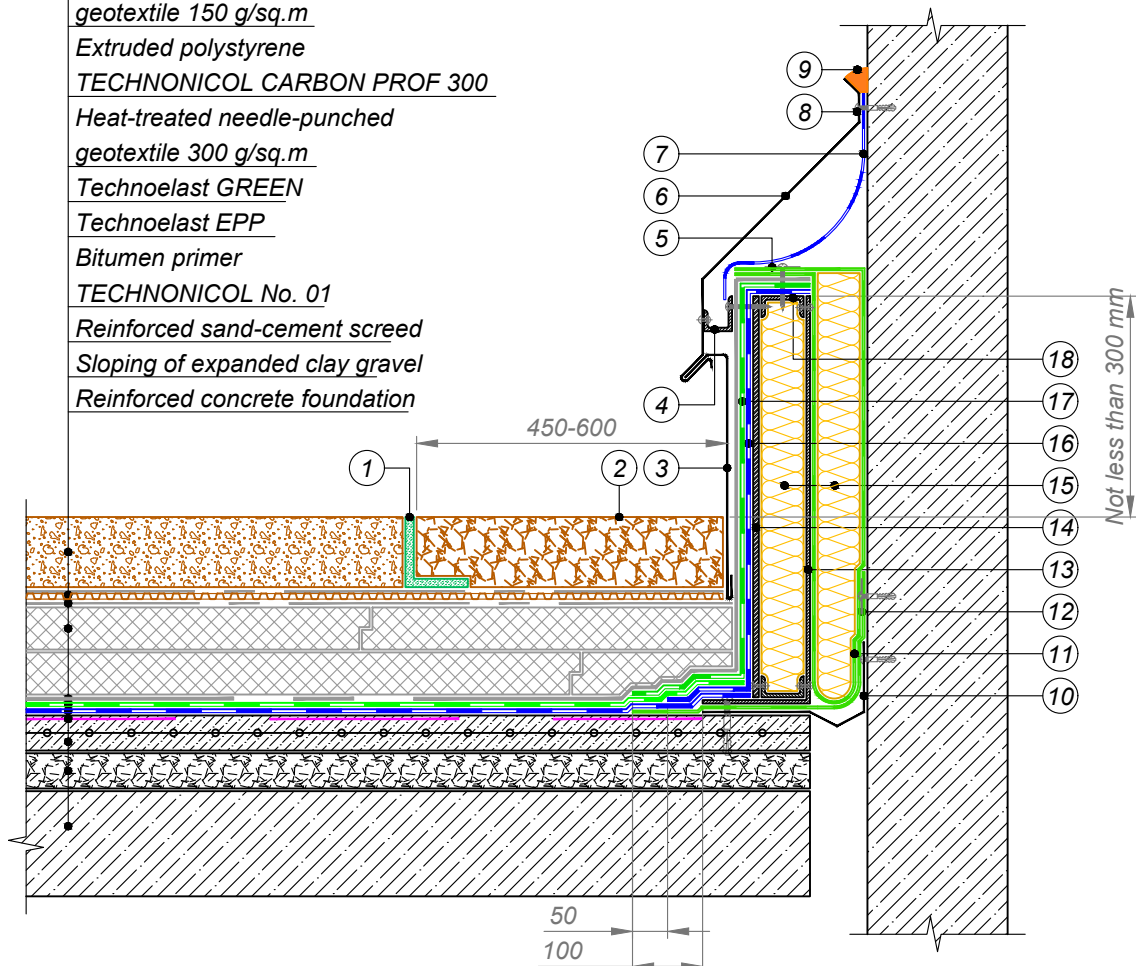


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|--|---|
| ① Galvanized steel compensator
to be fastened from one side at 600 mm intervals | ⑪ Galvanized steel profile
not less than 3 mm in thickness |
| ② Vapour barrier | ⑫ Stone wool thermal insulation |
| ③ L-shaped plastic element | ⑬ Fasten by roofing
self-tapping screws with EPDM gasket |
| ④ Washed gravel | ⑭ Coating of galvanised sheet |
| ⑤ Removable metal flashing | ⑮ Roofing material flashing |
| ⑥ Cap sheet bitumen membrane | ⑯ Galvanized steel
profile to be fastened by rivets |
| ⑦ Underlay bitumen membrane | ⑰ Vapour barrier material
for fixation of insulation |
| ⑧ Fasten by self-tapping screws with
washer Ø 50 mm at 250 mm intervals | |
| ⑨ Fastening element | |
| ⑩ CBPB or ACB | |

				GREEN ROOF	DESIGN	APPROVED
					SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED	DEFORMATION SEPARATOR	DWG No.	REV.



Plant substrate with green planting
Drainage membrane with geotextile
Heat-treated needle-punched geotextile 150 g/sq.m
Extruded polystyrene
TECHNONICOL CARBON PROF 300
Heat-treated needle-punched geotextile 300 g/sq.m
Technoelast GREEN
Technoelast EPP
Bitumen primer
TECHNONICOL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation

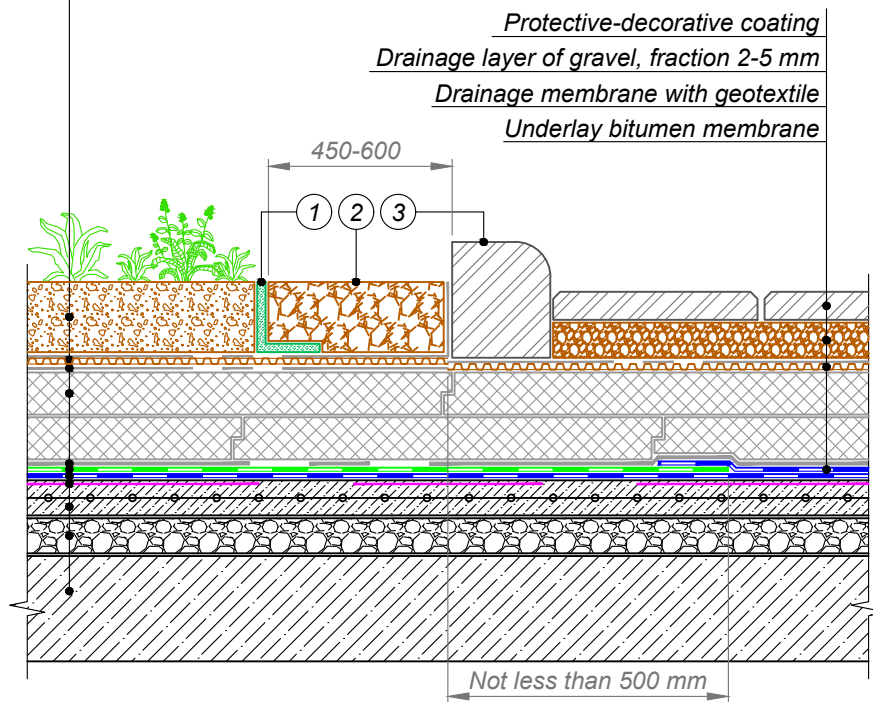


- ① L-shaped plastic element
- ② Washed gravel
- ③ Removable metal flashing
- ④ Galvanized steel compensator to be mechanically fastened with flashing
- ⑤ Vapour insulation to be fastened by self-tapping screws with washer Ø 50 mm at 500 mm intervals
- ⑥ Galvanized steel flashing
- ⑦ Roofing material flashing
- ⑧ Fasten by self-tapping screws at 200 mm intervals
- ⑨ Sealing mastic
- ⑩ Galvanized steel compensator to be fastened on wall by self-tapping screws
- ⑪ Vapour barrier material for fixation of insulation
- ⑫ Built-up on vertical surface and fastened by self-tapping screws with washer Ø 50 mm
- ⑬ Galvanized steel profile not less than 3 mm in thickness
- ⑭ CBPB or ACB
- ⑮ Stone wool thermal insulation
- ⑯ Underlay bitumen membrane
- ⑰ Cap sheet bitumen membrane
- ⑱ Galvanized steel profile

				GREEN ROOF	DESIGN	APPROVED
					SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED	EXPANSION JOINT AT JUNCTION TO WALL	DWG No.	REV.



Plant substrate with green planting
Drainage membrane with geotextile
Heat-treated needle-punched geotextile 150 g/sq.m
Extruded polystyrene
TECHNICOL CARBON PROF 300
Heat-treated needle-punched geotextile 300 g/sq.m
Anti-root waterproofing bitumen membrane
Underlay waterproofing bitumen membrane
Bitumen primer TECHNICAL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation



- ① L-shaped plastic element
- ② Washed gravel
- ③ Kerb stone

NOTES

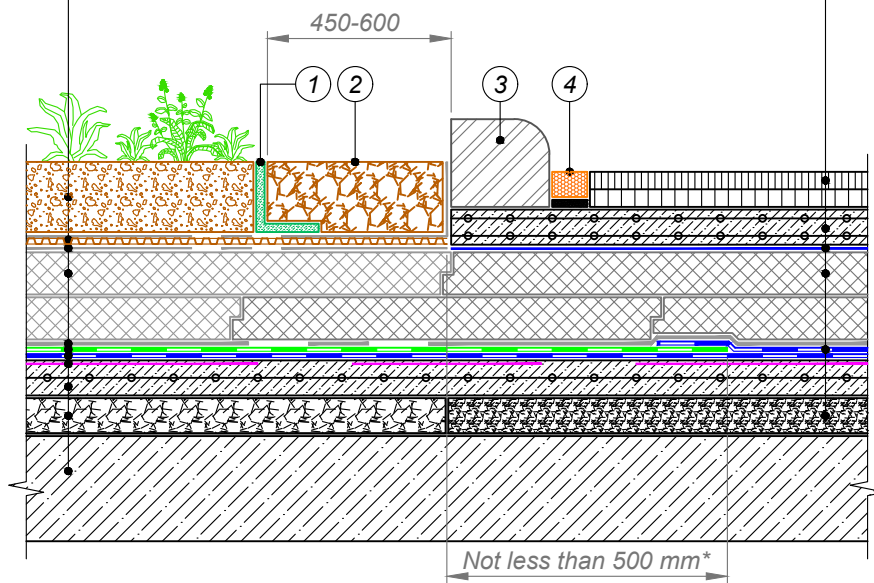
* Anti-root waterproofing bitumen membrane to be taken up on the roof section using another roofing system by the amount of not less than 500 mm

				GREEN ROOF	DESIGN	APPROVED
				CONJUGATION WITH PEDESTRIAN AREA	SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED		DWG No.	REV.



Plant substrate with green planting
Drainage membrane with geotextile
Heat-treated needle-punched geotextile 150 g/sq.m
Extruded polystyrene
TECHNICOL CARBON PROF 300
Heat-treated needle-punched geotextile 300 g/sq.m
Anti-root waterproofing bitumen membrane
Underlay waterproofing bitumen membrane
Bitumen primer TECHNICAL No. 01
Reinforced sand-cement screed
Sloping of expanded clay gravel
Reinforced concrete foundation

Two layers of asphaltic concrete
Reinforced concrete slab
Polyethylene film
Extruded polystyrene
TECHNICOL CARBON
Underlay bitumen membrane
Sloping of claydite concrete



- ① L-shaped plastic element
- ② Washed gravel
- ③ Kerb stone
- ④ Polymer-bitumen sealant on layer of sand

NOTES

** Anti-root waterproofing bitumen membrane to be taken up on the roof section using another roofing system by the amount of not less than 500 mm

				GREEN ROOF	DESIGN	APPROVED
				CONJUGATION WITH TRAFFIC AREA	SCALE	DATE
REV.	DATE	DESCRIPTION	CHECKED		DWG No.	REV.