

PERMILINE is an effective corrosion prevention system for use in the transportation of produced fluids.

PERMILINE cement lining system is an excellent choice for flow lines and water injection wells. The liner is made from specialized cement that is affixed to the ID of the pipe via centrifugal force. This creates a corrosion barrier against water and gases that would attack the steel surface. Permiline creates a more robust abrasion resistant line of protection versus traditional coatings providing a longer performance life. When flowline repairs are needed, Permiline is easily repairable and can be fitted, cut, and welded back into service without specialized welding sleeves or costly replacements of the whole line.

Additional Information:

Recommended Services:

- H₂O transmission lines
- Flow lines / line pipe
- H₂O injection floods

Benefits:

- Long service life
- Excellent abrasion resistance
- Low cost
- Extend lifespan of downgraded pipe
- In field repairs

Characteristics:

- Portland cement
- Burst up to yield of pipe
- Operating temperatures: 350°F

Lining Capabilities:

- OCTG 2 3/8" - 13 3/8"
- Line Pipe - 2" - 24"



Laying and Handling

Joints may be coupled (1) welding - using a special gasket (2) the conventional T&C joint with PERMITEK joint compound (3) or the seal grooved type coupling. There are other trademarked coupling system available. Field cuts can be made with either saws, or cutting torches; however, rough lining ends should be repaired with our easily applied patching compound.

Care should be taken to prevent either denting or permanent distortion of the steel tube. Damage can result from throwing lined pipe from trucks, allowing it to strike a hard object, or exceeding the legal overhand during transport. Hooks or other objects should not be inserted into the pipe ends.

Fittings

Permiline fittings are available for transition areas such as 90's, 45's, and T's. Permiline fittings keep consistency within the flow line providing seamless protection throughout the piping

Line Pipe Weights and Dimensions

Pipe Size Norm.	Pipe Size O.D.	Pipe Sched.	Pipe Wall Thickness	Pipe Weight Per Ft.	Lining Thickness*	Pipe I.D. Lined	Lining Weight Per Ft.**	Lined Weight Per Ft.
1 1/2"	1 9/10"	40 (STD)	0.145	2.72	0.125	1.360	0.55	3.27
2"	2 3/8"	-	0.125	3.00	0.156	1.813	0.90	3.90
2"	2 3/8"	40 (STD)	0.154	3.65	0.156	1.755	0.88	4.53
2"	2 3/8"	80	0.218	5.02	0.156	1.627	0.82	5.84
2 1/2"	2 7/8"	-	0.125	3.67	0.156	2.313	1.13	4.80
2 1/2"	2 7/8"	40 (STD)	0.203	5.79	0.156	2.157	1.06	6.85
2 1/2"	2 7/8"	80	0.276	7.66	0.156	2.011	1.00	8.66
3"	3 1/2"	-	0.125	4.51	0.188	2.874	1.69	6.20
3"	3 1/2"	40 (STD)	0.216	7.58	0.188	2.692	1.60	9.18
3"	3 1/2"	80	0.300	10.25	0.188	2.524	1.50	11.75
4"	4 1/2"	-	0.188	5.84	0.188	3.874	2.25	8.09
4"	4 1/2"	40 (STD)	0.280	10.79	0.188	3.650	2.13	12.92
4"	4 1/2"	80	0.432	14.98	0.188	3.450	2.02	17.00
6"	6 5/8"	-	0.188	12.89	0.250	5.749	4.42	17.31
6"	6 5/8"	40 (STD)	0.280	18.97	0.250	5.565	4.28	23.25
6"	6 5/8"	80	0.432	28.57	0.250	5.261	4.06	32.63
8"	8 5/8"	20	0.250	22.36	0.375	7.375	8.56	30.92
8"	8 5/8"	40 (STD)	0.322	28.55	0.375	7.231	8.40	36.95
8"	8 5/8"	80	0.500	43.39	0.375	6.875	8.01	51.40
10"	10 3/4"	20	0.250	28.04	0.375	9.500	10.90	38.94
10"	10 3/4"	40 (STD)	0.365	40.48	0.375	9.270	10.65	51.13
10"	10 3/4"	80	0.594	64.40	0.375	8.812	10.15	74.55
12"	12 3/4"	20	0.250	33.38	0.375	11.500	13.12	46.50
12"	12 3/4"	- (STD)	0.365	49.56	0.375	11.250	12.84	62.40
12"	12 3/4"	40	0.406	53.56	0.375	11.188	12.77	66.33
14"	14"	20	0.312	45.68	0.375	12.626	14.33	60.01
14"	14"	30 (STD)	0.375	54.57	0.375	12.500	14.22	68.79
14"	14"	40	0.500	63.37	0.375	12.374	14.08	77.45
16"	16"	20	0.312	52.36	0.438	14.500	19.26	72.62
16"	16"	30 (STD)	0.375	62.58	0.438	14.374	19.11	81.69
16"	16"	40	0.500	82.77	0.438	14.124	18.79	101.56
18"	18"	20	0.312	59.03	0.438	16.500	21.84	80.87
18"	18"	30 (STD)	0.375	70.59	0.438	16.374	21.69	92.28
18"	18"	40	0.562	104.76	0.438	16.000	21.21	125.97
20"	20"	20	0.375	78.60	0.500	18.250	27.61	106.21
20"	20"	30 (STD)	0.500	104.13	0.500	18.000	27.24	131.37
24"	24"	20	0.375	94.62	0.500	22.250	33.50	128.12
24"	24"	30 (STD)	0.562	140.80	0.500	21.876	32.95	173.75

* Allowed tolerances: 1 1/2" - 4" plus or minus 0.031"; 6 5/8" and up plus or minus 0.063"

** Add 25% for shipping weight

Minimum Pipe Wall Thickness for Cement Lining

Pipe Size Norm.	Pipe Wall Thickness	Pipe Size Norm.	Pipe Wall Thickness	Pipe Size Norm.	Pipe Wall Thickness
2"	0.125"	8"	0.188"	16"	0.281"
3"	0.125"	10"	0.203"	18"	0.312"
4"	0.125"	12"	0.219"	20"	0.312"
6"	0.156"	14"	0.250"	24"	0.312"

Cement lining pipe of lesser wall thickness at customer risk.