

# J&L Refiner Plates: Ultra-Bar™ Patterns with PowerCast™ Technology

Ultra fine bar patterns deliver:

Optimum Fiber Quality.  
Longer Plate Life.  
Lower Operating Costs.

*Introducing*

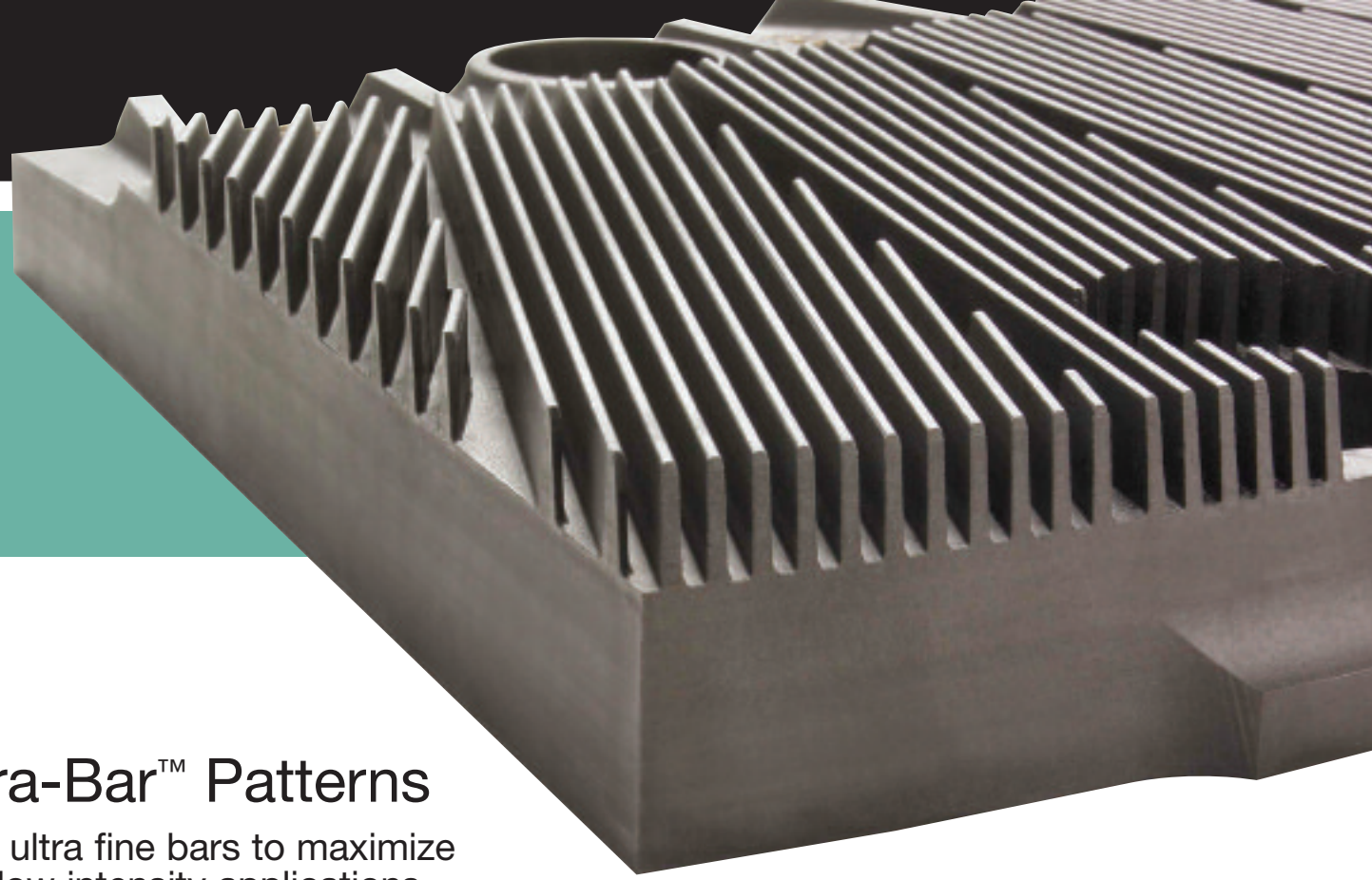


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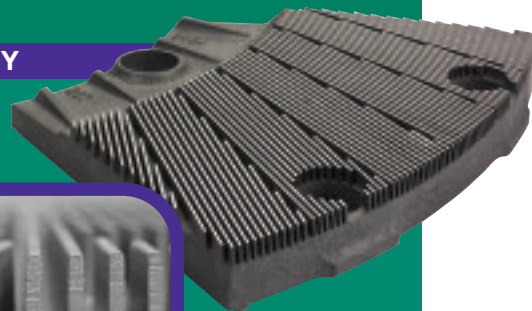


Look to J&L Fiber Services, the world leader in plate technologies, to meet your mill refining needs.

Building on four decades of experience, J&L redefines refiner plate casting technology with PowerCast.™ This new process extends J&L's casting capability to produce ultra-low intensity fine bar patterns.



**POWERCAST TECHNOLOGY**



Zero-Degree Bar Draft Angles

In effect, PowerCast Technology delivers an investment grade refiner plate casting. Application engineers can now design extremely low intensity patterns with taller ultra fine bars at virtually **Zero-Degree Bar Draft Angles**. PowerCast Technology allows for limitless pattern designs, high-strength castings, and superior alloys to provide the strongest and longest lasting refiner plates available.

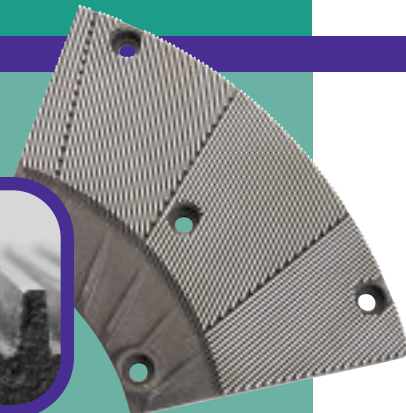
**COMPETITOR FABRICATED TECHNOLOGY**



Two-step welding process limits alloy selection

Fabricated brazed fine bar designs enable designers to create refiner plates with narrow bars, deep grooves and no draft angle. However, this manufacturing process restricts both alloy selection and breadth of plate designs, limiting pattern options.

**ORIGINAL CASTING TECHNOLOGY**



Limited fine bar designs

Original Casting Technology allows for an enormous range of pattern designs and endless possibilities of alloy combinations that serve the refiner plate market very well. This manufacturing process requires a 3-5 degree minimum draft angle on refiner plate bars. This draft restriction creates capacity limitations on low intensity pattern designs. Many applications still use this technology today and perform very well.

## Ultra-Bar™ Patterns

Taller ultra fine bars to maximize your low intensity applications.

Ultra-Bar Patterns use J&L's PowerCast Technology to produce taller ultra fine bars with virtually Zero-Degree Bar Draft Angles. Ultra-Bar designs optimize hardwood, OCC, DIP and Post Mechanical Refining applications. These patterns are available in the new revolutionary C96 alloy to extend life and consistently deliver a sharp bar edge.

Ultra-Bar Patterns will result in the following mill benefits:

- **Increased Pulp Strength.** Low intensity patterns allow maximum fiber development for hardwood, OCC, DIP and Post Mechanical Refining applications.
- **Longer Plate Life.** Taller bar heights, a superior C96 alloy and virtually Zero-Degree Bar Draft Angles extend refiner plate life.
- **Higher Refining Capacity.** Greater master-plate angle with deeper grooves and virtually Zero-Degree Bar Draft Angles maximize hydraulic capacity.

Ultra-Bar Patterns with PowerCast Technology is the only choice to maximize life, improve fiber development, and prevent bar bending and breakage in these tough applications.



**COMPARISON**

	Ultra-Bar Patterns with PowerCast Technology	Fabricated Fine Bar Technology
<b>Alloy</b>	C96 Surface Hardened Duplex Stainless Steel	17-4 Stainless Steel
<b>Bar Bending</b>	39% Additional Strength 34,900 lbs. bend strength	25,000 lbs. bend strength
<b>Bar Wear</b>	20% longer life; 50 Rc	36 Rc
<b>Construction</b>	Precision Zero-Degree Cast	Fabricated/brazed

**Choose J&L PowerCast Technology.**

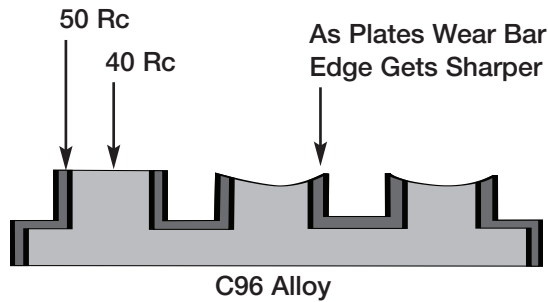
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## C96 – The next generation of refiner plate alloys

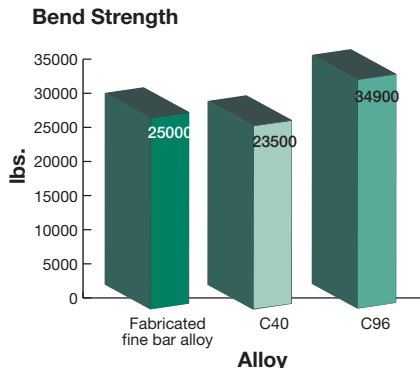
Longest life with the sharpest bar edge.

C96, expanding on the revolutionary family of C90 alloys, maximizes fiber development by maintaining a sharp bar edge throughout the refiner plate's life. A revolutionary surface hardened duplex stainless steel alloy provides exceptional strength and wear resistance to maximize life.

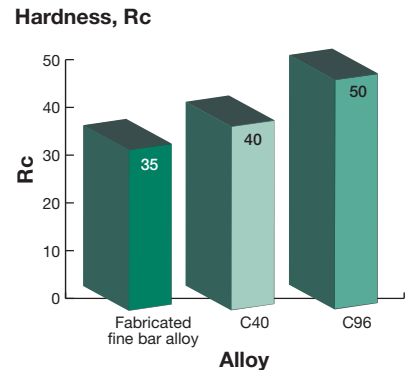
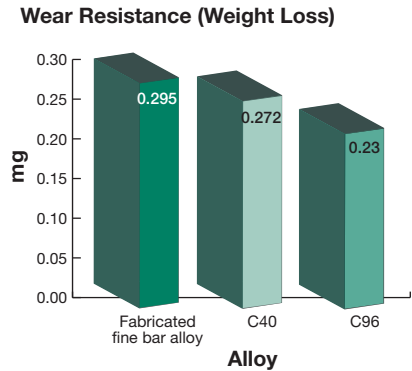
- Bar Edge Sharpness:** Effective energy transfer takes place on the refiner plate's bar edge. A sharp bar edge is critical to maximizing fiber development and refining efficiency. C96, a unique alloy, maintains a sharp bar edge throughout the life of the refiner plate. The sharp bar edge is maintained by combining a hardened edge with a softer bar face. C96 maximizes refining efficiency.



- Bar Breakage:** C96 provides a 39% increase in strength over fabricated plates using 17-4 stainless steel. C96 provides maximum resistance to bar bending and breakage and will extend life far beyond standard stainless steels.



- Bar Wear:** C96 is 32% harder and 22% more wear resistant than the 17-4 used with fabricated plates. J&L's unique C96 wear resistant alloy will provide the longest possible refiner plate life.



Contact your J&L Fiber Services representative to learn more about how Ultra-Bar™ Patterns with PowerCast™ Technology can improve your mill's refining needs today.