

Extending Service Life & Reducing Maintenance in Heavy Industrial Bearing or Wearing Applications

Using “Canadian Made” Thordon Bearings



Thordon Bearings Inc.

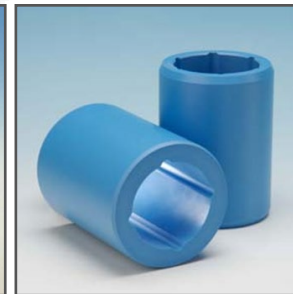
A Canadian Manufacturer

- Designer and manufacturer of water lubricated & self lubricated bearings
- State-of-the-art polymer production & machining facilities in Burlington, Ontario, with global presence in 100+ countries
- ISO 9001 certified
- Local support through distributors throughout the world



With Unique Bearing Materials

- Elastomeric polymers, with optimum combination of **strength and flexibility**
- Self-lubricating, no grease required
- Exceptional toughness and abrasion resistance, absorbs shock & impact loads
- Homogeneous materials, no layers of differing materials
- Consistent material & mechanical properties for the life of the part



Unparalleled Bearing Expertise

- Thordon Bearings has successful installations in severe duty and industrial equipment applications across many industries, around the world
- As the authorized Ontario distributor for Thordon Bearings, Millstream Engineering has extensive experience troubleshooting and assisting customers in extending bearing life
- Thordon & Millstream Engineering will provide quick response, clear proposals, and detailed technical guidance on optimal material selection, sizing & implementation
- Support can include reverse-engineering of components, bearing installation assistance, and comprehensive technical documentation – including 3D models & 2D drawings

Where Does Thordon Perform Best?

- Where rubber, nylon, UHMWPE, acetal, or plastics have failed - Thordon materials outperform
- When bronze bushings or wear components don't get grease - ThorPlas-Blue eliminates the need
- When the application involves repeated shock & impact loads - Thordon elastomer bounces back
- In material handling that involves abrasive dust, dirt, grit & debris - Thordon materials survive
- In a corrosive fluid environments that destroy seals and bearings - ThorPlas-Blue works
- For locations with high moisture & humidity, or even immersed - Thordon stays grease-free
- The application example slides demonstrate where Thordon has helped industrial customers to:
 - Reduce Equipment Life Cycle Costs
 - Reduce Maintenance Costs
 - Increase MTBF (Mean Time Between Failure)
 - Extend Equipment Life

What are Thordon material limits?

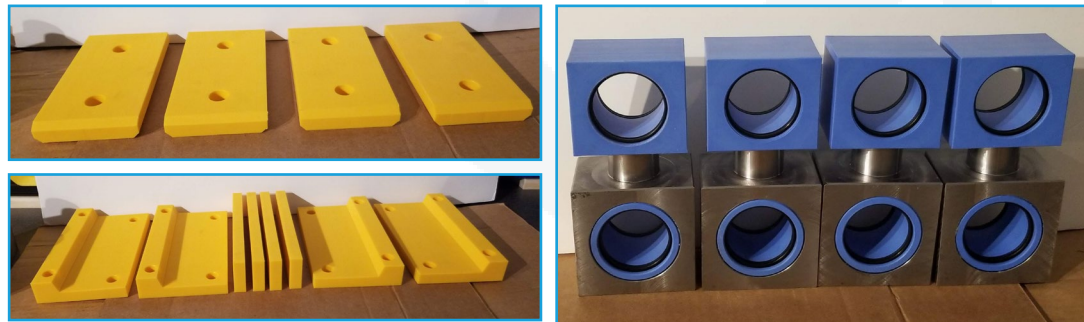
- Excellent chemical resistance to a wide range of acids, bases, hydrocarbons, salt solutions, oxidizing agents, alcohols, oils, detergents, etc.
- Operating temperature range from -40°C up to 110°C (-40°F up to 230°F), depending on material grade
- Coefficient of friction as low as 0.10 in sliding contact
- Can support bearing pressures up to 55 MPa (8000psi) in low-speed sliding, rotating, oscillating motion applications
- Excellent dry running & self-lubricating characteristics, dependent on application speed

Harsh Environment - Bushings & Wear Pads

Application: Bar Rolling – Mill Stand Rebuild

Application Details:

- Thordon Regular elastomer replaced Spindle Coupling Slipper Pads (UHMWPE deformed from impacting)
- ThorPlas-Blue used to eliminate grease from bronze pivot bushings
- Thordon Regular elastomer wear pads to replace easily damaged Nylon pads on spindle support slide rails
- Trial started in November 2021



Impact & Shock Loads - Bumper Pads

Application: Sawmill Bumper Bar

Application Details:

- Rubber bonded to steel pipe was used to try and prevent damage to the stopper
- Rubber Bumper was replaced every 4 weeks
- Thordon SXL was recommended due to its ability to resist impact, vibration and wear
- Sawmill has now retrofitted all bumper arms with Thordon SXL



Application: Pipe Mill Kicker and Catch Plates

Application Details:

- UHMWPE pads replaced every 4 months due to permanent deformation from repeated impacts
- Thordon ThorFlex 70D elastomer was installed and after 4 month trial, no wear or damage was observed
- Plant retrofitted several hundred pads throughout plant with Thordon



Severe Duty / High Loads - Pivot Bushings

Application: Scrap Metal Grapple **Application Details:**

- High shock and impact loads
- Previous bearing greased NYLON, changed every 2 weeks
- ThorPlas-Blue lasting 2+ years
- Savings on cost of grease, labour & equipment downtime



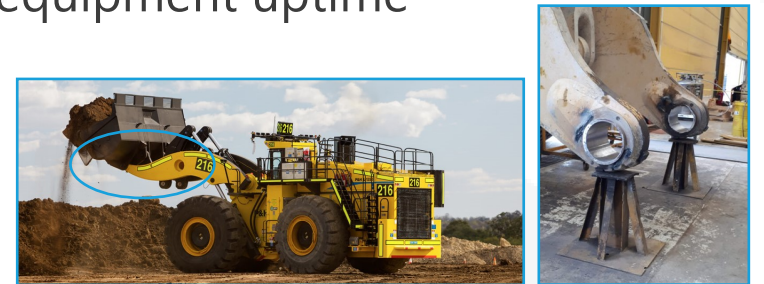
Application: Excavator Pivots **Application Details:**

- Greased BRONZE bushings were wearing very quickly
- ThorPlas-Blue used as direct replacement bushing
- Significant bushing wear life extension



Application: Heavy Loader Bucket Pivots **Application Details:**

- OEM bushings are hardened steel, greased heavily
- Grease mixes with dirt & water
- Rapid abrasive wear of shaft and steel bushings – require frequent servicing
- ThorPlas-Blue sized to directly fit in place of bronze bushings
- Greasing is eliminated, increased equipment uptime



Abrasive Conditions - Extend Wear Pad Life

Application: Conveyor Wear Pads

Application Details:

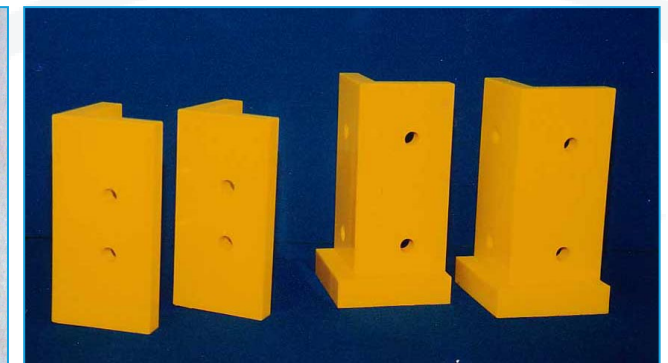
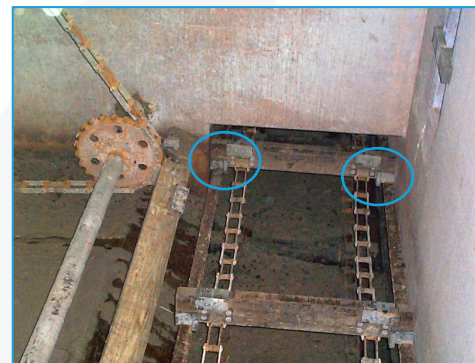
- SXL wear pads replaced UHMWPE
- UHMW was only lasting 2-3 months
- Thordon SXL wear pads have achieved over 1 year in service!



Application: Water Treatment Chain conveyor scraper wear shoes

Application Details:

- UHMWPE wear shoes were problematic for this application.
- Thordon supplied Thor-Flex due to:
 - Excellent wear resistance in low-speed application
 - Greater cut and gouge resistance than UHMWPE
 - Longer wear life (working since 2001 at this plant!)

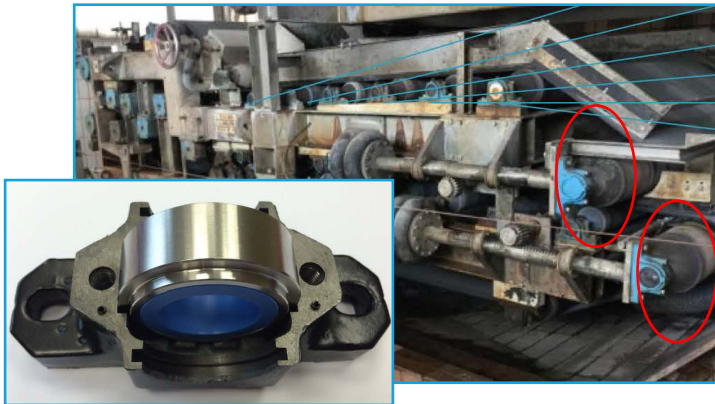


Wet Locations - Grease Free Pillow Blocks

Application: Pulp/Paper De-watering

Application Details:

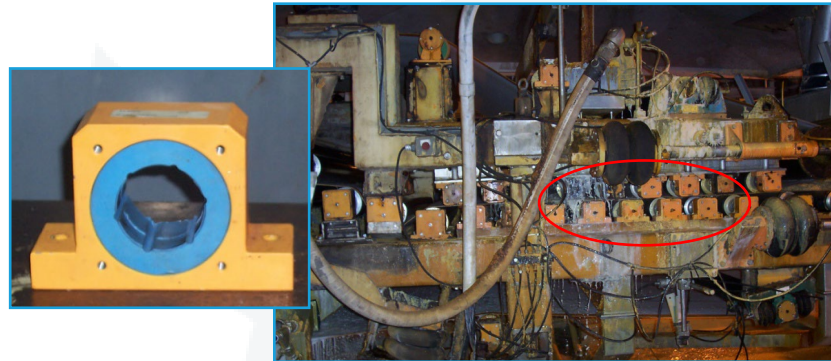
- Pillow block bearings damaged frequently from water ingress, resulting in seized bearings
- ThorPlas-Blue self-lubricated pillow block requires no grease or seals and can work reliably in wet or dry condition



Application: Corn Grinder Support Bearing

Application Details:

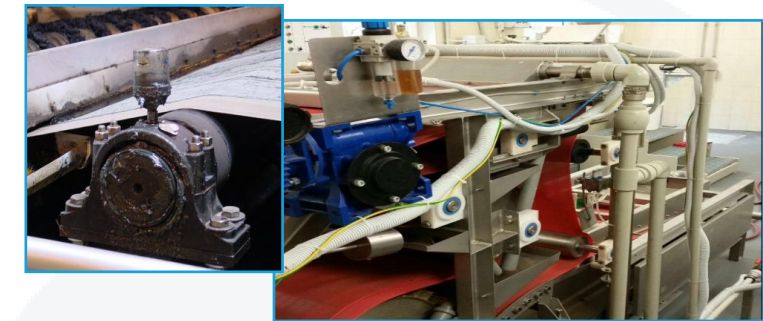
- ThorPlas-Blue replaced greased SKF roller element bearings.
- ThorPlas-Blue due to acidic condition (sulfuric acid present during process)
- Eliminated grease contamination in product
- Extended time between bearing overhauls



Application: Wastewater De-watering

Application Details:

- Belt filter press squeezes water out of waste sludge
- Short bearing life, water washing the grease from roller bearings
- Premature failure of bearings: only 2-3 months between replacements
- ThorPlas-Blue pillow block bearings have achieved life of 2 – 3 years



How Can We Help You?

- If you are having trouble with short life of bushings, pillow block bearings, wear pads, side guides, seals, wipers, or any other persistent equipment challenges – contact us!
- We will review pictures, drawings, sketches & any background you can share, and then provide you with sound technical advice.
- If a site visit is required to understand the full situation, we will attend your facility and walk through the equipment challenges with you before developing an upgrade proposal.
- Getting us to take a quick look at the problem doesn't cost you anything – never a downside to have a second opinion!

Interested? What's the Next Step?

Step 1 – Thordon/Millstream to Present to Technical Team

- Discuss application details and review drawings if possible

Step 2 – Virtual Meeting to Review Your Application

- Share our initial ideas how we might be able to help

Step 3 – Site / Plant Visit

- Investigate the operating environment
- Discuss ideas & requirements with your maintenance team

Step 4 – Technical Proposal

- Providing recommendations & cost savings

Step 5 – Field Trial

- Prove out the recommended solutions in service

Final Step – Success & Full Implementation!



Thank You

Any Questions?

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