

Plastic-Infused Wire Rope

BXL products are recommended for shovel hoist, crowd and retract ropes, and some dragline hoist and drag ropes.

BXL combines Bethlehem Wire Rope® superior quality with a specially-engineered polymer, creating a well-balanced matrix which features extended service life. The BXL Family of Mining Products is comprised of:

- **BXL**
- **BXL with Maxi-core**
- **Bethpac BXL**
- **Bethpac BXL with Maxi-core**

Plastic-infused wire ropes were introduced over 20 years ago. Developed specifically for mining, plastic-infused products enhanced fatigue and abrasion resistance through the cushioning effect of the plastic. In addition, these ropes offered other benefits to the end user, such as clean handling and operation, increased corrosion protection, and extended sheave and drum service life.

WW's BXL products are designed with performance in mind. The specially-engineered polymer used in the manufacture of the BXL product line, in combination with Bethlehem Wire Rope quality, ensures a consistent, high quality wire rope that provides excellent service life. The BXL Family of Mining Products includes BXL, BXL with Maxi-Core, Bethpac BXL and Bethpac BXL with Maxi-core.



BXL plastic-infused round wire rope

BXL provides the characteristics common to Bethlehem Mining Rope, enhanced by the plastic-infusion. BXL starts with WW's special wire grades used in the manufacture of mining rope. *Excavator* grade is designed to provide excellent resistance to bending fatigue, such as those conditions found with hoist ropes. *Excavator-AR* is intended for those applications where more abrasive operating conditions exist, such as in drag line applications. Enhanced by plastic infusion, BXL offers several improved features.

Improved fatigue resistance is one key feature of BXL. BXL's polymer cushions each wire and strand, minimizing interstrand and interlayer nicking. BXL also offers improved abrasion resistance. The polymer acts as a

BXL:

- Excellent Abrasion and Fatigue Resistance
- Resistance to Multilayer Drum Crushing
- Extended Sheave & Drum Service Life
- Increased Corrosion Protection
- Clean Handling & Operation
- Increased Breaking Strength



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barrier between the individual strands, preventing penetration of any adverse material, such as dust, dirt and metal particles. The polymer also distributes and reduces contact stresses between the rope and sheave, reducing the wire rope wear normally associated with uncoated wire rope.

Perhaps the most important feature of BXL, however, is the polymer's ability to maintain the balance of the rope. When a rope is in operation, or simply wound upon a drum, the rope's components move and adjust accordingly. Due to the nature of wire rope, this movement may cause accelerated wear, and in uncoated rope, may also produce a flattening or ovaling of the rope. The polymer in BXL minimizes this movement by locking the individual wires and strands in place. With the rope's holding its intended shape during operation, operating stresses such as vibration are evenly distributed to all wires and strands, thereby reducing fatigue breaks and increasing service life.

Construction

BXL is furnished as right regular or Lang lay, Form-set, IWRC wire rope manufactured in the 6x19 and 6x37 Classes. Available grades are Excavator and Excavator-AR. For specific information, please refer to the table. For information on smaller diameters for mining applications, please contact our Customer Service Department.

BXL with Maxi-core plastic-infused round wire rope with a specialized IWRC

Many wire rope users have observed that most heavily loaded ropes fail internally, primarily due to the failure of the core. Such conditions illustrate that heavy core stresses exist, which promote fewer fatigue cycles and create short

service life. Maxi-core was developed to counteract these stresses.

Maxi-core utilizes an independent wire rope core (IWRC) design that features eight strands around a strand center. Maxi-core's IWRC provides longer life, and therefore increases the overall service life of the rope. Because of its specialized IWRC, Maxi-core is resilient and able to better accommodate shock loads than conventional IWRC designs. Maxi-core also adds 33% more core support to the outer strands, thereby reducing internal stresses and promoting longer service life.

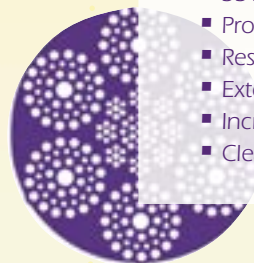
When combined with WW's polymer to create BXL with Maxi-core, the result is a rope that offers excellent fatigue resistance, particularly in those applications where the rope fails due to internal wire breakage. BXL with Maxi-core is the rope of choice for shovel hoist applications. It provides a service life that meets or exceeds that provided by an 8-strand plastic-infused rope.

Construction

BXL with Maxi-core is furnished as regular or Lang lay in a 6x37 Class construction. Depending on the application, available grades are Excavator and Excavator-AR. For specific information, please refer to the table. For information on other diameters or constructions, please contact our Customer Service Department.

BXL with Maxi-core:

- Superior Fatigue and Abrasive Resistance
- Resistance to Shock Loading
- 33% More Core Support
- Prolonged Service Life
- Resistance to Multilayer Drum Crushing
- Extended Sheave & Drum Service Life
- Increased Corrosion Protection
- Clean Handling & Operation



Bethpac BXL plastic-infused compacted wire rope

The term “Bethpac” refers to a mining rope manufactured by compacting each individual strand prior to closing the rope. Compaction offers a number of benefits to the end user, including increased strength and fatigue resistance, but its greatest feature is its abrasion resistance.

The greater abrasion resistance is derived from external contact between the rope and the sheaves and drums. Compaction increases the rope’s surface area, and therefore better distributes the stresses that result from operating over a sheave or drum. Bethpac BXL provides abrasion resistance even in those areas where the polymer has abraded away or is near the end of its life cycle. In those areas where the polymer no longer protects the rope, Bethpac still provides abrasion resistance due to its flattened strand surfaces.

The increased strength of Bethpac is a direct result of the manufacturing process. Compaction creates a denser cross section, or greater metallic area. This increases the breaking strength. Also contributing somewhat to the increase in strength are the strands’ smooth flat surfaces, which eliminate interstrand nicking and enable the load placed upon the wire rope to increase without causing internal damage. Bethpac’s smooth, flat surface also contributes to its resistance to fatigue. As mentioned previously, the compacted strands’ flat surface areas reduce internal resistance and therefore also reduce the wear (fatigue) associated with internal strand to strand contact.

When combined with BXL, Bethpac BXL offers fatigue resistance in combination with outstanding abrasion resistance. Bethpac BXL is recommended for those

Diameter		BXL	BXL w/ Maxi-core		Bethpac BXL		Bethpac BXL w/ Maxi-core	
in	mm	Approx. Weight (lb./ft.)	Approx. Weight (lb./ft.)	Constr. Supplied	Approx. Weight (lb./ft.)	Constr. Supplied	Approx. Weight (lb./ft.)	Constr. Supplied
1-5/8	42	5.02	5.04	6x43	5.17	6x26, 6x43	5.26	6x43
1-3/4	45	5.80	5.86	6x49	6.07	6x26, 6x49	6.16	6x49
1-7/8	48	6.78	6.81	6x49	6.99	6x26, 6x49	7.01	6x49
2	52	7.61	7.64	6x49	7.83	6x26, 6x49	7.86	6x49
2-1/8	54	8.74	8.78	6x49	9.00	6x26, 6x49	9.04	6x49
2-1/4	57	9.75	9.84	6x49	9.99	6x26, 6x49	10.01	6x49
2-3/8	60	10.62	10.64	6x49	10.94	6x26, 6x49	11.02	6x49
2-1/2	64	12.03	12.04	6x49	12.25	6x26, 6x49	12.38	6x49
2-5/8	67	13.08	13.10	6x57	13.47	6x26, 6x57	13.49	6x57
2-3/4	70	14.51	14.54	6x57	14.94	6x26, 6x57	14.97	6x57

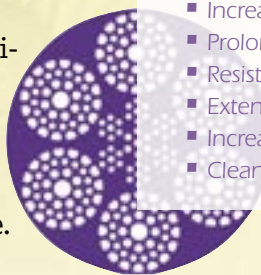
applications where severe operating conditions exist.

Construction

Bethpac BXL is furnished as Lang lay, Form-set, IWRC wire rope manufactured in the 6x19 and 6x37 Class constructions depending on diameter required, and is available in both Excavator and Excavator-AR grades. For specific information, please refer to the table. For information on smaller diameters for mining applications, please contact our Customer Service Department.

Bethpac BXL:

- Excellent Abrasion and Fatigue Resistance
- Increased Breaking Strength
- Prolonged Service Life
- Resistance to Multilayer Drum Crushing
- Extended Sheave & Drum Service Life
- Increased Corrosion Protection
- Clean Handling & Operation



Bethpac BXL with Maxi-core plastic-infused compacted wire rope with a specialized IWRC

Bethpac BXL with Maxi-core is the cadillac of the BXL family of Bethlehem Wire Rope mining



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products. In combining the specialized IWRC and compacted strands with the special polymer, WW created a mining rope that is unparalleled in performance by any mining rope in the industry.

Bethpac BXL with Maxi-core is recommended for extreme operating conditions where Bethpac or Maxi-core alone will not provide the abrasion and fatigue resistance necessary for good service life. Bethpac BXL with Maxi-core offers a rope characterized by the superior fatigue resistance of BXL with Maxi-core with outstanding resistance to abrasion of Bethpac BXL.

Bethpac BXL with Maxi-core::

- Superior Fatigue and Abrasion Resistance
- Resistance to Shock Loading
- 33% More Core Support
- Prolonged Service Life
- Resistance to Multilayer Drum Crushing
- Extended Sheave & Drum Service Life
- Increased Corrosion Protection
- Clean Handling & Operation

Wire rope products will break if abused, misused or overused. Consult industry recommendations and ASME Standards before using. Wirerope Works, Inc. warrants all Bethlehem Wire Rope® and Strand products. However, any warranty, expressed or implied as to quality, performance or fitness for use of wire rope products is always premised on the condition that the published breaking strengths apply only to new, unused rope, that the mechanical equipment on which such products are used is properly designed and maintained, that such products are properly stored, handled, used and maintained, and properly inspected on a regular basis during the period of use. Manufacturer shall not be liable for consequential or incidental damages or secondary charges including but not limited to personal injury, labor costs, a loss of profits resulting from the use of said products or from said products being incorporated in or becoming a component of any product.

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