



# Technical Supplement

Pipeline Pulling Force | HDPE Handling FCX-HS12 | Release Date 1/18/2019

**Table 1 HDPE Pipeline Pulling Force (17.5% Grade)**

		Pipe SDR Rating									
		32.5	26	21	19	17	15.5	13.5	11	9	7 or 7.3
Nominal Pipe Diameter (inches)	12	2,600	3,200	4,000	4,400	4,800	5,300	6,000	7,200	8,500	10,500
	14	3,200	3,900	4,800	5,200	5,800	6,300	7,200	8,600	10,300	12,700
	16	4,100	5,100	6,200	6,800	7,600	8,200	9,400	11,300	13,400	16,600
	18	5,200	6,400	7,900	86,300	9,600	10,400	11,800	14,200	17,000	21,000
	20	6,400	7,900	9,700	10,600	11,800	12,900	14,600	17,600	20,900	25,900
	22	7,700	9,600	11,700	12,900	14,300	15,500	17,700	21,200	25,300	31,300
	24	9,200	11,400	13,900	15,300	17,000	18,500	21,000	25,300	30,100	37,300
	26	10,800	13,300	16,300	17,900	19,900	21,700	24,600	29,600	35,400	43,600
	28	12,500	15,500	18,900	20,800	23,100	25,200	28,600	34,400	41,000	
	30	14,300	17,700	21,700	23,900	26,500	28,900	32,800	39,400	47,100	
	32	16,300	20,200	24,700	27,200	30,100	32,800	37,300	44,900	53,500	
	34	18,400	22,800	27,900	30,700	34,000	37,100	42,100	50,600		
	36	20,600	25,500	31,300	34,400	38,100	41,600	47,200	56,700		
42+	Engineering Review Required										

**Table 2 HDPE Pipeline Pulling Force (25% Grade)**

		Pipe SDR Rating									
		32.5	26	21	19	17	15.5	13.5	11	9	7 or 7.3
Nominal Pipe Diameter (inches)	12	2,800	3,400	4,200	4,600	5,100	5,600	6,300	7,600	9,000	11,200
	14	3,300	4,100	5,100	5,500	6,200	6,700	7,600	9,100	10,900	13,500
	16	4,400	5,400	6,600	7,200	8,000	8,700	9,900	11,900	14,200	17,600
	18	5,500	6,800	8,300	9,100	10,100	11,000	12,500	15,100	18,000	22,200
	20	6,800	8,400	10,300	11,300	12,500	13,600	15,500	18,600	22,200	27,400
	22	8,200	10,100	12,400	12,500	151,010	16,500	18,700	22,500	26,800	33,200
	24	9,700	12,000	14,800	16,200	18,000	19,600	22,200	26,800	31,900	39,500
	26	11,400	14,100	17,300	19,000	21,100	23,000	26,100	31,400	37,500	46,300
	28	13,200	16,400	20,100	22,000	24,500	26,600	30,300	36,400	43,400	
	30	15,200	18,800	23,000	25,300	28,100	30,600	34,700	41,800	49,800	
	32	17,300	21,400	26,200	28,800	31,900	34,800	39,500	47,500	56,700	
	34	19,500	24,100	29,600	32,500	36,000	39,300	44,600	53,700		
	36	21,800	27,000	33,100	36,400	40,400	44,000	50,000	60,100		
42+	Engineering Review Required										

## NOTES

Use in conjunction with the approved rigging assemblies. Friction factor of 0.80 used in calculations (Sand/HDPE published at 0.66).

An engineering review is required for pulling pipe on a slope greater than 14° (25%).

Pulling forces in orange exceed capacity of original six rigging assemblies.

Calculations based on pulling empty 400 ft pipeline up respective slopes, assuming 0.8 coefficient of friction.

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