

Lining of concrete pipes with the Ekoliner

Super smooth coagulates with polyethylene-webs (PE)

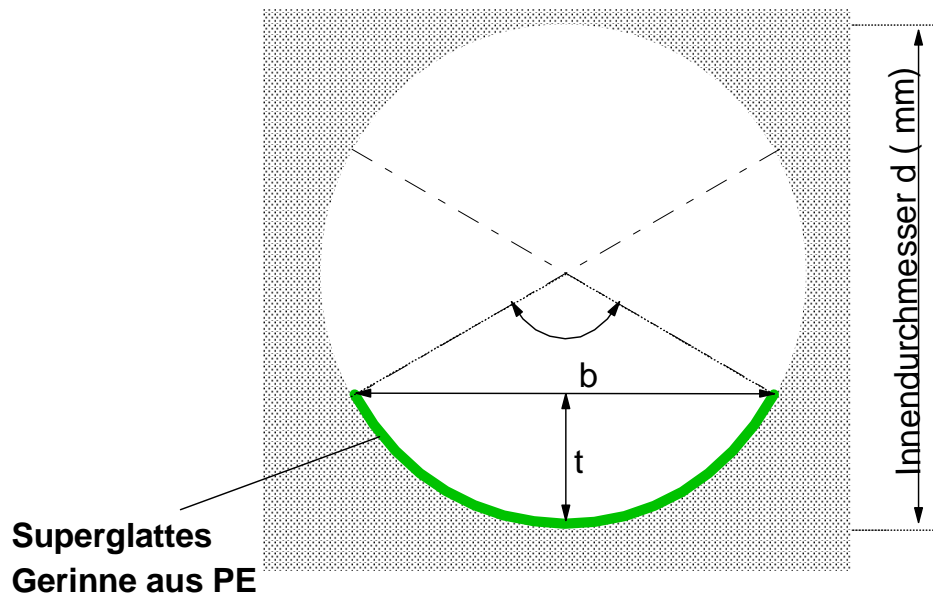
The Advantages:

- Increased velocity of flow with small flow, strong dragging effect at dry weather.
- Effectively against deposits.
- Doubled security by PE-protected concrete.
- Protection against corrosion with aggressive waters in the industry, with dump seeping water and the entire sewage engineering.
- Protection for groundwaters and soil by high chemical and biological stability.
- More easily and safe installation without joints.
- Concrete at production or
- Or prefabricated pipes in the canal construction with special adhesives.
- The **Ekoliner** can be welded within the impact range.
- Outstanding adhesion by patented anchor fleece material. No decrease of the wall thickness.
- Coagulate in the Ekoliner (for example).

A progressive concept with proven elements.

Concrete layer and sanitation-webs for concreting and gluing on:

Partial lining of circular concrete pipes with the Ekoliner



PE nominal thickness 3,0 mm. Standard dimensions*
Diameter drying gutter > 15 % of the tubin diameter
 $A_{TR} > 15 \% A$:

d mm	A m ²	A_{TR} m ²	b_o m	b m	t m
300	0,07	0,01	0,30	0,252	0,069
500	0,20	0,03	0,50	0,421	0,115
1000	0,79	0,14	1,00	0,841	0,230
1200	1,13	0,20	1,20	1,009	0,275
1500	1,77	0,31	1,50	1,262	0,344
2000	3,14	0,54	2,00	1,682	0,459
2500	4,91	0,85	2,50	2,103	0,574
3000	7,07	1,22	3,00	2,523	0,689

Legend:

d (mm) internal diameter

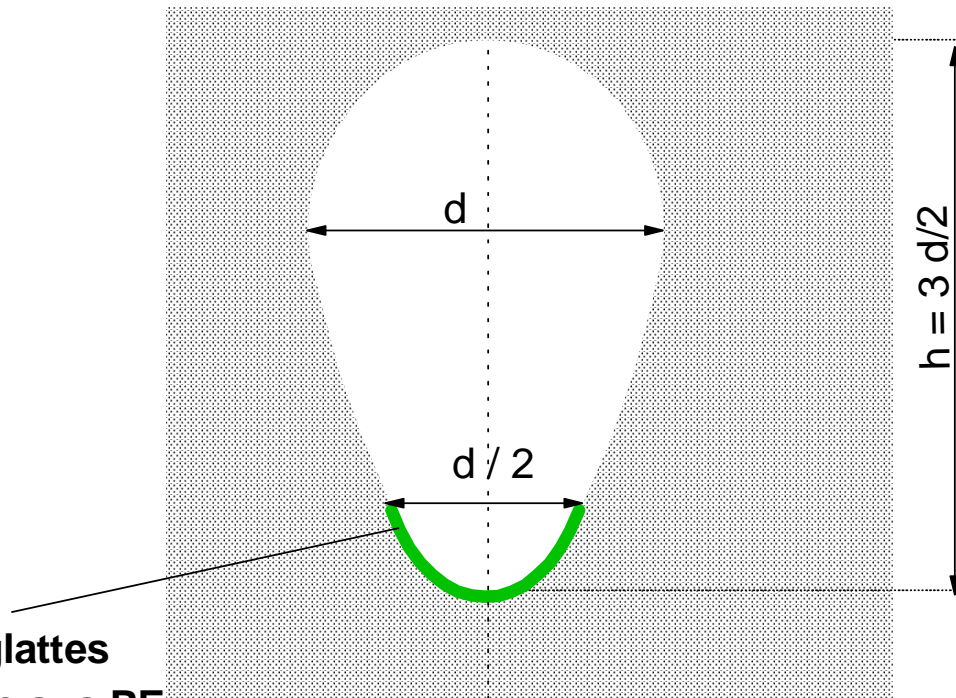
A (m²) circular area

A_{TR} (m²) diameter drying gutter

b_o (m) length of curve of the watercourse

* special measures in request

Ekoliner partial lining of a dry weather gutter



Superglattes Gerinne aus PE

Example:
Tube lining with the Ekoliner:

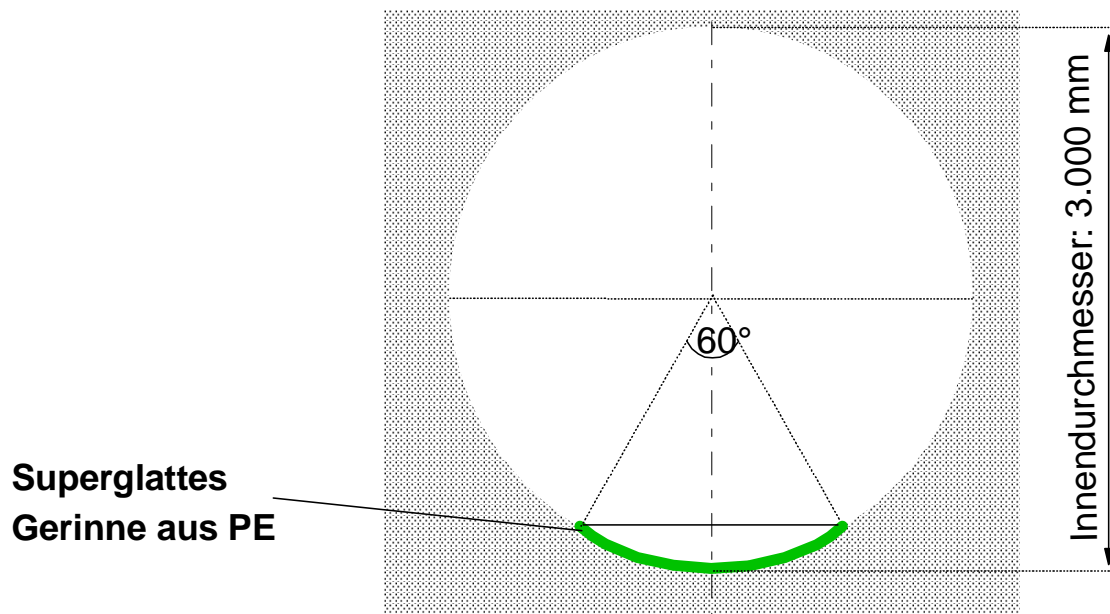
PE nominal thickness 3,0 mm.
Diameter of gutter $A_{TR} > 9 \% A$:

Standard measures*:

d / h mm	A m ²	A _{TR} m ²	b _o m
600/ 900	0,41	0,04	0,47
700/ 1.050	0,56	0,05	0,55
800/ 1.200	0,74	0,06	0,63
900/ 1.350	0,93	0,08	0,71
1.000/ 1.500	1,15	0,10	0,79
1.200/ 1.800	1,65	0,14	0,94
1.400/ 2.100	2,25	0,19	1,10
1.600/ 2.400	2,94	0,25	1,26

A (m²) surface of the profile
A_{TR} (m²) diameter of the drying gutter
b_o (m) length of curve of the watercourse
* special measures on request

Ekoliner partial lining of a dry weather gutter



Example:

Rohrauskleidung mit dem Ekoliner:

PE nominal thickness 3,0 mm

Concrete pipe DN 3.000

1/6 lining = approx. 1.500 mm breadth

in longitudinal direction results in a flow diameter of the gutter

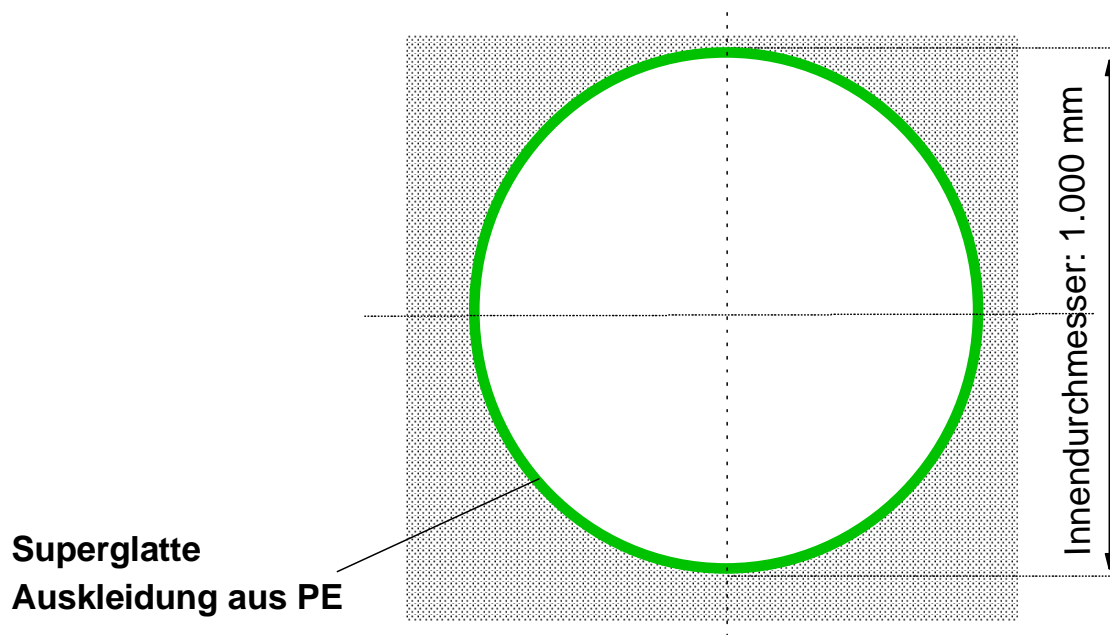
from approx. 0,2 m²

lining is made in the shifted pipe

particularly favourably:

already in the tubing work

Full lining with the Ekoliner



Example:

Full lining with the Ekoliner during fulfillment with chemically aggressive waste water or gases.

PE nominal thickness 5,0 mm.

Synthesis of the advantages of PE and concrete:

Mechanical stability of the concrete pipes and high chemical stability of the concrete, compare DIN 4030:

Evaluation of concrete-attacking waters, soils and gases.

Picture series: Full lining of concrete pipes with the Ekoliner



1. Important advantage: Easy handling.



2. Draw up the Inliners on the core.



3. Moisten the anchor fleece material.



4. Roughen up with steel brooms.



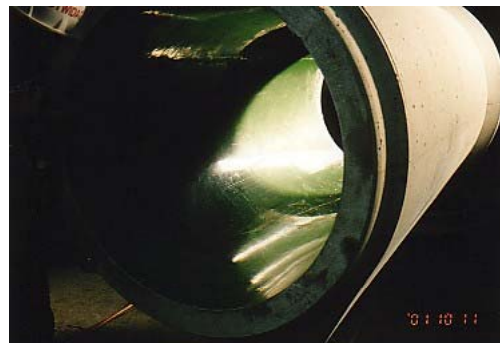
5. Bringing in the reinforcement.



6. Latching of the formwork.



7. Concreting.



8. View onto the lined pipe.