VERIFIED PERFORMANCE DATA & Quality Control Documentation

Field-Tested Service Life Data & Metallurgical Specifications

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PERFORMANCE DATA METHODOLOGY

The service life data presented in this document is compiled from:

- Controlled field trials at partner operations worldwide
- Customer feedback and wear tracking programs
- Laboratory testing under simulated conditions
- 35+ years of application engineering experience

Important: Actual service life varies significantly based on feed material characteristics, crusher settings, maintenance practices, and operational consistency. Data shown represents typical ranges under recommended operating conditions.

APPLICATION-SPECIFIC SERVICE LIFE DATA

Application	Alloy	Hours	Tonnage	Key Conditions
M-Sand (High Silica)	HC+Ceramic Plus	1,500-2,400	150K-300K	Pre-screen fines; clean feed
Asphalt Recycling	Mart+ Ceramic	1,000-1,800	100K-220K	Overband magnet; centered feed
Concrete Recycling	Mart+ Ceramic	800-1,600	80K-180K	Steel picking; controlled feed
Concrete (Standard)	Martensitic	400-700	50K-90K	Manual rebar removal; flip 200-300h
Limestone (Clean)	HC+ Ceramic	1,500-3,000	200K-400K	Grizzly screen; tight S1/S2
Limestone (Secondary)	High Chrome	800-1,500	100K-200K	Ultra-clean feed; no tramp metal
Basalt (Secondary)	HC+Ceramic Plus	1,200-2,200	150K-280K	Clean feed; lower RPM
Mixed C&D Demolition	Martensitic	400-800	50K-100K	Overband magnet; slower speed
Primary (Variable)	Mn18Cr2	600-1,200	80K-160K	Work-hardening; flip 250-400h
Primary (Aggressive)	Mn+TiC	800-1,400	100K-180K	TiC edge life; pre-screen fines
Gravel (Clean)	HC+ Ceramic	1,800-3,200	220K-420K	Washed feed; low impact

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QUALITY CONTROL STANDARDS

Material Certification:
• Full chemical analysis for each heat/batch
• Spectroscopic verification of alloy composition
• Material traceability from raw material to finished product

Hardness Testing:
• Brinell (HB) testing per ASTM E10
• Rockwell (HRC) testing per ASTM E18
• Multiple test points across wear surface
• Hardness mapping available on request

Dimensional Inspection:
• CMM verification of critical dimensions
• Weight tolerance ±3% for rotor balance
• Surface finish inspection
• Mounting feature verification

Non-Destructive Testing:
• Visual inspection (100% of production)
• Ultrasonic testing (UT) for internal defects on request
• Magnetic particle inspection (MPI) available

CERTIFICATIONS & COMPLIANCE

ATF Crusher Parts manufacturing facilities maintain:

• **ISO 9001:2015** — Quality Management System certification
• Material test reports (MTR) available for all shipments
• Heat treatment records and process documentation
• Casting process quality records
• Dimensional inspection reports

Available Documentation on Request:
• Mill test certificates for raw materials
• Heat treatment cycle records
• Hardness test certificates with location mapping
• Dimensional inspection reports
• Ultrasonic testing certificates (where applicable)

COST-PER-TON ANALYSIS

Calculation Formula:

Cost Per Ton = (Blow Bar Cost + Shipping + Installation Labor + Downtime Cost) ÷ Total Tonnage

Example Comparison:

Factor	Standard HC	HC + Ceramic
Blow bar set cost	$6,000	$9,500
Shipping	$500	$500
Installation labor (2 hrs)	$400	$400
Downtime cost (2 hrs)	$1,000	$1,000
TOTAL COST	$7,900	$11,400
Service life (tons)	150,000	300,000
COST PER TON	$0.053	$0.038
Annual savings (500K tons)	—	$7,500

Key Insight: *Higher-cost ceramic composite blow bars often deliver 25-40% lower cost-per-ton compared to standard alloys in suitable applications, plus reduced downtime and labor costs from fewer change-outs.*

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