Interior Solid Surface Material

HI·MACS

TECHNICAL DATA SHEET
SANDING

1. Tools & Technique Required

Best experiences have been made using a random orbital sander by air or electrical power.
For large areas use a sanding pad as big as possible up to ø 500 or ø 600mm (if available) when working with hand machines.
Most of the time working with a pad of ø 150mm will be done, because sandpaper disks of this size are more available in the market.
A special sanding technique is required to minimize or to avoid sanding marks or cloudy shadow marks on the surface. (See description below)
For flat areas use a hard pad.
For edges and profiles use a soft or super soft pad or special foam connected to the pad for edges and profiles.
Do not apply too much pressure during sanding but use equal pressure and speed.

Fig.1

Fig.2

Fig.3

Large sections of HIMACS sheets can be sand best with a wide belt sanding machine having at least 3 belts in one row. Such work process allows achieving a better price of fabrication and labor costs with excellent results of a finished surface.
Run small sanding steps only, and take off not more than 0.1mm per process flow. Taking off more material in ones will great much heat and will deform the sheet flatness easily.
Ensure HIMACS sheets do not heat up because of too high or too low speed of the sanding machine.
Dust collection is always recommended by any sanding process.

Fig.4 Long belt sanding machine

Fig.5 Wide belt sanding machine

Fig.6 Dust extraction system machine

2. Sanding Requirements for HIMACS Sheets

Under normal circumstances, follow the sanding steps mentioned in the spread sheet below. Ensure to run the sanding process in a professional and consistent HIMACSdescribed in this Technical bulletin.
Be aware, that the recommended gloss finish for HIMACS standard fabrication is a “Semi-Gloss-Finish”.

High-Gloss-Finish can be done as well, but should be used for art applications only and is NOT covered under our warranty program.

Be aware, that some colors of HIMACS, especially darker colors with higher color pigmentation need to have more sanding and finishing care. (This should be taken into consideration when calculating a project.)
Always use a dust extraction system when sanding.
Avoid heat during the sanding process.

2.1. Wet Sanding

For special applications or specific fabrication processes: wet sanding may is a better option to reduce and keep dust more efficient under control.
Ensure all necessary items are water proof and water resistant as well as environmental friendly to use water with a recycle system.
The advantage is having no dust in the work zone. Surface gets cooled during the sanding rotation process.

2.2. Matte Finish

To achieve a matte finish, you can either use a grit or a micron system. Remember the numbering system or grades of papers between grit and micron systems are opposite to one another.
First, use a 120 Grit or 100 micron abrasive. Once this step has been completed, remember to clean the top and switch papers to a 180 or 220 Grit or 60 Micron paper.
Finally, clean the top once again and surface the top with a Scotch Brite™ pad.
If you are working with a dark or black colour, you may have to add an additional third step in sanding. This will require a 320-400 Grit or 30 micron paper. If this is done, you will then want to clean the top and then surface the top with a Ultra Fine Scotch Brite™ pad.

2.3. Semi-Gloss Finish

If you wish to achieve a satin finish follow the same steps expressed to achieve a Matte Finish on a dark colour. Use a 120 Grit/100 Micron; clean surface from dust,
Switch to 180-220 Grit/60 Micron. Wipe off the dust.

> Remember to clean off the top between each single sanding step.

Then change using 320-400 Grit/30 Micron paper. Clean the top from dust.
Sand the top with a Ultra Fine Scotch Brite ™ pad or by using the Superpad S/G from Joest-Abrasives. Clean the top once again and examine the final finish.
Clean off from any dust or wipe off with wet soap-water and dry cloth/paper.

2.4. Gloss Finish / High Gloss Finish

Gloss prior High Gloss finish is not recommended for any application of use and is not protected neither covered under our warranty.

Follow the steps to the Satin Finish specification, but do not use the pad yet. As you reach the 320-400 Grit/30 Micron step, you will need to add a few additional steps.
Sand the top using 600-900 Grit/15 Micron paper. Thoroughly clean the top. Remember to check the loading of your paper during the process and replace it frequently as necessary to maintain a consistent finish.

2.5. Next – polishing procedures

Remember to note that HI-Gloss finishes on dark colours are not recommended in high traffic areas, as the finish will show wear very quickly and require constant maintenance.

Remember the polisher will build a lot of heat as you buff the surface with the polishing compounds. Maintain moderate consistent pressure to prevent overheating of the top and burnishing of the gloss finish.

Use an approx. 250 / 300mm variable speed polisher. Several machine manufactures offer a few models that can maintain 2500 RPM's and 8-10 amps of power.
Install a 3M Buff Adapter to the polishing equipment. This is important so as not to allow the arbor to damage the surface in the polishing process.
You must now install a white 3M Super Duty 2+2 Pad to the polisher assembly.
Apply 3M Marine Paste Compound to the top. This paste is abrasive and will remove swirls to 30 Micron. You may need to repeat this step. Keep the buffer moving in a controlled fashion across the countertop and then from front to back across the countertop.
Clean all compound residue from the polished surface. You can do so by reversing the white pad. Then clean the top with denatured alcohol and a clean soft white rag.
Take off the White 3M Super Duty 2 + 2 Pad and replace it with a Yellow 3M Super Buff Polishing Pad.
Apply 3M "Finesse-It" Polishing Material to the countertop. Remove any remaining swirls to produce a high gloss surface.
Clean all polishing residue from the polished surface. You can reverse the Yellow Pad to remove any residue left behind from this step.

3. Sanding Technique for HIMACS Sheets

When starting with the sanding process using the manual method,
following the direction < West - East > and then changing into < South - North > direction. Fig.7

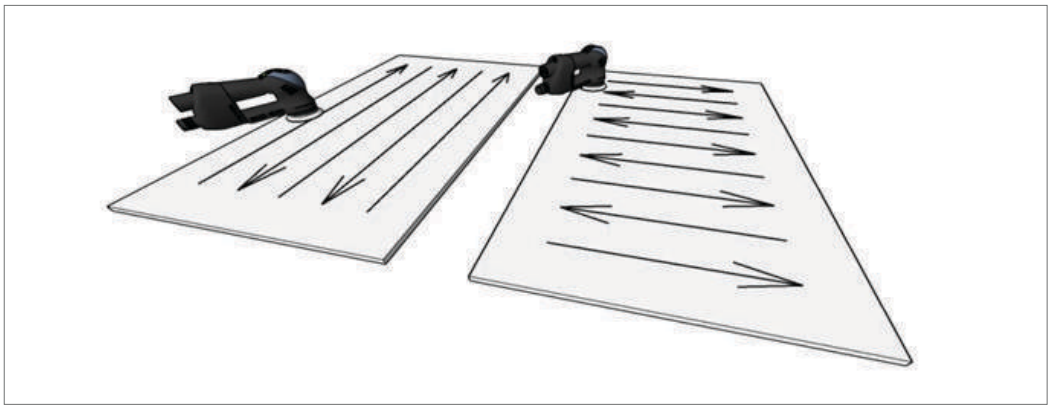


Fig.7

Use ex-center position of the machine for rough sandpaper and change the adjustment to fine sanding by using finer grid sandpaper.

Run those directions two times in moving the random orbital sander in small circulars motion, where each move will overlap the small circle before. Fig.8

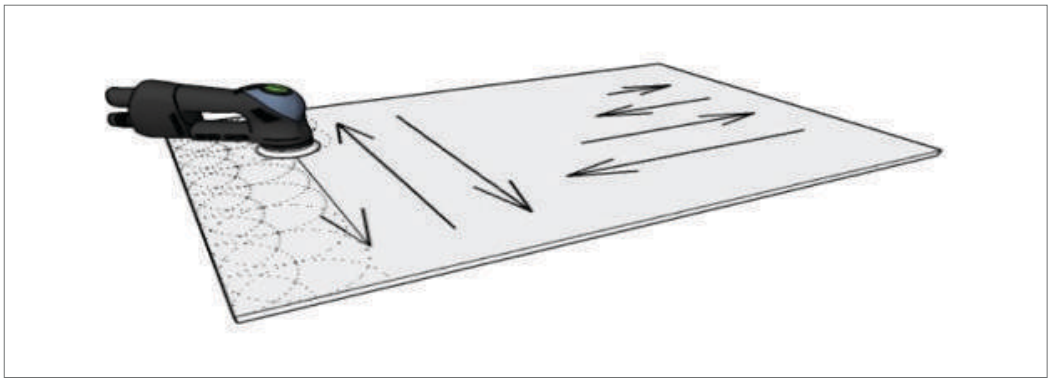


Fig.8

Ensure the sandpaper disc does not start to clog. Always take off dust when changing to the next step using a soft cloth or a special dust sanding disk.

When changing sanding process to step 3 or/and step 4 change the sanding direction into a diagonal direction and also change the sanding moves into - movements.

Always ensure to overlap the movements. Fig.10

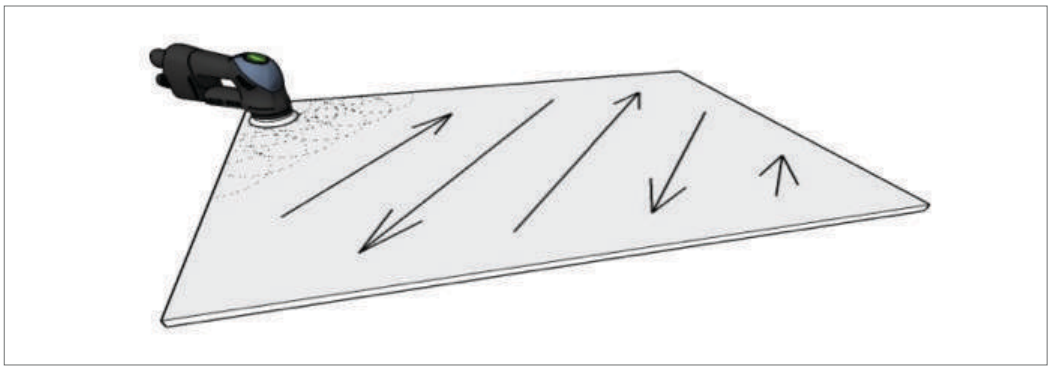


Fig.9

Work continuously – and always use same pressure to the surface.
Uneven pressure or clocking sandpaper can cause cloudy effects of the surface.

4. Sanding Step Overview for HIMACS Sheets

			Standard recommendation			
FINISH-LEVEL	**MATT-FINISH**		**SEMI-GLOSS-FINISH**		**HIGH-GLOSS-FINISH**	
HIMACS colour family	**for all colours**		**for all colours**		**for all colours**	
Sanding steps	**micron-sandpaper**	**grid-sandpaper**	**micron-sandpaper**	**grid-sandpaper**	**micron-sandpaper**	**grid-sandpaper**
Step 1	*100/80 µ*	150/180	*100/80 µ*	150/180	*100/80 µ*	150/180
	take dust away		take dust away		take dust away	
Step 2	60 µ	220	60 µ	220	60 µ	220
	take dust away		take dust away		take dust away	
Step 3	"useit®" Superpad S/G Scotch Brite™ Maroon 7447	280	40/30 µ	280/320	30 µ	280/320
	take dust away		take dust away		take dust away	
Step 4	industrial paper towel	"useit®" Superpad S/G Scotch Brite™ Maroon 7447	"useit®" Superpad S/G Scotch Brite™ Maroon 7447	380/400	15 µ	380/400
	take dust away		take dust away		take dust away	
Step 5		industrial paper towel	industrial paper towel	"useit®" Superpad S/G Scotch Brite™ Maroon 7447	9 µ	600/800
				take dust away	take dust away	
Step 6				industrial paper towel	Finesse-it™ Finish-component	1200
					take dust away	
Step 7						1500
						1800
						2500

Fig.10

5. (A) Sanding Recommendation Summery for HIMACS Sheets

In the following guidelines all sanding media is referred to in “grit” for simplicity.

5.1. Matte finish guide

1. Sand the entire surface with 120-grit
2. Clean the surface to remove all 120-grit dust
3. Sand the entire surface with 180-grit
4. Clean the surface to remove all 180-grit dust
5. Sand the entire surface with 3M brand #7447 Scotch-Brite®pad or equivalent
6. Clean the entire surface and examine the finish. Repeat any steps as necessary.

5.2. SEMI-GLOSS (SATIN) FINISH GUIDE

1. Follow steps 1 through 6 above, then...
2. Sand the entire surface with 320-grit
3. Clean the entire surface to remove all 320-grit dust
4. Sand the entire surface with 400-grit
5. Clean the entire surface to remove all 400-grit dust
6. Sand the entire surface with 3M brand #7448 Scotch-Brite®pad or equivalent
7. Clean the entire surface and examine the finish. Repeat any steps as necessary.

5.3. HIGH-GLOSS FINISH GUIDE

1. Follow steps 1 through 10 above. After the 400-grit sanding step-no.10 follow steps below Sand
2. the entire surface using 600-grit
3. Clean the entire surface to remove all 600-grit dust
4. Sand the entire surface using 900-grit
5. Clean the entire surface to remove all 900-grit dust
6. Switch to a variable speed polisher [for best results use a ten (10)-inch (250mm) pad]. If necessary use a Buff Adapter to prevent the arbor from damaging the HIMACS surface. Depending on the desired gloss level the following polishing products or equivalents are used:
7. 3M™ Trizact™ 3000 and 5000 abrasive/polishing pads
8. Remove dust pigments after each step with water and wipe off with a wet soft cloth
9. 3M brand Finesse-it™ Marine Paste Compound 06039 White
10. 3M brand Finesse-it Finishing Material 81235 White
11. Consult your polishing product and/or polishing equipment supplier for their recommendations.
12. Clean the entire surface to remove the polishing residue and examine the surface. Repeat any steps as necessary.

Sample

Sandpaper Joest Abrasives
USEIT®-SUPERPAD P Gold

Thanks to their full-surface perforation, the Multi-Perforation useit® Superpad P Gold sanding disc are ideal for use on all manual grinding machines with and without suction. They guarantee 100% capability with minimum storage costs. Thanks to its stearate coating and unique design, clogging of the sanding disc is effectively avoided. Dust pollution for humans and the environment is reduced to a minimum. Compared to conventional perforated sandpaper from other manufacturers, the Gold quality achieves a much higher level of sanding performance. Precise and exquisite surface qualities with unique 'feel' can be achieved. Thanks to its stearate coating, zhe Gold quality is particularly suitable for sanding painted surfaces and guarantees dust and shadow-free sanding when used on mineral materials.

Fig.11

Fig.12

Technical Data Areas of use:

- Paints / Varnishes
- Composite
- Plastic
- **Solid Surface material like HIMACS**
- Wood
- Filler

Carrier material:
C-paper, extra strong Abrasive grain: Alumina.

Scattering: half-open
Grain: P40 - P800 Bonding agent: synthetic Resin paint: Gold Backing :
special foam / velour coating

Available Product for Standard Excenter size Ø 150 mm:

517-A 40	Ø 150 mm	red	P-40	in carton	25 pcs.
517-A 40/SB	Ø 150 mm	red	P-40	blister	10 pcs.
517-A 60	Ø 150 mm	red	P-60	in carton	25 pcs.
517-A 60/SB	Ø 150 mm	red	P-60	blister	10 pcs.
517-A 80	Ø 150 mm	gold	P-80	in carton	25 pcs.
517-A 80/SB	Ø 150 mm	gold	P-80	blister	10 pcs.
517-A100	Ø 150 mm	gold	P-100	in carton	25 pcs.
517-A100/SB	Ø 150 mm	gold	P-100	blister	10 pcs.
517-A120	Ø 150 mm	gold	P-120	in carton	25 pcs.
517-A120/SB	Ø 150 mm	gold	P-120	blister	10 pcs.
517-A150	Ø 150 mm	gold	P-150	in carton	25 pcs.
517-A150/SB	Ø 150 mm	gold	P-150	blister	10 pcs.
517-A180	Ø 150 mm	gold	P-180	in carton	25 pcs.
517-A180/SB	Ø 150 mm	gold	P-180	blister	10 pcs.
517-A220	Ø 150 mm	gold	P-220	in carton	25 pcs.
517-A220/SB	Ø 150 mm	gold	P-220	blister	10 pcs.
517-A240	Ø 150 mm	gold	P-240	in carton	25 pcs.
517-A240/SB	Ø 150 mm	gold	P-240	blister	10 pcs.
517-A280	Ø 150 mm	gold	P-280	in carton	25 pcs.
517-A280/SB	Ø 150 mm	gold	P-280	blister	10 pcs.
517-A320	Ø 150 mm	gold	P-320	in carton	25 pcs.
517-A320/SB	Ø 150 mm	gold	P-320	blister	10 pcs.
517-A400	Ø 150 mm	gold	P-400	in carton	25 pcs.
517-A400/SB	Ø 150 mm	gold	P-400	blister	10 pcs.
517-A500	Ø 150 mm	gold	P-500	in carton	25 pcs.
517-A500/SB	Ø 150 mm	gold	P-500	blister	10 pcs.
517-A600	Ø 150 mm	gold	P-600	in carton	25 pcs.
517-A600/SB	Ø 150 mm	gold	P-600	blister	10 pcs.

Fig.13

Fig.14

useit-abrasives® - Schleifsysteme für Mineralwerkstoffe
useit-abrasives® - for Solid Surface Materials

Bearbeiten von Mineralwerkstoffen wolkenfrei, schattenfrei, staubfrei, schnell und kostensparend mit den patentierten useit®-Schleifmitteln.

Finishing of Solid Surface Materials cloudless, shadeless, dust-free, quick and cost-saving with the patented useit-abrasives®.

useit®-Superpad P

useit®-Superfinishing-Pad SG

	matt	seidenmatt *semigloss*	Hochglanz *high gloss*
useit®-Superpad P 220	x	x	x
useit®-Superpad P 400	x		
useit®-Superfinishing-Pad SG 600		x	x
useit®-Superfinishing-Pad SG 1500			x
useit®-Superfinishing-Pad SG 3000 für Spiegelglanz (nass schleifen) *for high gloss (wet sanding)*			x

(Kratzer und sonstige Fehler in der Oberfläche mit Korn 80, 120, 150 oder 180 ausschleifen)
(useit®-Superpad P grit 120, 150 or 180 to remove deep sanding marks or other surface defects!)

Bearbeiten von Aufkantungen, Radien, Rundungen und Flächen
To work on chamfered edges, radii, roundings and plane surfaces

useit®-Adapter Schleifsystem
useit®-adapter sanding system

useit®-Feinschliff- und Polierbürste
useit®-finishing and polishing brush

useit®-Superfinishing-Bänder
useit®-Superfinishing-Belts

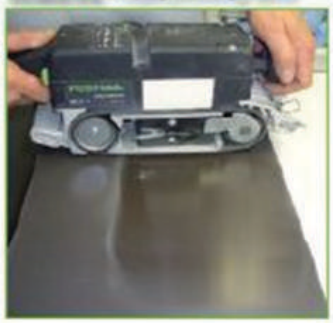


Fig.15

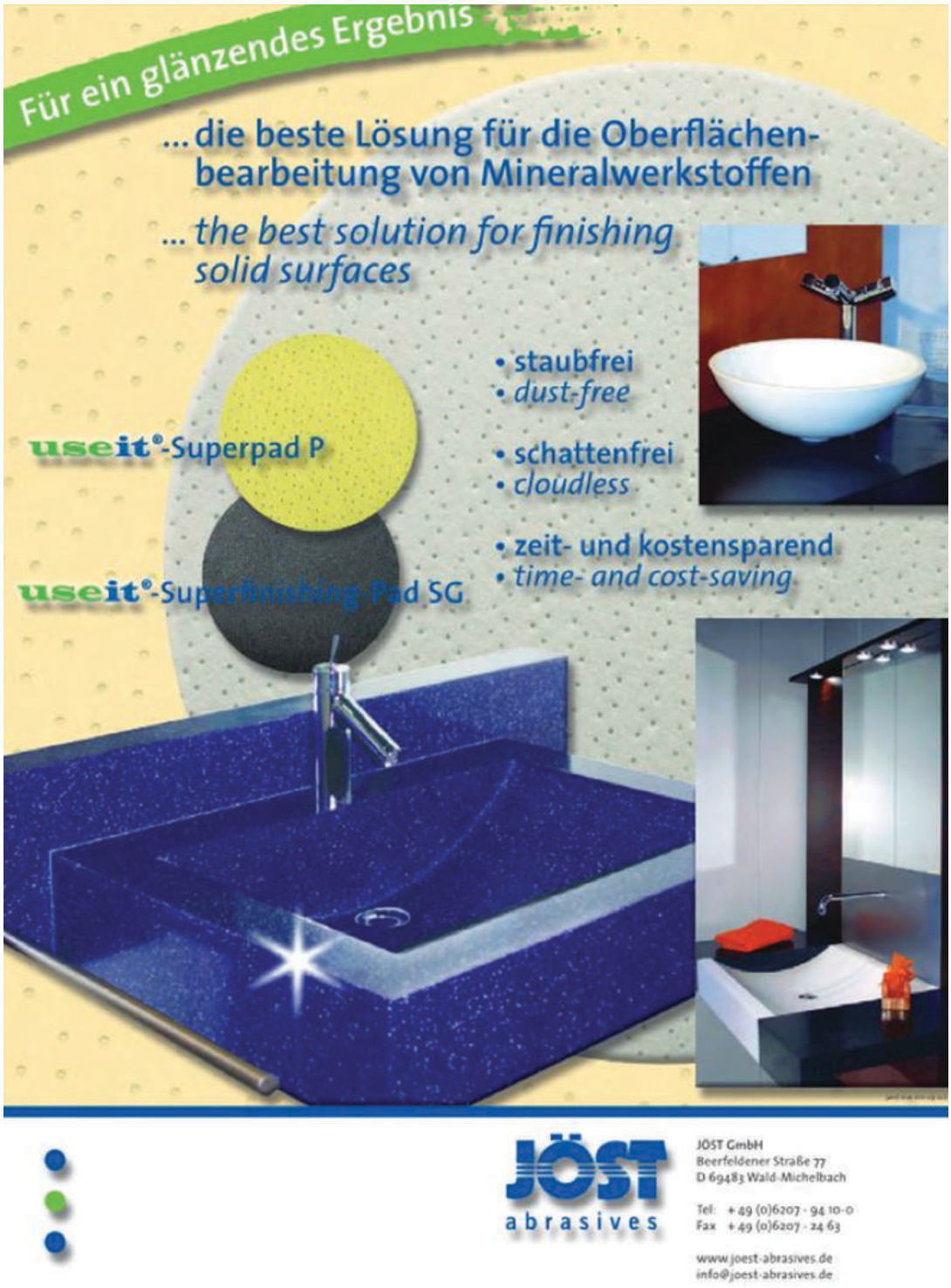

Für ein glänzendes Ergebnis
... die beste Lösung für die Oberflächen-bearbeitung von Mineralwerkstoffen
... the best solution for finishing solid surfaces
useit®-Superpad P
useit®-Superfinishing-Pad SG
• staubfrei
• dust-free
• schattenfrei
• cloudless
• zeit- und kostensparend
• time- and cost-saving
JÖST abrasives
JÖST GmbH
Beerfeldener Straße 77
D 69483 Wald-Michelbach
Tel: +49 (0)6207 - 94 10-0
Fax +49 (0)6207 - 24 63
www.joest-abrasives.de
info@joest-abrasives.de

Fig.15

Sandpaper: 3M Hookit 266L Micon

Excenter sanding machine

Inhalt der 3M™ Finesse-it™ Systembox

Schleifen

Produkt	Produkt-beschreibung	Durch-messer	Korn	ID/ Part-Nr.	Inhalt pro Box
	3M 466LA Trizact Stikit Schleifronden	32 mm	A5	50079	100 Ronden
	3M 260L Hookit Schleifscheibe, Lochung LD801A	150 mm	P600	E62015	50 Scheiben
	3M 260L Hookit Schleifscheibe, Lochung LD801A	150 mm	P1200	E62012	50 Scheiben
	3M 443SA Trizact Hookit Feinschleifscheibe	150 mm	P1000	E50341	15 Scheiben
	3M 443SA Trizact Hookit Feinschleifscheibe	150 mm	P3000	50414	15 Scheiben

Fig.17

Inhalt der 3M™ Finesse-it™ Systembox

Schleifen

Produkt	Produkt-beschreibung	Durch-messer	Korn	ID/ Part-Nr.	Inhalt pro Box
	3M 466LA Trizact Stikit Schleifronden	32 mm	A5	50079	100 Ronden
	3M 260L Hookit Schleifscheibe, Lochung LD801A	150 mm	P600	E62015	50 Scheiben
	3M 260L Hookit Schleifscheibe, Lochung LD801A	150 mm	P1200	E62012	50 Scheiben
	3M 443SA Trizact Hookit Feinschleifscheibe	150 mm	P1000	E50341	15 Scheiben
	3M 443SA Trizact Hookit Feinschleifscheibe	150 mm	P3000	50414	15 Scheiben

Polieren

Produkt	Produkt-beschreibung	Inhalt	Farbe	ID/ Part-Nr.	Inhalt pro Box
	3M Finesse-it Schleifpaste	1 l	weiß	09639	1 Flasche
	3M Perfect-it III Extra Fine PLUS Schleifpaste	1 l	weiß	E80349	1 Flasche
	3M Finesse-it Ultra Fine Polierpaste	1 l	weiß	60168	1 Flasche

Schleifzubehör

Produkt	Produkt-beschreibung	Abmessung in mm	Inhalt / Farbe	ID/ Part-Nr.	Inhalt pro Box
	3M Stikit Handblock	Ø 31,7		E50199	1 Stück
	3M Hookit 1/2-Hand-schleifteller	Ø 150	schwarz	05792	1 Stück
	3M Sprühflasche		500 ml	05793	1 Stück
	3M Gummispachtel	70 x 110	schwarz	05517	1 Stück
	3M Schutzhandschuhe PU-beschichtet	Größe 10	grau	63512	1 Paar

Polierzubehör

Produkt	Produkt-beschreibung	Abmessung in mm	Farbe	ID/ Part-Nr.	Inhalt pro Box
	3M Finesse-it Polierfell	Ø 133,3	weiß	81471	2 Stück
	3M Finesse-it Polierschaum „Extra Life"	Ø 133,3	orange	60107	2 Stück
	3M Perfect-it III Antihologramm Polierschaum	Ø 133,3	schwarz	05727	2 Stück
	Scotch-Brite Mikrofaser-Poliertuch „Premium"	320 x 360	gelb	2022	2 Stück

Fig.18

Sandpaper: 3M

Sanding moves:

Um ein perfektes Oberflächenfinish zu erzielen, wird die handgeführte Maschine in einem schlangenförmigen Kreuzgang eingesetzt, d. h. von oben nach unten und von rechts nach links.

Fig.19

Fig.20

Mineral Grading Comparison

FEPA	Micron Grade	3M Flexible Diamond		3M Trizact
		Nickel Bonded	Resin Bonded	
P14000			R2*	
P9000	3			
P3800	6			
P3000	7			A6
P2500	9			
P2000		N10		
P1500			R10*	
P1200	15			A16
P1000	20			A20
P800		N20		
P600				A30
P500	30		R30*	A40
P400				A45
P360	40	N40		
P320				A60
P280				A65
P240	60			A80
P220				A90
		N74		A100
P180				A110
P150				A130
P120	100	N125		A160
P100				
P80				A300
P60		N250		
P50				
P40				
P38				
P36				
P24				
P20				
P16				
P12				

Fig.21

6. (B) Sanding Recommendation for HIMACS Sheets

Alternative Sanding Products & Sanding step

HIMACS Surface Sanding Process

FINISH LEVEL	SANDING STEP	REMARK: DRY SANDING USED SANDPAPER:
Matt	P 60/100	3M Hookit
		dust remove
	P 120 / 150	3M Hookit
		dust remove
	P 180	3M Hookit
		dust remove
	Scotch-Brite	Marron
		dust remove

FINISH LEVEL	SANDING STEP	REMARK: DRY SANDING USED SANDPAPER:
Semi gloss	P 240	3M Hookit
		dust remove
	P 320	3M Hookit
		dust remove
	P 400	3M Hookit
		dust remove
	Scotch-Brite	Grey
		dust remove
Dust remove	3M Scotch-Brite MS-DC 150x8mm type T white	

FINISH LEVEL	SANDING STEP	REMARK: DRY SANDING USED SANDPAPER:
High gloss	P 600	3M Hookit 51156
	Cleanup / dry	Wipe off
	P 1200	3M Hookit 51156
	Cleanup / dry	Wipe off
	P 1000	3M Trizact
	Cleanup / dry	Wipe off
	P 3000	3M Trizact
	Cleanup / dry	Wipe off
	Finess-it	Polish paste with felt-disk
	Wipe off	With cotton cloth

Fig.22

If there are no other products listed yet does not mean that other products would not work on HIMACS surfaces but maybe can bring a good finish result on its surface.
And what really matters is the final perfect result for customer satisfaction under best professional practice.

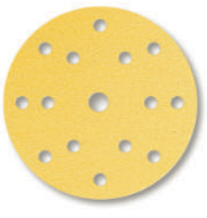
7. (C) Sanding Recommendation for HIMACS Sheets

Alternative Sanding Products & Sanding steps

SIA

MIRKA:

Mirka Gold Schleifscheiben, 15-Loch, Ø150mm,
100St./Pack Product number: 2361109980
Manufacturer: Mirka



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BECAUSE QUALITY WINS