

# Polishing Compounds for Stainless Steel

Surface before polishing	Super Heavy Cut	Heavy Cut	Medium Cut	Finish	Super Finish	Surface after polishing
Raw Part	SC: 523 NG EM: AVM 45					Brushed
		SC: 439 T, 439 S EM: 246 GD				Satin-finished
		SC: 439 T, 439 S EM: 246 GD		SC: P 126 EM: PE F 88		Glossy
Throwing Marks		SC: 439 T, 439 S EM: 246 GD				Satin-finished
		SC: 439 T, 439 S EM: 246 GD		SC: P 126 EM: PE F 88		Glossy
	SC: 523 NG EM: AVM 45		SC: 333 EM: PE F 86		SC: P 175 EM: PE 25 D	High gloss
Grit Size P180	SC: 523 NG EM: AVM 45		SC: 333 EM: PE F 86		SC: P 175 EM: PE 25 D	High gloss
Grit Size P280		SC: 439 T, 439 S EM: 246 GD				Satin-finished
		SC: 439 T, 439 S EM: 246 GD		SC: P 126 EM: PE F 88		Glossy

EM = Emulsion  
SC = Solid Compound

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## Polishing Compounds for Stainless Steel

	Product Name	Art.-No.	Packaging	Cut	Polishing Buff				Suitable for:					Properties
					Fibre	Sisal	Soft Buff	Cotton	Ferrous metals	Aluminium	Brass/non-ferrous metals	precious metals	coatings + plastic	
Solid Compounds	<b>523 NG</b>	1015.056.001	Pieces at 1,15kg	Super Heavy Cut	●	●			●	●	●			Highly abrasive and fast-acting grinding paste. Especially durable, high grade abrasive minerals guarantee a consistent, matt surface.
	<b>439 T</b>	Ø7001.056.001	Pieces at 1,1kg	Heavy Cut		●		●	●	●				Universal, very effective prepolishing compound suitable for a broad range of applications. Quickly removes throwing marks, orange peel and sanding marks.
	<b>333</b>	07013.056.001	Pieces at 1,4kg	Medium Cut		●		●	●			●		Abrasive chromium oxide compound. Swiftly produces an even, high gloss surface.
	<b>P 126</b>	07201.056.001	Pieces at 1,3kg	Finish				●	●	●	●	●	●	Finish paste for all metals and plastics. Leaves very little residues due to low grease content. Produces impeccable deep gloss surfaces in the shortest possible time.
	<b>P 175</b>	07984.056.001	Pieces at 1,3kg	Super Finish			●		●	●	●	●	●	Superfine, high-gloss compound for multiple applications. Guarantees a perfect deep mirror finish.
Emulsions	<b>AVM 45</b>	20848.220.001	Drums at 40kg	Super Heavy Cut	●	●			●					Ideal for burnishing and matting stainless steel. Durable and swiftly working abrasive minerals produce a uniform satin-finished surface.
	<b>246 GD</b>	20879.220.001	Drums at 35kg	Heavy Cut		●		●	●					Very fast-acting pre-polishing compound. Uncomplicated application due to excellent degreasability.
	<b>PE F 86</b>	20929.220.001	Drums at 40kg	Medium Cut				●	●					Emulsion developed especially for stainless steel. Eliminates small defects and produces an impeccable, deep mirror finish.
	<b>PE F 88</b>	20927.220.001	Drums at 40kg	Finish				●	●		●			High grade finishing emulsion. Due to an optimised bond, PE F 88 is easily applicable while leaving very little residue.
	<b>PE 25 D</b>	20472.220.001	Drums at 35kg	Super Finish			●		●	●	●			Eliminates all polishing marks and mikro scratches and guarantees a deep mirror finish that meets the highest quality standards.

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# Root Cause Analysis for Polishing Problems

Problem	Potential root causes				Physical indications	Possible recognisable signs on the buff	Corrective actions
	Polishing compound	Buff	Process	Workpiece			
Deep polishing marks			Buff below operating temperature		Buff temperature too low		Use dummy workpiece for buff warm-up
				Alloy cavities	Micro particle deposits in cavities		Check alloy quality
	Too little of compound applied				Frictional heat too high	Compound coating too thin	Apply more compound, apply more frequently
			Rotational speed too high				Reduce rotational speed
		Buff too rough					Use finer buff, use impregnated buff for metals
		Buff too hard					Use open quilted/pleated buffs, use softer fabric, spacer rings btw. buffs
	Too much compound applied				Frictional heat too low	Compound coating too thick	Apply less compound, peel the buff
			Rotational speed too low				Increase rotational speed
Polishing compound too coarse				Stock removal too high		Use finer compound	
		Buff contaminated				Use new buff, use different buff for different polishing steps	
Micro craters				Unsuitable raw material	Defects visible before polishing		Use different batch of workpieces
	Compound too dry				Frictional heat too high	Compound coating too thin	Use a greasier compound, use more compound
	Too little compound applied						Apply more compound
			Rotational speed too high				Reduce rot. speed, increase buff diameter for better cooling
				Initial surface defects	Surface defects not eliminated		Increase polishing time
		Buff provides insuff. cooling		Frictional heat too high		Use buff with better cooling	
Matt surface	Compound too coarse				Micro scratches		Use finer compound
	Too little compound applied				Frictional heat too high	Compound coating too thin	Apply more compound, apply more frequently
	Too much compound applied					Compound coating too thick	Apply less compound, peel the buff
			Rotational speed too high		Pressure too high	Compound coating too thin	Reduce rotational speed
			Buff below operating temperature		Buff temperature too low	Buff temperature too low	Warm polish tool with dummy part
			Rotational speed too low		Too little pressure applied		Increase rotational speed
			Buff contaminated		Stock removal too high		Remove the wheel, ensure process separation
		Buff too rough			Frictional heat too high		Use buffs with finer or softer fabric
		Buff too hard					Use buff with finer fabric or more open folding
			Unsuitable raw material	Initial surface nit ready for polishing		Use different batch of workpieces, change alloy/material	
Insufficient gloss	Too little compound applied				Insufficient stock removal	Compound coating too thin	Apply more compound, apply more frequently
			Rotational speed too high			Compound coating too thin	Reduce rotational speed
			Buff below operating temperature			Buff temperature too low	Use dummy workpiece for buff warm-up
			Rotational speed too low				Increase rotational speed
	Low compound adhesion to the buff					Compound coating too thin	Adjust buff impregnation, use stickier compound
		Buff too fine		Too little pressure applied			Increase pressure, use narrower buff
		Buff too soft					Use buff with stronger fabric or denser weave
				Initial surface defects too deep		Use buff with harder folding or denser weave	
			Overall sanding and polishing process unsuitable		Polishing marks from previous polishing steps not eliminated		Improve pre-polishing, refine sanding
	Compound too greasy				Compounds residues on surface		Follow process recommendations and instructions for use
	Too much compound applied					Compound coating too thick	Use drier compound
		Buff too rough			Micro scratches		Reduce amount of polishing compound used, peel the buff
			Too much pressure applied				Use finer/softer buff
			Too little pressure applied				Reduce pressure
		Rotational speed too low				Increase pressure, use narrower buff	
Unsuitable polishing compound				Scratches or insufficient stock removal		Increase rotational speed	
						Follow product and process recommendations	

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Problem	Potential root causes				Physical indications	Possible recognisable signs on the buff	Corrective actions
	Polishing compound	Buff	Process	Workpiece			
Sanding or pre-polishing marks not eliminated			Sanding too coarse		Sanding marks not eliminated		Finer sanding
			Unsuitable pre-polishing process				Add one pre-polishing step
Uneven surface				Roll skin not completely removed	Unsuitable sanding process		Use more abrasive compound
		Buff too soft			Polishing time too long		Use harder buff
			Pressure too high		Workpiece temperature too high		Reduce pressure
Rounded edges / workpiece deformation					Workpiece deformation		Spare workpiece edges, use smaller buff diameter, use drier compound
		Buff too hard					Use softer buff
				Complicated workpiece geometry			Use blind plugs e.g. to protect drill holes
Sheet metal deformation			Pressure too high		Workpiece temperature too high		Reduce pressure
	Polishing compound too dry						Use greasier compound
Compound residues on the surface			Pressure too low		Workpiece temperature too low		Increase pressure
			Rotational speed too low				Increase rotational speed
	Compound too greasy				Compound residues on workpiece	Compound coating too thick	Use less compound, change buff impregnation, use cotton instead of polymer fibres
	Too much compound applied						Increase pressure, use narrower buff with same pressure
			Pressure too low				Increase rotational speed
			Rotational speed too low				Follow product recommendations
Compound deposits in drill holes or notches					Extensive cleaning effort necessary		Cover drill holes
							Use ultrasonic cleaning
Heavy dusting	Compound too dry				Increased dust formation	Compound coating too thin	Use greasier compound
			rotational speed too high				Reduce rotational speed
			Too high pressure				Reduce pressure, use wider buff
		Wheel adhesion too weak					Change sisal impregnation
		Buff too soft					Use a harder buff
Too much polishing debris	Too little compound applied				Buff too dry	Compound coating too thin	Apply more compound
			Rotational speed too high				Reduce rotational speed
			Pressure too high				Decrease pressure
			Nozzles worn out				Workplace soiled with polishing debris
Color change on surface			Too much pressure applied		Workpiece temperature too high	Compound coating too thin	Use softer buff or apply less pressure
			Rotational speed too high				Reduce rotational speed, use larger buff diameter for better cooling
		Buff too hard					Use a softer buff
		Tool cools insufficiently					Use buff with better cooling (open quilting/folding, lower density of fabric)
	Compound too dry						Apply more compound or use greasier compound
			Very thin component			Intervall polishing, use additional ventilation for cooling	
Surface is too glossy	Unsuitable polishing compound				Workpiece too glossy		Follow product recommendations
		wheel adhesion too weak					e.g. use a fibre brush, use thicker yarn
			rotational speed too high				Reduce speed
	Too little of polishing compound					Compound coating too thin	More polishing compound

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