

||||||| MEDIA AND COMPOUNDS |||||||



TROWAL MASS FINISHING TECHNOLOGY
Media and Compounds

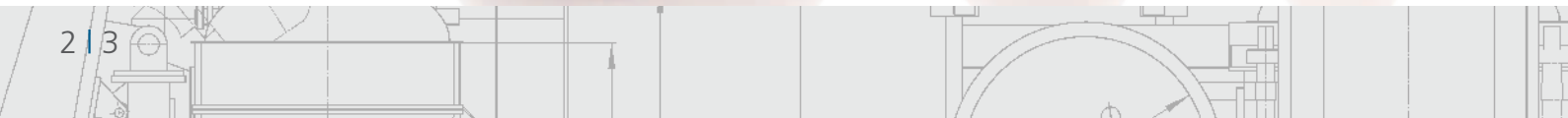
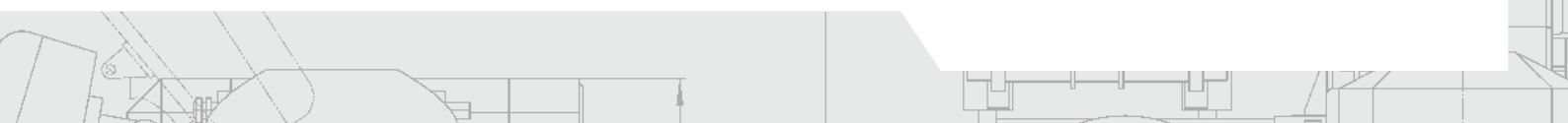




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TRADITION – DEEPLY ROOTED IN GERMANY

Trowal has been building surface finishing machinery since 1931. Our name stands for excellent quality & reliability, and we are recognized as the inventor of the modern mass finishing technology. It is no surprise that the term “Trowalizing” has become synonymous with mass finishing.

MEDIA AND COMPOUNDS – ALL MADE IN-HOUSE

In addition to its surface finishing equipment Walther Trowal also produces a wide range of grinding & polishing media and compounds at plants in Haan (Germany) and at METAREF in Stoke-on-Trent (UK). All our products are subject to strict quality controls, and our mass finishing consumables division is certified to DIN ISO 9001:2008.

EXCELLENT INDUSTRIAL SAFETY AND ENVIRONMENTAL PROTECTION

To meet the mandated governmental VOC emission limits (BlmSchG) in our plastic media production, we have installed a thermal post-combustion system that is based on the principle of regenerative thermal oxidation (RTO). This is no doubt a win-win situation for our employees and the air quality in Germany.





MEDIA AND COMPOUNDS

“Trowalizing” does not just represent a single process for finishing the surface of different parts, but it offers a huge spectrum of solutions for treating and improving surfaces in a targeted manner. Optimum finishing results are only achieved with the right combination of equipment technology, grinding & polishing media and compound.

GRINDING & POLISHING MEDIA

The Walther Trowal media program offers solutions for practically any conceivable finishing problem. Over a period of 80 years we developed a near-perfect range of grinding and polishing media made from different materials, in different shapes and sizes and with different abrasive characteristics. Be it for intensive surface grinding or for creating a preplate finish, Walther Trowal can always deliver the optimum media, made in-house.

















COMPOUNDS

Compounds not only enhance the grinding performance, but they also flush out the media and metal fines to maintain the “cutting” capabilities of the media. In addition, compounds are used for cleaning the parts and placing a corrosion protection on the part surface. Trowal compounds, also made in-house, are essential to achieve optimum surface finishing results.

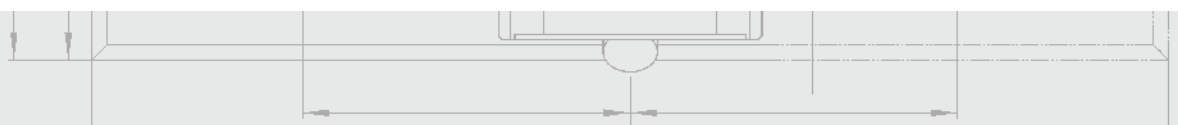




trowalit ceramic media: Efficiency comes in many shapes and sizes

Type	Grinding performance	Achievable surface finish	 Triangle	 Triangle A/C	 Cylinder	 Cylinder A/C	
WXC			6 x 6 10 x 10 13 x 13 28 x 26	15 x 15 21 x 21	3 x 6 10 x 19	7 x 14 10 x 20	
MAC			10 x 10 26 x 26	6 x 12 10 x 15 15 x 15 21 x 21 33 x 23		7 x 15 15 x 25	
Z			6 x 6	4 x 10	3 x 6		
F			9 x 5 16 x 7		4 x 10 6 x 7 7 x 13 10 x 19	4 x 11 7 x 15 8,5 x 20 10 x 20	
PI					4 x 10 6 x 12 15 x 15 25 x 25	7 x 15	
BA			4 x 4 6 x 6 8 x 8 10 x 10 13 x 13 16 x 16 20 x 20 26 x 26 30 x 30	10 x 15 15 x 15 21 x 21 25 x 25 33 x 23		10 x 20 15 x 25	
WV					10 x 15		3 x 10 6 x 14 7 x 10 10 x 20
FSG			6 x 6 10 x 10 13 x 13 16 x 16 20 x 20 26 x 26	4 x 10 6 x 12 10 x 20 13 x 26	20 x 40		
DK			13 x 13 16 x 16 26 x 26	6 x 12 10 x 20 13 x 26 15 x 15 21 x 21	6 x 14 10 x 19		
MHC						1,7 x 5 2,5 x 8 3 x 10 4 x 14	
GP			6 x 6		4 x 6	3 x 10 4 x 10 6 x 14	

A/C = angle cut, S = straight cut; additional sizes and types upon request





Star Ellipse Pyramid Tristar Arrow head Rhombus Sphere

14 x 14 x 5
20 x 20 x 8 10 x 10 x 10 S 50 x 30 x 30 6

35 x 17 x 12
45 x 23 x 15 25
35 4 x 4 x 5 G
10 x 10 x 10 S
20 x 20 x 20 S

14 x 14 x 5
20 x 20 x 8

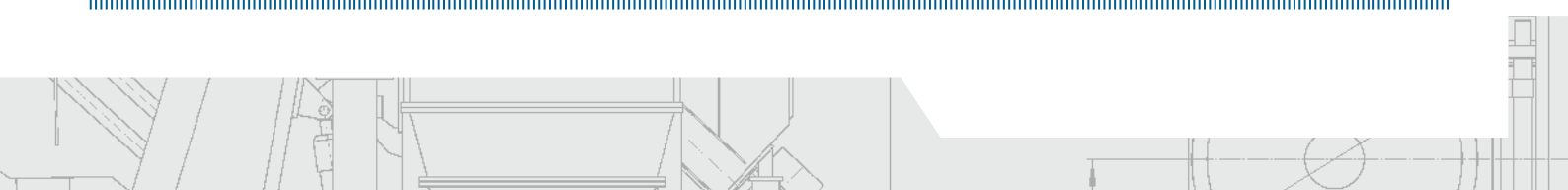
22 x 10 x 8
40 x 20 x 15 14 x 14 x 5
20 x 20 x 8 10 x 10 x 10 S 14 x 14
19 x 19

35 x 17 x 12
45 x 23 x 15 15
25
35
45 50 x 30 x 30

6 x 6 x 6 G
10 x 10 x 10 G 6

22 x 10 x 8
40 x 20 x 15 15 x 15 x 6

6 x 6 x 6 G 6

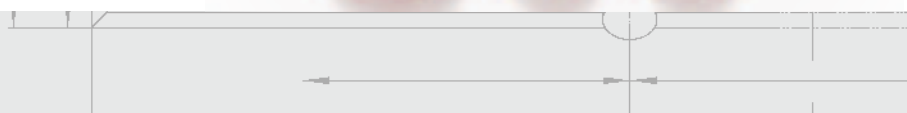




trowalplast plastic media: For gentle processing

Type	Grinding performance	Achievable surface finish	Color	Pyramid	Tristar	Cone	
HSC			dark grey	10 20 25		19	
ET			green	10 20 30			
SP			dark red	15, 20, 25, 30, 40			12 19 24 29
NG			blue	10 15 20			12, 16, 19, 29, 39
XS			light brown	10, 15, 20, 25, 30, 40		42	12, 16, 19, 24, 29, 39, 59
V 2030			light red	10, 15, 20, 25			12, 16 19, 24, 29
CX			pink	10, 15, 20, 25, 30, 40, 50, 60		22 32 42	12, 16, 19, 24, 29, 39, 59
PP			white	10			

Additional sizes and types upon request





Paraboloid



Kite



Nipple



Lens

28 (28 x 16 x 28)

41 (41 x 23 x 41)
51 (51 x 27 x 51)

75 (75 x 61 x 37)

28 (28 x 16 x 28)

28 (28 x 16 x 28)
41 (41 x 23 x 41)

63 (63 x 32 x 22)

28 (28 x 16 x 28)
41 (41 x 23 x 41)

14

28 (28 x 16 x 28)
41 (41 x 23 x 41)
51 (51 x 27 x 51)
61 (61 x 33 x 61)

75 (75 x 61 x 37)

53 (40 x 51)
62 (50 x 60)

14

14



trowal liquid compounds – process water going to drain

ARF, ARO 1, KH 65, KTI, M 10, S 70, T 77

	ARF	ARO 1	KH 65	KTI	M 10	S 70	T 77
	Placing a luster, surface smoothing, polishing, passivating	Cleaning and brightening with corrosion protection	Cleaning and brightening with corrosion protection	Placing a luster, surface smoothing and polishing	Deburring, surface smoothing and brightening	Cleaning with corrosion protection	Cleaning with corrosion protection
Shipping form	liquid	liquid	liquid	liquid	liquid	liquid	liquid
Color	dark yellow	purple	purple	yellow	yellow	blue	green
pH value (10g/l) about	8.9	8.4	8.2	7.6	8.5	9.4	9.5
Functional characteristics							
Corrosion protection	+	++	++	+	+	++	++
Cleaning	++	++	+	++	++	++	++
Degreasing	0	0	0	+	0	0	0
Brightening	++	++	++	++	++	++	++
Foam	++	+	+	++	+	+	+
Passivating	++	+	0	0	+	0	0
Pickling	-	-	-	-	-	-	-
Recycling	-	0	0	0	0	0	0
Going to drain	++	++	++	++	++	++	++
Materials							
Carbon steel	0	++	++	+	++	++	++
Stainless steel	++	++	++	++	++	++	++
Non-ferrous metals	++	++	++	++	++	++	++
Ceramic/plastic	++	++	++		++	++	++
Titanium				++			

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trowal liquid compounds – recycling of process water

DE 97, KE 61, KFL, KR 50, KS 66, SGE, SGK

	DE 97	KE 61	KFL	KR 50	KS 66	SGE	SGK
	Degreasing and corrosion protection	Degreasing, brightening with corrosion protection	Cleaning and degreasing	Cleaning with corrosion protection	Cleaning and brightening with corrosion protection	Cleaning and degreasing with corrosion protection	Cleaning and degreasing with corrosion protection
Shipping form	liquid	liquid	liquid	liquid	liquid	liquid	liquid
Color	yellow	purple	yellow	blue	purple	light red	yellow
pH value (10g/l) about	8.6	7.5	8.2	8.6	8.7	10.8	9.7
Functional characteristics							
Corrosion protection	++	++	+	++	++	+	+
Cleaning	+	+	+	+	++	++	++
Degreasing	++	+	++	+	+	++	++
Brightening	+	+	+	+	++	0	+
Foam	+	0	+	0	0	+	0
Passivating	0	0	0	0	0	+	+
Pickling	-	-	-	-	-	-	-
Recycling	++	+	++	++	++	+	++
Going to drain	++	++	++	++	++	++	++
Materials							
Carbon steel	++	++	++	++	++	+	+
Stainless steel	++	++	++	++	++	+	+
Non-ferrous metals	++	++	++	++	++	++	++
Ceramic/plastic	++	++	++	++	+		
Aluminum						++	++

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trowal powder compounds

9 A, Z 1, B 2, K 10, K 15

	9 A	Z 1	B 2	K 10	K 15
	Grinding	Pickling	Cleaning and degreasing with corrosion protection	Cleaning and degreasing	Cleaning and degreasing
Shipping form	solid	solid	solid	solid	solid
Color	beige	light yellow	white	white	white
pH value (10g/l) about	n.a.	1.1	10.7	12.0	12.1
Functional characteristics					
Corrosion protection		-	++	++	++
Cleaning		0	+	++	++
Degreasing		-	++	++	++
Brightening		-	-	+	++
Foam	-	-	0	-	++
Passivating		-	+	-	-
Pickling	-	++	-	-	-
Recycling	+	-	++	+	0
Going to drain	++	++	++		
Materials					
Carbon steel	++	++	++	++	++
Stainless steel	++	++	++	++	++
Non-ferrous metals	++	++	0	++	++
Ceramic/plastic	++			++	++
Grinding	++				

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trowal liquid compounds – pickling and polishing

AG 26, KP 12, GB 13, FMV, LZ 11

	AG 26	KP 12	GB 13	FMV	LZ 11
	Polishing, placing a luster and brightening	Polishing, placing a luster and brightening	Polishing, placing a luster and brightening	Polishing of aluminum	Pickling
Shipping form	liquid	liquid	liquid	liquid	liquid
Color	yellow	light yellow	yellow	yellow	light yellow
pH value (10g/l) about	2.2	2.5	3.1	2.5	1.0
Functional characteristics					
Corrosion protection	-	-	-	-	+
Cleaning	++	+	++	++	0
Degreasing	++	++	++	++	-
Brightening	++	++	++	++	+
Foam	++	+	++	++	0
Passivating	+	+	+	+	+
Pickling	+	+	+	+	++
Recycling	-	-	-	-	-
Going to drain	++	++	++	++	++
Materials					
Carbon steel	+	+	0	0	++
Stainless steel	+	++	+	+	++
Non-ferrous metals	++	++	++	++	++
Aluminium	++	++	++	++	
Silver	++	++	++		

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trowapast grinding and polishing pastes

PKD, PKR, PKS, PKZ, PKV, PKC, PKP

	PKD	PKR	PKS	PKZ	PKV	PKC	PKP
	Grinding	Grinding	Grinding and polishing	Grinding and polishing	Grinding and polishing	Grinding and polishing of very hard materials, especially ceramics	Polishing
Shipping form	solid	solid	solid	solid	solid	solid	solid
Color	grey	grey	grey	grey	grey	grey	grey
pH value (10g/l) about	9.8	9.8	9.8	9.8	9.8	9.8	9.8
Functional characteristics							
Corrosion protection	+	+	+	+	+	+	+
Recycling	-	-	-	-	-	-	-
Going to drain	++	++	++	++	++	++	++
Grinding	++	++	++	++	+	++	0
Polishing	-	0	0	+	++	++	++
Grinding performance							
Materials							
Carbon steel	++	++	++	++	++	++	++
Stainless steel	++	++	++	++	++	++	++
Hardened steel	++	++	++	++	0	++	++
Copper	-	-	+	-	++	0	0
Brass	-	-	0	0	++	0	++
Ceramic	++	++	0	-	0	++	0

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trowalpur process water cleaning compounds – liquid

LAC, F, C, R, V

	PROCESS WATER GOING TO DRAIN		RECYCLING OF PROCESS WATER		
	LAC	F	C	R	V
	Flocculant for cleaning of the process water	Flocculant for cleaning of the process water	Flocculant for cleaning of the process water	Flocculant for cleaning of the process water	Flocculant for cleaning of the process water
Shipping form	liquid	liquid	liquid	liquid	liquid
Color	yellow-green	without color	without color	greenish	without color
pH value (10g/l) about	2-3	8.3	6.2	6.4	4.3
Functional characteristics					
Recycling	+	0	++	++	++
Going to drain	++	++	-	-	-
Process water contamination					
Media fines	+	+	++	++	++
Metal fines	++	++	++	++	++
Surfactants	+	0	+	+	+
Oil	++	-	-	+	0

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trowalpur process water cleaning compounds – powder

ESM, ESB, EST, ESZ, ESO

	ESM	ESB	EST	ESZ	ESO
	Absorbing flocculant for cleaning of the process water	Absorbing flocculant for cleaning of the process water	Absorbing flocculant for cleaning of the process water	Absorbing flocculant for cleaning of the process water	Absorbing flocculant for cleaning of the process water
Shipping form	solid	solid	solid	solid	solid
Color	grey	grey	grey	grey	grey
pH value (4 g/l) approx.	8.4	8.5	7.9	11.5	8.0
Functional characteristics					
Recycling	++	0	0	++	++
Going to drain	++	++	++	-	-
Process water contamination					
Media fines	++	++	++	++	+
Metal fines	++	++	++	++	-
Surfactants	+	+	++	++	+
Oil	++	+	+	++	++

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trowal auxiliary surface finishing media



BALL BURNISHING WITH STAINLESS STEEL MEDIA

Ball burnishing produces high gloss surface finishes on the work pieces. For these challenging applications mainly stainless steel media is used in combination with special ball burnishing compounds. In some cases media made from hardened steel can be utilized. But this requires the use of alternative ball burnishing compounds.

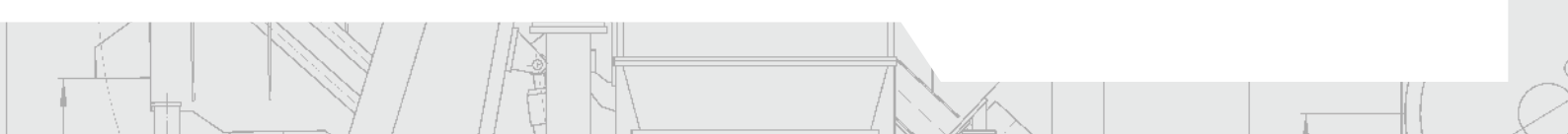
Trowal offers ball burnishing media in many shapes and sizes:

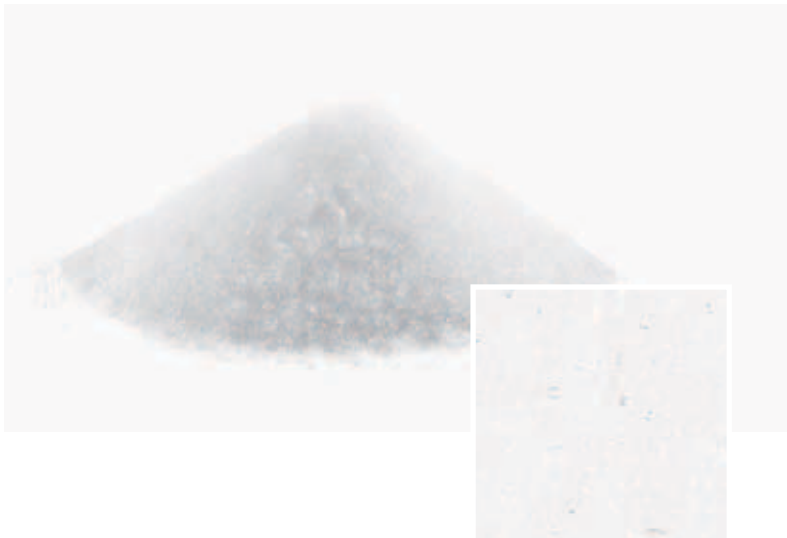
- Spheres
- Satellites (also called ball cones)
- Pins

DEBURRING WITH STEEL MEDIA

So-called "Abcuts", made from needle bearing steel, have a surface profile in the shape of many little files. This media produces not only excellent deburring results on work piece edges and in corners, but also cleans and polishes the complete work piece surface.

Low wear rate = high efficiency!





FLAT WORK PIECES STICKING TOGETHER

Flat parts, e.g. washers, tend to stick together during the finishing process. By adding ATK – short for adhesion prevention pellets – into the part/media mass, this phenomenon is prevented, thus permitting an all-around treatment of the part surface. For particularly difficult applications this media can be supplied in the size range of 100 – 200 μm .

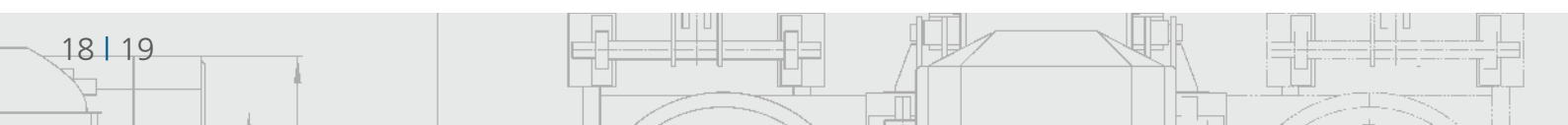
DRYING WITH MAIZE AND NUTSHELL GRANULATE OR WOODEN CUBES

If used in a well heated Trowal vibratory drier, maize granulate (so-called maizorb) is an excellent medium for drying of the finished but still wet work pieces. A welcome side effect is the removal of metal and media fines from the work piece surface.

Nutshell granulate has poorer absorption characteristics, but is harder and, therefore, has excellent polishing capabilities.



Wooden cubes in exactly defined sizes will not lodge in bore holes or channels.





SURFACE SMOOTHING AND POLISHING WITH GLASS BEADS

Glass beads are ideal for light and gentle deburring of parts with complex shapes (including inner contours). Exactly defined bead sizes and a very low wear rate minimize the risk of lodging in the work pieces. Standard bead diameters: 2 – 10 mm (0.08 – 0.4”).



MEDIA FOR SUPPORTING THE GRINDING PROCESS

Adding grinding powder 9A into the parts/media mass quickly increases the cutting rate, even in the case of less aggressive ceramic grinding media. 9A can also be used to provide more “bite” for media that has glazed over.

Grinding and polishing powder trowal VS is used for finishing processes requiring a fine-grinding step and light descaling.



WAL THER
TROWAL !

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