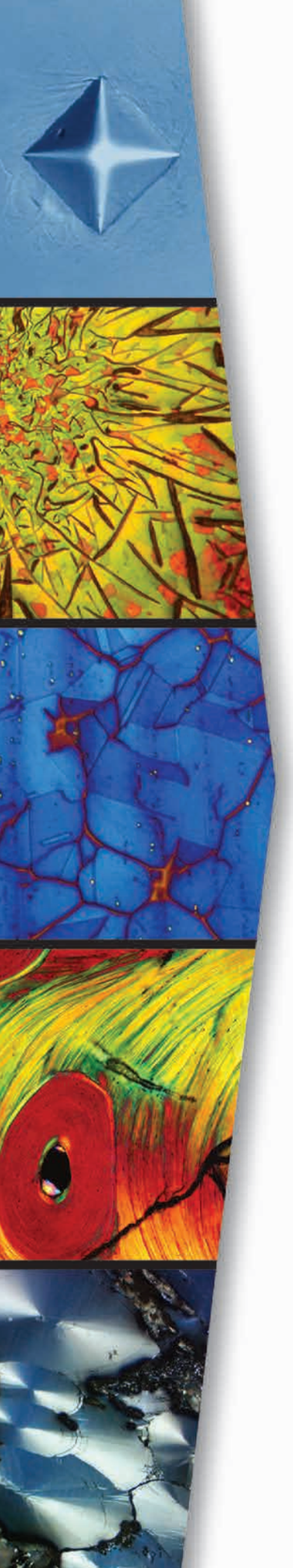

Technical Information Guide: Cutting Recommendations

ABRASIVE CUTTING RECOMMENDATIONS

Recommended Use	Bond	Abrasive	Available Diameters (Inches)	Available Diameters (mm)
General Usage Blades				
Ferrous materials >HRC60	Rubber Resin	Al_2O_3	9, 10, 12, 14, 16, 18	229, 254, 305, 356, 406, 457
Ferrous HRC50-60	Rubber Resin	Al_2O_3	9, 10, 12, 14, 16, 18	229, 254, 305, 356, 406, 457
Ferrous HRC35-50	Rubber Resin	Al_2O_3	9, 10, 12, 14, 16, 18	229, 254, 305, 356, 406, 457
Ferrous HRC15-35	Rubber	Al_2O_3	9, 10, 12, 14, 16, 18	229, 254, 305, 356, 406, 457
Ductile materials, Ti & Ti-alloys, Zr &Zr-alloys	Rubber	SiC	9, 10, 12, 14, 16, 18	229, 254, 305, 356, 406, 457
Non-ferrous materials (Al, Cu, Brass)	Rubber	SiC	9, 10, 14, 18	229, 254, 356, 457
Superalloys	Rubber	Al_2O_3	10, 12, 14, 16, 18	254, 305, 356, 406, 457
Thin Blades to Minimize Kerf Loss and Cutting Deformation				
General use, ≤ 45RC	Rubber	Al_2O_3	9, 10*	229, 254*, 305
Ferrous material, ≥ 45RC	Rubber	Al_2O_3	9, 10	229, 254

**Rubber Resin Bond*
Refer to Buehler's Buyer's Guide for ordering information and exact dimensions of arbor sizes, outer diameter and thickness of Buehler AbrasiMet, AbrasiMatic,, Delta and AcuThin Abrasive Cut-off Wheels

Abrasive Cutting Troubleshooting Guide

Issue	Possible Cause	Suggested Remedy
Burning (bluish discoloration)	Overheated specimen	Increase coolant flow rate Reduce cutting pressure Select a wheel with softer bonding (faster breakdown)
Rapid wheel wear	Wheel bonding breaks down too rapidly	Select a wheel with harder bonding Reduce cutting pressure
Frequent wheel breakage	Uneven coolant distribution	Adjust coolant flow to be even on both sides of the wheel
	Loose specimen fixturing	Clamp the specimen more securely
	Abrupt contact with specimen	Start cut contact carefully
	Wheel was previously cracked at start up	Handle carefully
Resistance to cutting	Slow wheel bond breakdown	• Select a wheel with softer bonding • Use a "pulse" cutting mode • Use cutter with orbital motion or with Minimal Area of Contact Cutting* (MACC) ability
Stalled wheels	Inadequate cutter capacity	• Use cutter with greater horsepower • Reduce pressure or feed rate • Use with cutter orbital motion or with MACC ability
	Pinched blade due to movement of specimen	Tighten the vise on one side less than on the other side

**Minimal Area of Contact Cutting as on the Delta™ Orbital Abrasive Cutter*

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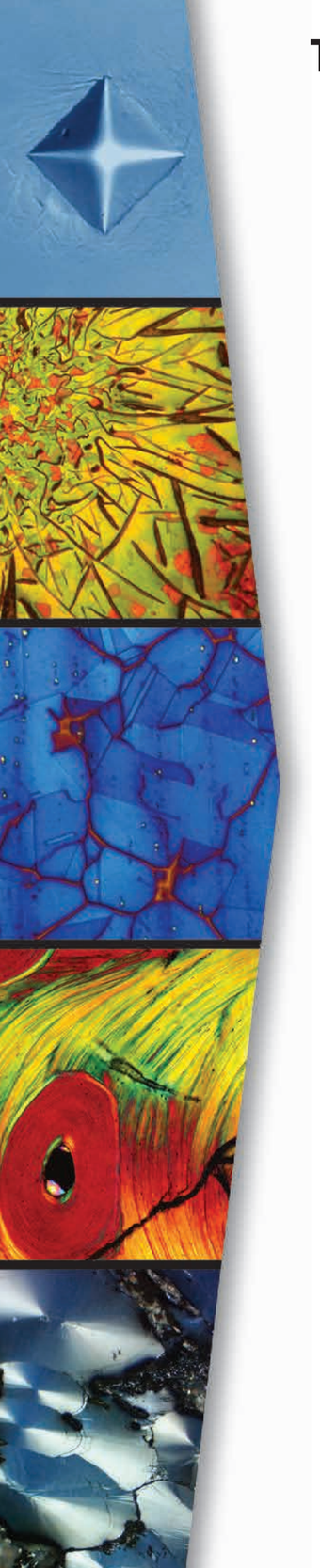

Technical Information Guide: Cutting Recommendations

PRECISION SECTIONING CONSUMABLES

Precision Sectioning Blades for IsoMet™ Saws, 0.5in [12.7mm] Arbor (qty 1)

[Part Number / Blade Thickness]

Recommended Use	3in [76mm]	4in [102mm]	5in [127mm]	6in [152mm]	7in [178mm]	8in [203mm]	Dressing Stick*
Use with Saws	Best on IsoMet Low Speed Saw or 4000/5000 with Precision Table	All	All	1000 2000 4000 5000	1000 2000 4000 5000	2000 4000 5000	
IsoMet 30HC - Polymers Rubber, Soft Gummy Materials			11-4239 0.030in [0.76mm]		11-4241 0.03in [0.76mm]	11-4242 *SO* 0.035in [0.9mm]	*Blade should not be dressed*
IsoMet 20HC - Aggressive Sectioning of Metals			11-4215 0.020in [0.5mm]		11-4237 0.025in [0.6mm]	11-4238 0.035in [0.9mm]	11-1190 11-2490
IsoMet 15HC - Metal Matrix Composite, PCBs, Bone, Ti, TSC	11-10066 0.07in [2mm]	11-4244 0.012in [0.3mm]	11-4245 0.015in [0.4mm]	11-4246 0.02in [0.5mm]	11-4247 0.025in [0.6mm]	11-4248 0.035in [0.9mm]	11-1190 11-2490
IsoMet 20LC - Hard tough Materials, Structural Ceramics			11-4225 0.02in [0.5mm]		11-4227 0.025in [0.6mm]	11-4228 0.035in [0.9mm]	11-1190 11-2490
IsoMet 15LC - Hard Brittle Materials, Glass, Al_2O_3, Zr_2O_3, Concrete	11-10067 0.07in [2mm]	11-4254 0.012in [0.3mm]	11-4255 0.015in [0.4mm]	11-4276 0.02in [0.5mm]	11-4277 0.025in [0.6mm]	11-4279 0.045in [1.1mm]	11-1190 11-2490
IsoMet 10LC - Medium to Soft Ceramics, Glass Fiber Reinforced Composites	11-10068 0.07in [2mm]		11-4285 0.015in [0.4mm]		11-4287 0.02in [0.5mm]	11-4288 *SO* 0.045in [1.1mm]	11-1290 *SO*
IsoMet 5LC - Soft, Friable Ceramics, Composites with Fine Reinforcing, CaF_2, MgF_2, Carbon Composites	11-10069 0.07in [2mm]		11-4295 0.015in [0.4mm]				11-1290 *SO*
IsoCut™ CBN LC - Fe, Co, Ni based alloys and superalloys	11-10070 0.07in [2mm]	11-4264 0.012in [0.3mm]	11-4265 0.015in [0.4mm]	11-4266 0.02in [0.5mm]	11-4267 0.025in [0.6mm]	11-4268 0.035in [0.9mm]	11-1190 11-2490
IsoCut CBN HC - Fe, Co, Ni based alloys and superalloys		11-5264 0.012in [0.3mm]	11-5265 0.015in [0.4mm]	11-5266 0.02in [0.5mm]	11-5267 0.025in [0.6mm]	11-5268 0.035in [0.9mm]	11-1190 11-2490
Cup Grinder for Ferrous Material *(IsoMet 5000 only)*				11-2720 *SO*			
Cup Grinder for Non-Ferrous Material *(IsoMet 5000 only)*				11-2730 *SO*			
Cup Grinder for Ceramic & Geological Materials *(IsoMet 5000 only)*			11-2740				

SO - Special Order. Items may have long lead times and minimum orders.
** All Blades come with a Dressing Stick included. The Part Numbers shown in the table can be used for re-ordering the Dressing Sticks.*

AcuThin™ Abrasive Wheels for IsoMet™ 2000, 4000 and 5000 Precision Saws, 0.5in [12.7mm] Arbor (qty 10)

[Part Number / Blade Thickness]

Recommended Use	5in [127mm]	7in [178mm]	150mm*	200mm*
Tool Steel, hard steel, HRC45 & Up	10-4060-010 0.19in [0.48mm]			
Medium hard, soft steel, HRC45 & Below	10-4061-010 0.19in [0.48mm]			
Steel, Stainless Steel		11-4207-010 0.030in [0.76mm]		
Hard, soft non-ferrous materials		11-4217-010 0.030in [0.76mm]		
Soft materials			101520 *2, 3* 0.50mm	1015998E *2, 3* 1mm
Tough materials and general use			102020 *2, 3* 0.50mm	1020998E *2, 3* 1.5mm

**Refer to regional maps in footer for product availability*

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