



“TUFFTIF”

TUFFTIF

BROWN - 2 lph

Maximum Recommended Lateral Length (m)

(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)					
		16/13.6		17.8/15.2		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%
0.2	-2	3	4	4	4	4	5
		5	1	1	8	7	7
	-1	4	4	4	5	5	6
		0	6	7	4	8	6
	0	4	5	5	6	6	7
		5	0	5	1	9	7
	1	4	5	6	6	7	8
		9	4	1	7	8	6
	2	5	5	6	7	8	9
		3	8	6	2	6	4
0.3	-2	4	5	4	5	5	6
		3	0	8	7	5	6
	-1	5	5	5	6	7	8
		0	7	9	8	1	2
	0	5	6	7	7	8	1
		8	5	1	9	9	0
	1	6	7	8	8	1	1
		5	2	0	9	0	1
	2	7	7	8	9	1	1
		1	7	8	6	1	2
0.4	-2	4	5	5	6	6	7
		8	7	4	4	0	3
	-1	5	6	6	7	8	9
		8	7	8	8	0	4
	0	7	7	8	9	1	1
		0	8	5	5	0	2
	1	7	8	7	8	0	0
		8	8	9	1	1	1

		0	8	8	0	2	4
					8	8	1
	2	8	9	1	1	1	1
		7	5	1	1	4	5
				0	9	5	7
0.5	-2	5	6	5	7	6	7
		2	3	8	0	3	9
	-1	6	7	7	8	8	1
		5	6	5	8	9	0
							5
	0	8	9	9	1	1	1
		1	0	8	1	2	3
					0	3	8
	1	9	1	1	1	1	1
		3	0	1	2	5	6
			3	6	7	1	5
	2	1	1	1	1	1	1
		0	1	3	4	7	8
		3	2	0	1	2	6
0.6	-2	5	6	6	7	6	8
		5	7	0	4	5	2
	-1	7	8	8	96	95	113
		1	3	2			
		0	90	101	110	123	139
	1	106	116	132	145	172	188
	2	118	128	149	161	198	214

(-) Uphill

(+) Downhill

(Continued from page6)

**TUFFTIF
BROWN - 2 lph**

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)					
		16/13.6		17.8/15.2		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%
0.7	-2	5	7	6	7	6	8
		8	1	2	8	7	5
	-1	7	9	8	1	1	1
		6	0	8	0	0	2
	0				3	1	1
		9	1	1	1	1	1
	1	9	1	2	3	5	7
			1	1	5	3	1
	2	1	1	1	1	1	2
		1	3	4	6	9	1
8		0	8	1	3	1	
0.8	-2	1	1	1	1	1	2
		3	4	6	7	1	3
	-1	0	2	2	8	4	3
		8	9	6	1		
	0	1	1	1	2	9	2
		0	2	3	4	6	8
	1	8	2	1	7	6	6
		1	1	1	1	2	2
	2	3	4	6	7	1	3
		0	2	2	8	4	3
1		1	1	2	9	2	
0.9	-2	1	1	1	1	1	2
		4	5	8	0	6	0
	-1	7	9	6	1		5
		1	1	1	2	9	2
	0	6	7	6	8	6	8
		2	7	6	3	9	9
	-1	8	1	9	1	1	1
		6	0	6	1	1	3
	0		1		5	0	3
		1	1	1	1	1	2

		1 7	3 1	4 1	5 8	7 9	0 1
	1	1 4 2	1 5 5	1 7 7	1 9 4	2 3 4	2 5 4
	2	1 6 1	1 7 4	1 0 4	2 2 0	9 9	2 2 8
1	-2	6 3	7 9	6 7	8 5	7 0	9 1
	-1	8 9	1 0 6	1 0 0	1 2 0	1 1 4	1 3 8
	0	1 2 5	1 4 0	1 5 1	1 7 0	1 9 2	2 1 5
	1	1 5 3	1 6 7	1 9 1	2 0 9	2 5 4	2 7 5
	2	1 7 5	1 8 9	1 1 2	2 3 8	1 0 1	1 2 6
1.2	-2	6 6	8 3	6 8	8 8	7 2	9 2
	-1	9 6	1 1 4	1 0 7	1 3 0	1 2 0	1 4 6
	0	1 4 0	1 5 7	1 7 0	1 9 1	2 1 5	2 4 1
	1	1 7 5	1 9 1	2 2 1	2 3 9	2 9 2	3 1 6
	2	2 0 2	2 1 7	1 3 6	1 5 4	1 0 7	1 3 2
1.5	-2	6 8	8 6	7 1	9 0	7 4	9 5
	-1	102	123	114	138	126	156
	0	158	174	192	213	246	273

	1	201	216	257	275	345	368
	2	149	245	111	137	95	120

(-) Uphill

(+) Downhill



TUFFTIF BLACK - 4 lph

Maximum Recommended Lateral Length (m)
(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)					
		16/13.6		17.8/15.2		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%
0.2	-2	2	3	3	3	3	4
		7	0	2	6	8	3
	-1	2	3	3	3	4	4
		9	2	4	9	3	8
	0	3	3	3	4	4	5
		1	4	8	1	7	2
	1	3	3	4	4	5	5
		3	6	0	4	2	6
	2	3	3	4	4	5	6
		4	8	3	6	5	0
0.3	-2	3	3	3	4	4	5
		3	9	9	4	6	3
	-1	3	4	4	4	5	6
		7	1	4	9	3	0
	0	4	4	4	5	6	6
		0	4	9	4	2	8
	1	4	4	5	5	6	7
		3	7	3	8	8	4
	2	4	5	5	6	7	8
		6	0	7	2	4	0
0.4	-2	3	4	4	5	5	6
		8	4	4	1	2	0
	-1	4	4	5	5	6	7
		3	8	1	7	2	0
	0	4	5	5	6	7	8
		8	3	8	4	4	1
	1	5	5	6	7	8	9

		2	7	4	0	3	1
	2	5	6	7	7	9	9
		6	1	0	5	1	8
0.5	-2	4	4	4	5	5	6
		2	9	9	7	7	7
	-1	4	5	5	6	7	7
		9	5	8	5	0	9
	0	5	6	6	7	8	9
		6	1	7	4	5	4
	1	6	6	7	8	9	1
		1	7	5	2	8	0
							6
	2	6	7	8	8	1	1
		6	1	2	8	0	1
						8	6
0.6	-2	4	5	5	6	6	7
		6	3	3	1	1	1
	-1	54	61	63	71	76	87
	0	62	68	76	83	95	105
	1	69	76	85	93	111	120
2	75	81	94	101	123	132	

(-) Uphill

(+) Downhill

(Continued from page8)

**TUFFTIF
BLACK - 4 lph**

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)					
		16/13.6		17.8/15.2		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%
0.7	-2	5	5	5	6	6	7
		0	7	6	5	4	6
	-1	5	6	6	7	8	9
		8	6	9	8	2	4
	0	6	7	8	9	1	1
9		6	3	2	0	1	
1	7	8	9	1	1	1	
	7	4	5	0	2	3	
2	8	9	1	1	1	1	
	3	0	0	1	3	4	
			4	3	9	8	
0.8	-2	5	6	5	6	6	7
		2	1	8	9	6	9
	-1	6	7	7	8	8	1
		2	1	4	3	7	0
	0	7	8	9	1	1	1
4		2	0	0	1	2	
1	8	9	1	1	1	1	
	4	2	0	1	3	4	
2	9	9	1	1	1	1	
	2	9	1	2	5	6	
			6	5	3	4	
0.9	-2	5	6	6	7	6	8
		5	4	1	2	8	2
	-1	6	7	7	8	9	1
		7	6	7	8	2	0
	0	8	8	9	1	1	1
						6	

		0	8	7	0	2	3
					7	3	6
	1	9	1	1	1	1	1
		2	0	1	2	4	6
			0	3	3	9	0
	2	1	1	1	1	1	1
		0	0	2	3	6	7
		1	8	7	6	7	9
1	-2	5	6	6	7	7	8
		7	7	3	5	0	5
	-1	7	8	8	9	9	1
		0	0	2	3	6	1
							2
	0	8	9	1	1	1	1
		6	5	0	1	3	4
				4	5	2	5
	1	9	1	1	1	1	1
		9	0	2	3	6	7
			7	3	3	0	3
	2	1	1	1	1	1	1
		0	1	3	4	8	9
		9	7	7	7	2	4
1.2	-2	6	7	6	8	7	8
		1	2	7	0	3	9
	-1	7	8	8	1	1	1
		7	8	9	0	0	2
					2	4	1
	0	9	1	1	1	1	1
		6	0	1	3	4	6
			7	6	0	8	3
	1	1	1	1	1	1	1
		1	2	3	5	8	9
		3	1	9	1	2	7
	2	1	1	1	1	2	2
		2	3	5	6	0	2
		5	4	7	8	9	3
1.5	-2	6	7	7	8	7	9
		5	7	1	4	7	3
	-1	84	95	96	111	113	132
	0	107	117	132	144	170	185

1	128	137	162	173	216	230
2	143	152	183	194	117	260

(-) Uphill

(+) Downhill

TUFFTIF



GREEN - 8 lph

Maximum Recommended Lateral Length (m)
(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)					
		16/13.6		17.8/15.2		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%
0.2	-2	1	2	2	2	2	3
		8	1	2	5	7	1
	-1	1	2	2	2	2	3
		9	2	3	6	9	3
	0	2	2	2	2	3	3
		0	3	5	8	1	5
	1	2	2	2	2	3	3
		1	4	6	9	3	7
	2	2	2	2	3	3	3
		2	4	7	0	5	8
0.3	-2	2	2	2	3	3	3
		3	6	7	2	3	9
	-1	2	2	2	3	3	4
		5	8	9	4	7	2
	0	2	2	3	3	4	4
		6	9	2	6	0	5
	1	2	3	3	3	4	4
		8	1	4	8	3	8
	2	2	3	3	3	4	5
		9	2	5	9	6	0
0.4	-2	2	3	3	3	3	4
		7	1	2	7	8	5
	-1	2	3	3	4	4	4
		9	3	5	0	3	9
	0	3	3	3	4	4	5
		1	5	8	3	8	4
	1	3	3	4	4	5	5
		3	7	1	5	2	8
	2	3	3	4	4	5	6
		5	9	3	8	6	2
-2	3	3	3	4	4	5	

0.5		1	6	6	2	3	0
	-1	3 4	3 8	4 0	4 6	4 9	5 6
	0	3 6	4 1	4 4	4 9	5 6	6 3
	1	3 9	4 3	4 8	5 3	6 1	6 8
	2	4 1	4 5	5 1	5 6	6 6	7 2
0.6	-2	3 4	3 9	3 9	4 6	4 6	5 5
	-1	3 7	4 2	4 4	5 0	5 4	6 2
	0	4 0	4 6	4 9	5 5	6 2	7 0
	1	4 4	4 9	5 4	5 9	7 0	7 7
	2	4 6	5 1	5 8	6 3	7 5	8 2

(-) Uphill

(+) Downhill

(Continued from page10)

**TUFFTIF
GREEN - 8 lph**

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)					
		16/13.6		17.8/15.2		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%
0.7	-2	3	4	4	4	5	5
		6	2	2	9	0	9
	-1	4	4	4	5	5	6
		1	6	8	5	9	7
	0	4	5	5	6	6	7
		5	0	4	1	9	7
	1	4	5	6	6	7	8
		8	4	0	6	7	5
	2	5	5	6	7	8	9
		2	7	4	1	4	2
0.8	-2	3	4	4	5	5	6
		8	5	5	3	2	2
	-1	4	5	5	5	6	7
		3	0	1	9	3	3
	0	4	5	5	6	7	8
		9	4	9	6	4	4
	1	5	5	6	7	8	9
		3	8	6	2	5	4
	2	5	6	7	7	9	1
		7	2	0	8	3	0
						1	
0.9	-2	4	4	4	5	5	6
		1	8	7	6	5	6
	-1	4	5	5	6	6	7
		7	3	5	3	7	7
	0	5	5	6	7	8	9
		2	9	4	1	0	0
	1	5	6	7	7	9	1
		8	4	1	8	2	0
	2	6	6	7	8	1	1
		2	8	7	5	0	1
					1	0	
-2		4	5	4	5	5	6

1		3	0	9	8	7	9
	-1	4	5	5	6	7	8
		9	6	8	7	0	2
	0	5	6	6	7	8	9
		6	3	8	6	6	7
	1	6	6	7	8	9	1
		2	8	6	4	9	0
							9
	2	6	7	8	9	1	1
		7	3	3	1	0	1
						9	9
1.2	-2	4	5	5	6	6	7
		7	5	3	4	1	4
	-1	5	6	6	7	7	9
		4	2	4	4	7	0
	0	6	7	7	8	9	1
		2	1	7	5	6	0
							8
	1	7	7	8	9	1	1
		0	7	6	6	1	2
						3	4
	2	7	8	9	1	1	1
		6	3	5	0	2	3
					3	6	6
1.5	-2	5	5	5	6	6	8
		0	9	7	9	5	0
	-1	5	6	7	8	8	9
		9	8	1	1	6	9
	0	6	7	8	9	1	1
		9	8	6	6	1	2
						0	3
	1	8	8	9	1	1	1
		0	6	9	0	3	4
					8	2	3
	2	8	9	1	1	1	1
		6	3	1	1	4	5
				0	9	7	8

(-) Uphill

(+) Downhill



TUFFTIF

RED - 11 lph

Maximum Recommended Lateral Length (m)
(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)					
		16/13.6		17.8/15.2		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%
0.2	-2	1	1	1	2	2	2
		6	8	9	1	3	7
	-1	1	1	2	2	2	2
		6	8	0	2	5	8
	0	1	1	2	2	2	2
		7	9	0	3	6	9
	1	1	1	2	2	2	3
		7	9	1	4	7	0
	2	1	2	2	2	2	3
		8	0	2	4	8	1
0.3	-2	2	2	2	2	2	3
		0	3	4	7	9	4
	-1	2	2	2	2	3	3
		1	4	5	9	1	5
	0	2	2	2	3	3	3
		2	4	6	0	4	8
	1	2	2	2	3	3	3
		3	5	8	1	5	9
	2	2	2	2	3	3	4
		3	6	9	2	7	1
0.4	-2	2	2	2	3	3	3
		4	7	8	2	4	9
	-1	2	2	3	3	3	4
		5	8	0	4	7	2
	0	2	2	3	3	4	4
		6	9	2	6	0	5
	1	2	3	3	3	4	4
		7	0	4	7	3	8
	2	2	3	3	3	4	5
		8	2	5	9	5	0
-2	2	3	3	3	3	4	

0.5		7	1	2	6	8	5
	-1	2 9	3 2	3 4	3 9	4 2	4 8
	0	3 0	3 4	3 7	4 1	4 7	5 2
	1	3 2	3 6	3 9	4 3	5 0	5 6
	2	3 3	3 7	4 1	4 5	5 3	5 9
0.6	-2	2 9	3 4	3 5	4 0	4 2	4 9
	-1	3 1	3 6	3 8	4 3	4 7	5 3
	0	3 4	3 8	4 1	4 6	5 2	5 8
	1	3 6	4 0	4 4	4 9	5 6	6 2
	2	3 7	4 1	4 6	5 1	6 1	6 6

(-) Uphill

(+) Downhill

(Continued from page12)

**TUFFTIF
RED-11 lph**

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)					
		16/13.6		17.8/15.2		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%
0.7	-2	3	3	3	4	4	5
		2	7	7	3	5	3
	-1	3	3	4	4	5	5
		4	9	1	7	1	8
	0	3	4	4	5	5	6
		7	2	6	0	7	4
	1	4	4	4	5	6	6
		0	4	9	4	3	9
	2	4	4	5	5	6	7
		2	6	2	7	7	4
0.8	-2	3	3	4	4	4	5
		4	9	0	6	8	7
	-1	3	4	4	5	5	6
		8	2	5	0	4	3
	0	4	4	4	5	6	7
		1	6	9	5	2	0
	1	4	4	5	5	6	7
		3	8	4	9	9	6
	2	4	5	5	6	7	8
		6	0	7	2	4	1
0.9	-2	3	4	4	5	5	5
		6	2	2	0	0	9
	-1	4	4	4	5	5	6
		0	5	8	4	9	8
	0	4	4	5	5	6	7
		3	9	3	9	8	6
	1	4	5	5	6	7	8
		7	2	8	4	5	2
	2	5	5	6	6	8	8
		0	5	2	8	1	8
	-2	3	4	4	5	5	6
		8	5	5	2	3	3
	-1	4	4	5	5	6	7
		2	8	0	8	2	1

1	0	4 6	5 2	5 7	6 4	7 2	8 0
	1	5 0	5 6	6 2	6 9	8 0	8 8
	2	5 3	5 9	6 6	7 3	8 7	9 5
1.2	-2	4 2	4 9	4 8	5 8	5 8	6 8
	-1	4 7	5 4	5 5	6 4	6 8	7 9
	0	5 2	5 9	6 4	7 1	8 0	9 0
	1	5 6	6 4	7 0	7 8	9 1	1 0 1
	2	6 1	6 7	7 6	8 3	1 0 0	1 0 8
1.5	-2	4 5	5 3	5 3	6 2	6 2	7 5
	-1	5 1	5 9	6 2	7 1	7 5	8 7
	0	5 7	6 5	7 1	8 0	9 2	1 0 2
	1	6 3	7 1	8 0	8 9	1 0 5	1 1 6
	2	6 9	7 5	8 7	9 5	1 1 6	1 2 5

(-) Uphill

(+) Downhill