TOOLMAKER SOLUTIONS

Sawing Applications

Cemented carbide tips for circular, hole, band, and chain saws

HYPERION
Materials & Technologies

WELCOME TO HYPERION

Hyperion Materials & Technologies is an engineering company with more than six decades of experience in the development and manufacturing of innovative cemented carbides, cubic boron nitrides, and diamonds. In addition to innovative materials, Hyperion offers our extensive knowledge, unique services, and application development capabilities to support our customers' competitive needs.

Hyperion's technical expertise and global manufacturing facilities are a foundation from which a network of local sales and customer service teams support our customers in the development of effective solutions.

HYPERION SAWING APPLICATIONS

We are over 1,500 people dedicated to creating solutions for your hard and super-hard material needs through partnership, innovation, and invention. Through extensive research and customer testing, we have developed a comprehensive offering of cemented carbide grades to meet the changing manufacturing and productivity demands in metal sawing.

We supply the following blanks:

- Saw tips for metal cutting saw blades
- Band saw balls
- Cylinders
- Customized tip designs
- Tips for other applications.

CUSTOMER SPECIFICATIONS

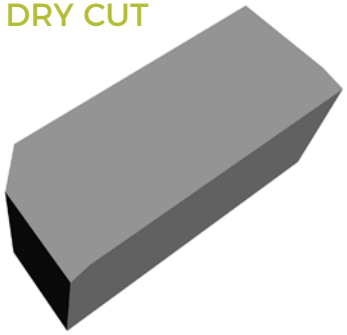
Metal cutting saw tips are manufactured to customer specifications. A Hyperion Product Specialist can help you determine which cemented carbide grade and quantity to order to satisfy your sawing conditions.

CIRCULAR SAW APPLICATIONS

DRY CUT

Hyperion Materials & Technologies manufactures saw tips that are designed for cemented carbide or CERMET tipped circular saws and cover most geometries. The cemented carbide grades designed for these applications perform well under the elevated temperatures that will be present in the absence of cooling. Cemented carbide grade superiority together with carbide design expertise at Hyperion will offer you a solution that enables high productivity of the finished saw blade.

DRY CUT

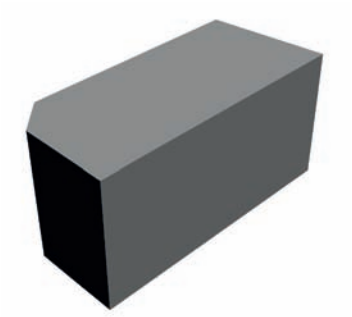


CIRCULAR SAW APPLICATIONS

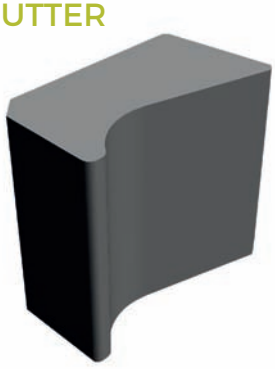
FLY CUTTER / ORBIT CUTTER

Hyperion has designed cemented carbide tips for most geometries of tipped circular saws. As this is a high productivity application, we have engineered the design of the tips and the wear resistance of the cemented carbide grades to create a tip second to none. These solutions will deliver a smooth cut for a long time and ensure your machine downtime is kept to an absolute minimum.

FLY CUTTER



ORBIT CUTTER



CIRCULAR SAW APPLICATIONS

COLD SAW

Hyperion Materials & Technologies' chip breaker form offering features customized designs and narrow tolerance control resulting in reduced grinding operation costs. Our cold saw cemented carbide grades are specifically designed to ensure the heat generated during cutting is rapidly removed so that the cut stays cold. Whether you need cutting tubes with an intermittent contact or solid bars with a long cutting edge at the peak, our saw tips will provide consistent and high performance.

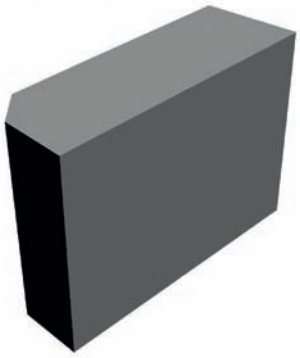
COLD SAW

HOLE SAW APPLICATIONS

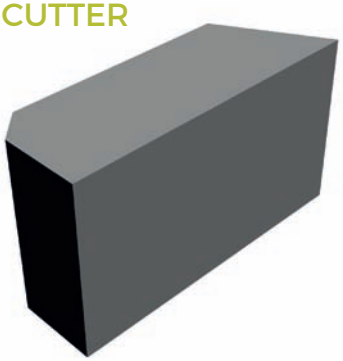
HOLE SAW / ANNULAR CUTTER

Hyperion has designed this product to cover the demands of cemented carbide tipped hole saws for annular cutters, concrete core drills, and power tool core drills. Products can be supplied in preformed or "blocks" form. Hyperion's expertise in sawing applications has allowed us to design and adopt our offerings for many different applications. Hole saws are not an exception. We know that cutting conditions can vary quite a bit in these applications due to the work material and the machine used. Hence, we have ensured these grades and designs are strong enough to withstand vibrations, force overload, and other negative cutting conditions.

HOLE SAW



ANNULAR CUTTER



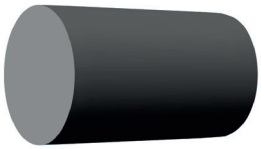
BAND SAW APPLICATIONS

BALL / CYLINDER / PREFORMED

Hyperion has designed these products for use in the manufacture of cemented carbide tipped band saw blades, and they cover the most popular dimensions. Products can be supplied as ball, cylinder, and preformed shapes, creating solutions for your unique needs. With the smaller kerf of bandsaws, the dimensional stability of the cemented carbide tip is a major factor to consider. Our manufacturing processes adhere to a very tight tolerances, and we can guarantee that your grind stock will be minimal. This will result in substantial cost and productivity savings in operations.

BALL

CYLINDER



PREFORMED

Surface treatment = Co, Ni 6 µm ± 3 µm, 10 µm ± 3 µm
Balls surface treatment = 22 µm ± 3 µm

THE IMPORTANCE OF APPLICATION MAPPING

For each specific application, Hyperion Materials & Technologies can recommend the latest high performance material and saw tooth geometry.

KEY FACTORS IN PRODUCING A HIGH QUALITY SAW BLADE

- Saw blade body
- Cemented carbide and CERMET grade selection based on cutting conditions
- Braze and grinding quality
- Geometry of saw tooth
- Physical vapor deposition (PVD) coating of finished blade for specific applications.

HOW CAN HYPERION HELP THE TOOLMAKER?

- A worldwide network of technical support specialists
- A long-term global research and development strategy
- Ability to provide cemented carbide and CERMET grade recommendations based on cutting machine type, material, and operating conditions
- Proven grade performance solutions.

APPLICATION	GRADE	ISO CODE	WORKING MATERIALS		
Cold Saw	CE05	CERMET	Stainless steel	Steel / Mild steel	Harden steel
	CE14	CERMET	Stainless steel	Steel / Mild steel	Harden steel
	H12F	K20 / K30	Stainless steel	Steel / Mild steel	Harden steel
Dry Cutter	S10F	K20 / P25	Mild steel	Cast Iron	Wood with nails
	SM25	P25	Alloy steel		
	SMA	P20	Alloy steel		
	SM35	P35	Alloy steel		
	MP40	P40	Alloy steel		
	CE14	CERMET	Alloy steel		
Fly/Orbit Cutter	SM25	P25	Alloy steel		
	SM35	P35	Alloy steel		
	MP40	P40	Alloy steel		
Band Saw	H6F	K10	Non-ferrous	Aluminum alloy	Brass
	DZ05	K10 / K01	Non-ferrous	Aluminum alloy	Brass
	H10F	K20	Universal		
	H12F	K20 / K30	Universal		
	H15F	K30 / K40	Universal		
	AM70	K10 / K20	Stainless steel	Inconel	High Ni/ Ti content
Hole Saw (Annular Cutter)	H10F	K20	Alloy steel	Stainless steel sheet	
	H6N	K20	Alloy steel		
	DH40	K40	Concrete (with rebar)		

Please contact your Hyperion sales person for further information.

GRADE PROPERTY DATA

As the worldwide market leader in metal sawing, Hyperion Materials & Technologies has the ability to adapt our grade offering to meet the performance needs of our customers.

Our offering includes cemented carbide and CERMET grades and various surface treatments to provide extended tool life and ease of tool fabrication.

GRADE	GRAIN SIZE	HARDNESS (HV30)	TRS* (N/mm²)
CE05	Fine	1500	1650
CE14	Fine	1550	1680
AM70	Extra fine	1570	3750
H6F	Extra fine	1775	3500
H10F	Extra fine	1600	3750
H12F	Extra fine	1490	3800
H15F	Extra fine	1380	3900
H6N	Medium	1600	2200
DH40	Medium	1290	3300
S10F	Fine	1550	2600
SM25	Medium	1525	3200
SMA	Medium	1600	1800
SM35	Medium	1400	2000
MP40	Medium	1390	2400
DZ05	Extra fine	1910	1710

* TRS - transverse rupture strength
All data shown are typical values.

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