

Safe and Efficient Wire Pulling

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This session is eligible for 0.5 Continuing Education Hours.

For these hours to appear on your certificate, you must:

- Have your badge scanned at the door
- Attend 90% of this presentation
- Fill out the online evaluation for this session



Online Evaluation



Danger Zones



Start with Safety in Mind

Task	Hazard	Protection/Prevention
Receiving and staging wire reels	Back strain, knees and hands, crushing injuries, repetitive tasks, crouching/kneeling, flipping reels upright	Have wire delivered on paralleled, stacked reels. Provide mechanical lifting devices for reels. Eliminate jack stands
Serving up the pulling head	Hand/wrist sprains and cuts	Provide factory installed pulling heads
Pulling the wire	Back strain, cuts, high pulling tension recoil, carrying wire on shoulders, falls, rope breaking	Provide no-lube low friction wire. Use low friction, lighter ropes. Provide easy setup pullers and payoff devices. Pull straight through boxes with no tailing out and backfeeding. Get the reel close to the pull point
Planning and preparation	Lack of planning creates multiple hazards. Unknown pulling tensions	Use pulling tension and reel size/configuration calculators

Feeder Schedule

Project Name			Conduit		Feeder Length			Phase Conductors		
Feeder Number	From	To	Size	Type	Feeder Tag	Gland-Cable Len	Additional Wire Length	Estimated Total Wire Length	Wire Type	# of Wires
1.2	GS.1	GEN 26	4"	PVC-40	M250.3	75	20	95	AL 15KV 220 MIL NL-EPR/TAPE SHIELD/SIMPULL PVC	3
2.2	GS.1	GEN 27	4"	PVC-40	M250.3	97	20	117	AL 15KV 220 MIL NL-EPR/TAPE SHIELD/SIMPULL PVC	3
3.2	GS.1	GEN 28	4"	PVC-40	M250.3	118	20	138	AL 15KV 220 MIL NL-EPR/TAPE SHIELD/SIMPULL PVC	3
4.2	GS.1	GEN 29	4"	PVC-40	M250.3	146	20	166	AL 15KV 220 MIL NL-EPR/TAPE SHIELD/SIMPULL PVC	3
5.2	GS.1	GEN 30	4"	PVC-40	M250.3	167	20	187	AL 15KV 220 MIL NL-EPR/TAPE SHIELD/SIMPULL PVC	3
6.2	GS.1	GEN 31	4"	PVC-40	M250.3	188	20	208	AL 15KV 220 MIL NL-EPR/TAPE SHIELD/SIMPULL PVC	3
7.2	GS.2	GEN 32	4"	PVC-40	M250.3	244	20	264	AL 15KV 220 MIL NL-EPR/TAPE SHIELD/SIMPULL PVC	3



Pre-Lubed Wire



Calculations

Straight Section		Bend Section			Colored wires	
Wire is being pulled ...	Segment Length ft.	Bend Type	Up, Down, N/A	Degree of elbow	Radius (in.)	continuous tension (lbs.)
UP	10	VCDN	UP	90	Std	154
HZTL	130	VCDN	Down	90	Std	514
Down	20	VCUP	Down	90	Std	460
sidewall pressure (lbs.)						
UP	10	VCDN	UP	90	Std	86
HZTL	130	VCDN	Down	90	Std	288
Down	20	VCUP	Down	90	Std	258
HZTL	40	HZTL	N/A	90	Std	720
HZTL	180	HZTL	N/A	90	Std	1,402
HZTL	15.5	HZTL	N/A	90	36	1,944
HZTL	40	VCDN	Down	90	36	2,738
Down	20					2,562



Conduit Routing



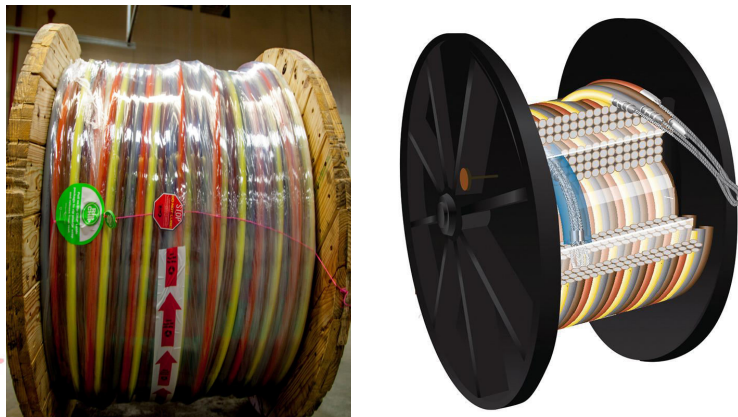
Identify pull points



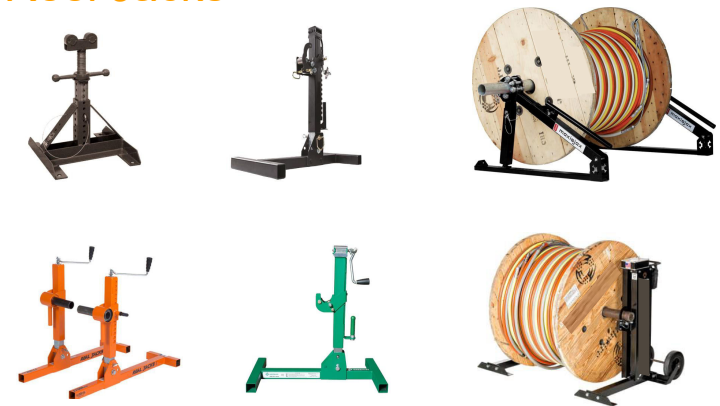
Minimize Reels



Color/Parallel/Stack



Reel Jacks



Reel in reel



Grips



Heads



Rope



Accessories



Feeders



Pullers



Communication



Questions



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Contact For Additional Information



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