

Lorbrand Composite Rolls



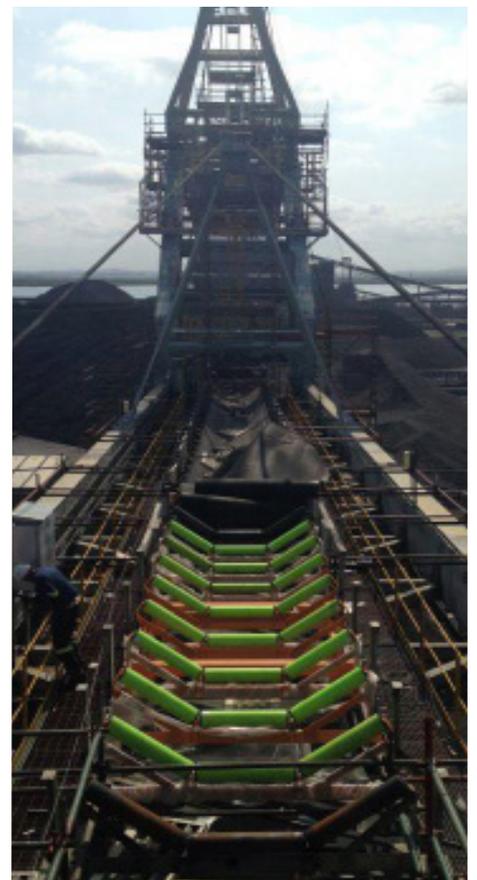
Lorbrand Composite Rolls utilise our unique proprietary shell material, delivering exceptional performance in all conveying applications.

Key Benefits:

- Light Weight
- Low Noise
- Excellent abrasion resistance
- Friction Welded

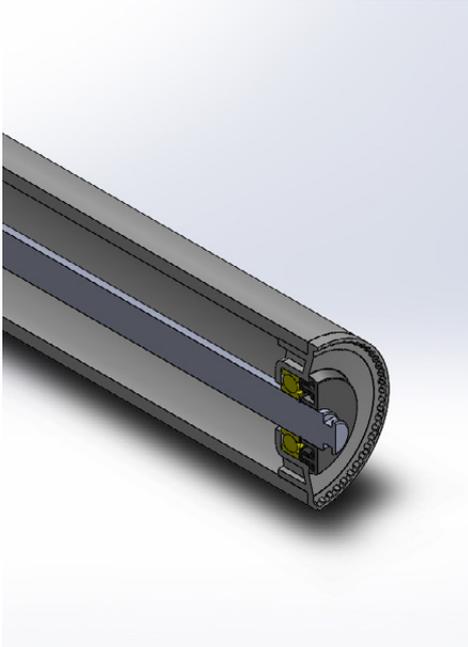
Safety & Operational Benefits

- Weight reduction up to 60% of a steel roller. Less roll maintenance requirements.
- Lighter weight construction will reduce the potential for lifting (back) and pinch point injuries.
- Fire Resistance and Anti-Static Compliance for use in underground applications.
- Smart design reduces heat build-up and friction.
- Up to five times longer operational life over steel rolls.
- Substantial reduction in energy consumption
- Ave 10dB drop in sound emissions over steel rolls.
- Longevity of composite rolls will dramatically improve conveyor uptime and productivity.
- Smart component configuration has improved overall operational performance over competitive rolls.



MATERIALS AVAILABLE

- Nylon
- Fire Resistant/Anti-Static Nylon
- Econo-Roll
- High Density Polyethelene



Lorbrand Composite Rolls are the only composite idler using friction welded technology and hollow shafts on heavy rolls.

Friction Welding

- Eliminates the risk of end cap separation
- Increases roll load bearing capacity
- Eliminates fatigue and stress points in the conveyor roll.

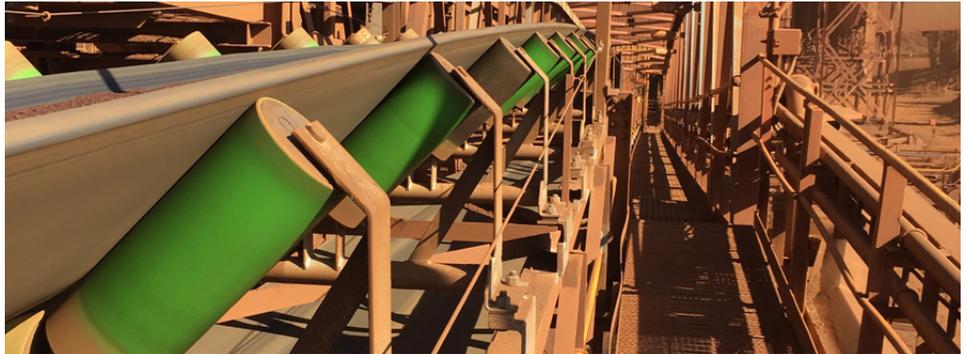
Hollow Shaft Technology

- Further reduces roll weight, improving manual handling
- Unique design ensures shaft deflection is kept to a minimum and strength is maintained.

Composite Tubing

- 5.5x Stronger than standard HDPE tubing
- Unique Glass Fibre Reinforced tubing allows lengths of up to 2.5m
- FRAS Options
- Excellent abrasion qualities increasing roll life by up to 5x of steel
- Minimal shell deflection

- Reduction in work related injuries.
- Reduction in cost of spares.
- Reduction in conveyor damage and downtime.
- Reduction in labour costs.
- Electricity usage savings.
- Reduction in noise violations.



Financial Benefits

INDUSTRIES SERVED

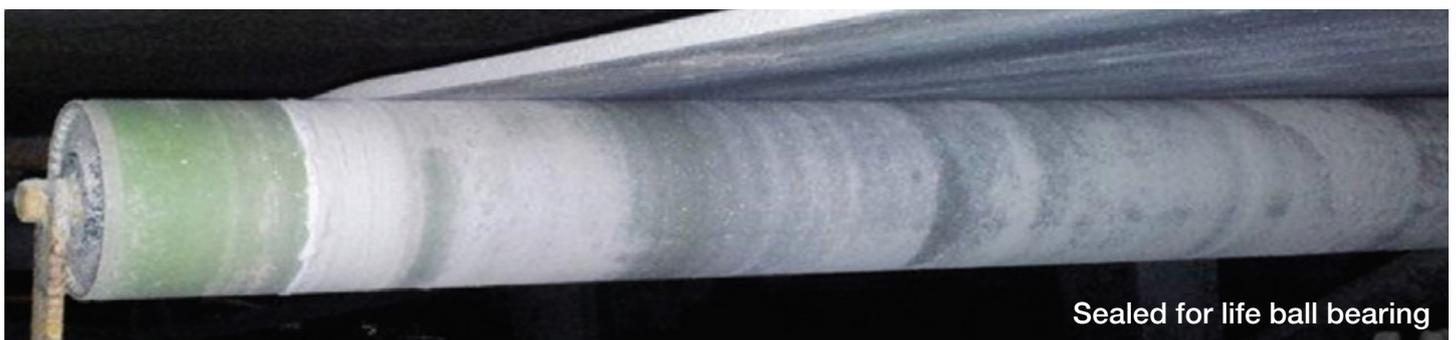
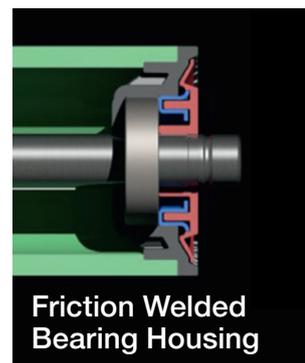
- | | | |
|---|-----------------|----------------------|
| • Coal (Surface / Underground) | • Potash | • Aggregate |
| • Hard Rock (Gold, Copper, Platinum, Iron Ore, etc) | • Steel | • Crushed Stone |
| • Ports | • Chemical | • Mobile Crushing |
| • Load Out Facilities | • Fertilizer | • Preparation Plants |
| • Salt | • Sugar | • Cement |
| | • Sand & Gravel | • Grain |

MANUFACTURING STANDARDS:

- | | |
|---|--|
| • Global Manufacturing - ISO 9000, | • Running Friction SANS 1313-3:2012, |
| • Water Ingress Testing SANS 1313-3:2012, | • Fire Resistance AS/NZS Standard, |
| • Dust Ingress Testing SANS 1313-3:2012, | • Anti-Static AS/NZS Standard, |
| • TIR SANS 1313-3:2012, | • Acoustic Testing - KRD2005GA, |
| • Breakaway Mass SANS 1313-3:2012, | • Toxicity Testing - SANS 10177 Part 9 |

Specification Chart

	LBC NYLON	LBC HDPE
Manufacturing Method	Spun Cast Nylon	Extruded HDPE
ISO Certification	ISO 9000	ISO 9000
SA Manufacturing Compliance	Tests conducted in accordance with SANS 1313-3:2012, "Conveyor, Belt Idlers, Part 3: Performance specifications for belt conveyor idlers."	Tests conducted in accordance with SANS 1313-3:2012, "Conveyor Belt Idlers, Part 3: Performance specifications for belt conveyor idlers."
Manufacturer	Lorbrand	Lorbrand
Shell Construction	Composite Nylon	Composite HDPE
B/Housing Construction	Glass Reinforced Nylon	Reinforced HDPE
Single Longest Roll Length	2500mm	2500mm
Sulphuric Acid Resistance	Poor	Excellent
Std Diameters (mm)	127, 152,178 or to customer specification	127, 152,178 or to customer specification
Weight Reduction over Steel Rolls	Up to 60% Less	Up to 60% Less
Std Wall Thickness (mm)	10,15,20 or to specification	10,15,20 or to specification
Shaft Diameter (mm)	25 through 65	25 through 45
Bearing Sizes	6205, 6305, 6306, 6308, 6309, 6310	6205, 6305, 6306, 6308, 6309, 6310
Bearing Type	Greased for life ball bearing	Greased for life ball bearing
Bearing Manufacturer	URB/LFD or customer spec	URB/LFD or customer spec
Seal Type	Non Contact Centrifugal Seal	Non Contact Centrifugal Seal
Fire Resistance	AS/NZS Standard	Not Applicable
Anti-Static	AS/NZS Standard	Not Applicable



Value Proposition Chart

PROBLEM/ISSUE	RESULT	SOLUTION
Corrosion	Exposed steel continually oxidises. Rust on rolls causes premature failure resulting in costly downtime and under utilized components.	Composite materials designed specifically to cope with corrosive environments.
Abrasion	Abrasive materials along with corrosive action causes premature wear and failure of the shell.	Composite material range designed to offer superior abrasion resistance to steel and other composite materials. (Sand/Slurry Tests)
Weight	Increased on site work injuries, high workers compensation claims. Increased fatigue as a result in carrying heavy steel rolls. Increased cost of spares due to poor maintenance, belt downtime.	Up to 60% weight reduction over comparable steel rollers. Ability to safely carry multiple rolls. No specific equipment required for larger roll installations.
Performance	Poor quality rolls fail prematurely causing costly roll replacements, as well as costly production downtime for maintenance purposes.	Quality roll and component design ensures optimal performance on the conveyor.
Safety	Work related injuries as a result of heavy lifting and more time on the conveyor.	Composite materials make overall weight of roll considerably lighter. Hollow shaft technology can further reduce overall weight of roll. Large diameter stationary rock shield offers barrier to spillage that will abrade outer bearing housing.
Sealing	Premature roll failure due to ingress of moisture and dust into the bearing.	Sealing arrangements to suit your specific application (moisture/dust). Industry leading seal designs. Independently tested.
Increased Power Requirements	Design requirements increase to handle roll performance design specifications. (Breakaway mass and Seal Drag) Costs associated with operating a conveyor dramatically increase.	Low breakaway mass and running friction numbers maintained without sacrificing seal/roll performance. Power required to drive system can be reduced by up to 30% per system. Immediate cost savings.
Non Fire Resistance Compliance	Many composite rollers are not Fire Resistant, meaning underground applications cannot take advantage of the benefits associated with composite rolls.	FRAS roller meets Australian standards for Anti-Static and Flame Retardancy use in Underground Mines.
Non Anti-Static Compliance	Other composite rolls are unsuitable for underground use and sparking applications.	FRAS roller meets Australian standards for Anti-Static and Flame Retardancy use in Underground Mines.
Noise Pollution	Costly citations due to elevated noise emissions. Failing componentry sound emissions not audible during inspections.	Rolls on average +-10dB lower than steel rolls. Implies up to 90% quieter than steel. Lower noise emissions allow for improved problem identification.
Toxicity Levels	Fatal results due to inhalation of toxic fumes. Particularly relevant to confined working areas.	Rolls designed using non lethal composite materials. Independent testing data available.
Chemical Resistance	Premature roll failure due to chemical attack to the composite material.	LBC's range of proprietary materials allows for rolls to be used in very specific applications, such as sulphuric acid applications (HDPE)
Design Flaws	Composite rolls dimensionally incapable of certain size, length and load operating capabilities. Inconsistency with scale quality rolls (Steel/Other composites)	Proprietary materials offer no design restrictions for length and load requirements. No sections welded together. Rolls manufactured standard to scale roll specifications.

Roll Ordering Options

Manufacturer	Shaft Diameters (Std) (mm)	Shell Diameters (Std) (mm)	Roll Face Length (mm)	Roll Material	Position	Bearing Size
Lorbrand Composites (LBC)	25	104	Up to 2500	N = Nylon	T = Trough	6205
	30	114		F = Fras Nylon	R = Return Flat	6305
	40	127	Actual dependant on customer dimension	EN = Economical Nylon	V = V -Return	6306
	45	152		H = HDPE		6308
	50	178				6309
	65	196				6310
	Non Standards Available On Request	Non Standards Available On Request	Capabilities (Single roll)			Customer Spec on Request

Roll Ordering Process

Step 1: Provide Basic Roll Information (Additional Information Required for Roll Design Verification)

	Example	Additional Information (Optional)		Example
Roll Shaft Diameter	25	<i>Additional information allows for load and design calculation verification.</i>	Material Conveyed	Coal
Roll Shell Diameter	127		Belt Speed (m/s)	2.5
Roll Face Length	191		Tonnes Per Hour Carried (tph)	150
Roll Material Construction	N		Idler Spacing	1.5
Roll Position Location	T			
Bearing Size	6305			

Step 2: Roll Part Number Generation

LBC-25-127-191-NT-6305

Step 3: Quote will be provided based on above information.

Step 4: Upon order acceptance, customer to submit roll drawing for shaft end detailing and dimensional verification.

CONTACT US

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Lorbrand Composite Roll Detailed Specification Sheet

	127mm Diameter	152mm Diameter	178mm Diameter
ISO Certification		ISO 9001	ISO 9002
Manufacturing Compliance	Tests conducted in accordance with SANS 1313-3:2012	Tests conducted in accordance with SANS 1313-3:2013	Tests conducted in accordance with SANS 1313-3:2014
Manufacturing Method 1	Spun Cast Nylon	Spun Cast Nylon	Spun Cast Nylon
Shell Material 1	Composite Nylon	Composite Nylon	Composite Nylon
Bearing Housing Material 1	Reinforced Nylon	Reinforced Nylon	Reinforced Nylon
Shell Wall Thickness Material 1	10;15;20 or to specification	10;15;20 or to specification	10;15;20 or to specification
Manufacturing Method 2	Extruded HDPE	Extruded HDPE	Extruded HDPE
Shell Material 2	Composite HDPE	Composite HDPE	Composite HDPE
Bearing Housing Material 2	Reinforced HDPE	Reinforced HDPE	Reinforced HDPE
Shell Wall Thickness Material 2	10;15;20 or to specification	10;15;20 or to specification	10;15;20 or to specification
Cema Rating	Up to Cema C/E	Up to Cema D/E	Up to Cema F
Weight Reduction over Steel Rolls	Up to 60% Less	Up to 60% Less	Up to 60% Less
TIR (Total Indicated Runout) 0.5mm Max	0.3 mm or less	0.3 mm or less	0.3 mm or less
Roll Max Face Length	2046mm	2452mm	2452mm
Shell Dimensional Tolerances	<= 1mm	<= 1mm	<= 1mm
Shaft Material	Mild steel (Stainless Available)	Mild steel (Stainless Available)	Mild steel (Stainless Available)
Shaft Diameter	25 to 30mm	30 to 40mm	Std 40mm or 45mm
Bearing Manufacturer	URB/LFD or customer spec	URB/LFD or customer spec	URB/LFD or customer spec
Bearing Type (Double Rubber sealed; greased for life)- 2 RS c3	6205-6306	6306-6308	6308-6309-6310
Suggested Bearing Life (Cema L10 Life @ 500rpm)	Cema C - 60 000 hrs; Cema D - 60 000 hrs	Cema D - 60 000 hrs; Cema E - 60 000 hrs	Cema E - 60 000 hrs; Cema F - 60 000 hrs
Seal Type	Non Contact Centrifugal Seal	Non Contact Centrifugal Seal	Non Contact Centrifugal Seal
Breakaway Mass (Energy Required to cause rotation) Spec 250g Max	Avg: 72g	Avg: 72g	Avg: 72g
Running Friction (Energy Required to maintain a given RPM) Spec 4.2N Max	Ave <= 2.3 N	Ave <= 2.5 N	Ave <= 2.5 N
Noise Emission (Tested at 90% less than steel)	Ave 60% less than steel	Ave 60% less than steel	Ave 60% less than steel
Fire Retardancy Properties	Standard Material Avg V2	Standard Material Avg V2	Standard Material Avg V2
Fire Retardancy and Anti Static Properties	NYLON ONLY. Meets and exceeds South African Fire Retardancy requirements for Underground use (SANS 10177-Part 9). The Special FRAS roller meets Australian standards for Anti-Static and Flame Retardancy use in Underground Mines. AS 4606 - 2012 "Grade S fire resistant and antistatic requirements for conveyor belting and conveyor accessories"		
Dust Ingress Testing	<1% Average Mass Gain	<1% Average Mass Gain	<1% Average Mass Gain
Water Ingress Testing	<0.04% Average Mass Gain	<0.04% Average Mass Gain	<0.04% Average Mass Gain
Toxicity Index: 1-10 (5 is maximum threshold for underground use in South Africa. SANS 10177 Part 9)	2.90	2.90	2.90