TECHNICAL DATA SHEET

United Glass RP

TEST SPECIFICATIONS

Roll

- Density and density distribution at various applied pressures.
  - Test: Compression measured at increasing pressure.
  - Standard: ASTM D5199
- Load at break in machine and cross directions.
  - Test: Tensile testing - Maximum Resistive Force.
  - Standard: ASTM D5035
- Secant Modulus in machine and cross directions (resistance to stretch)
  - Test: Tensile testing - Maximum Resistive Force vs Extension %.
  - Standard: ASTM D5035
- Coating adhesion and ability to weld.
  - Test: Peel strength of welded tape.
  - Standard: ASTM D903

Liner

- Density, Gauge of liner under various applied pressures.
  - Test: Compression test of sample of all layers.
  - Standard: ASTM D1777
- Felt weld strengths.
  - Test: Each weld is sampled and destructively tested.
  - Standard: ASTM D5035
- Sealing tape weld strengths.
  - Test: Each weld is sampled and destructively tested.
  - Standard: ASTM D5035

Fiberglass Reinforced Felt Pipe Liner

DESCRIPTION

A multilayer polyester felt/fiberglass hybrid liner with impermeable coating conforming to ASTM-1216.

INSTALLATION METHOD

Inversion using water or air.

DIAMETER RANGE

8 to 100 inch | 203 to 2,540 mm

WALL THICKNESS

¼ to 1 ½ inch | 5.5 to 40 mm

LENGTH

Any length made to order.

CURING SPECIFICATIONS

Polyester / Vinyl Ester

- Polyurethane
  Hot Water <190°F
  Steam <220°F
- Polypropylene
  Hot Water <190°F
  Steam <220°F

Epoxy

- Polyurethane
  Hot Water <190°F
- Polypropylene
  Hot Water <190°F
  Steam <220°F

This Technical Data Sheet gives general information. Exact coating type and thickness will depend on the specific types of resin being used. Please contact our technical team for specific questions and additional information.

UNITED FELTS
A VORTEX COMPANY

CURING TEMPERATURE MAX 266°F

DIAMETER (IN)	LINER THICKNESS (MM)	MINIMUM INVERSION PRESSURE (PSI)	MAX COLD INVERSION PRESSURE	IDEAL CURING PRESSURE (PSI)	MAX HOT PRESSURE (PSI)	RESIN AMOUNT (GALLON/FT)	PINCH ROLLER GAP (MM)
4	3	9	13	11	11	0.06	8.2
5	3	6	10	8	9	0.09	8.1
6	3	5	9	7	8	0.10	8.0
6	4.5	8	13	10	11	0.15	11.9
8	3	4	7	5	6	0.14	7.9
8	4.5	6	10	7	9	0.21	11.7
8	6	7	13	10	11	0.27	15.7
8	7.5	9	16	12	14	0.36	19.8
9	4.5	5	9	6	8	0.23	11.7
9	6	7	12	8	10	0.31	15.5
10	4.5	4	8	6	7	0.28	11.6
10	6	6	10	8	9	0.35	15.4
10	7.5	7	13	9	11	0.45	19.4
12	6	4	9	6	8	0.42	15.3
12	7.5	5	11	7	9	0.55	19.2
12	9	7	13	9	11	0.68	23.1
15	7.5	4	9	6	8	0.69	18.9
15	9	5	10	7	9	0.82	22.8
15	10.5	6	12	8	11	0.95	26.8
18	9	4	9	6	8	0.99	22.6
18	10.5	5	10	7	9	1.15	26.4
18	12	6	12	8	10	1.31	30.4
18	13.5	7	13	9	11	1.47	34.4
21	9	4	7	5	7	1.16	22.4
21	10.5	4	9	6	8	1.35	26.2
21	12	5	10	6	9	1.54	30.1
21	13.5	6	11	7	10	1.72	34.0
21	15	6	12	8	11	1.91	38.0
24	9	3	7	4	6	1.33	22.3
24	10.5	4	8	5	7	1.54	26.1
24	12	4	9	6	8	1.76	29.9
24	13.5	5	10	6	9	1.97	33.7
24	15	5	11	7	9	2.19	37.6

1. *Suitable only for Applied Felts liners designed for and to be installed by inversion.*
2. *Roller gap setting is for guidance only. Impregnation equipment differs: Rubber wrappings on rollers, positional hysteresis and flexing of rollers cause roller gap settings to vary between different equipment. Roller gap setting for any given equipment should be reasonably repeatable.*
3. *We strongly recommend the resin addition be monitored and controlled by adjustment of the roller gap settings, as necessary. Ultimately, it is the correct resin addition which is imperative, not the roller gap.*

MADE IN AMERICA

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RECOMMENDED INVERSION AND HEAD CURING CHART

Heat-Welded Seams

PIPE DIAMETER (IN)	CIPP TUBE THICKNESS (MM)	IDEAL CURING HEAD		MINIMUM INSTALLATION HEAD		MAXIMUM HOT HEAD		MAXIMUM COLD HEAD	
		(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)
6	4.5	23.4	10.2	18.0	7.8	26.2	11.4	30.0	13.0
6	5.5	28.6	12.4	21.9	9.5	32.0	13.9	36.7	15.9
6	6	31.2	13.6	23.9	10.4	34.9	15.2	40.0	17.4
8	4.5	16.8	7.3	12.8	5.6	19.7	8.5	22.5	9.8
8	5.5	20.5	8.9	15.7	6.8	24.0	10.4	27.5	11.9
8	6	22.3	9.7	17.1	7.4	26.2	11.4	30.0	13.0
8	7.5	27.9	12.1	21.4	9.3	32.8	14.2	37.5	16.3
10	4.5	13.0	5.7	10.0	4.3	15.7	6.8	18.0	7.8
10	5.5	15.9	6.9	12.2	5.3	19.2	8.3	22.0	9.6
10	6	17.4	7.5	13.3	5.8	21.0	9.1	24.0	10.4
10	7.5	21.7	9.4	16.6	7.2	26.2	11.4	30.0	13.0
10	9	26.1	11.3	20.0	8.7	31.5	13.7	36.0	15.6
12	6	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
12	6.5	14.1	6.1	10.8	4.7	18.9	8.2	21.7	9.4
12	7	15.2	6.6	11.7	5.1	20.4	8.9	23.3	10.1
12	7.5	16.3	7.1	12.5	5.4	21.8	9.5	25.0	10.9
12	9	19.6	8.5	15.0	6.5	26.2	11.4	30.0	13.0
12	10.5	22.8	9.9	17.5	7.6	30.6	13.3	35.0	15.2
15	6	10.4	4.5	8.0	3.5	14.0	6.1	16.0	7.0
15	7.5	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
15	9	15.7	6.8	12.0	5.2	21.0	9.1	24.0	10.4
15	10.5	18.3	7.9	14.0	6.1	24.5	10.6	28.0	12.2
15	12	20.9	9.1	16.0	7.0	28.0	12.1	32.0	13.9
15	13.5	23.5	10.2	18.0	7.8	31.5	13.7	36.0	15.6
18	6	8.7	3.8	6.7	2.9	11.6	5.1	13.3	5.8
18	7.5	10.9	4.7	8.3	3.6	14.6	6.3	16.7	7.2
18	9	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
18	10.5	15.2	6.6	11.7	5.1	20.4	8.9	23.3	10.1
18	12	17.4	7.6	13.3	5.8	23.3	10.1	26.7	11.6
18	13.5	19.6	8.5	15.0	6.5	26.2	11.4	30.0	13.0
18	15	21.8	9.4	16.7	7.2	29.1	12.6	33.3	14.5
21	6	7.5	3.2	5.7	2.5	10.0	4.3	11.4	5.0
21	7.5	9.3	4.0	7.1	3.1	12.5	5.4	14.3	6.2
21	9	11.2	4.9	8.6	3.7	15.0	6.5	17.1	7.4
21	10.5	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
21	12	14.9	6.5	11.4	5.0	20.0	8.7	22.9	9.9
21	13.5	16.8	7.3	12.9	5.6	22.5	9.8	25.7	11.2
21	15	18.7	8.1	14.3	6.2	25.0	10.8	28.6	12.4
21	16.5	20.5	8.9	15.7	6.8	27.5	11.9	31.4	13.6
21	18	22.4	9.7	17.1	7.4	30.0	13.0	34.3	14.9
21	19.5	24.2	10.5	18.6	8.1	32.5	14.1	37.2	16.1

UNITED FELTS
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RECOMMENDED INVERSION AND HEAD CURING CHART

Heat-Welded Seams

PIPE DIAMETER (IN)	CIPP TUBE THICKNESS (MM)	IDEAL CURING HEAD		MINIMUM INSTALLATION HEAD		MAXIMUM HOT HEAD		MAXIMUM COLD HEAD	
		(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)
24	7.5	8.2	3.5	6.3	2.7	10.9	4.7	12.5	5.4
24	9	9.8	4.3	7.5	3.3	13.1	5.7	15.0	6.5
24	10.5	11.4	5.0	8.8	3.8	15.3	6.6	17.5	7.6
24	12	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
24	13.5	14.7	6.4	11.3	4.9	19.7	8.5	22.5	9.8
24	15	16.3	7.1	12.5	5.4	21.8	9.5	25.0	10.9
24	16.5	18.0	7.8	13.8	6.0	24.0	10.4	27.5	11.9
24	18	19.6	8.5	15.0	6.5	26.2	11.4	30.0	13.0
24	19.5	21.2	9.2	16.3	7.1	28.4	12.3	32.5	14.1
24	21	22.8	9.9	17.5	7.6	30.6	13.3	35.0	15.2
24	22.5	24.5	10.6	18.8	8.1	32.8	14.2	37.5	16.3
27	7.5	7.3	3.1	5.6	2.4	9.7	4.2	11.1	4.8
27	9	8.7	3.8	6.7	2.9	11.6	5.1	13.3	5.8
27	10.5	10.2	4.4	7.8	3.4	13.6	5.9	15.6	6.8
27	12	11.6	5.0	8.9	3.9	15.5	6.7	17.8	7.7
27	13.5	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
27	15	14.5	6.3	11.1	4.8	19.4	8.4	22.2	9.6
27	16.5	16.0	6.9	12.2	5.3	21.4	9.3	24.5	10.6
27	19	18.4	8.0	14.1	6.1	24.6	10.7	28.2	12.2
27	19.5	18.9	8.2	14.5	6.3	25.2	11.0	28.9	12.5
27	21	20.3	8.8	15.6	6.8	27.2	11.8	31.1	13.5
27	22.5	21.8	9.4	16.7	7.2	29.1	12.6	33.3	14.5
27	24	23.2	10.1	17.8	7.7	31.1	13.5	35.6	15.4
30	7.5	6.5	2.8	5.0	2.2	8.7	3.8	10.0	4.3
30	9	7.8	3.4	6.0	2.6	10.5	4.6	12.0	5.2
30	10.5	9.1	4.0	7.0	3.0	12.2	5.3	14.0	6.1
30	12	10.4	4.5	8.0	3.5	14.0	6.1	16.0	6.9
30	13.5	11.8	5.1	9.0	3.9	15.7	6.8	18.0	7.8
30	15	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
30	16.5	14.4	6.2	11.0	4.8	19.2	8.3	22.0	9.6
30	18	15.7	6.8	12.0	5.2	21.0	9.1	24.0	10.4
30	19.5	17.0	7.4	13.0	5.6	22.7	9.9	26.0	11.3
30	21	18.3	7.9	14.0	6.1	24.5	10.6	28.0	12.2
30	22.5	19.6	8.5	15.0	6.5	26.2	11.4	30.0	13.0
30	24	20.9	9.1	16.0	6.9	28.0	12.1	32.0	13.9
30	27	23.5	10.2	18.0	7.8	31.5	13.7	36.0	15.6

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RECOMMENDED INVERSION AND HEAD CURING CHART

Heat-Welded Seams

PIPE DIAMETER (IN)	CIPP TUBE THICKNESS (MM)	IDEAL CURING HEAD		MINIMUM INSTALLATION HEAD		MAXIMUM HOT HEAD		MAXIMUM COLD HEAD	
		(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)
36	10.5	7.6	3.3	5.8	2.5	10.2	4.4	11.7	5.1
36	12	8.7	3.8	6.7	2.9	11.6	5.1	13.3	5.8
36	13.5	9.8	4.3	7.5	3.3	13.1	5.7	15.0	6.5
36	15	10.9	4.7	8.3	3.6	14.6	6.3	16.7	7.2
36	16.5	12.0	5.2	9.2	4.0	16.0	7.0	18.3	8.0
36	18	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
36	19.5	14.1	6.1	10.8	4.7	18.9	8.2	21.7	9.4
36	21	15.2	6.6	11.7	5.1	20.4	8.8	23.3	10.1
36	22.5	16.3	7.1	12.5	5.4	21.8	9.5	25.0	10.9
36	24	17.4	7.6	13.3	5.8	23.3	10.1	26.7	11.6
36	27	19.6	8.5	15.0	6.5	26.2	11.4	30.0	13.0
42	13.5	8.4	3.6	6.4	2.8	11.2	4.9	12.9	5.6
42	15	9.3	4.0	7.1	3.1	12.5	5.4	14.3	6.2
42	16.5	10.3	4.5	7.9	3.4	13.7	6.0	15.7	6.8
42	18	11.2	4.9	8.6	3.7	15.0	6.5	17.1	7.4
42	19.5	12.1	5.3	9.3	4.0	16.2	7.0	18.6	8.1
42	21	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
42	22.5	14.0	6.1	10.7	4.7	18.7	8.1	21.4	9.3
42	24	14.9	6.5	11.4	5.0	20.0	8.7	22.9	9.9
42	27	16.8	7.3	12.9	5.6	22.5	9.8	25.7	11.2
42	28.5	17.7	7.7	13.6	5.9	23.7	10.3	27.2	11.8
48	13.5	7.3	3.2	5.6	2.4	9.8	4.3	11.3	4.9
48	15	8.2	3.5	6.3	2.7	10.9	4.7	12.5	5.4
48	16.5	9.0	3.9	6.9	3.0	12.0	5.2	13.8	6.0
48	18	9.8	4.3	7.5	3.3	13.1	5.7	15.0	6.5
48	19.5	10.6	4.6	8.1	3.5	14.2	6.2	16.3	7.1
48	21	11.4	5.0	8.8	3.8	15.3	6.6	17.5	7.6
48	22.5	12.2	5.3	9.4	4.1	16.4	7.1	18.8	8.1
48	24	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
48	27	14.7	6.4	11.3	4.9	19.7	8.5	22.5	9.8
48	28.5	15.5	6.7	11.9	5.2	20.8	9.0	23.8	10.3
48	30	16.3	7.1	12.5	5.4	21.8	9.5	25.0	10.9
48	33	18.0	7.8	13.8	6.0	24.0	10.4	27.5	11.9
48	36	19.6	8.5	15.0	6.5	26.2	11.4	30.0	13.0
48	42	22.8	9.9	17.5	7.6	30.6	13.3	35.0	15.2

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RECOMMENDED INVERSION AND HEAD CURING CHART

Heat-Welded Seams

PIPE DIAMETER (IN)	CIPP TUBE THICKNESS (MM)	IDEAL CURING HEAD		MINIMUM INSTALLATION HEAD		MAXIMUM HOT HEAD		MAXIMUM COLD HEAD	
		(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)
54	15	7.3	3.1	5.6	2.4	9.7	4.2	11.1	4.8
54	16.5	8.0	3.5	6.1	2.7	10.7	4.6	12.2	5.3
54	18	8.7	3.8	6.7	2.9	11.6	5.1	13.3	5.8
54	19.5	9.4	4.1	7.2	3.1	12.6	5.5	14.5	6.3
54	21	10.2	4.4	7.8	3.4	13.6	5.9	15.6	6.8
54	22.5	10.9	4.7	8.3	3.6	14.6	6.3	16.7	7.2
54	24	11.6	5.0	8.9	3.9	15.5	6.7	17.8	7.7
54	27	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
54	28.5	13.8	6.0	10.6	4.6	18.4	8.0	21.1	9.2
54	30	14.5	6.3	11.1	4.8	19.4	8.4	22.2	9.6
54	33	16.0	6.9	12.2	5.3	21.4	9.3	24.5	10.6
54	36	17.4	7.6	13.3	5.8	23.3	10.1	26.7	11.6
54	42	20.3	8.8	15.6	6.8	27.2	11.8	31.1	13.5
54	48	23.2	10.1	17.8	7.7	31.1	13.5	35.6	15.4
54	54	26.1	11.3	20.0	8.7	34.9	15.2	40.0	17.4
54	60	29.0	12.6	22.2	9.6	38.8	16.9	44.5	19.3
60	18	7.8	3.4	6.0	2.6	10.5	4.6	12.0	5.2
60	19.5	8.5	3.7	6.5	2.8	11.4	4.9	13.0	5.6
60	21	9.1	4.0	7.0	3.0	12.2	5.3	14.0	6.1
60	22.5	9.8	4.3	7.5	3.3	13.1	5.7	15.0	6.5
60	24	10.4	4.5	8.0	3.5	14.0	6.1	16.0	6.9
60	27	11.8	5.1	9.0	3.9	15.7	6.8	18.0	7.8
60	28.5	12.4	5.4	9.5	4.1	16.6	7.2	19.0	8.2
60	30	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
60	33	14.4	6.2	11.0	4.8	19.2	8.3	22.0	9.6
60	36	15.7	6.8	12.0	5.2	21.0	9.1	24.0	10.4
60	42	18.3	7.9	14.0	6.1	24.5	10.6	28.0	12.2
60	48	20.9	9.1	16.0	6.9	28.0	12.1	32.0	13.9
60	54	23.5	10.2	18.0	7.8	31.5	13.7	36.0	15.6
60	60	26.1	11.3	20.0	8.7	34.9	15.2	40.0	17.4

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Heat-Welded Seams

PIPE DIAMETER (IN)	CIPP TUBE THICKNESS (MM)	IDEAL CURING HEAD		MINIMUM INSTALLATION HEAD		MAXIMUM HOT HEAD		MAXIMUM COLD HEAD	
		(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)
63	18	7.5	3.2	5.7	2.5	10.0	4.3	11.4	5.0
63	19.5	8.1	3.5	6.2	2.7	10.8	4.7	12.4	5.4
63	21	8.7	3.8	6.7	2.9	11.6	5.1	13.3	5.8
63	22.5	9.3	4.0	7.1	3.1	12.5	5.4	14.3	6.2
63	24	9.9	4.3	7.6	3.3	13.3	5.8	15.2	6.6
63	27	11.2	4.9	8.6	3.7	15.0	6.5	17.1	7.4
63	28.5	11.8	5.1	9.1	3.9	15.8	6.9	18.1	7.9
63	30	12.4	5.4	9.5	4.1	16.6	7.2	19.1	8.3
63	33	13.7	5.9	10.5	4.5	18.3	7.9	21.0	9.1
63	36	14.9	6.5	11.4	5.0	20.0	8.7	22.9	9.9
63	42	17.4	7.6	13.3	5.8	23.3	10.1	26.7	11.6
63	48	19.9	8.6	15.2	6.6	26.6	11.6	30.5	13.2
63	54	22.4	9.7	17.1	7.4	30.0	13.0	34.3	14.9
63	60	24.9	10.8	19.1	8.3	33.3	14.4	38.1	16.5
69	18	6.8	3.0	5.2	2.3	9.1	4.0	10.4	4.5
69	19.5	7.4	3.2	5.7	2.5	9.9	4.3	11.3	4.9
69	21	7.9	3.4	6.1	2.6	10.6	4.6	12.2	5.3
69	22.5	8.5	3.7	6.5	2.8	11.4	4.9	13.0	5.7
69	24	9.1	3.9	7.0	3.0	12.2	5.3	13.9	6.0
69	27	10.2	4.4	7.8	3.4	13.7	5.9	15.7	6.8
69	30	11.4	4.9	8.7	3.8	15.2	6.6	17.4	7.6
69	33	12.5	5.4	9.6	4.2	16.7	7.3	19.1	8.3
69	36	13.6	5.9	10.4	4.5	18.2	7.9	20.9	9.1
69	42	15.9	6.9	12.2	5.3	21.3	9.2	24.4	10.6
69	48	18.2	7.9	13.9	6.0	24.3	10.6	27.8	12.1
69	54	20.4	8.9	15.7	6.8	27.4	11.9	31.3	13.6
69	57	21.6	9.4	16.5	7.2	28.9	12.5	33.1	14.3
69	61	23.1	10.0	17.7	7.7	30.9	13.4	35.4	15.4
69	63	23.8	10.3	18.3	7.9	31.9	13.8	36.5	15.9

MADE IN AMERICA

UNITED FELTS
A VORTEX COMPANY

RECOMMENDED INVERSION AND HEAD CURING CHART

Heat-Welded Seams

PIPE DIAMETER (IN)	CIPP TUBE THICKNESS (MM)	IDEAL CURING HEAD		MINIMUM INSTALLATION HEAD		MAXIMUM HOT HEAD		MAXIMUM COLD HEAD	
		(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)
72	19.5	7.1	3.1	5.4	2.4	9.5	4.1	10.8	4.7
72	21	7.6	3.3	5.8	2.5	10.2	4.4	11.7	5.1
72	22.5	8.2	3.5	6.3	2.7	10.9	4.7	12.5	5.4
72	24	8.7	3.8	6.7	2.9	11.6	5.1	13.3	5.8
72	27	9.8	4.3	7.5	3.3	13.1	5.7	15.0	6.5
72	28.5	10.3	4.5	7.9	3.4	13.8	6.0	15.8	6.9
72	30	10.9	4.7	8.3	3.6	14.6	6.3	16.7	7.2
72	33	12.0	5.2	9.2	4.0	16.0	7.0	18.3	8.0
72	36	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
72	42	15.2	6.6	11.7	5.1	20.4	8.8	23.3	10.1
72	48	17.4	7.6	13.3	5.8	23.3	10.1	26.7	11.6
72	54	19.6	8.5	15.0	6.5	26.2	11.4	30.0	13.0
72	57	20.7	9.0	15.8	6.9	27.7	12.0	31.7	13.7
72	61	22.1	9.6	17.0	7.4	29.6	12.9	33.9	14.7
72	63	22.8	9.9	17.5	7.6	30.6	13.3	35.0	15.2
78	21	7.0	3.1	5.4	2.3	9.4	4.1	10.8	4.7
78	22.5	7.5	3.3	5.8	2.5	10.1	4.4	11.5	5.0
78	24	8.0	3.5	6.2	2.7	10.8	4.7	12.3	5.3
78	27	9.0	3.9	6.9	3.0	12.1	5.3	13.9	6.0
78	28.5	9.5	4.1	7.3	3.2	12.8	5.5	14.6	6.3
78	30	10.0	4.4	7.7	3.3	13.4	5.8	15.4	6.7
78	33	11.0	4.8	8.5	3.7	14.8	6.4	16.9	7.3
78	36	12.1	5.2	9.2	4.0	16.1	7.0	18.5	8.0
78	42	14.1	6.1	10.8	4.7	18.8	8.2	21.5	9.4
78	48	16.1	7.0	12.3	5.3	21.5	9.3	24.6	10.7
78	54	18.1	7.8	13.9	6.0	24.2	10.5	27.7	12.0
78	57	19.1	8.3	14.6	6.3	25.5	11.1	29.2	12.7
78	61	20.4	8.9	15.6	6.8	27.3	11.9	31.3	13.6
78	63	21.1	9.2	16.2	7.0	28.2	12.3	32.3	14.0

MADE IN AMERICA

UNITED FELTS
A VORTEX COMPANY

RECOMMENDED INVERSION AND HEAD CURING CHART

Heat-Welded Seams

PIPE DIAMETER (IN)	CIPP TUBE THICKNESS (MM)	IDEAL CURING HEAD		MINIMUM INSTALLATION HEAD		MAXIMUM HOT HEAD		MAXIMUM COLD HEAD	
		(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)
84	21	6.5	2.8	5.0	2.2	8.7	3.8	10.0	4.3
84	22.5	7.0	3.0	5.4	2.3	9.4	4.1	10.7	4.7
84	24	7.5	3.2	5.7	2.5	10.0	4.3	11.4	5.0
84	27	8.4	3.6	6.4	2.8	11.2	4.9	12.9	5.6
84	28.5	8.9	3.8	6.8	2.9	11.9	5.1	13.6	5.9
84	30	9.3	4.0	7.1	3.1	12.5	5.4	14.3	6.2
84	33	10.3	4.5	7.9	3.4	13.7	6.0	15.7	6.8
84	36	11.2	4.9	8.6	3.7	15.0	6.5	17.1	7.4
84	42	13.1	5.7	10.0	4.3	17.5	7.6	20.0	8.7
84	48	14.9	6.5	11.4	5.0	20.0	8.7	22.9	9.9
84	54	16.8	7.3	12.9	5.6	22.5	9.8	25.7	11.2
84	57	17.7	7.7	13.6	5.9	23.7	10.3	27.2	11.8
84	61	19.0	8.2	14.5	6.3	25.4	11.0	29.1	12.6
84	63	19.6	8.5	15.0	6.5	26.2	11.4	30.0	13.0
84	65	20.2	8.8	15.5	6.7	27.0	11.7	31.0	13.4

Warranty Disclaimer: The above chart provides the estimated installation and curing pressures of polyester felt inversion liners. Many factors can affect the outcome of a cured-in-place pipe installation. This table assumes proper installation techniques, type of equipment, and resin impregnation of the tube diameter. It is important to note that these and other factors associated with the installation of cured-in-place pipe will vary greatly between installations; each installation is unique. There is no warranty of merchantability or fitness for any particular purpose. Under no circumstances shall Applied Felts Inc., be liable for incidental, punitive special, indirect or consequential damages or for lost profits or labor costs, and in no event shall damages exceed the purchase price paid for the products.

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RECOMMENDED INVERSION AND HEAD CURING CHART

Stitched Seams

PIPE DIAMETER (IN)	CIPP TUBE THICKNESS (MM)	IDEAL CURING HEAD		MINIMUM INSTALLATION HEAD		MAXIMUM HOT HEAD		MAXIMUM COLD HEAD	
		(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)
6	4.5	19.5	8.4	15.5	6.7	33.9	14.7	65.4	28.4
6	5.5	23.8	10.3	18.9	8.2	41.4	18.0	79.9	34.7
6	6	26.0	11.3	20.7	9.0	45.2	19.6	87.2	37.8
8	4.5	14.6	6.3	11.6	5.0	25.4	11.0	49.0	21.3
8	5.5	17.8	7.7	14.2	6.2	31.1	13.5	59.9	26.0
8	6	19.5	8.4	15.5	6.7	33.9	14.7	65.4	28.4
8	7.5	24.3	10.6	19.4	8.4	42.4	18.4	81.7	35.5
10	4.5	11.7	5.1	9.3	4.0	20.3	8.8	39.2	17.0
10	5.5	14.3	6.2	11.4	4.9	24.9	10.8	47.9	20.8
10	6	15.6	6.8	12.4	5.4	27.1	11.8	52.3	22.7
10	7.5	19.5	8.4	15.5	6.7	33.9	14.7	65.4	28.4
10	9	23.4	10.1	18.6	8.1	40.7	17.7	78.4	34.0
12	6	13.0	5.6	10.3	4.5	22.6	9.8	43.6	18.9
12	6.5	14.1	6.1	11.2	4.9	24.5	10.6	47.2	20.5
12	7	15.1	6.6	12.1	5.2	26.4	11.4	50.8	22.1
12	7.5	16.2	7.0	12.9	5.6	28.2	12.3	54.5	23.6
12	9	19.5	8.4	15.5	6.7	33.9	14.7	65.4	28.4
12	10.5	22.7	9.9	18.1	7.8	39.5	17.2	76.3	33.1
15	6	10.4	4.5	8.3	3.6	18.1	7.8	34.9	15.1
15	7.5	13.0	5.6	10.3	4.5	22.6	9.8	43.6	18.9
15	9	15.6	6.8	12.4	5.4	27.1	11.8	52.3	22.7
15	10.5	18.2	7.9	14.5	6.3	31.6	13.7	61.0	26.5
15	12	20.8	9.0	16.5	7.2	36.2	15.7	69.7	30.3
15	13.5	23.4	10.1	18.6	8.1	40.7	17.7	78.4	34.0
18	6	8.7	3.8	6.9	3.0	15.1	6.5	29.1	12.6
18	7.5	10.8	4.7	8.6	3.7	18.8	8.2	36.3	15.8
18	9	13.0	5.6	10.3	4.5	22.6	9.8	43.6	18.9
18	10.5	15.1	6.6	12.1	5.2	26.4	11.4	50.8	22.1
18	12	17.3	7.5	13.8	6.0	30.1	13.1	58.1	25.2
18	13.5	19.5	8.4	15.5	6.7	33.9	14.7	65.4	28.4
18	15	21.6	9.4	17.2	7.5	37.7	16.3	72.6	31.5

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A VORTEX COMPANY

RECOMMENDED INVERSION AND HEAD CURING CHART

Stitched Seams

PIPE DIAMETER (IN)	CIPP TUBE THICKNESS (MM)	IDEAL CURING HEAD		MINIMUM INSTALLATION HEAD		MAXIMUM HOT HEAD		MAXIMUM COLD HEAD	
		(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)	(FT)	(PSI)
21	6	7.4	3.2	5.9	2.6	12.9	5.6	24.9	10.8
21	7.5	9.3	4.0	7.4	3.2	16.1	7.0	31.1	13.5
21	9	11.1	4.8	8.9	3.8	19.4	8.4	37.4	16.2
21	10.5	13.0	5.6	10.3	4.5	22.6	9.8	43.6	18.9
21	12	14.8	6.4	11.8	5.1	25.8	11.2	49.8	21.6
21	13.5	16.7	7.2	13.3	5.8	29.1	12.6	56.0	24.3
21	15	18.5	8.0	14.8	6.4	32.3	14.0	62.3	27.0
21	16.5	20.4	8.9	16.2	7.0	35.5	15.4	68.5	29.7
21	18	22.2	9.7	17.7	7.7	38.7	16.8	74.7	32.4
21	19.5	24.1	10.5	19.2	8.3	42.0	18.2	80.9	35.1
24	7.5	8.1	3.5	6.5	2.8	14.1	6.1	27.2	11.8
24	9	9.7	4.2	7.7	3.4	16.9	7.4	32.7	14.2
24	10.5	11.4	4.9	9.0	3.9	19.8	8.6	38.1	16.6
24	12	13.0	5.6	10.3	4.5	22.6	9.8	43.6	18.9
24	13.5	14.6	6.3	11.6	5.0	25.4	11.0	49.0	21.3
24	15	16.2	7.0	12.9	5.6	28.2	12.3	54.5	23.6
24	16.5	17.8	7.7	14.2	6.2	31.1	13.5	59.9	26.0
24	18	19.5	8.4	15.5	6.7	33.9	14.7	65.4	28.4
24	19.5	21.1	9.2	16.8	7.3	36.7	15.9	70.8	30.7
24	21	22.7	9.9	18.1	7.8	39.5	17.2	76.3	33.1
24	22.5	24.3	10.6	19.4	8.4	42.4	18.4	81.7	35.5

Warranty Disclaimer: The above chart provides the estimated installation and curing pressures of polyester felt inversion liners. Many factors can affect the outcome of a cured-in-place pipe installation. This table assumes proper installation techniques, type of equipment, and resin impregnation of the tube diameter. It is important to note that these and other factors associated with the installation of cured-in-place pipe will vary greatly between installations; each installation is unique. There is no warranty of merchantability or fitness for any particular purpose. Under no circumstances shall United Felts be liable for incidental, punitive special, indirect or consequential damages or for lost profits or labor costs, and in no event shall damages exceed the purchase price paid for the products.

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