WearComp®
Carbon Fiber Composite Solutions

Saint-Gobain HyComp, LLC

HyComp®

INDUSTRIAL APPLICATION: EXTRUSION & FORGING EQUIPMENT

Customer Challenge

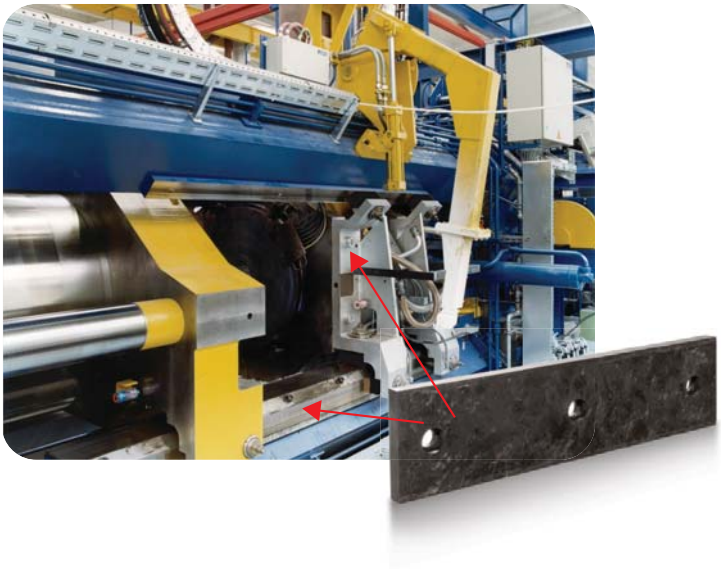
Equipment Damage, Downtime & Safety

- A misaligned press or drop hammer will damage equipment and negatively affect output.
- Basic wear components such as liners and bushings are on the front line of defense against unexpected maintenance outages.
- Excessive lubrication builds up around the machine, which can get on the work piece and create an unsafe environment for the employee.

Our Solution

WearComp® Carbon Fiber Composite Bearings

- 4 to 10 times longer service life compared to bronze
- Self-lubricated bearing surface reduces cost and helps satisfy 5S cleanliness initiatives
- 600°F (316°C) continuous operating with spikes to 1,000°F (538°C)
- Excellent dimensional stability & high impact resistance (Zero Creep)



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BST-6000-WCACS-0819

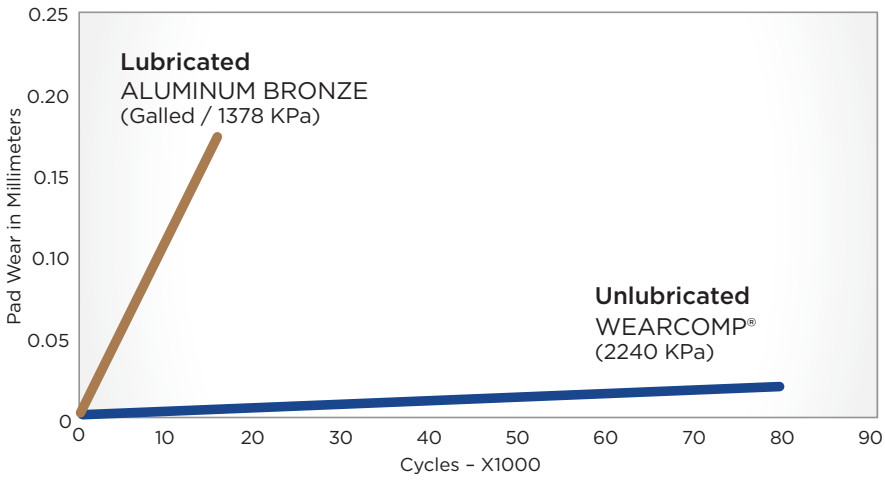
Critical parts making THE difference
PRECISE FIT · LIFETIME CONFIDENCE

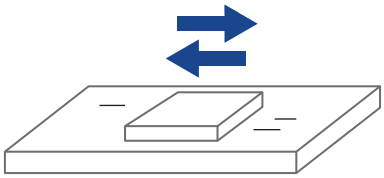
SAINT-GOBAIN

WearComp® Material: Wear and Mechanical Test Data

Testing results prove our material outperforms lubricated bronze and metallic plain bearing materials.

RECIPROCATING WEAR TESTING

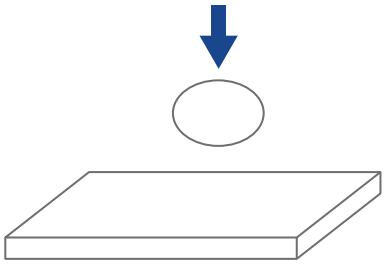




Reciprocating wear tester
(50mm stroke, load 1378–2240 KPa)

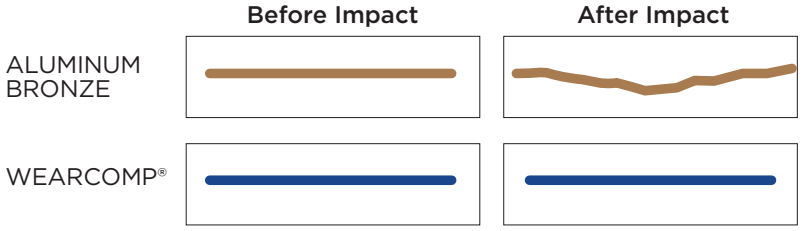
DYNAMIC COEFFICIENT OF FRICTION	
Material	**Value**
ALUMINUM BRONZE	.44
WEARCOMP®	.15 – .25

Impact Data



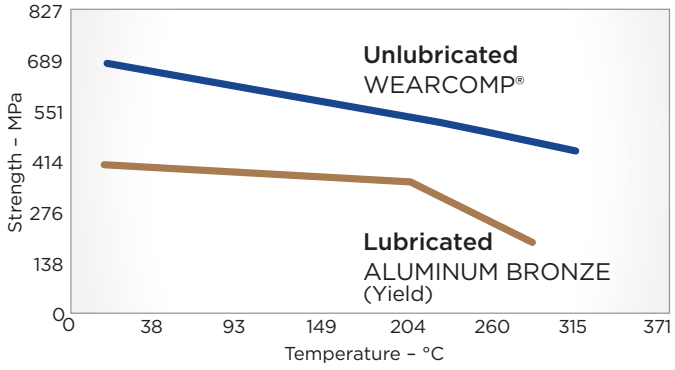
Falling ball impact test
(1.36 Kgs ball dropped from 2.28 Mtrs)

SURFACE PROFILE

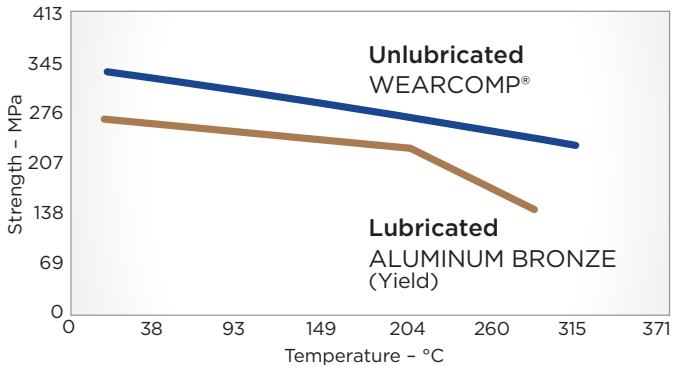


Material	Impact Energy (Mtrs Kgs)	Rebound (Mtrs)
ALUMINUM BRONZE	3.10	0.45
WEARCOMP®	3.10	1.37

COMPRESSIVE STRENGTH



TENSILE STRENGTH COMPARISON



CREEP UNDER LOAD		
WearComp®	**Pressure (MPa)**	**Disformation %**
23°C	103.42	.38
204°C	103.42	1.16

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INDUSTRIAL APPLICATION: STEEL & ALUMINUM ROLLING MILLS

Customer Challenge

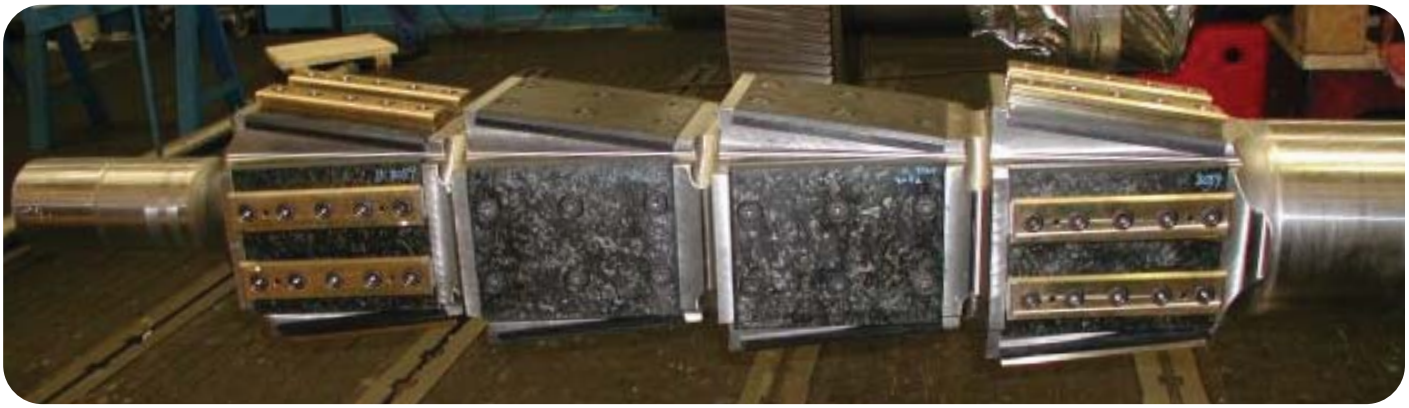
Equipment Failure & Downtime

- Rolling mills lose efficiency and waste money when equipment fails and unexpected downtime occurs.
- Linear and radial plain bearings are the first line of defense to protect equipment and keep it running. However, most bearings have a short service life and require messy lubrication, including close attention from the maintenance crew.

Our Solution

WearComp® Carbon Fiber Composite Bearings

- 4 to 10 times longer service life compared to bronze
- Self-lubricating material provides low cost and high cleanliness
- 600°F (316°C) continuous operating with spikes to 1,000°F (538°C)
- Excellent dimensional stability & high impact resistance



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PRECISE FIT · LIFETIME CONFIDENCE

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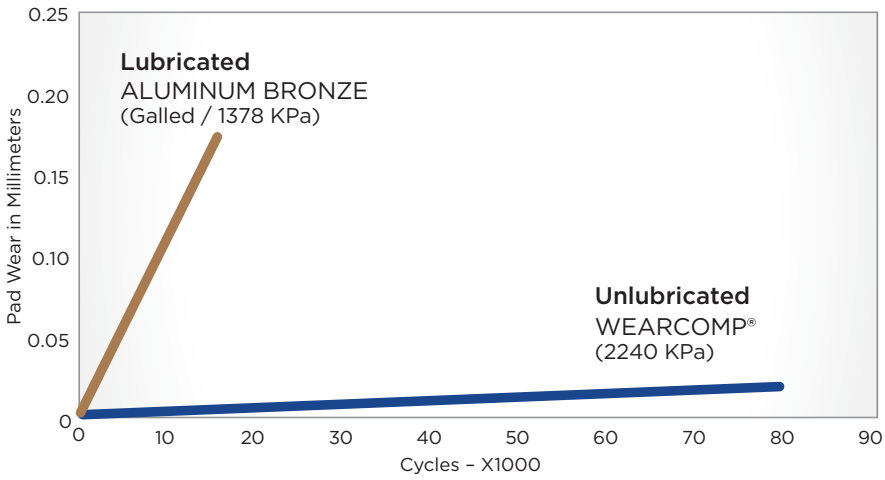
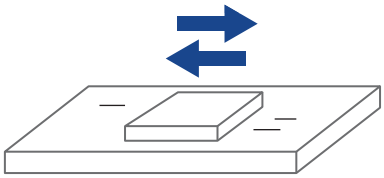
RECIPROCATING WEAR TESTING





Reciprocating wear tester
(50mm stroke, load 1378–2240 KPa)

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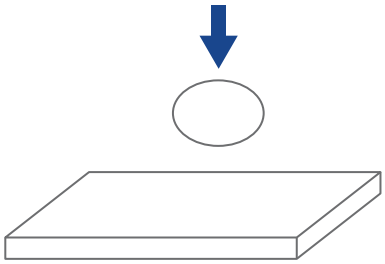

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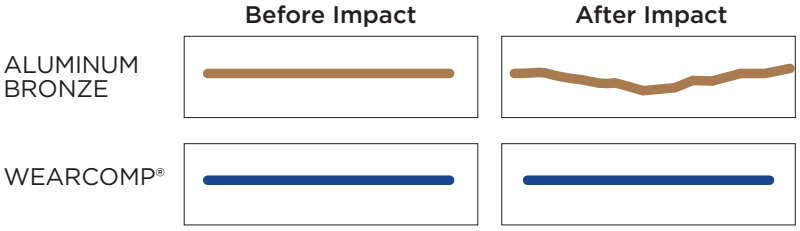
SURFACE PROFILE



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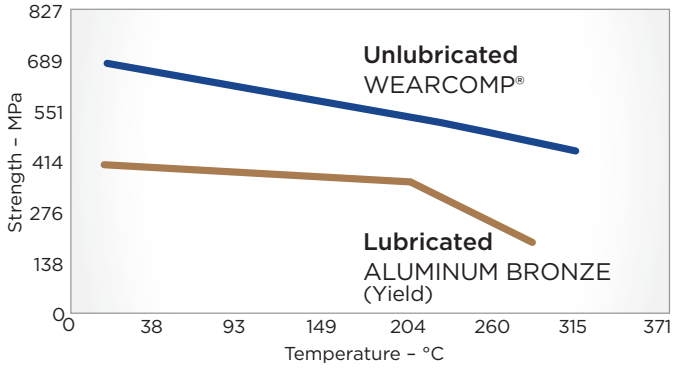
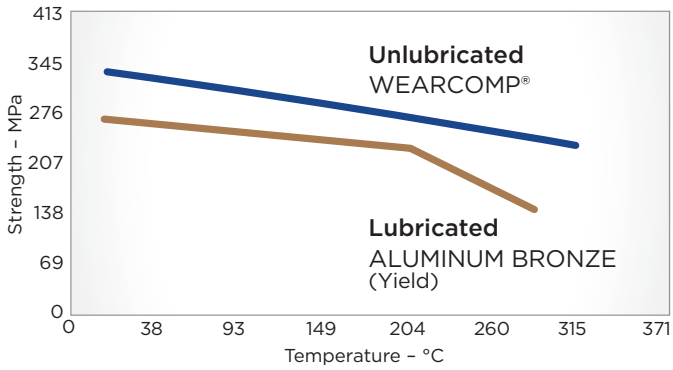


TENSILE STRENGTH COMPARISON



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INDUSTRIAL APPLICATION: SCRAP SHEARING MACHINERY

Customer Challenge

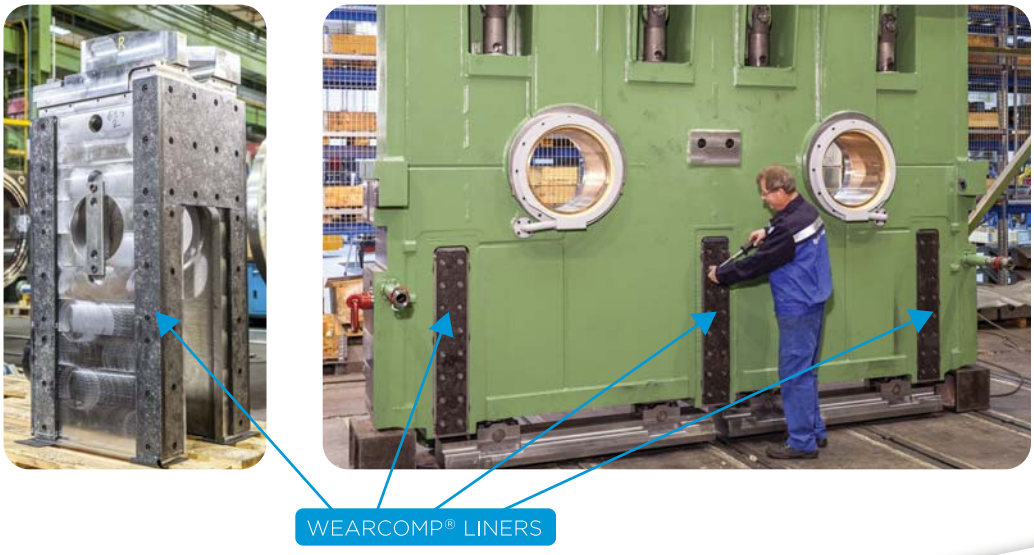
Equipment Damage, Downtime & Safety

- Scrap shears are a major investment; therefore, frequent downtime and costly servicing create an operational nightmare.
- Linear and radial plain bearings do protect equipment to keep them running. If the right bearing is not installed, this could create an even bigger issue, resulting in a short service life, messy lubrication and contamination.

Our Solution

WearComp® Carbon Fiber Composite Bearings

- Changing cycle of 3 to 4 years
- Grease-free guiding of the knife
- Less wear & longer service life of material
- No contamination of end product



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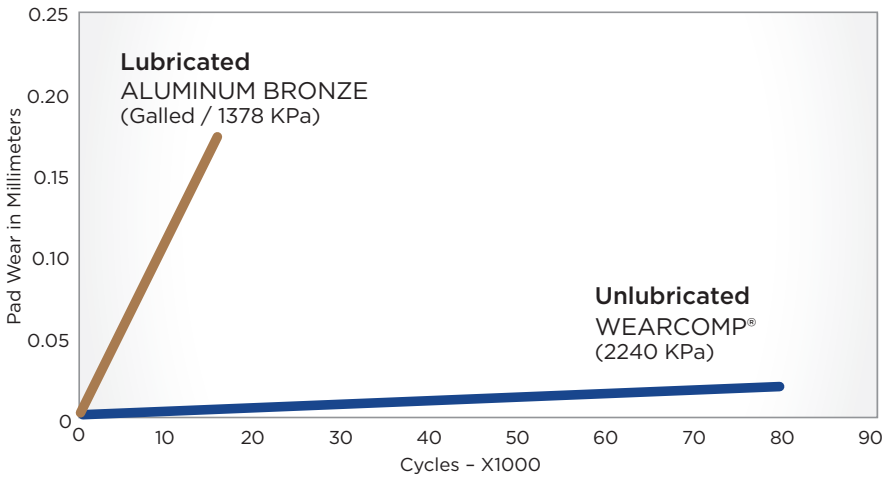

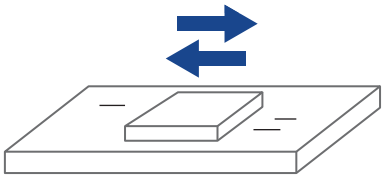

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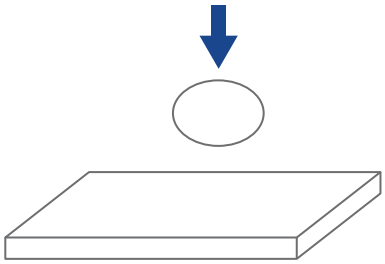

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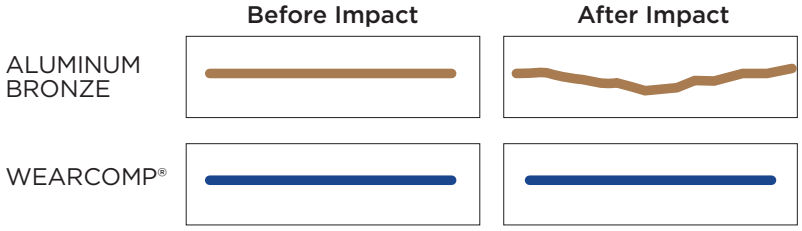

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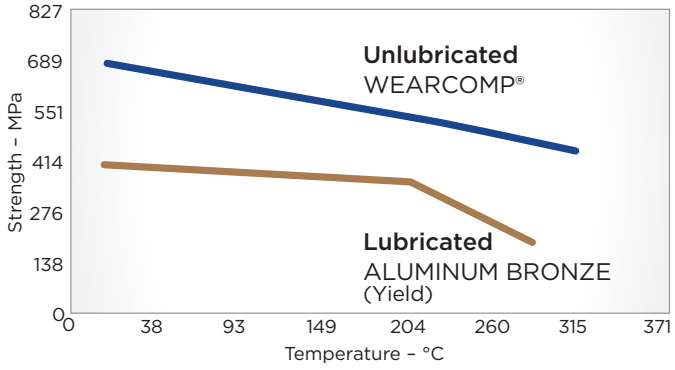

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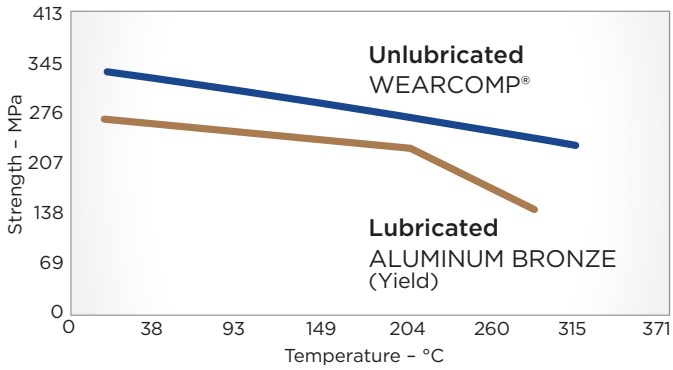

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INDUSTRIAL APPLICATION: STEEL & ALUMINUM CAN MANUFACTURING

Customer Challenge

Plant Productivity & High Cost of Downtime

Can manufacturing is an automated, high-speed precision operation that demands precise equipment alignment.

- Bronze bearing materials require lubrication and constant re-alignment, which lead to expensive downtime.
- Other thermoplastic plain bearing materials are soft, wear quickly, and deform under load causing alignment problems.

Our Solution

FibreComp® Bushings, Manifolds & Split Rings

Our industry-proven composite materials are self-lubricating with low wear rates and zero creep, which lead to increased productivity, reduced downtime and maintenance costs.

- 4 to 10 times longer service life compared to bronze and other thermoplastic materials
- 600°F (316°C) continuous operating with spikes to 1,000°F (538°C)
- Excellent dimensional stability & high impact resistance

FIBRECOMP® CRITICAL PARTS

Bushings for Necker Housing Reworks

- Critical tolerances for longer service life
- Reduced tool/die wear leading to less scrap and reduced lubrication

Bushings for Bodymaker & Trimmer Housing Reworks

- Minimal wear and dampen wobbling and other vibrations
- Extremely low wear rate maintains alignment and reduces wear on expensive dies

Manifolds for IC Spray, Decorator, Light Tester & Vacuum Parts

- Eliminates common causes of manifold failures (warping and uneven wear) through low wear, low co-efficient of friction and no wear to mating surface

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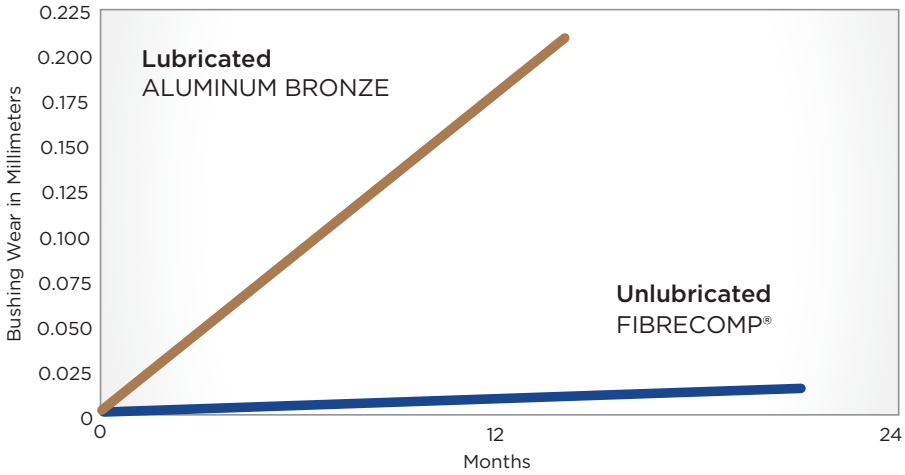
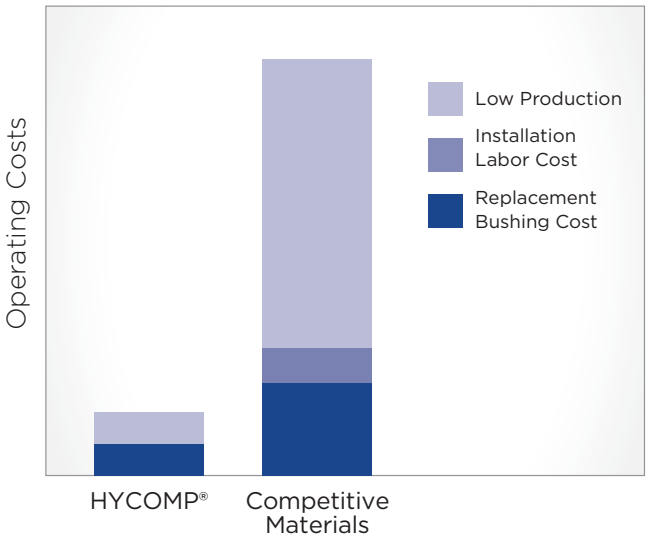
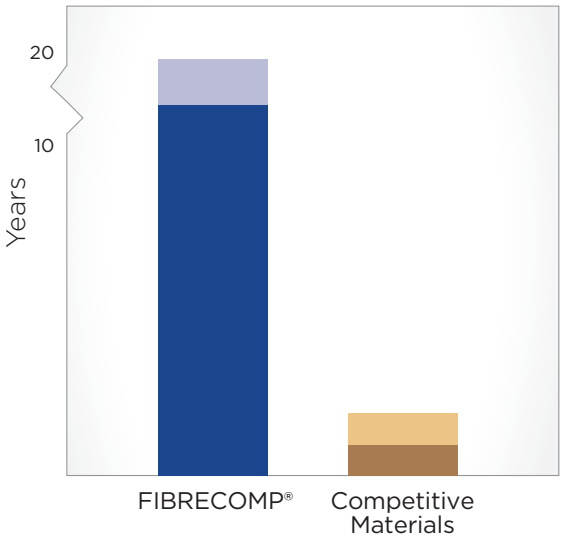
TRIMMER BUSHING WEAR TESTING



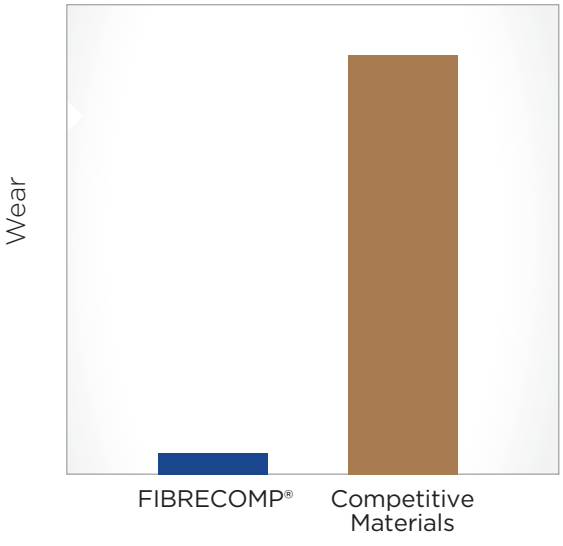
TYPICAL BUSHING OPERATING COST



TYPICAL MANIFOLD LIFE



TYPICAL SHELL DIE COMPONENT WEAR



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