

Linerwaste pipe relining system

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Health and safety

The Linerwaste system contains epoxy. Please consult the Material Safety Datasheet for more information. Always use appropriate safety equipment when working with Linerwaste products

Base



Skin Irrit. 2;H315
Skin Sens. 1;H317
Eye Irrit. 2;H319 Aquatic Chronic 2;H411

Hardener – (FAST, MEDIUM, SLOW)



Skin Irrit. 2;H315
Skin Sens. 1;H317
Eye Irrit. 2;H319 Aquatic Chronic 2;H411

The Linerwaste system

As a user of the Linerwaste relining system, you have invested in a top-tier solution that caters to a wide range of applications with liners available from DN50 to DN225. Our innovative liners create a durable, self-supporting pipe infrastructure that seamlessly adapts to size variations and effortlessly handles sharp 90° bends with minimal wrinkling.

The Linerwaste system is further enhanced by our unique low-viscosity resin formulations, available in fast, medium, and slow curing options. These resins, when combined with our liners, result in robust and adaptable rehabilitated sewer pipes. Once cured, these pipes boast impressive chemical resistance and a high E-modulus, rivaling the performance of brand-new, conventionally manufactured PP sewer pipes.

As a valued Linerwaste user, you can take full advantage of the following benefits:

Efficient installation process: The Linerwaste system simplifies the pipe rehabilitation process, minimizing downtime and disruptions to your operations.

Long-lasting results: The rehabilitated pipes have enhanced longevity, reducing future maintenance and replacement expenses.

Eco-friendly solution: The Linerwaste relining system does not release hazardous substances upon curing, contributing to a greener environment.

Quality assurance: Adhering to stringent industry standards, our system has earned the prestigious RISE CR072 approval in Sweden, ensuring top-quality and reliable results.

By utilizing the Linerwaste relining system to its full potential, you can maximize the benefits of this superior, user-focused solution for all your pipe rehabilitation needs.

Linerwaste standard liner

Linerwaste is available in diameters from DN50 to DN225. It is crafted from 100% PES fiber and features a TPU coating. The liner is compatible with ambient, hot water, or steam curing processes up to 80°C. All liners are flexible enough to fill variations in pipe diameter. The Liner does not stretch length wise, only radially. This allows for precise relining of pipes of known lengths. The material is developed to be able to negotiate bends of up to 90°

The Linerwaste liners

DN Liner	Layflat width	%below nominal pipe DN
50–70	54 mm	25%
70–100	85 mm	20%
100–150	130 mm	15%
150–225	191 mm	17%

Textile Material: ~95% Polyester ~5% Elastane

Coating material: Thermoplastic Polyurethane 0,15mm

Designed for wall thickness: 3mm

The liner is designed to have a diameter that is between 15-25% smaller than the smallest nominal pipe diameter it is designed for. Example: the liner for DN 100-150 is around 86mm in diameter

Linerwaste resin

Our selection of epoxy resins is specifically designed to be compatible with a variety of liners, including both woven and felt options, but especially with the Linerwaste liners. The low viscosity allows for easy impregnation of any liner.

Mixing ratios for Linerwaste resin

All Linerwaste resins has a mixing ratio of 100:30, base: hardener.

Example: to get 1,3 kg of finished FAST epoxy, 1 kg of Linerwaste BASE and 300g of Linerwaste FAST

Mixing table

Total resin weight (kg)	Linerwaste BASE (gram)	Linerwaste Hardener (FAST, MEDIUM, or SLOW) (gram)		Total resin weight kg	Linerwaste BASE (gram)	Linerwaste Hardener (FAST, MEDIUM, or SLOW) (gram)
0,5	385	115		15,5	11 923	3 577
1,0	769	231		16,0	12 308	3 692
1,5	1 154	346		16,5	12 692	3 808
2,0	1 538	462		17,0	13 077	3 923
2,5	1 923	577		17,5	13 462	4 038
3,0	2 308	692		18,0	13 846	4 154
3,5	2 692	808		18,5	14 231	4 269
4,0	3 077	923		19,0	14 615	4 385
4,5	3 462	1 038		19,5	15 000	4 500
5,0	3 846	1 154		20,0	15 385	4 615
5,5	4 231	1 269		20,5	15 769	4 731
6,0	4 615	1 385		21,0	16 154	4 846
6,5	5 000	1 500		21,5	16 538	4 962
7,0	5 385	1 615		22,0	16 923	5 077
7,5	5 769	1 731		22,5	17 308	5 192
8,0	6 154	1 846		23,0	17 692	5 308
8,5	6 538	1 962		23,5	18 077	5 423
9,0	6 923	2 077		24,0	18 462	5 538
9,5	7 308	2 192		24,5	18 846	5 654
10,0	7 692	2 308		25,0	19 231	5 769
10,5	8 077	2 423		25,5	19 615	5 885
11,0	8 462	2 538		26,0	20 000	6 000
11,5	8 846	2 654		26,5	20 385	6 115
12,0	9 231	2 769		27,0	20 769	6 231
12,5	9 615	2 885		27,5	21 154	6 346
13,0	10 000	3 000		28,0	21 538	6 462
13,5	10 385	3 115		28,5	21 923	6 577
14,0	10 769	3 231		29,0	22 308	6 692
14,5	11 154	3 346		29,5	22 692	6 808
15,0	11 538	3 462		30,0	23 077	6 923

Linerwaste resin, open times and curing times

Linerwaste FAST

Curing: 3 hours to self-supporting at 20°C,

Working time at 20°C: 15 minutes (the time until the viscosity doubles)

Linerwaste MEDIUM

Curing: 6 hours to self-supporting at 20°C,

Working time at 20°C: 35 minutes (the time until the viscosity doubles)

Linerwaste SLOW

Curing: 8 hours to self-supporting at 20°C,

Working time at 20°C: 50 minutes (the time until the viscosity doubles)

Recommended working temperature is 15-30°C. At lower temperatures the viscosity will be high, and the resin will be difficult to work with.

Cure time is impacted by ambient temperature. Every 10°C the temperature goes down the curing time is doubled. Same for every 10°C above recommended working temperature the cure time is cut in half.

Linerwaste FAST resin cures in 10 hours at 5°C and 1,5 hours at 30°C

Linerwaste MEDIUM resin cures in 18 hours at 5°C and 3 hours at 30°C

Linerwaste SLOW resin cures in 28 hours at 5°C and 4 hours at 30°C

Expected storage life in sealed containers
12 months from our warehouse.

Resin consumption and roller settings

	To achieve 3mm wall thickness	
DN	Roller spacing	Linerwaste Epoxy need kg /m
50-70	7 mm	0,6
70-100	10 mm	1
100-150	11 mm	1,3
150-225	12 mm	2,4

Epoxy weight per total liner length

DN 50-70		DN 70-100		DN 100-150		DN 150-225	
Length (meters)	Total epoxy weight (kg)	Length (meters)	Total epoxy weight (kg)	Length (meters)	Total epoxy weight (kg)	Length (meters)	Total epoxy weight (kg)
1	0,60	1	1,00	1	1,3	1	2,40
2	1,20	2	2,00	2	2,6	2	4,80
3	1,80	3	3,00	3	3,9	3	7,20
4	2,40	4	4,00	4	5,2	4	9,60
5	3,00	5	5,00	5	6,5	5	12,00
6	3,60	6	6,00	6	7,8	6	14,40
7	4,20	7	7,00	7	9,1	7	16,80
8	4,80	8	8,00	8	10,4	8	19,20
9	5,40	9	9,00	9	11,7	9	21,60
10	6,00	10	10,00	10	13	10	24,00
11	6,60	11	11,00	11	14,3	11	26,40
12	7,20	12	12,00	12	15,6	12	28,80
13	7,80	13	13,00	13	16,9	13	31,20
14	8,40	14	14,00	14	18,2	14	33,60
15	9,00	15	15,00	15	19,5	15	36,00
16	9,60	16	16,00	16	20,8	16	38,40
17	10,20	17	17,00	17	22,1	17	40,80
18	10,80	18	18,00	18	23,4	18	43,20
19	11,40	19	19,00	19	24,7	19	45,60
20	12,00	20	20,00	20	26	20	48,00
21	12,60	21	21,00	21	27,3	21	50,40
22	13,20	22	22,00	22	28,6	22	52,80
23	13,80	23	23,00	23	29,9	23	55,20
24	14,40	24	24,00	24	31,2	24	57,60
25	15,00	25	25,00	25	32,5	25	60,00
26	15,60	26	26,00	26	33,8	26	62,40
27	16,20	27	27,00	27	35,1	27	64,80
28	16,80	28	28,00	28	36,4	28	67,20
29	17,40	29	29,00	29	37,7	29	69,60
30	18,00	30	30,00	30	39	30	72,00

31	18,60	31	31,00	31	40,3	31	74,40
32	19,20	32	32,00	32	41,6	32	76,80
33	19,80	33	33,00	33	42,9	33	79,20
34	20,40	34	34,00	34	44,2	34	81,60
35	21,00	35	35,00	35	45,5	35	84,00
36	21,60	36	36,00	36	46,8	36	86,40
37	22,20	37	37,00	37	48,1	37	88,80
38	22,80	38	38,00	38	49,4	38	91,20
39	23,40	39	39,00	39	50,7	39	93,60
40	24,00	40	40,00	40	52	40	96,00

Installation and curing pressure

Recommended installation pressure 0,4-0,8 Bar.

Recommended curing pressure 0,4-0,8 Bar.