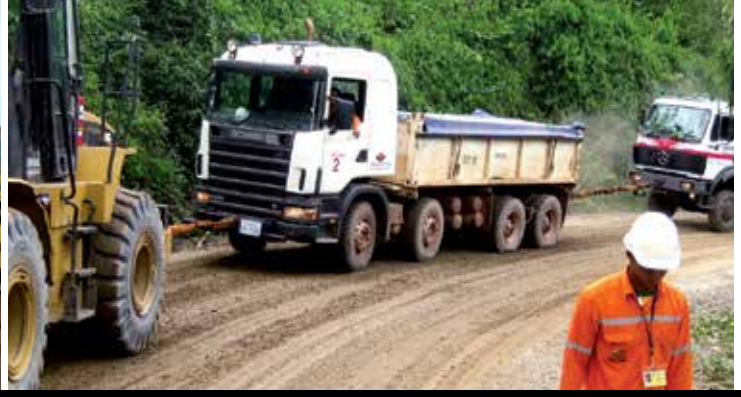
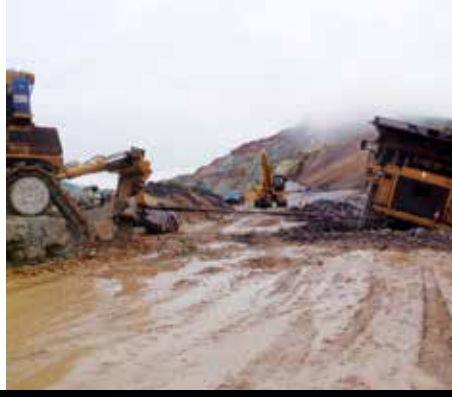




Synthetic Rope Recovery and Tow Cables

Light. Strong. Safe. Fast.

When heavy equipment becomes stuck, mine productivity goes down. Recovering the disabled vehicle can be a difficult and hazardous process. Steel wire rope or chain tow lines are heavy, inflexible and difficult to handle and rig. When these lines break, they can recoil in dangerous patterns to personnel and machinery.

Cortland synthetic braided rope recovery and tow lines, also known as Bog Strops, replace these steel cables.

Cortland's recovery and tow cables are fabricated using lightweight high modulus synthetic fibers that are braided in a torque-balanced design; unlike wire rope they cannot kink or "bird-cage". These synthetic rope cables offer equal or greater strength than wire rope in a diameter size comparison. They offer the same elongation characteristics as wire rope, at only 1/7th the weight. Quickly attached to recovery or towing equipment, wheeled or tracked vehicles, these cables can easily meet the toughest tests and have been popular in mining for more than 25 years.

Cortland's recovery and tow cables are typically supplied in an endless loop (grommet) fabrication with eye terminations each end. The rope is not affected by water, is very cut resistant and has excellent UV resistance; effective strength retention in the hottest or coldest environments.

For safety, performance and service life, Cortland's Synthetic Braided Rope Recovery and Tow cables are the industry standard.

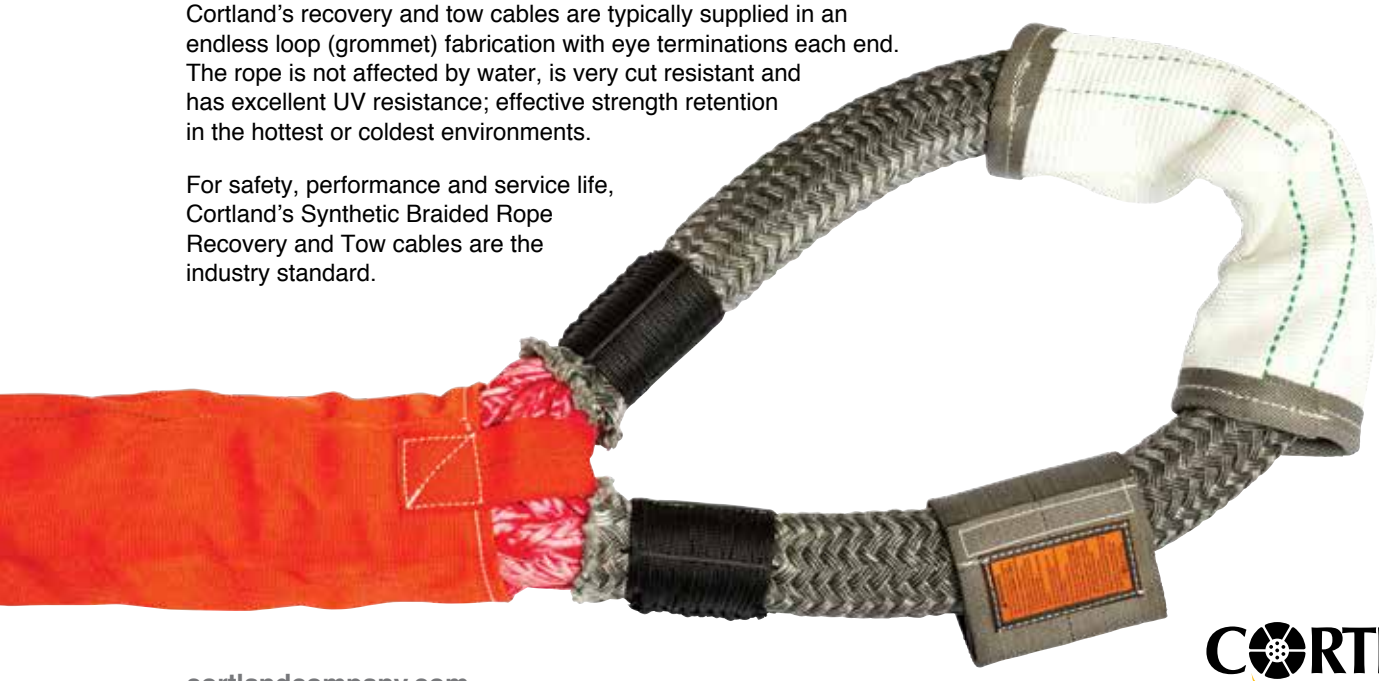
Features & Benefits

Safety

- Provides sequential break if overloaded or cut—significantly reducing cable "snap" or "lash-back"
- Lightweight flexibility reduces handling issues and speeds rigging time
- High visibility orange color

Performance

- Strength of wire rope without the weight
- Durable fabrication with chafe gear proven to work in the roughest conditions
- Manufactured in the USA using quality certified fibers and fabrications



CORTLAND®

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Synthetic Rope Recovery and Tow Cables

Synthetic rope recovery and tow cables have been designed to provide the maximum combination of strength, flexibility, low elongation and durability. To protect the fiber interior the entire cable body is encased in heavy duty high visibility protective jacketing. This extra-durable jacket provides protection during use from external abrasion, cutting and ingress of dirt into the fiber core. Each end termination is protected with the most durable lightweight wear protection, SX chafe guard, and every cable delivered includes a tag providing the Minimum Break Strength (MBS) and a unique serial number for traceability.

Choosing the correct size / strength cable

To determine the appropriate size cable for the application, consider two factors:

- The pulling power of the recovery vehicle
  - – either drawbar-pull for dozers, or rim-pull for trucks
  - – this is more important that the dead-weight of the disabled machine
- SWL (Safe Work Load) factor
  - – Cortland recommends a minimum SWL of 2.3:1 or higher for vehicle tow or recovery

Pulling-Power of Cat® Mine Vehicles

Dozers		Mine Haul Trucks	
D-8	139,000 lbs	785D	187,393 lbs
D-9	161,000 lbs	793F	230,000 lbs
D-10	225,000 lbs	795F	295,693 lbs
D-11	330,693 lbs	797F	340,000 lbs

Cortland Mining Grommet Fabrication Tow Cables using Toro 12/S and 12x12 (endless loop with formed eyes)

Part No.	Minimum Break Strength (MBS) lbs	MT (tonnes)	Rope Dia. Size	Std OAL (length) ft	m	Eye Termination #1	#2	Chafe Description Eyes	Body of Cable	Approx. Weight per cable lbs	kg	Recommended for Tow & Recovery of Disabled Vehicles
Z309G-20SST	60,225	27	9/16"	20	6	18"	18"	SX10	Orange Tubular Cordura	3	1.4	Light Vehicles
Z312G-25SST	101,970	46	3/4"	25	7.6	18"	18"	SX14	Orange Tubular Cordura	9	4.1	Light Vehicles
Z314G-25SST	139,095	63	7/8"	25	7.6	18"	18"	SX14	Orange Tubular Cordura	12	5.4	Light Vehicles
Z316G-25SST	173,250	79	1"	25	7.6	18"	18"	SX16	Orange Tubular Cordura	16	7.3	Light Vehicles
Z320G-30SST	259,050	118	1 1/4"	30	9.1	24"	24"	SX18	Orange Tubular Cordura	27	12.2	Medium Vehicle & D6 Dozers
Z324G-30SST	354,750	161	1 1/2"	30	9.1	24"	24"	SX21	Orange Tubular Cordura	38	17.2	Medium Vehicle & D6-D8 Dozers
Z3326G-30SST	404,250	183	1 5/8"	30	9.1	24"	24"	SX21	Orange Tubular Cordura	45	20.4	Medium Vehicle & D6-D8 Dozers
Z3332G-30SST	610,335	277	2"	30	9.1	36"	36"	SX32	Orange Tubular Cordura	68	30.8	Cat 770-780 series trucks & D9 dozers
Z3334G-30SST	699,435	317	2 1/8"	30	9.1	36"	36"	SX32	Orange Tubular Cordura	78	35.4	Cat 770-780 series trucks & D9 dozers
Z3336G-30SST	775,665	352	2 1/4"	30	9.1	36"	36"	SX32	Orange Tubular Cordura	90	40.8	Cat 780 series trucks & D9 -D10 dozers
Z3340G-30SST	939,510	426	2 1/2"	30	9.1	36"	36"	SX42	Orange Tubular Cordura	105	47.6	Cat 790 series trucks & D11 dozers
Z3342G-30SST	1,039,995	472	2 5/8"	40	12.2	42"	42"	SX42	Orange Tubular Cordura	125	56.7	Cat 790 series trucks & D11 dozers
Z3344G-30SST	1,152,360	523	2 3/4"	40	12.2	42"	42"	SX42	Orange Tubular Cordura	180	81.6	Cat 790 series trucks & D11 dozers
Z3348G-30SST	1,351,350	613	3"	40	12.2	42"	42"	SX42	Orange Tubular Cordura	215	97.5	Cat 790 series trucks & D11 dozers

Notes:

- "Pulling Power" of the recovery vehicle should be used to determine correct size Cortland tow cable - NOT deadweight of disabled vehicle.
- Minimum Break Strength (MBS) of Cortland tow cable assumes correct connection D:d ratio of hardware or "hard-point".
- Cortland recommends a SF (Safety Factor) of 2.3:1or greater (of new cable MBS) for tow cable choice.
- Cortland can maunfacture any length of tow cable other than listed in the above chart. Standard OAL lengths and eye termination lengths recommended are for maximum safety during recovery.
- Orange tubular woven Cordura nylon chafe sleeve for body coverage of tow cable is replaceable with velcro-clasp sleeve from same material.

Cortland also offers Mining Tow Cables in eye and eye fabrications. These fabrications are different in strength and overall weight than endless loop grommet fabrications. Eye and eye fabrication tow cables have splice-terminated eyes each end covered with SX chafe gear. Body of eye and eye fabrications covered by orange tubular Cordura chafe sleeve.