

GZM COMPOSITE DOUBLE BRAID

GZM Composite Double Braid ropes have very high strength, are firm with a round profile, and have extremely low stretch. These durable, torque-free synthetic ropes are excellent for replacing steel wire rope in winch applications and are designed to withstand drum compression. GZM ropes can be used in multiple applications such as vessel mooring lines for Articulated Tug & Barges (ATB's), Gilson winch lines used in commercial fishing, as well as helicopter long lines.

GZM Double Braid ropes are constructed with a braided Toro® HMPE fiber core. This core is encased in a tightly braided jacket of a new generation HMPE fiber that offers the highest abrasion and cut resistance durability.* The final construction of core and cover work in balance to provide excellent service life.

GZM braided rope standard color is orange, but is available with a polyurethane finish in clear or any of five additional colors; black, yellow, red, blue or green.

Features & Benefits

- High strength
- Lowest stretch
- Low creep
- Firm hand
- Torque free

Applications

- Vessel mooring lines
- Winch lines
- Tug mainlines
- Tug pendants
- Recreational vehicle winch lines
- Utility winch and pulling lines
- Theatrical rigging

Nominal Diameter		Size (circ. in)	Approximate Weight		Minimum Tensile Strength Spliced Rope		Minimum Tensile Strength Unspliced Rope	
inch	mm		lbs/100ft	kg/100m	lbs	MT (tonnes)	lbs	MT (tonnes)
5/8	16	2	10.2	15.1	43,000	19.5	48,000	21.8
3/4	18	2-1/4	14.3	21.2	53,000	24.0	59,000	26.8
7/8	22	2-3/4	18.9	28.1	80,000	36.3	89,000	40.4
1	24	3	25.3	37.7	104,700	47.5	117,000	53.1
1-1/8	28	3-1/2	31.6	47.0	126,300	57.3	141,000	63.9
1-1/4	30	3-3/4	38.7	57.5	146,600	66.5	163,000	73.9
1-5/16	32	4	43.1	64.1	162,600	73.7	181,000	82.1
1-3/8	34	4-1/8	47.0	69.9	179,900	81.6	200,000	90.7
1-1/2	36	4-1/2	57.9	86.1	212,300	96.3	236,000	107
1-5/8	40	5	66.6	99.1	242,600	110	270,000	122
1-3/4	44	5-1/2	75.7	112.7	269,300	122	299,000	136
1-7/8	46	5-5/8	87.3	129.8	326,100	148	362,000	164
2	48	6	98.6	146.6	363,200	165	404,000	183
2-1/8	52	6-1/2	110.3	164.2	401,200	182	446,000	202
2-1/4	56	7	128.2	190.8	459,200	208	510,000	231

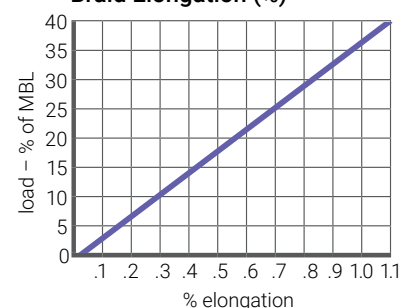
Tensile strengths are determined in accordance with Cordage Institute CI-1500, Test Methods for Fiber Rope and ISO 2307. Published Minimum Tensile Strength (MTS) assumes spliced eye terminations at each end of the rope. Weights actually calculated at linear density under stated preload (200d²) plus 4%. Diameter and circumference size published are nominal and reflect rope size after loading (10 cycles) to 50% of MTS. See reverse side for application and safety information.

Technical Information

Specific gravity	0.98*
Melting point	284°F (140°C)
Critical temp.	150°F (65°C)
Coefficient of friction	0.12–0.15
Elongation at break	2.5–3.5%
Fiber water absorption	0–1%
UV resistance	excellent
Wet abrasion	superior
Dry abrasion	superior

* value based on data supplied by the fiber manufacturer for new, dry fiber

GZM Composite Double Braid Elongation (%)



* GZM Composite ropes can also be designed with materials other than HMPE for jacketing depending on application. Linear density & external fiber properties will change depending on jacketing material but the strength will remain the same on a per size basis. Please contact Cortland for further information.

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Rope Specifications

Minimum Tensile Strength Minimum tensile strengths shown are for new (unused) rope and will decrease after use. All tests are performed in accordance with Cordage Institute Standard CI 1500-02. The rope strength will be reduced after use due to heat, abrasion, ultraviolet or chemical exposure. The tensile strengths may be further reduced by up to 50% as a result of knots or kinks. Minimum tensile strengths are defined as two standard deviations (typical about 10%) below the average.

Maximum Working Loads Maximum working loads are determined by dividing the tensile strength by the safety factor. The safety factor is a function of the physical properties of the rope, the age and history of the rope, the type of service it will be subjected to and the risks involved if failure occurs. For a rope manufacturer to give blanket working load recommendations would be like a car manufacturer giving the "safe driving speed" of their cars. Obviously the conditions of use far outweigh the design characteristics of the rope. Typically safety factors vary from 3:1 (for new rope used in applications with uniform loading and where failure would cause little or no risk to equipment or personnel) to 20:1 (for conditions involving moderate shock loading, possibility of snags or kinks or where failure could cause severe risk to equipment or personnel).

Rope Weights Rope weights shown are average and may vary plus or minus 5%.

Working Elongation Working elongation is shown from a preload tension of 200 times the diameter squared per the Cordage Institute Standard.

Special Requirements

Factory Splicing Various types are available for all of our ropes. Splices can be provided with various types of chafe protection or coatings.

Custom Lengths Special constructions are available on request.

Rope Terminations Cortland International can provide custom terminations such as thimbles, links, rings and custom hardware. Terminations are available in plastic, bronze, stainless steel and galvanized steel. Please call, or email your requirements to contact@cortlandinternational.com for a quotation.

Special Coatings Coatings such as polyurethane, polyethylene and vinyl esters may be applied to any of the synthetic ropes to improve snag resistance, sunlight resistance or for color coding. Cortland can provide ropes with a variety of finishes to meet your needs.

Commercial and Military Specifications Certificates of compliance are supplied at no charge if requested when placing the order. Certified test reports can be provided at an additional charge when requested at the time of the order.