

Friction Loss of PVC Layflat Hose (psi/100 ft.)

GPM	1.5"	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"
20	1.2										
30	2.4										
40	5.1	1.1									
50	6.0										
60		2.4	1.4								
80		4.1	1.9	1.0							
90	17.0										
100		6.0	2.8	1.2							
120				1.8							
140				2.2							
160				2.6	0.6						
180				3.3	0.7						
200		22	7		0.8						
220					1.0						
240					1.1		0.2				
250				5							
260					1.3	0.2					
280					1.4	0.2					
300					1.6	0.2					
340						0.3					
350			22								
380						0.4					
420						0.5					
460						0.6					
500					4	0.7					
540						0.8					
580					22	0.9					
620						1.0					
660						1.1					
1,200						3.0					
1,250					22						
1,800							1.5				
2,500								1.0			
3,500									0.8		
3,630						22					
5,000							11			0.6	
6,000											0.4
8,000								8			
12,000									8		
15,000										5	
16,000											30

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Friction Loss of Oroflex® Layflat Hoses in (psi/100 ft.)

GPM	1	1 1/4	1 1/2	1 3/4	2	2 1/2	2 3/4	3	3 1/2	4	4 1/2	5	6	8	10	12
1	0.04	0.01	0.01													
2	0.15	0.05	0.02	0.01												
5	0.82	0.28	0.11	0.05	0.03	0.01	0.01									
7	1.53	0.52	0.21	0.10	0.05	0.02	0.01	0.01								
10	2.96	1.00	0.41	0.19	0.10	0.03	0.02	0.01	0.01							
15	6.27	2.11	0.87	0.41	0.21	0.07	0.05	0.03	0.01	0.01						
20	10.67	3.60	1.48	0.70	0.36	0.12	0.08	0.05	0.02	0.01	0.01					
25	16.13	5.44	2.24	1.06	0.55	0.19	0.12	0.08	0.04	0.02	0.01	0.01				
30	22.59	7.62	3.14	1.48	0.77	0.26	0.16	0.11	0.05	0.03	0.01	0.01				
35	30.05	10.14	4.17	1.97	1.03	0.35	0.22	0.14	0.07	0.04	0.02	0.01	0.00			
40	38.47	12.98	5.34	2.52	1.32	0.44	0.28	0.18	0.09	0.04	0.03	0.02	0.01			
45	47.84	16.14	6.64	3.13	1.64	0.55	0.35	0.23	0.11	0.06	0.03	0.02	0.01			
50	58.13	19.61	8.07	3.81	1.99	0.67	0.42	0.28	0.13	0.07	0.04	0.02	0.01			
60	81.45	27.48	11.31	5.34	2.79	0.94	0.59	0.39	0.18	0.10	0.05	0.03	0.01			
70	108.33	36.54	15.04	7.10	3.70	1.25	0.79	0.51	0.24	0.13	0.07	0.04	0.02	0.00		
80		46.78	19.25	9.09	4.74	1.60	1.01	0.66	0.31	0.16	0.09	0.05	0.02	0.01		
90		58.17	23.94	11.30	5.90	1.99	1.25	0.82	0.39	0.20	0.11	0.07	0.03	0.01		
100		70.69	29.09	13.73	7.17	2.42	1.52	0.99	0.47	0.25	0.14	0.08	0.03	0.01		
125		106.82	43.96	20.75	10.83	3.65	2.30	1.50	0.71	0.37	0.21	0.12	0.05	0.01		
150			61.59	29.07	15.17	5.12	3.22	2.11	0.99	0.52	0.29	0.18	0.07	0.02	0.01	
175			81.92	38.67	20.18	6.81	4.28	2.80	1.32	0.69	0.39	0.23	0.10	0.02	0.01	
200			104.87	49.50	25.84	8.71	5.48	3.59	1.69	0.88	0.50	0.30	0.12	0.03	0.01	
225				61.56	32.13	10.84	6.81	4.46	2.10	1.10	0.62	0.37	0.15	0.04	0.01	
250				74.60	39.04	13.17	8.28	5.42	2.56	1.33	0.75	0.45	0.19	0.05	0.02	
275				89.23	46.57	15.71	9.88	6.46	3.05	1.59	0.90	0.54	0.22	0.05	0.02	
300				104.81	54.70	18.45	11.60	7.59	3.58	1.87	1.05	0.63	0.26	0.06	0.02	
350					72.75	24.54	15.43	10.10	4.77	2.49	1.40	0.84	0.35	0.09	0.03	
400					93.14	31.42	19.75	12.93	6.10	3.18	1.79	1.07	0.44	0.11	0.04	
450						39.07	24.56	16.08	7.59	3.96	2.23	1.34	0.55	0.14	0.05	
500						47.47	29.84	19.54	9.22	4.81	2.71	1.62	0.67	0.16	0.06	0.02
600						66.52	41.82	27.37	12.92	6.74	3.80	2.27	0.94	0.23	0.08	0.03
700						88.47	55.62	36.41	17.18	8.97	5.05	3.03	1.24	0.31	0.10	0.04
800						113.26	71.20	46.61	22.00	11.48	6.47	3.87	1.59	0.39	0.13	0.05
1000							107.59	70.43	33.24	17.35	9.78	5.85	2.41	0.59	0.20	0.08
1200								98.68	46.58	24.31	13.70	8.20	3.37	0.83	0.28	0.12
1400								131.24	61.95	32.33	18.22	10.91	4.49	1.11	0.37	0.15
1600									79.31	41.39	23.32	13.96	5.75	1.42	0.48	0.20
1800									98.62	51.47	29.00	17.36	7.14	1.76	0.59	0.24
2000										62.55	35.24	21.10	8.68	2.14	0.72	0.30
2500										94.51	53.26	31.88	13.12	3.23	1.09	0.45
3000											74.62	44.67	18.38	4.53	1.53	0.63
3500											99.24	59.41	24.45	6.02	2.03	0.84
4000												76.06	31.30	7.71	2.60	1.07
4500												94.58	38.92	9.59	3.23	1.33
5000													47.30	11.65	3.93	1.62
5500													56.42	13.90	4.69	1.93
6000													66.27	16.33	5.51	2.27
6500													76.84	18.93	6.39	2.63
7000													88.14	21.71	7.32	3.01
7500													100.14	24.67	8.32	3.42
8000														27.80	9.38	3.86

Note: These calculations are theoretical and based on straight lines. Liquid is water at 20°C.
 Recommended maximum velocity for constant work: 11.5 ft/s (3.5m/s).
 Maximum recommended velocity for non constant work: 16.4 ft/s (5 m/s).
 Values in red match with flows given 16.4 ft/s (5 m/s).

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Vinylflow® Longitudinal Elongation Percentage (On Flat Ground Only)

Series Number	Pressure (psi)							
	10	20	30	40	50	60	70	80
VF150	0.00	0.01	0.02	0.06	0.14	0.17	0.35	0.50
VF200	0.01	0.03	0.04	0.15	0.32	0.38	0.61	0.84
VF250	0.06	0.15	0.23	0.50	0.79	0.95	1.33	1.57
VF300	0.03	0.14	0.21	0.34	0.63	0.76	1.10	-
VF400	0.14	0.35	0.53	0.90	1.40	1.68	1.98	-
VF600	0.14	0.42	0.63	1.08	1.35	-	-	-
VF800	0.21	0.57	0.86	1.47	-	-	-	-
VF1000	0.15	0.39	0.59	-	-	-	-	-
VF1200	0.14	0.55	0.82	-	-	-	-	-
VF1600	0.00	0.28	0.42	-	-	-	-	-

Ironsides® Longitudinal Elongation Percentage (On Flat Ground Only)

Series Number	Pressure (psi)														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
IS150	0.00	0.10	0.10	0.20	0.30	0.36	0.40	0.50	0.60	0.60	0.80	0.90	0.90	1.00	1.10
IS200	0.00	0.00	0.00	0.10	0.10	0.10	0.20	0.40	0.60	0.60	0.70	0.80	0.80	0.90	1.10
IS250	0.00	0.00	0.10	0.20	0.30	0.40	0.40	0.60	0.60	0.80	1.00	1.10	1.10	1.30	1.30
IS300	0.00	0.10	0.10	0.20	0.30	0.40	0.50	0.50	0.60	0.70	0.80	1.00	1.10	-	-
IS400	0.00	0.10	0.20	0.30	0.40	0.50	0.70	0.80	0.90	1.20	1.30	1.40	1.40	-	-
IS600	0.00	0.10	0.30	0.50	0.50	0.60	0.80	0.90	1.00	1.20	-	-	-	-	-
IS800	0.10	0.20	0.50	0.80	1.00	1.20	1.50	0.00	-	-	-	-	-	-	-

Vinylflow® EZ-Lite™ Longitudinal Elongation Percentage (On Flat Ground Only)

Series Number	Pressure (psi)					
	10	20	30	40	50	60
VFL150	0.00	0.10	0.20	0.30	0.40	0.60
VFL200	0.00	0.20	0.30	0.60	0.80	-
VFL300	0.20	0.40	0.80	1.20	-	-
VFL400	0.20	0.50	1.40	1.90	-	-
VFL600	0.00	0.40	0.80	1.40	-	-
VFL800	0.20	0.80	1.60	2.20	-	-
VF800	0.21	0.57	0.86	1.47	-	-
VF1000	0.15	0.39	0.59	-	-	-
VF1200	0.14	0.55	0.82	-	-	-
VF1600	0.00	0.28	0.42	-	-	-

Layflat Hose ID Size Guide

Hose ID	3/4	1	1-1/2	2	3	4	5	6	8	10	12	14	16
Hose Width When Flat	5/8	1-5/8	2-1/2	3-1/2	5	6-1/2	8	9-1/2	13	16	19	22	25

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Vinylflow[®], Vinylflow[®] EZ-Lite Maximum Length Availability

Series Number	Max. Available Length
VF150	1000
VF200	1000
VF250	800
VF300	800
VF400	750
VF600	700
VF800	650
VF1000	500
VF1200	500
VF1400	500
VF1600	500

Ironsides[®] Maximum Length Availability

Series Number	Max. Available Length
IS150	700
IS200	650
IS250	600
IS300	550
IS400	500
IS600	450
IS800	450
IS1000	450

For Sloped Ground, Add Head Pressure Shown Below

Hose	Slope Angle	Additional Head Pressure
Vinylflow [®]	5°	11
	10°	23
Vinylflow [®] EZ-Lite [™]	15°	34
	20°	44
Vinylgreen [™]	25°	55
	30°	65
Ironsides [®] Tuffides [™]	35°	75
	40°	83

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Layflat Hose Material Properties

Product Name	Series	Tube Material	General Applications	Overall Durability	Drag Application Suitability	Water	Liquid Manure
Vinylflow® EZ-Lite™	VFL	PVC	Water transfer	Standard	Limited	Excellent	Limited
Vinylflow®	VFL	PVC	Water transfer & drip irrigation	Standard	Limited	Excellent	Limited
Ironsides™	IS	PVC	Water transfer and mining applications	Good	Limited	Excellent	Limited
PVC Layflat Assemblies	LF & LFR	PVC	Water transfer	Standard	Not Recommended	Excellent	Not Recommended
OROFLEX® 10	OF10	PVC/NBR	Water	Very Good	Limited	Excellent	Excellent
OROFLEX® 20	OF20B & OF20Y	PVC/NBR	Water & liquid manure transfer	Excellent	Good	Excellent	Excellent
OROFLEX® Drag	OFDG	TPU	Manure spreaders	Excellent	Excellent	Excellent	Excellent
OROFLEX® Bandama	BD	PVC/NBR	Traveling irrigators	Excellent	Very Good	Excellent	Excellent
OROFLEX® Aqua	OFAQ	Polyurethane	Water Bypass	Excellent	Very Good	Excellent	Excellent
OROFLEX® Terrain	OFTR	Polyurethane	Frac Water Transfer	Excellent	Very Good	Excellent	Excellent
OROFLEX® Oil	OFOIL	Polyurethane	Military Oil Transfer	Excellent	Very Good	Excellent	Excellent
Mill Discharge Hose	SJMD & DJMD	Rubber/Polyester	Water transfer	Standard	Not Recommended	Excellent	Not Recommended
Mill Discharge Assemblies	DJ	Rubber/Polyester	Water transfer	Standard	Not Recommended	Excellent	Not Recommended

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