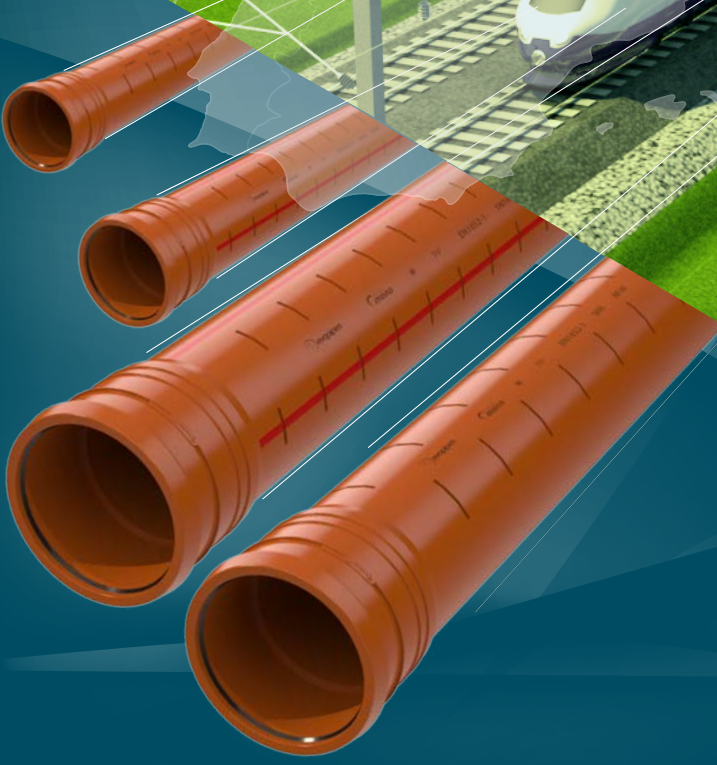
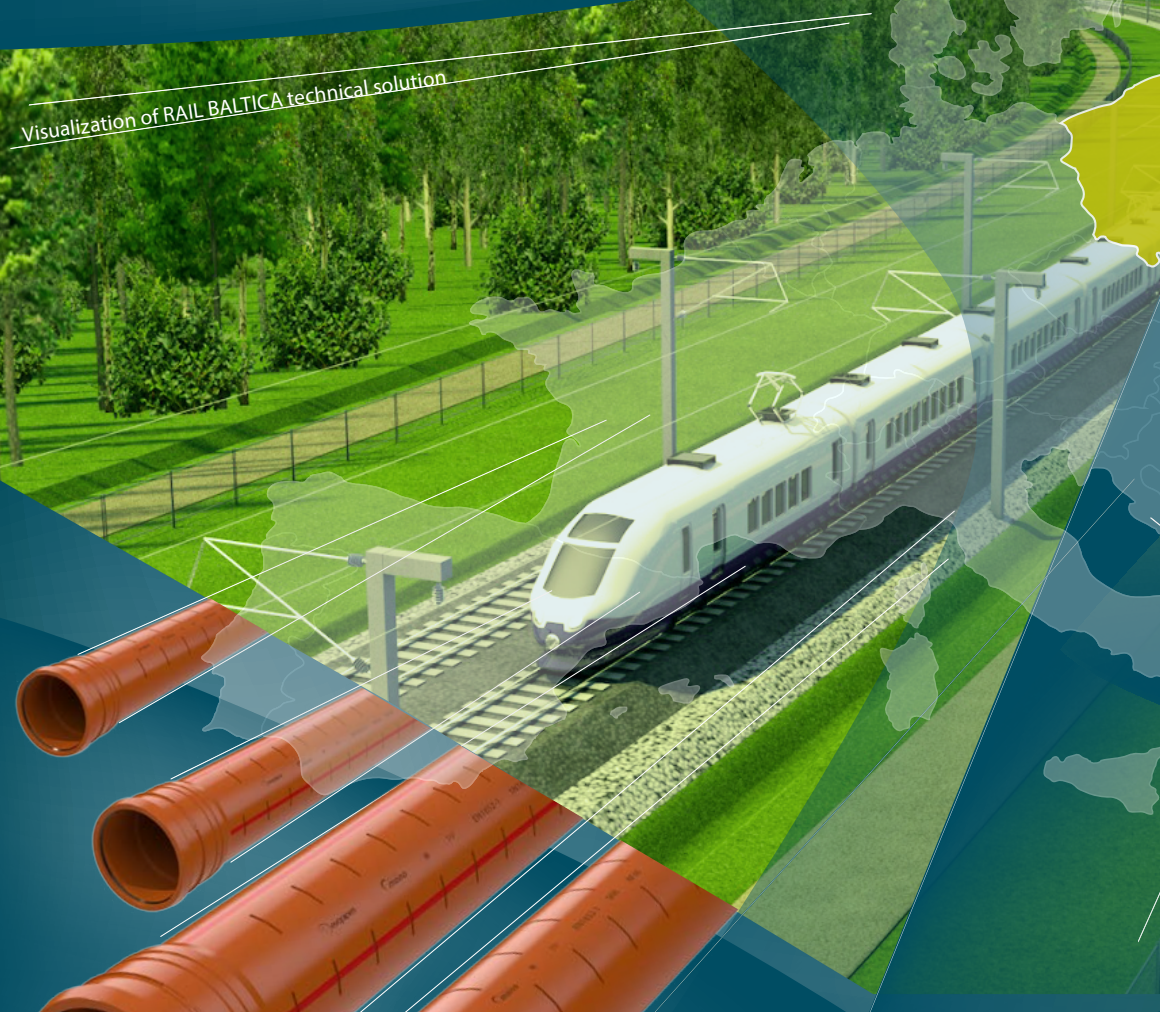




RAIL
BALTICA

Visualization of RAIL BALTICA technical solution



DRAINAGE SYSTEMS FOR RAILWAY CONSTRUCTION

ADVANTAGES OF EVOPIPES DRAINAGE PIPES AND CHAMBERS

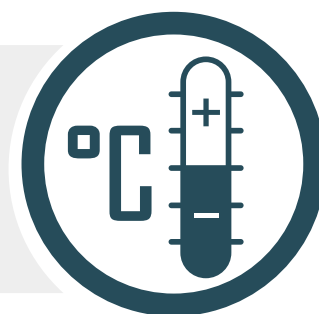


Mechanical

Excellent balance between product ring stiffness, ring flexibility and impact resistance.

Thermal

The products can be installed in low temperatures until -10 °C



Chemical

Products are resistant to exposure to aggressive substances present in sewage and subsoil from pH2 (acidic medium) until pH12 (alkaline medium)

Ecologic

The products are environment-friendly and recyclable after several decades in operation



Product lifetime \geq **100 years.**



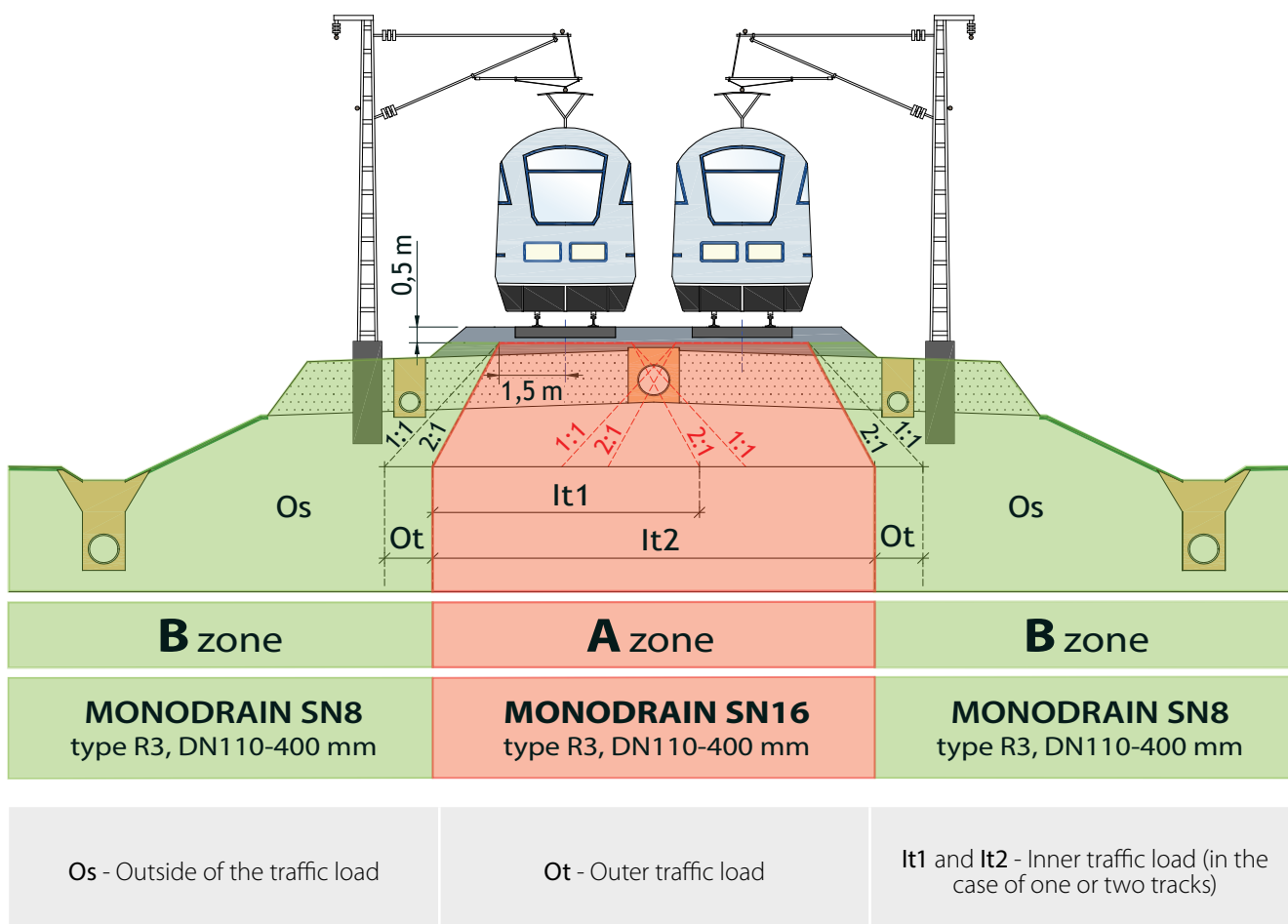
DRAINAGE PIPES FOR RAILWAY CONSTRUCTION

According to Deutsche Bahn specification DBS 918 064

Product name	Description	Standard
MONODRAIN SN8	R3 type drainage pipe with smooth internal and external surface	<ul style="list-style-type: none"> • DBS 918 064 • EN 1852-1 • DIN 4262-1 • DIN 4102-1*
MONODRAIN SN16	R3 type drainage pipe with smooth internal and external surface	<ul style="list-style-type: none"> • DBS 918 064 • EN 1852-1 • DIN 4262-1 • DIN 4102-1*

*On request available pipe conform to DIN 4102-1 (used for tunnel construction, self-extinguishing, class B2).

RAILWAY CONSTRUCTION





DRAINAGE PIPES FOR RAILWAY CONSTRUCTION

MONODRAIN

DN/OD series R3 type drainage pipe with smooth internal and external surface. **Water inlet perforation opening area $\geq 100 \text{ cm}^2/\text{m}$** . The products are supplied in straight 6m bars. Pipe is equipped with **SEAL LOCK** socket and integrated sealing ring. The supplied sealing ring grants a hermetic seal with a pressure rating of $\geq 0,5 \text{ bar}$ (for coupling area). The supplied sealing rings conform to EN 681-1.

Conformity DBS 918 064, EN 1852-1, DIN 4262-1, DIN 4102-1*

Type: R3 (smooth-wall pipes)

Material: polypropylene (PP)

Ring stiffness: SN8

Perforation opening width: 5 mm

Perforation type: TP(360°), LP(220°±10°), MP(≤120°), UP

DN/OD: 110, 160, 200, 250 mm

Ring stiffness **SN8**
Water inlet perforation opening area **$\geq 100 \text{ cm}^2/\text{m}$**


Perforation type	Cross section	View form top of the pipe	Perforation opening, mm
TP (360°)			
LP (220°±10°)			
MP (≤120°)			

Notes

*On request available pipe conform to DIN 4102-1 (used for tunnel construction, self-extinguishing, class B2)



DRAINAGE PIPES FOR RAILWAY CONSTRUCTION



MONODRAIN

DN/OD series R3 type drainage pipe with smooth internal and external surface. Due to the SN16 ring stiffness class the pipe is perfectly suited for installation works in zones/places with large traffic loads. **Water inlet perforation opening area $\geq 100 \text{ cm}^2/\text{m}$** . The products are supplied in straight 6m bars. Pipe is equipped with **SEAL LOCK** socket and integrated sealing ring. The supplied sealing ring grants a hermetic seal with a pressure rating of $\geq 0,5 \text{ bar}$ (for coupling area). The supplied sealing rings conform to EN 681-1.

Conformity DBS 918 064, EN 1852-1, DIN 4262-1, DIN 4102-1*

Type: R3 (smooth-wall pipes)

Material: polypropylene (PP)

Ring stiffness: SN16

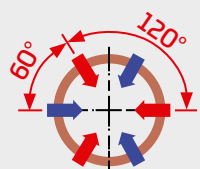
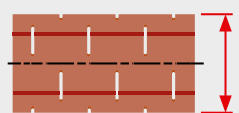
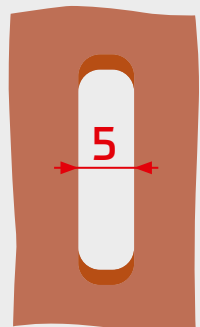
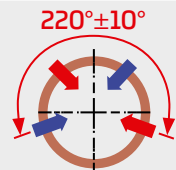
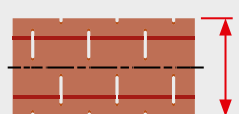
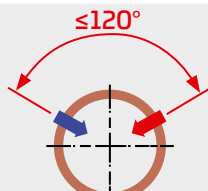
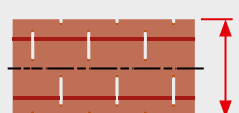
Perforation opening width: 5 mm

Perforation type: TP(360°), LP(220°±10°), MP(≤120°), UP

DN/OD: 110, 160, 200 mm

Ring stiffness **SN16**

Water inlet perforation opening area $\geq 100 \text{ cm}^2/\text{m}$

Perforation type	Cross section	View form top of the pipe	Perforation opening, mm
TP (360°)		 DN/OD 110, 160, 200	
LP (220°±10°)		 DN/OD 110, 160, 200	
MP (≤120°)		 DN/OD 110, 160, 200	

Notes

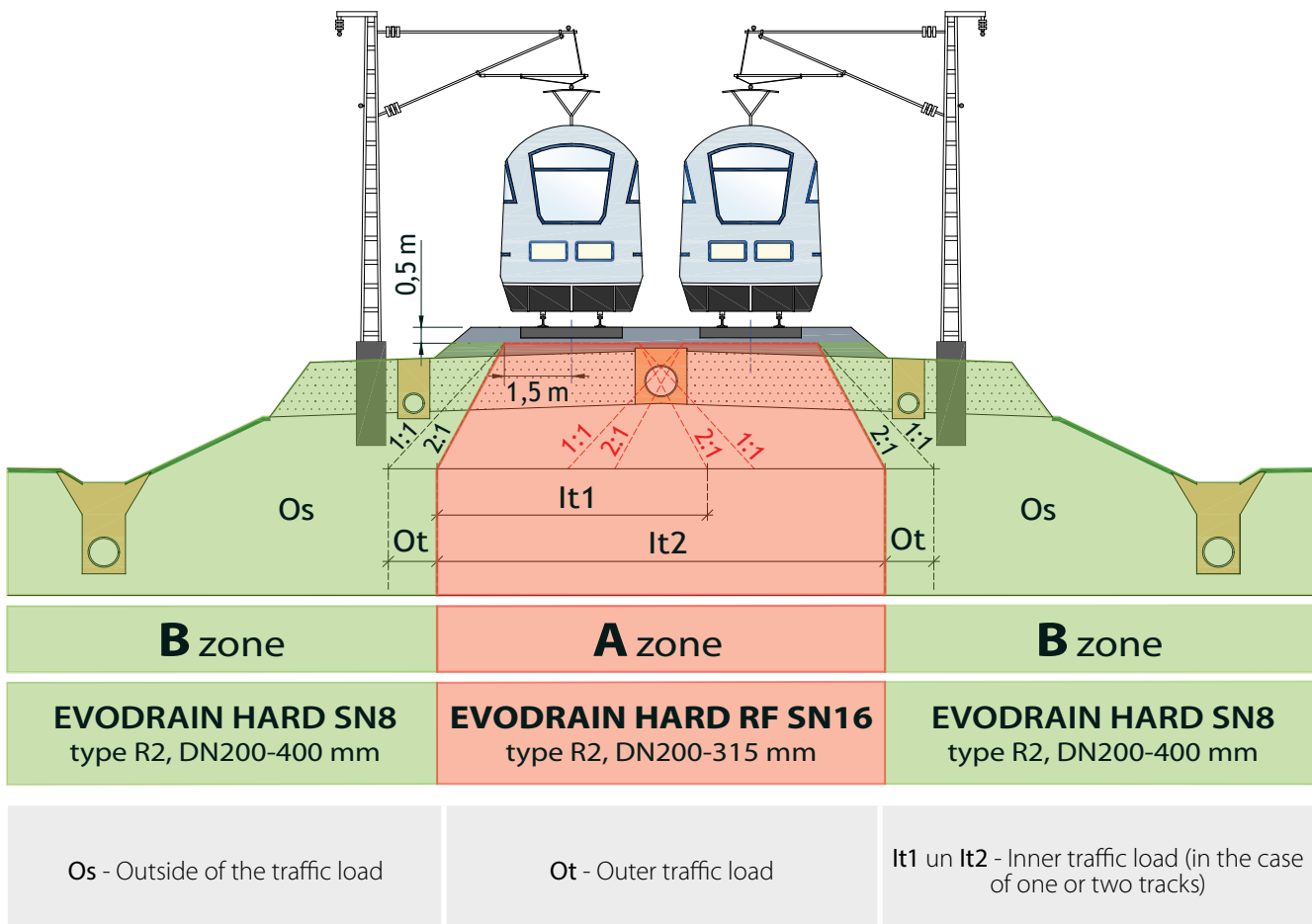
*On request available pipe conform to DIN 4102-1 (used for tunnel construction, self-extinguishing, class B2)



DRAINAGE PIPES FOR RAILWAY CONSTRUCTION

Product name	Description	Standard
EVODRAIN HARD PP DN/OD	R2 type drainage pipe with profiled (corrugated) external and smooth internal surface, SN16	<ul style="list-style-type: none"> • EN 13476-3 • DIN 4262-1
EVODRAIN HARD PP DN/OD	R2 type drainage pipe with profiled (corrugated) external and smooth internal surface, SN8	<ul style="list-style-type: none"> • EN 13476-3 • DIN 4262-1
EVODRAIN HARD PP DN/ID	R2 type drainage pipe with profiled (corrugated) external and smooth internal surface, SN16	<ul style="list-style-type: none"> • EN 13476-3 • DIN 4262-1
EVODRAIN HARD PP DN/ID	R2 type drainage pipe with profiled (corrugated) external and smooth internal surface, SN8	<ul style="list-style-type: none"> • EN 13476-3 • DIN 4262-1

RAILWAY CONSTRUCTION





DRAINAGE PIPES FOR RAILWAY CONSTRUCTION

EVODRAIN HARD PP DD/OD

DN/OD series R2 type double-wall pipe with profiled (corrugated) external and smooth internal surface. Due to the SN16 ring stiffness class the pipe is perfectly suited for installation works in zones/places with large traffic loads. The products are supplied in straight 6m bars. Each bar is equipped with welded on solid PP coupling and rubber sealing ring. The supplied sealing rings conform to EN 681-1.

Conformity DIN 4262-1, EN 13476-3

Type: R2 (double-wall pipes)

Material: polypropylene (PP)

Ring stiffness: SN16

Perforation opening width: 2 mm

Perforation type: TP(360°), LP(220°±10°) LP(180°±10°), MP(≤120°), UP


DN/OD: 200, 250, 315, 400 mm

Ring stiffness **SN16**

Perforation type	Cross section	View from top of the pipe	Water inlet perforation opening area	Perforation opening, mm
TP (360°)			DN/OD 200, 250, 315, 400 ≥100 cm ² /m	
LP (220°±10°)			DN/OD 200, 250, 315, 400 ≥100 cm ² /m	
MP (180°±10°)			DN/OD 200, 250, 315 ≥100 cm ² /m DN/OD 400 ≥50 cm ² /m	
MP (≤120°)			DN/OD 200, 250, 315, 400 ≥50 cm ² /m	



DRAINAGE PIPES FOR RAILWAY CONSTRUCTION



EVODRAIN HARD PP DN/OD

DN/OD series R2 type double-wall pipe with profiled (corrugated) external and smooth internal surface. The products are supplied in straight 6m bars. Each bar is equipped with welded on solid PP coupling and rubber sealing ring. The supplied sealing rings conform to EN 681-1.

Conformity DIN 4262-1, EN 13476-3

Type: R2 (double-wall pipes)

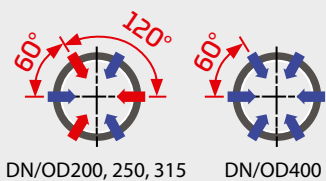
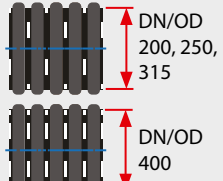
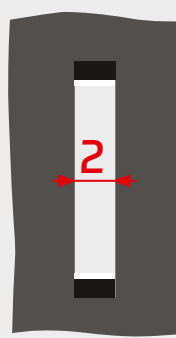
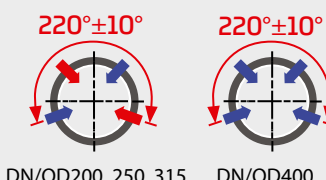
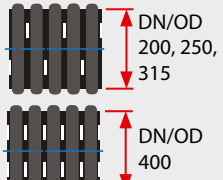
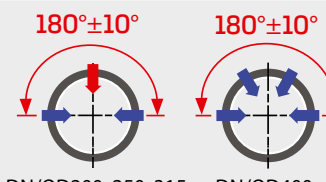
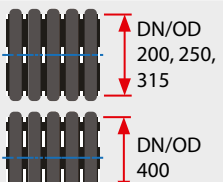
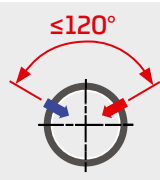
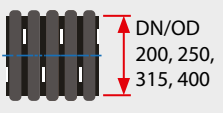
Material: polypropylene (PP)

Ring stiffness: SN8

Perforation opening width: 2 mm

Perforation type: TP(360°), LP(220°±10°), LP(180°±10°), MP(≤120°), UP

DN/OD: 200, 250, 315, 400 mm

Ring stiffness SN8				
Perforation type	Cross section	View from top of the pipe	Water inlet perforation opening area	Perforation opening, mm
TP (360°)			<p>DN/OD 200, 250, 315, 400</p> <p>≥100 cm²/m</p>	
LP (220°±10°)			<p>DN/OD 200, 250, 315, 400</p> <p>≥100 cm²/m</p>	
MP (180°±10°)			<p>DN/OD 200, 250, 315</p> <p>≥100 cm²/m</p> <p>DN/OD 400</p> <p>≥50 cm²/m</p>	
MP (≤120°)			<p>DN/OD 200, 250, 315, 400</p> <p>≥50 cm²/m</p>	



DRAINAGE PIPES FOR RAILWAY CONSTRUCTION

EVODRAIN HARD PP DN/ID

DN/OD series R2 type double-wall pipe with profiled (corrugated) external and smooth internal surface. The products are supplied in straight 6m bars. Each bar is equipped with integrated expanded coupling for flawless connections. Rubber sealing ring (to be installed on the pipe at the construction site) conform to EN 681-1.

Conformity DIN 4262-1, EN 13476-3

Type: R2 (double-wall pipes)

Material: polypropylene (PP)

Ring stiffness: SN16

Perforation opening width: 2 mm

Perforation type: TP(360°), LP(220°±10°), LP(180°±10°), MP(≤120°), UP

DN/ID: 300, 400, 500 mm

Ring stiffness **SN16**

Perforation type	Cross section	View form top of the pipe	Water inlet perforation opening area	Perforation opening, mm
TP (360°)			DN/ID 300, 400, 500 ≥100 cm ² /m	
LP (220°±10°)			DN/ID 400, 300, 500 ≥100 cm ² /m	
MP (180°±10°)			DN/ID 300, 400, 500 ≥50 cm ² /m	
MP (≤120°)			DN/ID 300 ≥50 cm ² /m DN/ID 400 ≥75 cm ² /m DN/ID 500 ≥50 cm ² /m	



DRAINAGE PIPES FOR RAILWAY CONSTRUCTION

EVODRAIN HARD PP DN/ID

DN/OD series R2 type double-wall pipe with profiled (corrugated) external and smooth internal surface. The products are supplied in straight 6m bars. Each bar is equipped with integrated expanded coupling for flawless connections. Rubber sealing ring (to be installed on the pipe at the construction site) conform to EN 681-1.

Conformity DIN 4262-1, EN 13476-3

Type: R2 (double-wall pipes)

Material: polypropylene (PP)

Ring stiffness: SN8

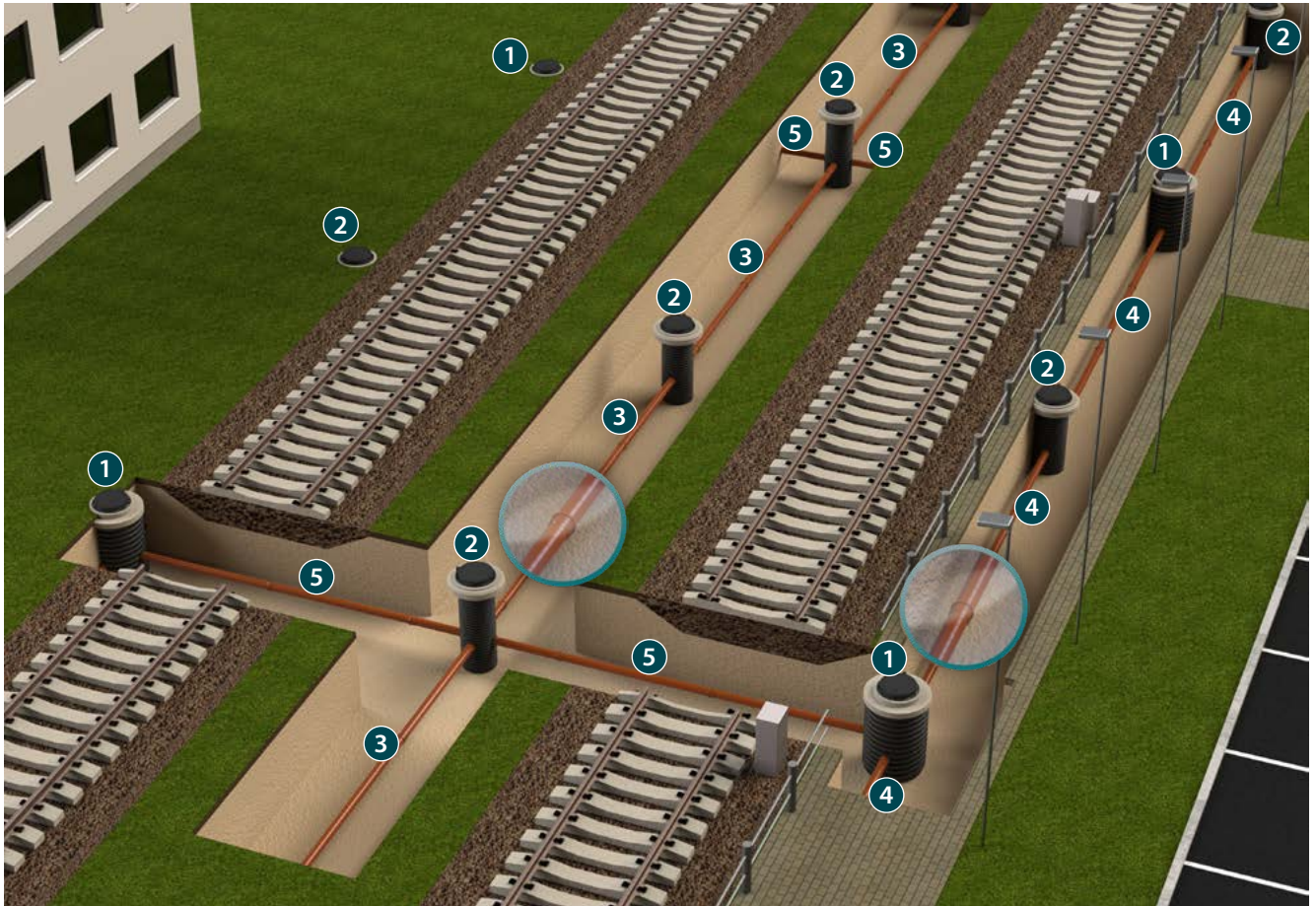
Perforation opening width: 2 mm

Perforation type: TP(360°), LP(220°±10°), LP(180°±10°), MP(≤120°), UP

DN/ID: 300, 400, 500 mm

Ring stiffness SN8				
Perforation type	Cross section	View form top of the pipe	Water inlet perforation opening area	Perforation opening, mm
TP (360°)			DN/ID 300, 400, 500 ≥100 cm ² /m	
LP (220°±10°)			DN/ID 400, 300, 500 ≥100 cm ² /m	
MP (180°±10°)			DN/ID 300, 400, 500 ≥50 cm ² /m	
MP (≤120°)			DN/ID 300 ≥50 cm ² /m DN/ID 400 ≥75 cm ² /m DN/ID 500 ≥50 cm ² /m	

DRAINAGE CHAMBERS FOR RAILWAY CONSTRUCTION



Legend

1	Drainage manhole with sediment trap CSL 1000/600D
2	Drainage chamber with sediment trap CSL 600D
3	Drainage pipe MONODRAIN SN16 DN/OD 110-400 mm, type R3, perforation type TP (360°)
4	Drainage pipe MONODRAIN SN8 DN/OD 110-400 mm, type R3, perforation type TP (360°)
5	Drainage pipe MONODRAIN SN16 DN/OD 110-400 mm, type R3, perforation type UP (unperforated)



DRAINAGE CHAMBERS FOR RAILWAY CONSTRUCTION



CRS 400/315D

Drainage chamber with diameter of DN/OD 400 mm and sediment trap.* Double-wall PP height adjustment shaft with welded on base. Industrially welded connections. Cast iron cover, conform to EN 124-2, traffic load class D400(40t), with PP smooth-wall telescopic pipe DN 315mm, height of the telescopic pipe — 0,6m. Rubber cuff DN400/315 mm.

**standard set 0,4m with volume 38l=38dm³; on request available chamber with other height of sediment trap (or without it).*

Chamber top: EN 124-2

Telescopic pipe: EN 13476-2

Shaft: EN 13476-3, EN 14802

Connections:
DN/OD
110, 160, 200, 250 mm
DN/ID
300 mm



CSL 600D

Drainage chamber with diameter of DN/ID 600 mm and sediment trap.* Double-wall PP height adjustment shaft with welded on base. Industrially welded connections. Reinforced concrete support ring, h=160mm. Reinforced concrete height adjustment ring, h=80mm (adjustment height 60mm, installed if necessary, no more than 4 pieces can be stacked). Stationary type cast iron cover, conform to EN 124-2, traffic load class D400(40t), opening DN/ID>600 mm.

**standard set 0,4m with volume 145l=145dm³; on request available manhole with other height of sediment trap (or without it).*

Chamber top: EN 124-2

Reinforced concrete support rings: EN 206, EN 1917, EN 1917/AC

Shaft: EN 13476-3, EN 14802

Connections:
DN/OD
110, 160, 200, 250, 315 mm
DN/ID
300, 400 mm



CSL 1000/600D

Drainage manhole with diameter of DN/ID 1000 mm and sediment trap.* Double-wall PP height adjustment shaft with welded on base. Industrially welded connections. Reinforced concrete support ring, h=160mm. Reinforced concrete height adjustment ring, h=80mm (adjustment height 60mm, installed if necessary, no more than 4 pieces can be stacked). Stationary type cast iron cover, conform to EN 124-2, traffic load class D400(40t), opening DN/ID>600 mm.

**standard set 0,4m with volume 309l=309dm³; on request available manhole with other height of sediment trap (or without it).*

Manhole top: EN 124-2

Reinforced concrete support rings: EN 206, EN 1917, EN 1917/AC

Shaft: EN 13476-3, EN 14802

Connections:
DN/OD
110, 160, 200, 250, 315, 400 mm
DN/ID
300, 400, 500 mm



PRODUCTION AND OFFICE

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