

Bimetallic Barrel Technology

Optimize your process, performance and quality with an innovative barrel alloy from the field's leader in barrel technology

Benefits

- Extended working life
- Optimum abrasive and corrosive wear resistance
- Increased throughput and product quality through precision fit between screw and barrel for a longer period of time



Features

- Precision engineered barrels with superior chemical and physical properties for full range of process environments
- Best high wear solutions offering for processors with superior alloys from general purpose to the most complex applications
- High quality proprietary backing steel for less inherent stress, better straightness during heat cycles for the ultimate in strength and straightness
- Computer controlled furnace ensuring correct casting, preparation and repeatability, uniform bimetallic carbide distribution and maximized hard surfacing compatibility
- Barrels manufactured to straightness specification that exceeds all industry standards, even for barrels that are over 7.6 m (300') long

is one of world's leading manufacturers of components and melt delivery systems for injection and extrusion machinery, offering the highest quality in bimetallic barrels, high performance screws, preassembled plasticating systems, heat transfer rolls, melt pumps, screen changers, pelletizers, cleaning ovens, and advanced process testing and training services.

The technical leadership and personal service is backed by decades of engineering, materials, process and application experience. has the integrated engineered solutions to optimize processes, combat wear, boost output, improve and maintain quality, whether it is designing single components or integrating elaborate systems.

invented bimetallic barrels over 80 years ago and continues to lead the way in developing improved production processes and alloys for injection molding and extrusion applications providing longer working life, increased productivity, enhanced process consistency and product quality.

Bimetallic barrels from will assure any processor of optimum production conditions.

Barrel Alloys

For outstanding wear resistance for any process environment

X102® Standard

X220™ Standard + Corrosion

X306® Corrosion

X800® Carbide

Barrel

Backing Materials



High quality proprietary backing steel for strength and straightness

BM32® for[®] Extrusion Applications

BM 58® / BM 63 for Injection Applications


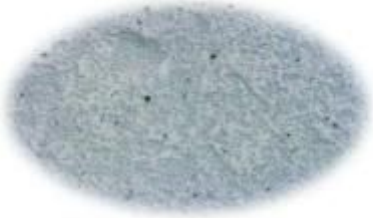
Bimetallic Barrel Technology

Barrel Alloy Overview

Alloy Specification	X102	X220																		
Microstructure 100X																				
Composition	Iron based	Iron-Chromium based																		
Hardness	58-65 HRc	64-69 HRc Single:																		
Density	7,6kg/dm ³	7,5kg/dm ³ kg/dm ³																		
Working Temperature	400°C 752°F	450°C 650°C 842°F 1202°F																		
Microhardness Phase	<table border="0"> <tr> <td>Phase</td> <td>Microhardness HV0.1</td> </tr> <tr> <td>Iron Boride/Carbide</td> <td>1100-1300</td> </tr> <tr> <td>Eutectic</td> <td>950-1050</td> </tr> <tr> <td>Bainite/Martensite</td> <td>400- 600</td> </tr> </table>	Phase	Microhardness HV0.1	Iron Boride/Carbide	1100-1300	Eutectic	950-1050	Bainite/Martensite	400- 600	<table border="0"> <tr> <td>Phase</td> <td>Microhardness HV0.1</td> </tr> <tr> <td>FE/CR-Boride/Carbide</td> <td>1</td> </tr> <tr> <td>Eutectic</td> <td>Ni-Si-Eutectic</td> </tr> <tr> <td>Bainite/Martensite</td> <td>1 Ni-Boride</td> </tr> <tr> <td></td> <td>Matrix-</td> </tr> </table>	Phase	Microhardness HV0.1	FE/CR-Boride/Carbide	1	Eutectic	Ni-Si-Eutectic	Bainite/Martensite	1 Ni-Boride		Matrix-
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Application	General Purpose	General Purpose Corrosion&																		
Filler Content	upto 15%	upto 15% greater																		
Typical Plastics	ABS, HIPS, PE, PS, PP etc.	ABS, HIPS, PE, PS, PP etc. VCP																		
Resistance to Wear	Moderate	Moderate Moderate																		
Resistance to Corrosive Wear	Poor	Moderate Excellent																		



Bimetallic Barrel Technology

X306		X800	
			
Nickel-Cobalt based		Tungsten Carbide-Nickel based	
Single: 44-54 HRc, Twin: 48-54 HRc		58-66 HRc	
7,9kg/dm ³		10,7kg/dm ³	
600°C 1112°F		650°C 1202°F	
Phase	Microhardness HV0.1	Phase	Microhardness HV0.1
Ni/Cr-Boride	1100-1300	WC-Carbide	1350-2100
Eutectic	800- 950	Ni-Si-Eutectic	750-1100
Ni-Co Matrix	350- 450	Ni-Boride	1050-1250
		Matrix	350-450
High Corrosion		High Wear & Corrosion	
up to 15%		greater than 15%	
CPVC, PVC rigid, some FEP etc.		ABS fiber-glass filled, PP mineral filled, PA, PC, PBT, PEEK, engineering blends (ABS/PBT), LCP	
Moderate		Excellent	
Excellent		Excellent	

[barrels](#)
meet the needs for wear
and corrosion resistance
for all requirements

specialists
will advise you of the best wear
systems available for your specific
process requirements and the
possible combinations of barrel
and screw materials.

[Dimensions](#)

Barrel Lengths:

- up to 7750 mm (305") multipart
- up to 6100 mm (240") without
- resorting to butt welding

Diameters:

- 18 mm (.708") to 610 mm (24")
- ID
- up to 725 mm (30") OD

[Barrel Rebuilding](#)

Take advantage of
's relining service for partially
relining your barrel using standard
hardened alloys or premium
bimetallic liners. For evaluation
of economics of relining versus
replacement contact your
representative.

Bimetallic Barrel Technology

Win the battle against corrosive and abrasive wear with
s best general purpose barrel alloy X220™

The X220 barrel alloy is the newest addition to the alloy portfolio and the industry's best choice for general purpose applications.

Benefits

- Extended working life through improved resistance to corrosive and abrasive wear
- Improved productivity and product quality through better screw to barrel fit for a long period of time
- Reduced downtime for extrusion processors
- Consistent, on-spec production

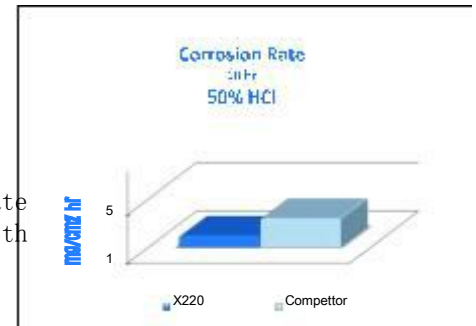
Features

- Newly developed alloy of iron, chromium and boride
- Chromium content more than double that of the X200™ alloy already available from



Case Study

In acid immersion tests performed by , the new X220 alloy exhibited a 55% improvement over the European standard material in terms of corrosion rate in sulfuric acid, and a 44% improvement with hydrochloric acid.



Corporation Polymer Processing Systems

Corporation's Polymer Processing Systems group provides customers with a uniquely broad range of technologies for melting, conditioning, dispensing, and shaping plastics. manufactures precision melt stream components starting with screws and barrels for extrusion and injection molding, proceeding downstream to dies for film, sheet, coating, and pellet production. In between are a diversity of critical components such as filtration systems, pumps, and valves.

Headquartered in New Castle, Pennsylvania, U.S.A., is part of the Corporation Polymer Processing Systems group and is a leading international supplier of bimetallic barrels, high performance screws, preassembled plasticating systems, heat transfer rolls, melt pumps, screen changers, pelletizers, cleaning ovens, and advanced process testing and training services. The company operates plants in the United States, Thailand and Germany and a network of sales agents and service points around the world.