

SELECTION GUIDE FOR CUT-OFF WHEELS

Struers offers the market's most comprehensive ranges of purpose-designed cut-off wheels for materialographic sectioning. Our cut-off wheels are thoroughly tested and optimized for use on Struers cut-off machines.

The cut-off wheels are also applicable for other machines in the market with similar specifications.

How to select the correct cut-off wheel:

If the hardness of the material is known, use the table at the top of the page. In the table at the bottom, you will then find the cut-off wheel codes for the specific cutting machines. If the hardness of the material is not known, find a suitable cut-off wheel according to material group in the table below.

1. Go upwards on the y-axis of the overview to the right until you find the hardness value of your material.
2. Move to the right, until you cross the material group that fits your application. If you only have one material to cut, find the wheel where your material's hardness is placed as close to the middle of the interval as possible. For two or more materials, see if you can find a wheel that covers the whole hardness range.
3. Find the number (I-XI) of the material group, and see the table below for the code of the correct wheel for your cut-off machine.

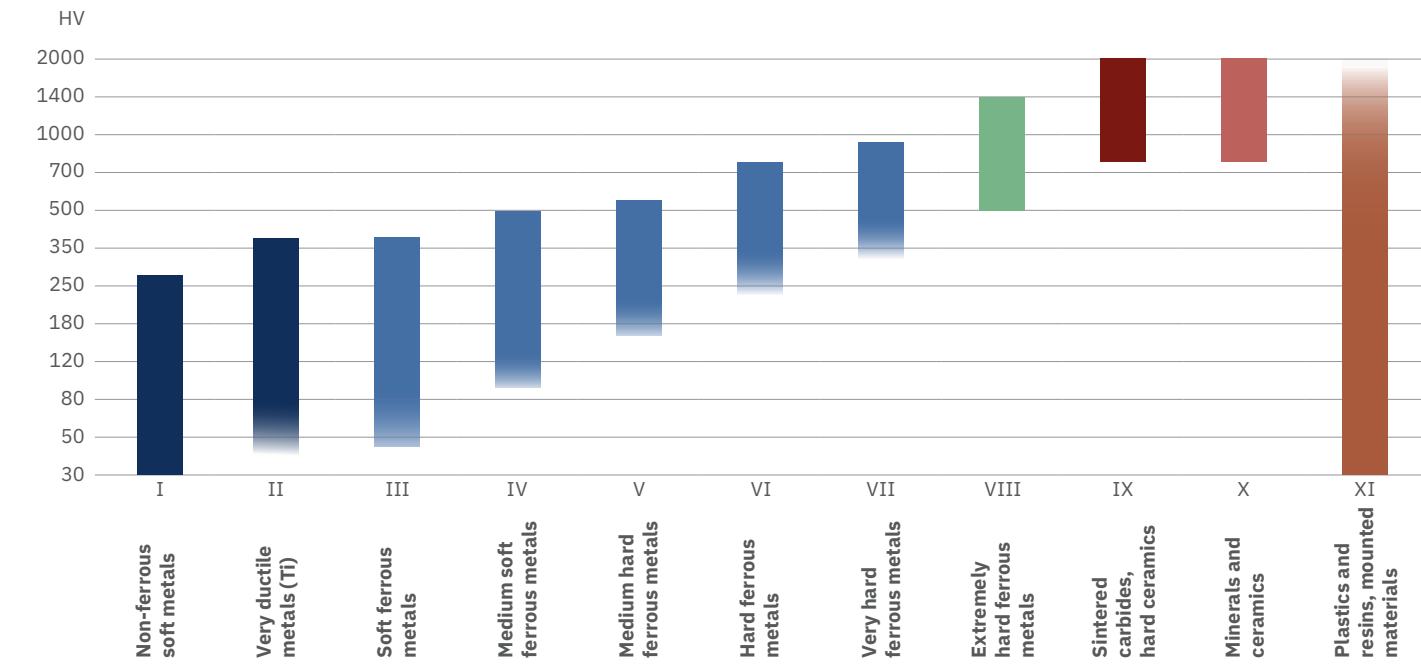


	Abrasive	Bond
●	SiC	Bakelite
●	Al ₂ O ₃	Bakelite
●	CBN	Bakelite
●	Diamond	Bakelite Hard and ductile materials
●	Diamond	Metal Hard and brittle materials
●	Diamond	Metal electroplated Mounted materials, predominately resin

Cut-off machine	Std. wheel size*
Magnutom-500/-5000	508 x 3.5 x 32
Exotom-100/-150 Magnutom-400/-500/-5000	432 x 3.0 x 32
Axitom-5/400	400 x 3.0 x 32
Axitom-5	350 x 2.5 x 32
Labotom-15/-20	350 x 2,5 x 32
Exotom/Unitom-2/-5/-50	350 x 2,5 x 32
Unitom/Discotom -50/-60/-65/-100	300 x 2,0 x 32
Discotom-5/-6/-10/ Labotom-3/-5	250 x 1,5 x 32
Discotom/Labotom	235 x 1,5 x 22
Discoflan-TS	200 x 1,0 x 22
1) 406 x 1.8 x 32 2) 350 x 1.5 x 32 3) 356 x 1.5 x 32 4) 305 x 1.8 x 32 5) 305 x 1.5 x 32	

Precision cut-off machine	Std. wheel size*
Secotom 1/-10/-15/-50-6/-20/-60**	200 x 0.8 x 22
Accutem-10/-100/-5/-50	150 x 0.5 x 12.7
Accutem-2	125 x 0.5 x 12.7
Minitem	125 x 0.5 x 12.7
Wheels with special sizes	100 x 0.3 x 12.7 75 x 0.15 x 12.7

* Diameter x Width x Bore in mm.



10S51			30A51	40A51 42A51 ¹⁰	50A51 52A51 ¹⁰	60A51 62A51 ¹⁰	B0C50	B0D51 ¹⁷	M0D51 ¹⁶	E0D36 ³
10S43	20S43		30A 43	40A43 42A43 ¹⁰	50A43 52A43 ¹⁰ 58A43 ¹⁸	60A43 62A43 ¹⁰ 66A43 ¹² 68A43 ¹⁸	B0C41 ¹	B0D35 ²	M0D35 ²	E0D36 ³
10S40	20S40		30A40	40A40	50A40 58A40	60A40 68A40	B0C41 ¹	B0D35 ²	M0D35 ²	E0D36 ³
10S35	20S35	20A35	20A35	30A35	40A35	50A35 56A35 ¹² 58A35 ¹⁸	B0C35 ⁶	B0D35 ² B7D35 ^{2/15}	M0D35 ²	E0D36 ³
10S35	20S35	49A35 ¹⁹ 30A35	49A35 ¹⁹ 40A35	49A35 ¹⁹ 50A35 56A35 ¹²	60A35 66A35 ¹²	60A35 66A35 ¹²	B0C35 ⁶	B0D35 ² B7D35 ^{2/15}	M0D35 ²	E0D36 ³
10S35	30S35	20A35	30A35	40A35	50A35 56A35 ¹² 58A35 ¹⁸	60A35 66A35 ¹² 68A43 ¹⁸	B0C35 ⁶	B0D35 ² B7D35 ^{2/15}	M0D35 ²	E0D36 ³
10S30	20S30		30A30	40A30	50A30	60A30 66A30 ¹²	B0C31 ⁴	B0D31 ⁴	M0D31 ⁵	E0D30 ⁵
10S25	20S25	20A25	30A25 33A25 ⁹	40A25 46A25 ¹²	54A25 50A25 ¹¹ 56A25 ¹²	60A25 66A25 ¹²	B0C25 ⁷	B0D25 ⁸	M0D25 ⁸	E0D25
10S24	20S24		30A24	40A24	50A24	60A24				
									B4D20	M4D20

6) 350 x 1.8 x 32 7) Width = 1.3 8) Width = 1.1 9) Width = 0.8 10) Fiberglass reinforced 11) For hard and ductile materials, Ni-base alloys
 12) 3D cut-off wheels 13) Width=0.6 14) Width=0.4 15) For sintered carbides in steel 16) Width = 2.4 17) Width = 3.2 18) Premium cut-off
 19) Fiber reinforced

10S20	10S20	30A20	30A20	50A20	50A20	50A20	B0C20	B0D20	M0D20 ¹³ M1D20 ¹³	E1D20
10S15	10S15	40A15 30A15	40A15 30A15	50A15	50A15	50A15	B0C15	B0D15	M0D15 M1D15	E0D15
30A13	30A13	30A13	30A13	50A13	50A13	50A13	B0C13	B0D13 ¹³	M0D13 ¹⁴ M1D13 ¹⁴	M1D13 ¹⁴
M1D13 ¹⁴	M1D13 ¹⁴	B0C13 ¹³	B0C13 ¹³	B0C13 ¹³	B0C13 ¹³	B0C13 ¹³	B0C13 ¹³	B0D13 ¹³	M0D13 ¹⁴ M1D13 ¹⁴	M1D13 ¹⁴
These wheels can be used on both Accutom-2/-5/-50 and Secotom-1/-10/-15/-50-6/-20/-60 for cutting of small specimens where high precision or minimum material loss is required.									M0D10 M1D10	M1D10
									M0D08 M1D08	M1D08

** On Secotom-1 only use M0D20 + B0D20

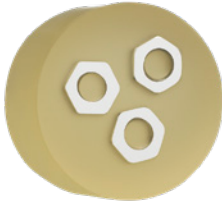
HOT MOUNTING SELECTION GUIDE

Resin	ClaroFast	CitoFast	ConduFast
			
Material	Acrylic	Acrylic with aluminum filler	Acrylic with iron filler
Specific properties	Clear transparent	Very fast mounting. Low process times also when it is used as 'backing' for DuroFast or LevoFast	Electrically conductive
Recommended use	Clear mounts Porous specimens	Fast mounting times For soft materials	Electrolytic polishing
Type	Thermoplastic	Thermoplastic	Thermoplastic
Shrinkage From 1-3 (1 is best)	..	..	..
Hardness From 1-3 (1 is softest)	..	..	.
Removal rate	High	High	High
Process parameters*			
Heating temperature (°C)	180	180	180
Quantity (ml)	20	20	20
Heating time (min.)	4	2,5	3,5
Heating pressure (bar)	350	300	250
Cooling time (min.)	6,5	1	1.5
Cooling rate	Low	High	High
Total process time (min.)	10.5	3.5	5
Application / Specific properties	Transparent mounts. Porous specimens.** Surface electrical insulator for ConduFast	For soft materials.* Fast mounting also when used as backing	Electrolytic polishing

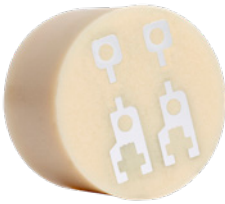
30 mm dia. mount with a 45% carbon steel specimen (20 vol%) * Embedded abrasives can occur in the aluminum filler ** Use sensitive mode

DuroFast	LevoFast	PolyFast	PuriFast	MultiFast
				
Epoxy with mineral filler	Melamine with mineral and glass filler	Bakelite with carbon filler	Polypropylene with wood and mineral filler	Bakelite with wood filler
Very low shrinkage. Very low removal rate	Very low shrinkage High removal rate	Very low shrinkage High removal rate	Medium shrinkage High removal rate	Medium shrinkage Medium removal rate
Excellent edge-retention for hard materials	Excellent edge-retention for soft to medium hard materials	Fast mounting process SEM examination	General used for soft to medium hard materials	Routine examination of soft to medium hard materials. Color coding
Thermosetting	Thermosetting	Thermosetting	Thermoplastic	Thermosetting
•	•	•	• • •	• • •
• • •	• • •	• •	•	• • •
Low	High	High	High	Medium
180	180	180	150 - 180	180
20	25	20	25	25
3,5	3,5	3,5	3	3
325	250	250	250	250
2	2	1.5	2	2
High	High	High	High	High
5.5	5.5	5	5	5
For hard materials Excellent edge retention	For soft to medium hard materials. Excellent edge retention	SEM examination	Unclassified, no hazardous components For soft to medium hard materials. Perfect as backing	Routine examination of soft to medium hard materials. Suitable as backing

COLD MOUNTING SELECTION GUIDE FOR ACRYLICS

Material	VersoCit-2	ClaroCit
		
Curing time	10 min.	20 min.
Shrinkage from 1-4 (1 is best)	****	***
Application	For routine examination • Routine examination of soft to medium hard materials	For extraordinarily clear mounts • For universal use • Target preparation
Mixing ratio weight recommended	Liquid: 2 parts Powder: 3 parts	Liquid: 6 parts Powder: 10 parts
Mixing ratio volume	Liquid: 1 part Powder: 2 parts	Liquid: 2 parts Powder: 5 parts
Mixing time	30 s	1 ½ min.
Potlife	3 min.	1 ½ min.
Colour	Dull yellowish, partly transparent	Colourless, clear (extremely clear when cured under pressure)
Can be coloured with EpoDye		X
Peak temperature	100 °C / 212 °F	90 °C / 194 °F
Hardness	82 Shore D	85 Shore D

(30 mm dia. mount without specimen at 21 °C / 70 °F)

DuroCit-3	LevoCit	ViaFix
		
30 min.	20 min.	20 min.
*	**	***
Fast curing and no shrinkage • For medium hard and hard ferrous metals and other hard materials – including ceramics, carbides etc. • For specimens where protection of layers is important e.g. coated specimens • Excellent edgeretention and planeness	Good edge-retention and planeness • For non-ferrous metals and soft ferrous metals • Low shrinkage • Low peak temperature	For vias and microvias • Excellent for filling of microvias <i>* Affected by alcohol. When using diamond products or lubricants containing alcohol, the surface will be affected and the structure of the polymer beads will appear</i>
Liquid I: 8 parts Liquid II: 4 parts Powder: 14 parts	Liquid: 1 part Powder: 2 parts	Liquid: 9 parts Powder: 11 parts
Liquid I: 10 parts Liquid II: 5 parts Powder: 15 parts	Liquid: 1 part Powder: 2 parts	Liquid: 1 part Powder: 2 parts
1 ½ min.	45 s	30 s
4 min.	1 ½ min.	2 min.
Light yellow	Off-white	Colourless, clear (extremely clear when cured under pressure). Otherwise semi-transparent
		X
138 °C / 280 °F	75 °C / 167 °F	115 °C / 239 °F
85 Shore D	84 Shore D	83 Shore D

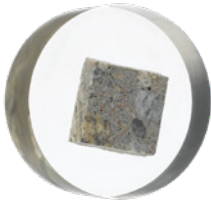
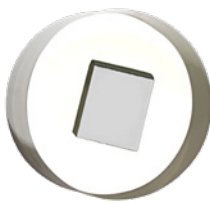
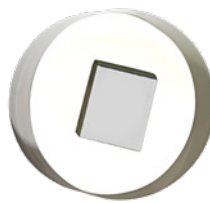
COLD MOUNTING SELECTION GUIDE FOR EPOXIES

Material	CaldoFix-2	SpeciFix-40
		
Curing time	1 ½ hour in oven at 75 °C / 167 °F ¹⁾	3 ½ hours in oven at 50 °C / 122 °F ¹⁾
Shrinkage from 1-4 (1 is best)	*	*
Application	For all-round vacuum impregnation • Short curing time • Low viscosity • Relatively hard after curing	Extremely good adhesion • Relative fast curing time • Very clear colourless mounts • Cures in oven or Drybox
Mixing ratio weight recommended	Resin: 25 parts Hardener: 7 parts	Resin: 2.5 parts Curing Agent: 1 parts
Mixing ratio volume	Resin: 31 parts Hardener: 10 parts	Resin: 10.5 parts Curing Agent: 5 part
Mixing time	5 min.	3 min.
Potlife	> 60 min.	> 60 min.
Colour	Clear, transparent Refractive index: ND = 1.561	Clear, transparent Refractive index: ND = 1.573
Can be coloured with EpoDye	X	X
Peak temperature	170 °C / 338 °F	100 °C / 212 °F
Hardness	85 Shore D	82 Shore D

30 mm dia. mount without specimen at 21 °C / 70 °F)

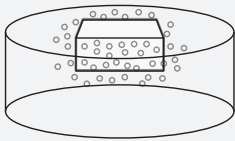
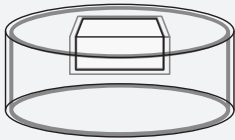
* 40 mm mount, 10% specimen volume, 25 °C / 73 °F ambient temperature, Covered while curing

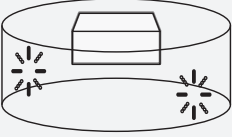
** 30 mm mount, 10% specimen volume, 25 °C / 73 °F ambient temperature, Covered while curing

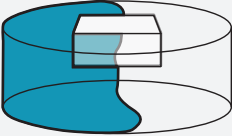
EpoFix	ProntoFix Standard	ProntoFix Accelerated														
																
Approx. 12 hours	90 min. *	90 min. **														
*		*														
For vacuum impregnation - low viscosity • Can be used on all types of specimens • Extremely low curing temperature – Very good for heat sensitive specimens • Superior penetration of cracks and pores • Excellent adhesion	For mounting and preparing specimens the same day • Suitable for vacuum impregnation • Excellent adhesion • Superior penetration of cracks and pores	DIAMETER OF CUP (mm) (") *** <table><tr><td></td><td>Ø25 Ø1.00</td><td>Ø30 Ø1.25</td><td>Ø40 Ø1.50</td></tr><tr><td rowspan="3">TEMPERATURE IN LAB (°C) (°F)</td><td><23 <73.4</td><td></td><td></td></tr><tr><td>23-27 73.4-80.6</td><td></td><td></td></tr><tr><td>>27 >80.6</td><td></td><td></td></tr></table> RECOMMENDATIONS Curing not possible in less than 4 hours Accelerated system Standard system		Ø25 Ø1.00	Ø30 Ø1.25	Ø40 Ø1.50	TEMPERATURE IN LAB (°C) (°F)	<23 <73.4			23-27 73.4-80.6			>27 >80.6		
	Ø25 Ø1.00	Ø30 Ø1.25	Ø40 Ø1.50													
TEMPERATURE IN LAB (°C) (°F)	<23 <73.4															
	23-27 73.4-80.6															
	>27 >80.6															
Resin: 25 parts Hardener: 3 parts	Resin: 20 parts Hardener: 5.3 part	Resin: 20 parts Hardener: 4.2 parts Accelerator: 1.1 parts														
Resin: 15 parts Hardener: 2 parts	Resin: 20 parts Hardener: 5.3 part	Resin: 20 parts Hardener: 4.2 parts Accelerator: 1.1 parts														
2 min.	1 min.	1 min.														
30 min.	25 min.	20 min.														
Clear, transparent Refractive index: ND = 1.578	Transparent, Yellow	Transparent, Yellow														
X	X	X														
40 °C / 104 °F	140 °C / 284 °F	150 °C / 302 °F														
78 Shore D	83 Shore D	83 Shore D														

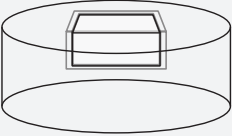
*** Use the matrix to find out if the accelerator is recommended. For example if you are mounting with 40 mm cups and the room temperature is between 23-27°, it is recommended to use the ProntoFix accelerator.

COLD MOUNTING TROUBLE SHOOTING GUIDE

Problem	Cause	Solution
Air bubbles along the sides of the specimen  The system creates too many bubbles – generation of excessive heat	Lab temperature > 23°C	- Uncover the mount during curing - Use Struers DryBox to increase airflow - Use a smaller amount of mounting material - Cool down mounting material during mixing - If Accelerator is used try to use standard system
	Specimen/ProntoFix volume ratio < 20% < 10% for metallic specimen (Too small specimen)	- Uncover the mounting cup - Use Struers DryBox to increase airflow - Pour less ProntoFix in the mounting cup - If Accelerator is used try to use standard system
	The mount is less than 5mm from the top of the mounting cup	- Uncover during curing - Use Struers DryBox to increase airflow
	Diameter 50mm	- Fill up only half of the mounting cup - If you need a 20mm tall mount, cure in two steps - Uncover while curing - Use a smaller mounting cup - Use Struers DryBox to increase airflow - If Accelerator is used try to use standard system
	Insufficient degreasing of specimen	Clean and degrease specimens prior to mounting
	Too active stirring of mixture	Stir without introducing air into the mixture
Problem	Cause	Solution
High shrinkage 	Too high temperature during curing	Use Struers DryBox to increase airflow
	Insufficient degreasing of specimen	Clean and degrease specimens prior to mounting
	Insufficient mixing of resin and hardener	Stir mixture thoroughly
	Too large volume of mixture or too long time after stirring before pouring	Mix smaller volumes and pour over specimens immediately after stirring

Problem	Cause	Solution
Sticky or rubbery surface  The system cures too slowly	Lab temperature < 23°C	• Fill up the mounting cup sufficiently • Use a bigger mounting cup • Use the Struers DryBox to increase temperature • If the standard hardener is used, try to use the Accelerator to decrease curing time
	Specimen/ProntoFix volume ratio > 20% > 10% for metallic specimen (Too big specimen)	• Use a bigger mounting cup • Reduce the size of the specimen • Use the Struers DryBox to increase temperature • If the standard hardener is used, try to use the Accelerator to decrease curing time
	The mount is more than 5mm from the top of the mounting cup (Too low mount)	• Use the Struers DryBox to increase temperature • If the standard hardener is used, try to use the Accelerator to decrease curing time
	Mounting cup diameter 25mm	• Use a Drybox to increase temperature • Use a bigger mounting cup • If the standard hardener is used, try to use the Accelerator to decrease curing time

Problem	Cause	Solution
Indraft/suction at the bottom of the specimen 	Too high temperature during curing	• Use Struers DryBox to increase airflow
	Specimen/ProntoFix volume ratio < 20% < 10% for metallic specimen (Too small specimen)	• Use adequate mounting cup or mount in layers of around 10mm per layer. Wait until the first layer is cured and then cast the next layer

Problem	Cause	Solution
Gap between ProntoFix and specimen 	Too high temperature during curing	• Use Struers DryBox to increase airflow
	Insufficient degreasing of specimen	• Clean and degrease specimens prior to mounting
	Specimen/ProntoFix volume ratio < 20% < 10% for metallic specimen (Too small specimen)	• Use Struers DryBox to increase airflow
	Too much hardener in relation to resin	• Mix resin and hardener in the correct ratio



TECHNICAL DATA

Grinding Stones and Diamond Grinding Disc

		Application area	Hardness range	Grinding stone or disc	Grit size (FEPA F)	Abrasive and bond
High removal plane grinding		Non-ferrous metals	40-250 HV	2S27	# 150	Resin bonded silicon carbide
		Non-ferrous metals	40-250 HV	2S36	# 150	Resin bonded silicon carbide
		Stainless steel and nickel-based alloys	150-500 HV	3A27	# 150	Resin bonded aluminum oxide
		Stainless steel and nickel-based alloys	150-500 HV	3A36	# 150	Resin bonded aluminum oxide
		Medium hard ferrous metals	250-700 HV	4A27	# 150	Resin bonded aluminum oxide
		Medium hard ferrous metals	250-700 HV	4A36	# 150	Resin bonded aluminum oxide
		Hard steels or steels containing many carbides	500-800 HV	6A27	# 150	Resin bonded aluminum oxide
		Hard steels or steels containing many carbides	500-800 HV	6A36	# 150	Resin bonded aluminum oxide

Cooling media	Run-in time - pre-dressing needed	Maintenance of the surface	Stone/Disc diameter sizes / Equipment
Water	None	Dressing with diamond dresser (on the equipment)	270 mm / Xmatic / Hexamatic
Water	None	Dressing with diamond dresser (on the equipment)	356 mm / AbraPlan
Water	None	Dressing with diamond dresser (on the equipment)	270 mm / Xmatic / Hexamatic
Water	None	Dressing with diamond dresser (on the equipment)	356 mm / AbraPlan
Water	None	Dressing with diamond dresser (on the equipment)	270 mm / Xmatic / Hexamatic
Water	None	Dressing with diamond dresser (on the equipment)	356 mm / AbraPlan
Water	None	Dressing with diamond dresser (on the equipment)	270 mm / Xmatic / Hexamatic
Water	None	Dressing with diamond dresser (on the equipment)	356 mm / AbraPlan



TECHNICAL DATA

Grinding Stones and Diamond Grinding Disc

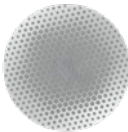
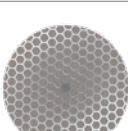
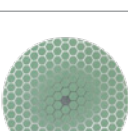
		Application area	Hardness range	Grinding stone or disc	Grit size (FEPA F)	Abrasive and bond
High removal plane grinding		Ceramics and sintered carbides	>800 HV	8D27	# 120	Resin bonded diamonds
		Ceramics and sintered carbides	>800 HV	8D36	# 120	Resin bonded diamonds
		Metal and general applications	250-700 HV	PAMST	# 150	Resin bonded aluminum oxide

Cooling media	Run-in time - pre-dressing needed	Maintenance of the surface	Stone/Disc diameter sizes / Equipment
Water	None	Dressing with Aluminum oxide specimens (to be clamped into a specimen holder)	270 mm / Xmatic / Hexamatic
Water	None	Dressing with Aluminum oxide specimens (to be clamped into a specimen holder)	356 mm / AbraPlan
Water	None	Dressing with diamond dresser (on the equipment)	200 mm / Prepamatic & Prepamatic-2



TECHNICAL DATA

MD grinding

		Application area	Hardness range	MD surface	Finish comparable to SiC Paper or Foil # size (FEPA P)	Abrasive and bond
Plane grinding		Ferrous metals & hard materials	150-2000 HV	MD-Piano (3 grits)	80, 120, 220	Embedded resin bonded diamonds
		Non-ferrous metals and soft materials	40-250 HV	MD-Primo (2 grits)	120, 220	Embedded resin bonded SiC
		Stainless steel & nickel-based alloys	120-1000 HV	MD-Alto	220	Resin bonded aluminum oxide
		Titanium alloys and hard materials containing titanium	150-2000 HV	MD-Mezzo	220	Embedded resin bonded diamonds
		Aluminum alloys and hard materials containing aluminum	50-2000 HV	MD-Molto	220	Embedded resin bonded diamonds
Fine grinding		Ferrous metals & hard materials	150-2000 HV	MD-Piano (2 grits)	500, 1200	Embedded resin bonded diamonds
		Materials harder than 150 HV	>150 HV	MD-Allegro	500	Suspension/spray 15-6 µm
		Ferrous metals & hard materials	150-2000 HV	MD-Piano (2 grits)	2000, 4000	Embedded resin bonded diamonds
		Soft materials & composites with soft matrix	40-1500 HV	MD-Largo	1200	Suspension/spray 9-3 µm

Cooling media	Run-in time – pre-dressing needed	Maintenance of the surface	Indicative lifetime per surface (Number of SiC Papers or Foils)	Surface diameter sizes
Water	None	Dressing with sintered alumina stick from time to time	100	200 mm / 8" 250 mm / 10" 300 mm / 12" 350 mm / 14"
Water	None	Dressing with sintered alumina stick from time to time	100	200 mm / 8" 250 mm / 10" 300 mm / 12" 350 mm / 14"*
Water	None	None for most materials. Diamond dressing tool available if needed	50	200 mm / 8" 250 mm / 10" 300 mm / 12" 350 mm / 14"
Water	None	Dressing with sintered alumina stick from time to time	100	200 mm / 8" 250 mm / 10" 300 mm / 12" 350 mm / 14"
Water	None	Dressing with sintered alumina stick from time to time	100	200 mm / 8" 250 mm / 10" 300 mm / 12" 350 mm / 14"
Water	None	Dressing with sintered alumina stick from time to time	100	200 mm / 8" 250 mm / 10" 300 mm / 12" 350 mm / 14"
Lubricant / suspension / All-in-One	None	None	>100	200 mm / 8" 250 mm / 10" 300 mm / 12" 350 mm / 14"
Water	None	Dedicated sintered alumina stick. Dress from time to time.	300	200 mm / 8" 250 mm / 10" 300 mm / 12" 350 mm / 14"
Lubricant / suspension / All-in-One	None	None	>100	200 mm / 8" 250 mm / 10" 300 mm / 12" 350 mm / 14"

* MD-Primo 120

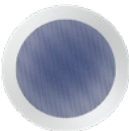


TECHNICAL DATA

Diamond Pads – Self adhesive grinding surfaces

		Application area	Hardness range	Surface	Grain sizes available	Abrasive and bond
Plane grinding		Ceramics, sintered carbides and very hard, ferrous metals	>600 HV	Diamond Pad	250 µm	Metal bonded diamonds
		Ceramics, sintered carbides and very hard, ferrous metals	>600 HV	Diamond Pad	125 µm	Metal bonded diamonds
Fine grinding		Minerals, ceramics, sintered carbides and very hard ferrous metals	>600 HV	Diamond Pad	40 µm	Metal bonded diamonds
		Minerals, ceramics, sintered carbides and very hard ferrous metals	>600 HV	Diamond Pad	20 µm	Metal bonded diamonds

Adaptor for magnetic disc

Adaptor	Description	Surface diameter sizes
	MD-Rondo Adapter for use with self adhesive consumables on the MD-disc. For easy exchange of consumables.	200 mm / 8” 250 mm / 10” 300 mm / 12”

Cooling media	Run-in time – pre-dressing needed	Maintenance of the surface	Indicative lifetime per surface (Number of of SiC Paper or Foil)	Surface diameter sizes
Water	None	None	>100	200 mm / 8" 250 mm / 10" 300 mm / 12"
Water	None	None	>100	200 mm / 8" 250 mm / 10" 300 mm / 12"
Water	None	None	>100	200 mm / 8" 250 mm / 10" 300 mm / 12"
Water	None	None	>100	200 mm / 8" 250 mm / 10" 300 mm / 12"



TECHNICAL DATA

Silicon Carbide Grinding Foils and Papers

		Application area	Hardness range	Surface	Grain sizes available (FEPA P)
Silicon Carbide Grinding Foil					
Plane grinding		All materials	30 - 800 HV	SiC Foil	80, 120, 180, 220, 320
		All materials	30 - 800 HV	SiC Foil	500, 800, 1000, 1200
Fine grinding		All materials	30 - 400 HV	SiC Foil	2000, 4000*
Silicon Carbide Grinding Paper					
Plane grinding		All materials	30 - 800 HV	SiC Paper	80, 120, 180, 220, 320
		All materials	30 - 800 HV	SiC Paper	500, 800, 1000, 1200
Fine grinding		All materials	30 - 400 HV	SiC Paper	2000, 2400*, 4000*

*not a part of FEPA P

Abbrasive	Backing material	Cooling media	Run-in time – pre-dressing needed	Surface diameter sizes
Adhesive bonded SiC grains	PET foil	Water	None	200 mm / 8” 250 mm / 10” 300 mm / 12” 350 mm / 14”
Adhesive bonded SiC grains	PET foil	Water	None	200 mm / 8” 250 mm / 10” 300 mm / 12” 350 mm / 14”
Adhesive bonded SiC grains	PET foil	Water	None	200 mm / 8” 250 mm / 10” 300 mm / 12” 350 mm / 14”
Adhesive bonded SiC grains	Plain paper	Water	None	200 mm / 8” 230 mm / 9” 250 mm / 10” 305 mm / 12”
Adhesive bonded SiC grains	Plain paper	Water	None	200 mm / 8” 230 mm / 9” 250 mm / 10” 305 mm / 12”
Adhesive bonded SiC grains	Plain paper	Water	None	200 mm / 8” 230 mm / 9” 250 mm / 10” 305 mm / 12”



TECHNICAL DATA

Silicon Carbide Grinding Foils and Papers

SiC Foil adaptors

	Adaptor	Description	Surface diameter sizes
MD-Disc	MD-Gekko 	Adaptor for use with SiC Foils on the MD-Disc. For easy exchange of consumables	200 mm / 8" 250 mm / 10" 300 mm / 12" 350 mm / 14"
Aluminum preparation disc	Gekko PSA 	Self adhesive foil for use with SiC Foils. To be glued onto the Aluminum disc	200 mm / 8" 250 mm / 10" 300 mm / 12"
Wet grinding disc Aluminum disc with retention ring	Cannot be used		

Grit / Grain size comparison

These are guideline values only. Grit sizes are defined as a range and not a single value. FEPA is the Federation of European Producers of Abrasives. ANSI is the American National Standards Institute. Struers grinding paper / foil follows the FEPA P standard while grinding stones and similar follow the Fepa F standard.

Grain size	200 µm	125 µm	82 µm	68 µm	46 µm
FEPA P (Europe)	P80	P120	P180	P220	P320
FEPA F (Europe)	F80	F100	F150	F180	F240
ANSI/UAMA (US)*	#80	#120	#180	#220	#280

* ANSI standard B74.18

SiC Paper adaptors

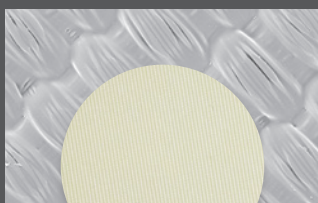
	Adaptor	Description	Surface diameter sizes
MD-Disc	MD-Fuga 	Metal disc with an adhesive layer for holding SiC Paper. Ensuring magnetic fixation on MD-Disc. For easy exchange of consumables	200 mm / 8" 250 mm / 10" 300 mm / 12"
Aluminum preparation disc	Adhesive Disc 	Double-sided adhesive discs for easy adhesion of SiC paper onto the Aluminum disc	200 mm / 8" 230 mm / 9" 250 mm / 10" 300 mm / 12"
Wet grinding disc Aluminum disc with retention ring	Can be used directly		

30 µm	22 µm	18 µm	15 µm	7 µm	4 µm
P500	P800	P1000	P1200	P2000	P4000
F320	F360	F400	F500	F800	F1200
#320	#360	#400	#500	#800	#1200



POLISHING CLOTHS

Choose your ideal polishing cloth



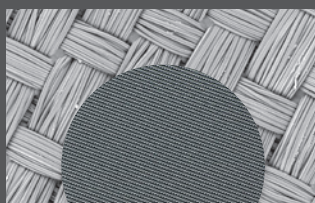
MD-Plan & DP-Plan

- Version for magnetic fixation (MD) or self-adhesive (DP)
- Coarse polishing of soft metals
- Fine polishing of hard materials
- Woven
- Diamond 15 - 3 μm



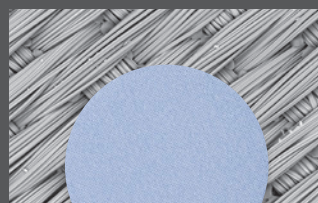
MD-Pan & DP-Pan

- Version for magnetic fixation (MD) or self-adhesive (DP)
- Coarse polishing of soft metals
- Fine polishing of hard and brittle material
- Non-woven
- Diamond 15 - 1 μm



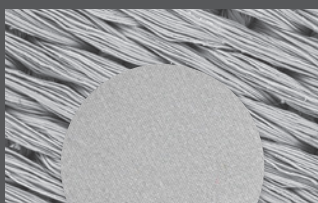
MD-Sat & DP-Sat

- Version for magnetic fixation (MD) or self-adhesive (DP)
- Coarse and fine polishing of ferrous metals, non-ferrous metals and coatings and plastics
- Woven
- Diamond 9 - 3 μm



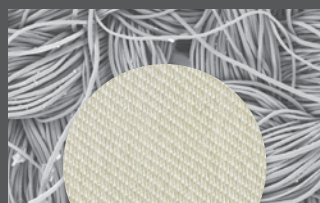
MD-Dac & DP-Dac

- Version for magnetic fixation (MD) or self-adhesive (DP)
- Coarse and fine polishing of all materials
- Woven
- Diamond 9 - 3 μm



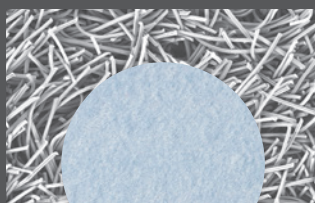
MD-Dur & DP-Dur

- Version for magnetic fixation (MD) or self-adhesive (DP)
- Coarse and fine polishing of ferrous metals, non-ferrous metals, coatings, ceramics and plastics
- Woven
- Diamond 9 - 1 μm



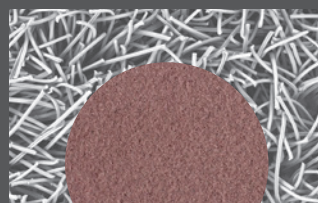
MD-Mol, MD-Mol APS & DP-Mol

- Version for magnetic fixation (MD) or self-adhesive (DP)
- Version available (MD-Mol APS) for fully automated preparation equipment
- Fine polishing of ferrous and non-ferrous metals and polymers
- Woven
- Diamond $\leq 3 \mu\text{m}$



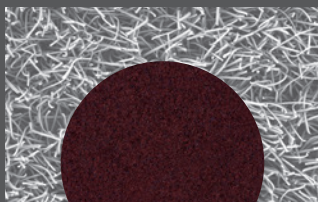
MD-Plus & DP-Plus

- Version for magnetic fixation (MD) or self-adhesive (DP)
- Fine polishing of sintered carbides and steels
- Napped
- Diamond 3 μm



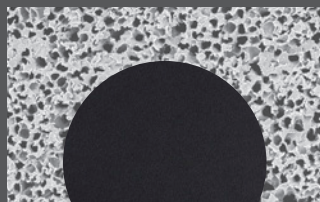
MD-Floc & DP-Floc

- Version for magnetic fixation (MD) or self-adhesive (DP)
- Fine and ultra-fine polishing of all materials
- Napped
- Diamond or oxide polishing $\leq 3 \mu\text{m}$



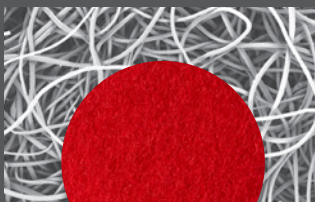
MD-Nap & DP-Nap

- Version for magnetic fixation (MD) or self-adhesive (DP)
- Fine and ultra-fine polishing of all materials
- Napped
- Diamond or oxide polishing $\leq 1 \mu\text{m}$



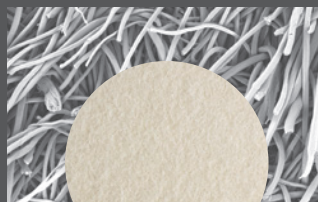
MD-Chem & OP-Chem

- Version for magnetic fixation (MD) or self-adhesive (DP)
- Version available (MD-Chem NonStick) to avoid suction of large specimens
- Ultra-fine polishing of all materials
- Woven
- Oxide polishing $\leq 1 \mu\text{m}$



OP-Nat

- For self-adhesive fixation
- Coarse, fine and ultra-fine polishing of ferrous metals
- Woven
- Alumina $\leq 9 \mu\text{m}$



OP-Felt

- For self-adhesive fixation
- Coarse, fine and ultra-fine polishing of non-ferrous metals
- Alumina $\leq 9 \mu\text{m}$

BUY IN WEBSHOP





Surface facing	Temperature of surface	Working life	Recommended compound
Horizontal, sloping	> 20°C	Normal	RepliSet-F5
		Short	RepliSet-F1/GF1
	< 20°C	Normal	
Vertical, overhead	> 20°C	Normal	RepliSet-T3
		Short	RepliSet-T1/GT1
	< 20°C	Normal	

BUY IN WEBSHOP

BRINELL TEST BLOCKS (WITH OR WITHOUT CERTIFICATE)

The Brinell hardness test is used for larger specimens in materials with a coarse or inhomogeneous grain structure. Before performing the Brinell hardness test, the surface of the specimen must be prepared.

We recommend you verify the calibration of your equipment on a regular basis ensuring reproducibility and reliability of your hardness testing results.

It must be either:

Machined – Ground – Lapped – Polished

Brinell		Hardness						
Test method	Load Factor	40	70	100	150	170	200	250
HBW 1/30	HB30			056483002C	056483003C	056483004C	056483005C	056483006C
HBW 2.5/187.5				056482402C	056482403C	056482404C	056482405C	056482406C
HBW 5/750				056481502C	056481503C	056481504C	056481505C	056481506C
HBW 10/3000				056481002C	056481003C	056481004C	056481005C	056481006C
HBW 1/10	HB10	056483100C	056483101C	056483102C	056483103C	056483104C	056483105C	
HBW 2.5/62.5		056482500C	056482501C	056482502C	056482503C	056482504C	056482505C	
HBW 5/250			056481601C	056481602C	056481603C	056481604C	056481605C	
HBW 10/1000			056481201C	056481202C	056481203C	056481204C	056481205C	
HBW 1/5	HB5	056483200C	056483201C	056483202C				
HBW 2.5/31.25		056482600C	056482601C	056482602C				
HBW 5/125		056482100C	056482101C	056482102C				
HBW 10/500			056481301C	056481302C				
HBW 1/2.5	HB2.5	056483300C						
HBW 2.5/15.625		056482700C						
HBW 5/62.5		056482200C						

Brinell (Heavy load)

All blocks will be supplied within ± 15 HB of the nominal value.

Block size: 90 mm diameter x 16 mm thickness.

Brinell (light load)

All blocks will be supplied within ± 15 HB of the nominal value.

Block size: 60 mm diameter x 10 mm thickness.

Please contact your local Struers representative, if you wish to add additional calibration and grid on the test block.



Test Blocks

	300	350	400	450	500	550	600	650
C	056483007C	056483008C	056483009C	056483010C	056483011C	056483012C	056483013C	056483014C
C	056482407C	056482408C	056482409C	056482410C	056482411C	056482412C	056482413C	056482414C
C	056481507C	056481508C	056481509C	056481510C	056481511C	056481512C	056481513C	056481514C
C	056481007C	056481008C	056481009C	056481010C	056481011C	056481012C	056481013C	056481014C

VICKERS TEST BLOCKS (WITH OR WITHOUT CERTIFICATE)

The Vickers hardness test is suitable for a wide range of applications, including micro hardness testing. The required surface condition for the Vickers hardness test depends on the load used.

Macro test blocks (loads higher than 1 kgf)

– Surface should be ground

Micro test blocks (loads below or equal to 1 kgf)

– Surface should be mechanically polished or electropolished

Steel and copper

– At least 3 diagonal widths between indentations

Lead, zinc and aluminum

– At least 6 diagonal widths between indentations

We recommend you verify the calibration of your equipment on a regular basis ensuring reproducibility and reliability of your test block results.

Vickers	Hardness									
Test method	40	70	100	150	200	250	300	350	400	450
HV0.010	056484000C	056484001C	056484002C	056484003C	056484005C	056484006C	056484007C	056484008C	056484009C	056484010C
HV0.025	056484100C	056484101C	056484102C	056484103C	056484105C	056484106C	056484107C	056484108C	056484109C	056484110C
HV0.050	056484200C	056484201C	056484202C	056484203C	056484205C	056484206C	056484207C	056484208C	056484209C	056484210C
HV0.1	056484300C	056484301C	056484302C	056484303C	056484305C	056484306C	056484307C	056484308C	056484309C	056484310C
HV0.2	056484400C	056484401C	056484402C	056484403C	056484405C	056484406C	056484407C	056484408C	056484409C	056484410C
HV0.3	056484500C	056484501C	056484502C	056484503C	056484505C	056484506C	056484507C	056484508C	056484509C	056484510C
HV0.5	056484600C	056484601C	056484602C	056484603C	056484605C	056484606C	056484607C	056484608C	056484609C	056484610C
HV1	056484700C	056484701C	056484702C	056484703C	056484705C	056484706C	056484707C	056484708C	056484709C	056484710C
HV2	056485000C	056485001C	056485002C	056485003C	056485005C	056485006C	056485007C	056485008C	056485009C	056485010C
HV3	056485100C	056485101C	056485102C	056485103C	056485105C	056485106C	056485107C	056485108C	056485109C	056485110C
HV5	056485200C	056485201C	056485202C	056485203C	056485205C	056485206C	056485207C	056485208C	056485209C	056485210C
HV10	056485300C	056485301C	056485302C	056485303C	056485305C	056485306C	056485307C	056485308C	056485309C	056485310C
HV20	056485400C	056485401C	056485402C	056485403C	056485405C	056485406C	056485407C	056485408C	056485409C	056485410C
HV30	056485500C	056485501C	056485502C	056485503C	056485505C	056485506C	056485507C	056485508C	056485509C	056485510C
HV50	056485600C	056485601C	056485602C	056485603C	056485605C	056485606C	056485607C	056485608C	056485609C	056485610C
HV100	056485700C	056485701C	056485702C	056485703C	056485705C	056485706C	056485707C	056485708C	056485709C	056485710C

Vickers, Micro

All blocks will be supplied within ± 25 HV of the nominal value.

Block size: 25 mm diameter x 6 mm thickness

Vickers, Macro

All blocks will be supplied within ± 25 HV of the nominal value.

Block size: 60 mm diameter x 10 mm thickness.

Please contact your local Struers representative, if you wish to add additional calibration and grid on the test block.



Test Blocks

500	550	600	650	700	750	800	850	900	950	1000	1050	1100
056484011C	056484012C	056484013C	056484014C	056484015C	056484016C	056484017C	056484018C	056484019C	056484020C	056484021C	056484022C	056484023C
056484111C	056484112C	056484113C	056484114C	056484115C	056484116C	056484117C	056484118C	056484119C	056484120C	056484121C	056484122C	056484123C
056484211C	056484212C	056484213C	056484214C	056484215C	056484216C	056484217C	056484218C	056484219C	056484220C	056484221C	056484222C	056484223C
056484311C	056484312C	056484313C	056484314C	056484315C	056484316C	056484317C	056484318C	056484319C	056484320C	056484321C	056484322C	056484323C
056484411C	056484412C	056484413C	056484414C	056484415C	056484416C	056484417C	056484418C	056484419C	056484420C	056484421C	056484422C	056484423C
056484511C	056484512C	056484513C	056484514C	056484515C	056484516C	056484517C	056484518C	056484519C	056484520C	056484521C	056484522C	056484523C
056484611C	056484612C	056484613C	056484614C	056484615C	056484616C	056484617C	056484618C	056484619C	056484620C	056484621C	056484622C	056484623C
056484711C	056484712C	056484713C	056484714C	056484715C	056484716C	056484717C	056484718C	056484719C	056484720C	056484721C	056484722C	056484723C
056485011C	056485012C	056485013C	056485014C	056485015C	056485016C	056485017C	056485018C	056485019C	056485020C	056485021C	056485022C	
056485111C	056485112C	056485113C	056485114C	056485115C	056485116C	056485117C	056485118C	056485119C	056485120C	056485121C	056485122C	
056485211C	056485212C	056485213C	056485214C	056485215C	056485216C	056485217C	056485218C	056485219C	056485220C	056485221C	056485222C	
056485311C	056485312C	056485313C	056485314C	056485315C	056485316C	056485317C	056485318C	056485319C	056485320C	056485321C	056485322C	
056485411C	056485412C	056485413C	056485414C	056485415C	056485416C	056485417C	056485418C	056485419C	056485420C	056485421C	056485422C	
056485511C	056485512C	056485513C	056485514C	056485515C	056485516C	056485517C	056485518C	056485519C	056485520C	056485521C	056485522C	
056485611C	056485612C	056485613C	056485614C	056485615C	056485616C	056485617C	056485618C	056485619C	056485620C	056485621C	056485622C	
056485711C	056485712C	056485713C	056485714C	056485715C	056485716C	056485717C	056485718C	056485719C	056485720C	056485721C	056485722C	

KNOOP TEST BLOCKS (WITH OR WITHOUT CERTIFICATE)

The Knoop hardness test is an alternative to the Vickers test in the micro hardness testing range. Before application of the Knoop hardness test, you must prepare the surface of the material to be tested.

We recommend you verify the calibration of your equipment on a regular basis ensuring reproducibility and reliability of your hardness testing results.

The Knoop hardness test is used for micro hardness testing (loads below or equal to 1 kgf) and so the surface of the specimen material should be highly polished or electropolished before testing is performed.

Knoop	Hardness								
Test method	40	70	100	150	200	250	300	350	400
HK0.001	056487000C	056487001C	056487002C	056487003C	056487005C	056487006C	056487007C	056487008C	056487009C
HK0.005	056487100C	056487101C	056487102C	056487103C	056487105C	056487106C	056487107C	056487108C	056487109C
HK0.010	056487200C	056487201C	056487202C	056487203C	056487205C	056487206C	056487207C	056487208C	056487209C
HK0.025	056487300C	056487301C	056487302C	056487303C	056487305C	056487306C	056487307C	056487308C	056487309C
HK0.050	056487400C	056487401C	056487402C	056487403C	056487405C	056487406C	056487407C	056487408C	056487409C
HK0.1	056487500C	056487501C	056487502C	056487503C	056487505C	056487506C	056487507C	056487508C	056487509C
HK0.2	056487600C	056487601C	056487602C	056487603C	056487605C	056487606C	056487607C	056487608C	056487609C
HK0.3	056487700C	056487701C	056487702C	056487703C	056487705C	056487706C	056487707C	056487708C	056487709C
HK0.5	056487800C	056487801C	056487802C	056487803C	056487805C	056487806C	056487807C	056487808C	056487809C
HK1	056487900C	056487901C	056487902C	056487903C	056487905C	056487906C	056487907C	056487908C	056487909C

Knoop

All blocks will be supplied within ± 25 HK of the nominal value.

Block size: 25 mm diameter x 6 mm thickness

Please contact your local Struers representative, if you wish to add additional calibration and grid on the test block.



Test Blocks

450	500	550	600	650	700	750	800	850	900	950	1000
056487010C	056487011C	056487012C	056487013C	056487014C	056487015C	056487016C	056487017C	056487018C	056487019C	056487020C	056487021C
056487110C	056487111C	056487112C	056487113C	056487114C	056487115C	056487116C	056487117C	056487118C	056487119C	056487120C	056487121C
056487210C	056487211C	056487212C	056487213C	056487214C	056487215C	056487216C	056487217C	056487218C	056487219C	056487220C	056487221C
056487310C	056487311C	056487312C	056487313C	056487314C	056487315C	056487316C	056487317C	056487318C	056487319C	056487320C	056487321C
056487410C	056487411C	056487412C	056487413C	056487414C	056487415C	056487416C	056487417C	056487418C	056487419C	056487420C	056487421C
056487510C	056487511C	056487512C	056487513C	056487514C	056487515C	056487516C	056487517C	056487518C	056487519C	056487520C	056487521C
056487610C	056487611C	056487612C	056487613C	056487614C	056487615C	056487616C	056487617C	056487618C	056487619C	056487620C	056487621C
056487710C	056487711C	056487712C	056487713C	056487714C	056487715C	056487716C	056487717C	056487718C	056487719C	056487720C	056487721C
056487810C	056487811C	056487812C	056487813C	056487814C	056487815C	056487816C	056487817C	056487818C	056487819C	056487820C	056487821C
056487910C	056487911C	056487912C	056487913C	056487914C	056487915C	056487916C	056487917C	056487918C	056487919C	056487920C	056487921C

ROCKWELL TEST BLOCKS (WITH OR WITHOUT CERTIFICATE)

Rockwell	Regular Scales								
Test Method	Hardness								
HRC	20 056486000C	25 056486001C	30 056486002C	35 056486003C	40 056486004C	45 056486005C	50 056486006C	55 056486007C	60 056486008C
HRA	60 056486020C	63 056486021C	65 056486022C	68 056486023C	70 056486024C	73 056486025C	76 056486026C	78 056486027C	81 056486028C
HRA	22 056486140C	26 056486141C	31 056486142C	35 056486143C	40 056486144C	45 056486145C	47 056486146C	50 056486147C	53 056486148C
HRD	40 056486040C	44 056486041C	48 056486042C	52 056486043C	56 056486044C	60 056486045C	64 056486046C	67 056486047C	71 056486048C
HRB	20 056486120C	30 056486121C	40 056486122C	50 056486123C	60 056486124C	70 056486125C	75 056486126C	80 056486127C	85 056486128C
HRE	75 056486160C	81 056486161C	87 056486162C	93 056486163C	100 056486164C				
HRF	74 056486170C	80 056486171C	86 056486172C	91 056486173C	97 056486174C				
HRG	33 056486182C	41 056486183C	49 056486184C	58 056486185C	66 056486186C	74 056486187C	83 056486188C		
HRH	94 056486190C	98 056486191C							
HRK	47 056486201C	56 056486202C	65 056486203C	73 056486204C	81 056486205C	86 056486206C	91 056486207C	95 056486208C	99 056486209C
HRL	92 056486280C	118 056486281C	123 056486282C						
HRM	67 056486290C	107 056486291C	118 056486292C						
HRP	86 056486300C	94 056486301C	112 056486302C						
HRR	105 056486310C	123 056486311C	126 056486312C						
HRS	115 056486320C	117 056486321C	123 056486322C						
HRV	107 056486330C	109 056486331C	120 056486332C						

Rockwell	Superficial Scales								
Test Method	Hardness								
HR15N	72 056486061C	75 056486062C	78 056486063C	81 056486064C	83 056486065C	85 056486066C	88 056486067C	90 056486068C	91 056486069C
HR30N	46 056486081C	50 056486082C	55 056486083C	59 056486084C	64 056486085C	68 056486086C	73 056486087C	77 056486088C	80 056486089C
HR45N	25 056486101C	31 056486102C	37 056486103C	43 056486104C	49 056486105C	55 056486106C	61 056486107C	66 056486108C	70 056486109C
HR15T	67 056486220C	70 056486221C	73 056486222C	77 056486223C	80 056486224C	83 056486225C	85 056486226C	86 056486227C	88 056486228C
HR30T	29 056486240C	36 056486241C	43 056486242C	49 056486243C	56 056486244C	63 056486245C	66 056486246C	69 056486247C	73 056486248C
HR45T	12 056486261C	22 056486262C	32 056486263C	43 056486264C	48 056486265C	53 056486266C	58 056486267C	63 056486268C	68 056486269C
HR15W	84 056486340C	87 056486341C	94 056486342C						
HR30W	67 056486350C	73 056486351C	87 056486352C						
HR45W	50 056486360C	59 056486361C	80 056486362C						
HR15X	92 056486370C	93 056486371C	96 056486372C						
HR30X	82 056486380C	84 056486381C	92 056486382C						
HR45X	72 056486390C	76 056486391C	85 056486392C						
HR15Y	95 056486400C	96 056486401C	98 056486402C						
HR30Y	90 056486410C	91 056486411C	95 056486412C						
HR45Y	85 056486420C	87 056486421C	94 056486422C						

63	65	67	68	69	70
056486009C	056486010C	056486011C	056486012C	056486013C	056486014C
83	84	85			
056486029C	056486030C	056486031C			
55	59	62			
056486149C	056486150C	056486151C			
73	74	77			
056486049C	056486050C	056486051C			
90	95	100			
056486129C	056486130C	056486131C			



Test Blocks

The Rockwell hardness test is a fast method, making it ideal for quick hardness testing. Rockwell hardness testing do not use optical measurement meaning specimen reflectiveness is not needed. Rockwell hardness testing can therefore be used on non-prepared surfaces

We recommend you verify the calibration of your equipment on a regular basis ensuring reproducibility and reliability of your hardness testing results.

Rockwell

Test blocks HRC, HRA, HRD, HR15N, HR30N, HR45N will be supplied within ± 3 HR of the nominal value.

All other blocks will be supplied within ± 4 HR of the nominal value.

Block size: 64 mm diameter x 15 mm thickness.

Please contact your local Struers representative, if you wish to add additional calibration and grid on the test block.

92	93	
056486070C	056486071C	
82	83	
056486090C	056486091C	
72	74	
056486110C	056486111C	
90	91	93
056486229C	056486230C	056486231C
76	80	
056486249C	056486250C	