

Manufacturers

Of High Quality

Precision

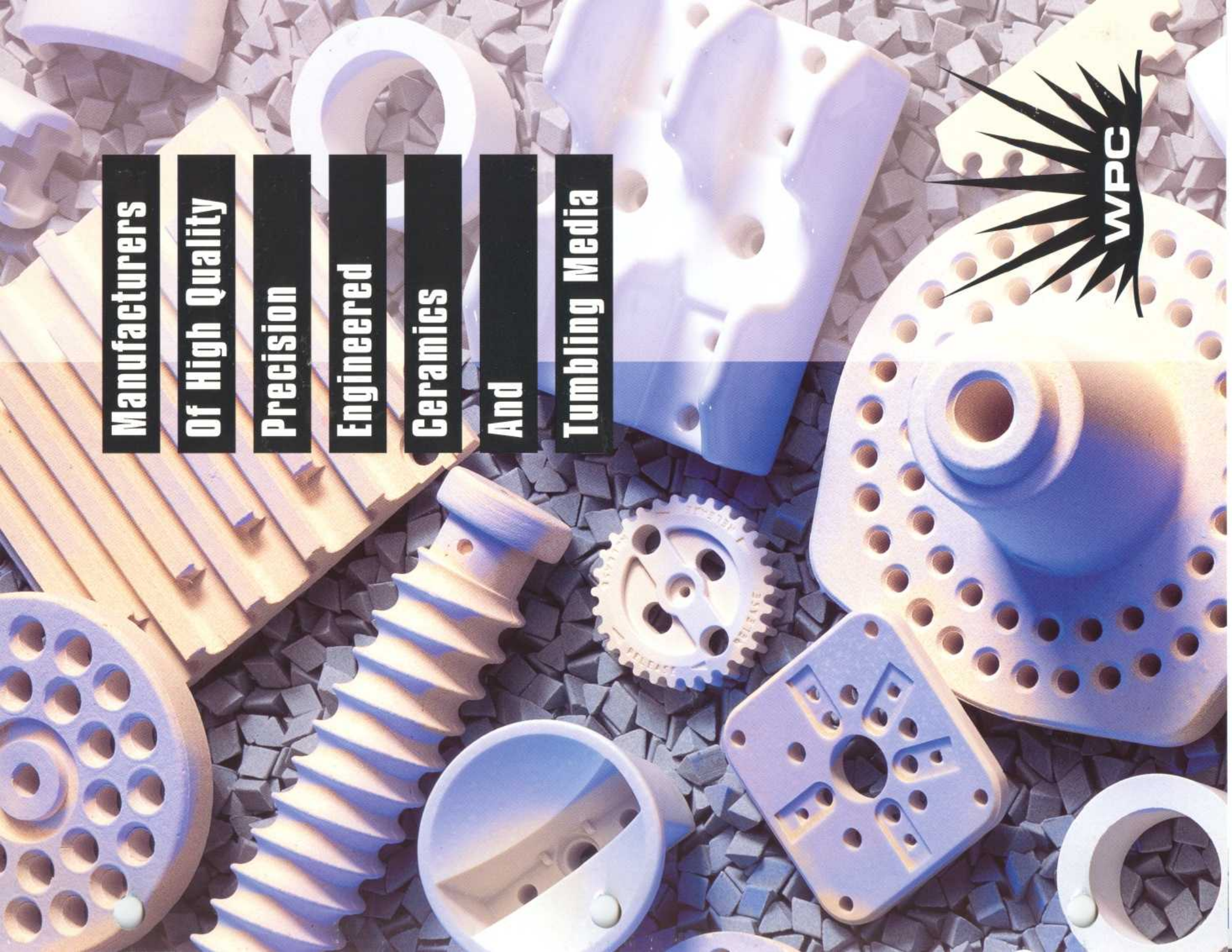
Engineered

Ceramics

And

Tumbling Media

WPC



Precision Engineered Ceramics

Wisconsin Porcelain is the business to produce engineered shapes where the material of choice is ceramic. Ceramics are usually selected as the material of construction for their thermal properties, electrical properties or their cost effectiveness. Tight tolerance components are used in a wide variety of applications including heater supports, high voltage insulators and cost effective fuse housings. Whatever your reason might be

for choosing ceramic material, we can produce your parts to specification and in volume.

Through the use of Statistical Process Control at all stages of the manufacturing process, we are able to reduce part to part variation. With the paper trail created by SPC, we are also able to identify error sources. By identifying trouble spots, we are better able to highlight critical operations and implement systems to control important processing steps.

Steatite



Steatite is used primarily in the electronic and electrical appliance industries. Steatite has high dielectric strength over wide temperature ranges, low power loss in high frequency fields, moisture absorption of less than 1 percent and has superior impact resistance. Steatite is composed of magnesium silicate, small amounts of clay and ceramic fluxes. Steatite can be machined for reentrant grooves, threaded or extruded. Wisconsin Porcelain steatite is particularly suited to high speed, fully automated assembly operations. Typical applications are heater coil supports, grommets, bushings, washers, stand-off insulators, rheostat bases and thermostat parts.

Porcelain



Porcelain is used in applications where dielectric strength, mechanical strength, hardness and resistance to high temperatures are desired. It is also resistant to strong acids and alkali. Porcelain is composed primarily of clay, flint and feldspar. Insulators, thermal blocks, fuse bodies, sockets and grinding spheres are just a few possible users.

Refractories



Refractories have extremely low thermal expansion coefficients which make them suitable for high temperature applications. Additional qualities include good mechanical strength. Wisconsin Porcelain refractory materials include cordierite, zircon porcelains and mullite. All refractory materials may be pressed or extruded. Mullite can be compounded in varying ranges of porosity and fusing temperatures. Special shapes can be fabricated upon request.

Technical Data	Units of Measure	Test Method	Porcelain	L-3 Steatite	L-5 Steatite	Wet Pressed Refractories	Dry Pressed Refractories
Water Absorption	%	ASTM C-20	0.0 - 0.07	0.0 - 0.05	0.0 - 0.05	5.8	6
Specific Gravity	g/cc	ASTM C-20	2.4	2.5	2.6	2.3	2.2
Color			White	Light Tan	Dark Tan	Cream	White
Softening Temperature	Degrees F Degrees C		2,600 1,427	2,600 1,427	2,600 1,427	2,600 1,427	2,600 1,427
Safe Operating Temperature	Degrees F Degrees C		1,800 983	1,830 999	1,830 999	2,200 1,205	2,200 1,205
Hardness	Mohs Scale	ASTM E-18	7.5	7.5	7.5	7	7
Coefficient of Expansion	20-300°C Per °C - 20-700°C	ASTM C-372	5.8 5.5	7.4 7.3	7.8 7.6	2.6 2.6	3 2.8
Tensile Strength	psi	ASTM D-116	3,500	8,000	9,000	3,500	3,500
Compressive Strength	psi	ASTM C-528	55,000	70,000	80,000	30,000	*30,000
Flexural Strength	psi	ASTM C-674	10,000	18,000	20,000	7,000	7,000
Resistance to Impact (1/2" rod)	in. - lbs.	ASTM D-256	2.5	4.5	4.2	2.4	2.5
Thermal Conductivity	cgs	ASTM C-480	0.0045	0.006	0.006	0.004	0.004
Dielectric Strength	volts/mil	ASTM D-149	200	250	235	100	100
Dielectric Constant	at 1 megacycle	ASTM D-150	6.2	5.4	6.1	5.0	5.0
Power Factor	at 1 megacycle		0.009	0.0031	0.00085	0.006	0.008
Loss Factor	at 1 megacycle	ASTM D-150	0.056	0.0167	0.0052	0.03	0.04
Te Value	Degrees F Degrees C		650 344	928 499	1,540 838	1,410 766	1,230 666

Tumbling Media



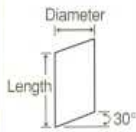
Angle Cut Cylinders

Angle/Cylinders are a uniquely designed tumbling media to improve finishes and cut costs. They reach into the most remote crevices and holes and virtually eliminate bridging or stacking. Standard in these sizes:

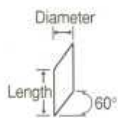


20° Angle Cut Triangles

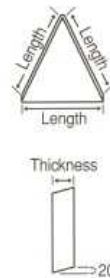
Angle/Triangles reach into remote areas not accessible to regular square-cut media. They provide an amazingly efficient media which retains its basic shape. Standard in these sizes:



30° Angle Cut Cylinders			
Part ID	Description	Diameter	Length
10000	F 1/8"	1/8"	11/32"
10030	F 3/16"	3/16"	11/32"
10070	F 5/16"	5/16"	9/16"
10100	F 7/16"	7/16"	25/32"
10140	F 3/8"	5/8"	1 1/8"
10700	ECH 3/16"	3/16"	9/16"
10710	ECH 7/16"	7/16"	25/32"
10720	ECH 3/8"	5/8"	1 1/8"
10730	ECH 7/8"	7/8"	1 1/2"
10010	C 1/8"	1/8"	11/32"
10040	C 3/16"	3/16"	11/32"
10080	C 5/16"	5/16"	9/16"
10110	C 7/16"	7/16"	25/32"
10150	C 3/8"	5/8"	1 1/8"
10180	C 7/8"	7/8"	1 1/2"
10020	XC 1/8"	1/8"	11/32"
10050	XC 3/16"	3/16"	11/32"
10090	XC 5/16"	5/16"	9/16"
10120	XC 7/16"	7/16"	25/32"
10160	XC 3/8"	5/8"	1 1/8"
10190	XC 7/8"	7/8"	1 1/2"
10268	HE 5/16"	5/16"	9/16"
10269	HE 7/16"	7/16"	25/32"
10911	HE 3/8"	5/8"	1 1/8"
10771	HE 7/8"	7/8"	1 1/2"
10060	H 3/16"	3/16"	11/32"
10130	H 7/16"	7/16"	25/32"
10170	H 3/8"	5/8"	1 1/8"
10968	PZ 1/8"	1/8"	11/32"
10958	PZ 3/16"	3/16"	11/32"
10979	PZ 5/16"	5/16"	9/16"
10987	PZ 7/16"	7/16"	25/32"



60° Angle Cut Cylinders			
Part ID	Description	Diameter	Length
10200	F 1/4" A60	1/4"	7/16"
10230	F 3/8" A60	3/8"	9/16"
10210	C 1/4" A60	1/4"	7/16"
10220	C 5/16" A60	5/16"	1/2"
10240	C 3/8" A60	3/8"	9/16"

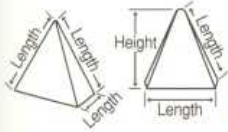


Part ID	Description	Length	Thickness
10380	F 3/8" T	3/8"	3/16"
10428	F 5/8" T	5/8"	3/16"
10470	F 7/8" T	7/8"	5/16"
10780	ECH 5/8" T	5/8"	3/16"
10790	ECH 7/8" T2	7/8"	3/8"
10791	ECH 7/8" T3	7/8"	15/16"
10800	ECH 1 1/8" T	1 1/8"	3/16"
10853	ECH 1 1/8" T3	1 1/8"	15/16"
10810	ECH 1 3/8" T	1 3/8"	1/2"
10820	ECH 1 7/8" T	1 7/8"	5/8"
10390	C 3/8" T	3/8"	3/16"
10410	C 5/8" T2	5/8"	3/8"
10431	C 3/8" T	3/8"	3/16"
10430	C 5/8" T2	5/8"	3/8"
10450	C 5/8" T3	5/8"	9/16"
10480	C 7/8" T	7/8"	5/16"
10520	C 7/8" T3	7/8"	15/16"
10540	C 1 1/8" T	1 1/8"	3/16"
10590	C 1 1/8" T3	1 1/8"	15/16"
10610	C 1 3/8" T	1 3/8"	1/2"
10630	C 1 7/8" T	1 7/8"	5/8"
10370	XC 3/16" T4	3/16"	3/4"
10400	XC 3/8" T	3/8"	3/16"
10420	XC 3/8" T2	3/8"	3/8"
10429	XC 5/8" T	5/8"	3/16"
10440	XC 5/8" T2	5/8"	3/8"
10460	XC 5/8" T3	5/8"	9/16"
10490	XC 7/8" T	7/8"	5/16"
10530	XC 7/8" T3	7/8"	15/16"
10550	XC 1 1/8" T	1 1/8"	3/16"
10600	XC 1 1/8" T3	1 1/8"	15/16"
10620	XC 1 3/8" T	1 3/8"	1/2"
10640	XC 1 7/8" T	1 7/8"	5/8"
10271	HE 5/8" T3	5/8"	9/16"
10841	HE 7/8" T3	7/8"	15/16"
10272	HE 1 1/8" T2	1 1/8"	5/8"
10273	HE 1 3/8" T	1 3/8"	1/2"
10274	HE 1 7/8" T	1 7/8"	5/8"
10510	H 7/8" T2	7/8"	5/8"
10570	H 1 1/8" T	1 1/8"	15/16"
10580	H 1 1/8" T2	1 1/8"	5/8"
10500	SC 3/8" T	3/8"	3/16"
10560	SC 1 1/8" T	1 1/8"	3/16"



Pyramids and Tetrahedrons

These two shapes combine the excellent tumbling qualities of Cylinders, Triangles, Cones and Star shapes. The flat sides provide the best in cutting surfaces, and are designed to reach into holes and slots without lodging...They react well in vibratory equipment. The orbital action in round bowl type equipment is extremely good.



Part ID	Description	Length	Height
10350	C 1 1/4" PY	1 1/4"	1"
10360	C 1 1/4" Tet	1 1/4"	1 1/4"



20° Angle Cut Stars

Angle/Stars may replace three or more sizes of other preformed media and provides for a wide variety of parts—both simple and intricate shapes. Standard in these sizes:

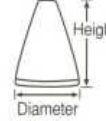


Part ID	Description	Length	Thickness
10974	ECH 5/8" S	5/8"	1/4"
10891	ECH 7/8" S	7/8"	5/16"
11056	ECH 1 1/8" S	1 1/8"	3/8"
10260	C 7/8" S	7/8"	5/16"
10280	C 1 1/8" S	1 1/8"	3/8"
10250	XC 5/8" S	5/8"	1/4"
10270	XC 7/8" S	7/8"	5/16"
10290	XC 1 1/8" S	1 1/8"	3/8"
10275	HE 5/8" S	5/8"	1/4"
10276	HE 7/8" S	7/8"	5/16"
10277	HE 1 1/8" S	1 1/8"	3/8"



Cones

Cones are designed so they will easily separate from parts. Their unique shape enables them to reach into remote areas without lodging. Standard in these sizes:

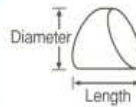


Part ID	Description	Diameter	Height
11006	FB 1/8" CN	1/8"	1/4"
11007	FB 3/16" CN	3/16"	3/8"
10300	FB 3/8" CN	3/8"	1/2"
10310	FB 7/16" CN	7/16"	5/8"
10320	FB 1 1/16" CN	1 1/16"	3/4"
10330	C 3/4" CN	3/4"	7/8"
10340	XC 3/4" CN	3/4"	7/8"



Cylindrical Wedges

The Cylindrical Wedge is one of our most versatile media products. It combines the excellent surface finish of a cylinder, while the large flat sides provide a maximum cutting area. Standard in these sizes:



Part ID	Description	Diameter	Length
10031	ECH 5/8" WG	5/8"	3/4"
10910	ECH 1" WG	1"	1 1/8"
10920	ECH 1 1/2" WG	1 1/2"	1 5/8"
11055	C 1" WG	1"	1 1/8"
10892	C 1 1/2" WG	1 1/2"	1 5/8"

Compositions

"FB" Media—For very fine burnishing

A ceramic media which contains no abrasive. It's recommended for burnishing and polishing operations. This very hard and long-wearing media weighs approximately 85 pounds per cubic foot and is off-white in color.

"F" Media—For light deburring and burnishing

"F" media contains just the right amount of finely-sized aluminum oxide abrasives for light deburring. When used with proper compounds, it will impart a very desirable burnished, or polished finish. It weighs approximately 85 pounds per cubic foot and is white in color.

"ECH" Media—For cutting and fine finishing

"ECH" Media is a general purpose pre-tumbled media containing Aluminum Oxide abrasive. Intended primarily for medium cut applications, it will leave a smooth surface finish because of the size of the abrasive grain. Economically priced, "ECH" media is extremely efficient when the amount of the metal removal is compared to media wear. It weighs approximately 90 pounds per cubic foot and is dark brown in color.

"C" Media—For cutting or burnishing

"C" media contains a coarser-grained aluminum oxide abrasive. Its rate of metal cut compared to media wear makes it a very efficient media. When used with proper compounds, "C" media will also provide a burnished finish. It weighs approximately 85 pounds per cubic foot and is blue in color.

"XC" Media—For aggressive cutting

This unusually aggressive media gets to work right away in the removal of heavy burrs, flash, or scale. Since it is made with finely sized aluminum oxide abrasive, amazingly good finishes can be obtained. It weighs approximately 85 pounds per cubic foot and is greenish-grey in color.

"HE" Media—For aggressive cutting and large equipment

Our "HE" media has been formulated for applications involving centrifugal force equipment and large cross-section vibrators. The Aluminum Oxide abrasive in this pre-tumbled media is blended with a hard ceramic body to increase durability and minimize fracturing. A very fast cutting composition, this media weighs approximately 100 pounds per cubic foot and is tan in color.

"SC" Media—Especially suited for materials to be welded, brazed or soldered

"SC" is an aggressive cutting media which contains silicon carbide abrasive grain. It is recommended for use on parts that can have no aluminum oxide impregnation (usually parts which are to be welded, brazed or soldered). It weighs approximately 85 pounds per cubic foot and is white in color with blue specks.

"H" Media—For super fast cutting

A tough, faster-cutting, longer-wearing, very efficient cutting media. "H" media contains aluminum oxide abrasive grain, weighs approximately 108 pounds per cubic foot and is grey in color.

"PZ" Media—Ideal for burnishing or accelerated chemical deburring

An extremely heavy, high-density media that can replace steel media for burnishing. Increased weight decreases time cycles in acid process deburring. It weighs approximately 130 pounds per cubic foot and is cream in color.

Wisconsin Porcelain Company is one of the nation's largest manufacturers of precision ceramics. Customers include an impressive list of diverse companies, each with ceramic needs for specific applications.

Precision Engineered Ceramics

Our commitment to quality began back in 1919 and it continues today.

Statistical Process Control used during manufacturing, assures that all necessary dimensions are kept. Only the finest quality raw materials are selected to provide the material performance our customers demand.

Precision equipment and automated controls enable us to provide the most cost effective ceramic solutions available. A large staff of ceramic specialists insures the same dedication to craftsmanship and value that has marked Wisconsin Porcelain products from the beginning.

Internal benchmarking, such as on time delivery and lead time reductions provide for exceptional service. Additional services include in-house laboratory, pressing, extruding and finishing.

Quality By

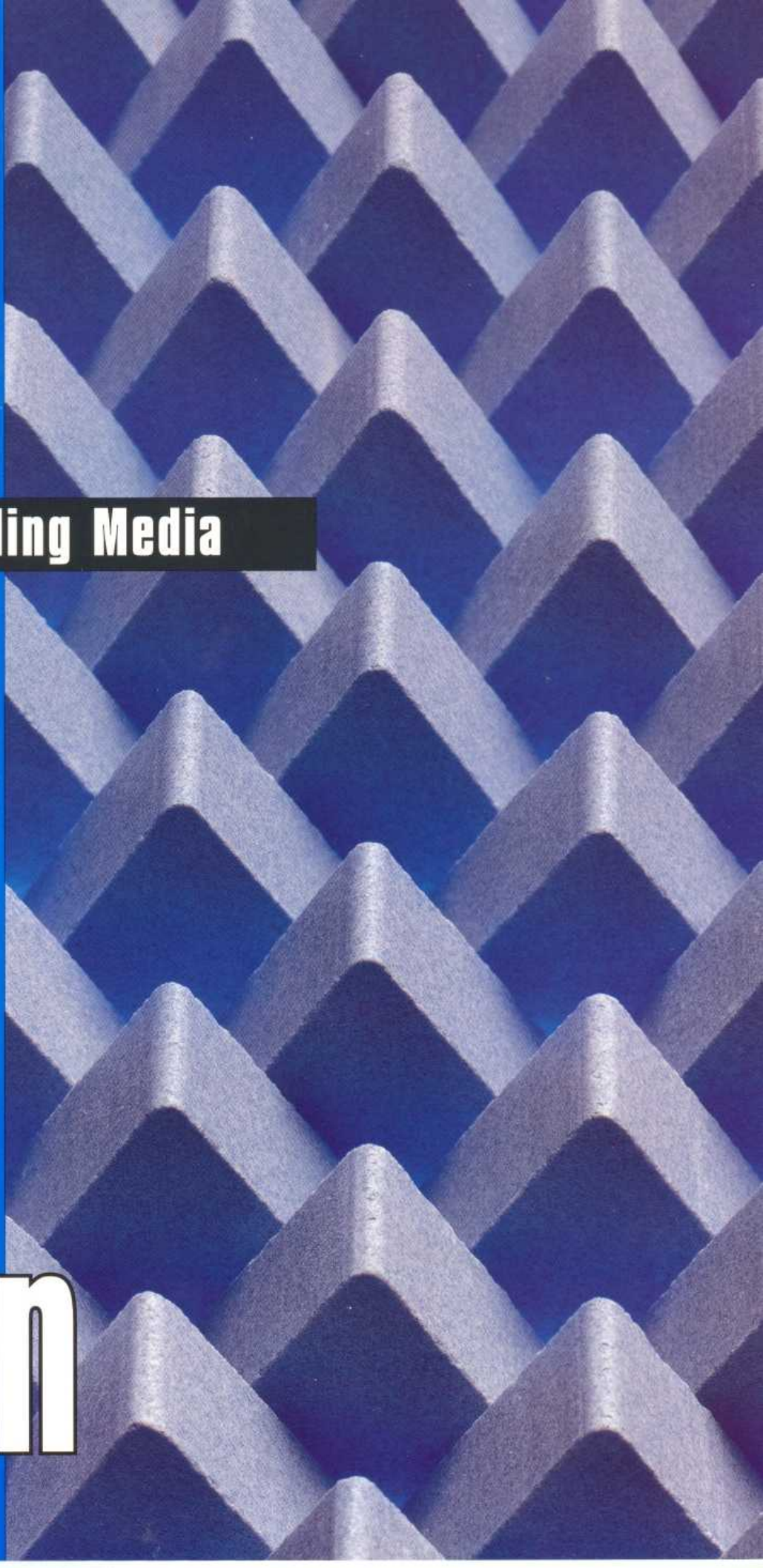
Wisconsin Porcelain would like to introduce you to our line of ceramic preformed tumbling media. In 1955, Wisconsin Porcelain became the first domestic manufacturer of ceramic preformed tumbling media. Since that time, we have maintained our reputation as the leader in the metal finishing industry.

Wisconsin Porcelain can offer you the largest selection of compositions, shapes and sizes available, the industry's most consistent sizing, and the largest inventory of finished media ready for immediate delivery.

Our pre-tumbling process minimizes chipping and the use of only virgin abrasive grain means unmatched quality in all of our media.

Tumbling Media

Design





**WISCONSIN
PORCELAIN
COMPANY**

RODECO COMPANY

Metal Finishing Equipment and Supplies
5811 Elwin Buchanan Drive
Sanford, North Carolina 27330
(919) 775-7149 • Fax (919) 774-3130