

# Surface Finishes and Fastener Matrix

## Breakstem Systems

This chart aims to show you what surface finish options are possible to apply to our standard fastener types as "customer specials". There are separate columns for the individual components such as the body and stem of breakstem rivets.

- If you want to colour-code the rivets, you may only need the body in a special finish as the stem colour will not be visible.
- For painted rivets, let us know the colour specification - such as the "RAL" code - if you know it. We can then match the colour precisely.
- We have many finish options for better corrosion resistance. Please contact us and our Application Engineers can help you choose the best solution for your needs.

### Key to the symbols

<b>Y</b>	Yes, this finish is technically proven and has been applied on this type of fastener (or fastener component) in the past. Note however a minimum order quantity may apply.
<b>Q</b>	The finish is technically possible but will require review by our Production Team to give you a price. Please submit an enquiry and we can start preparing a quote for you straight away.
<b>N/A</b>	Sorry, this finish is not suitable for this type of fastener (or fastener component). However we might have some alternative suggestions to meet your needs. Please contact us and let our Application Engineers help you to find a fastening solution.

Surface Finish	Component Base Material	Colour	Hours to		Avdelmate®		AveX® (aluminium body)		AveX® (steel body)		Avibulb®		Avinox®		Bulbex®		Hemlok®		Interlock®		Klamp-Tite®		Monobolt®		Nail rivets		Q Rivet		Stavex®		T-Lok®		
			white rust	red rust	Stem	Body	Stem	Body (alu)	Stem	Body (steel)	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	
<b>Aluminium</b>																																	
Anodise and dye	As required	n/a	n/a	Q	Y	N/A	Q	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Y	Q	Q	Q	Y	Q	Y	Q	Q	Q	Y	Q	Y	N/A	N/A	N/A	N/A
Black Delta®-Seal GZ	Black	480	n/a	Q	Y	N/A	Q	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Y	N/A	Q	Q	Y	Q	Y	N/A	Q	Q	Y	Q	Y	N/A	N/A	N/A	N/A
Epoxy painting	As required			Q	Y	N/A	Q	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Y	Q	Q	Q	Y	Q	Y	Q	Q	Q	Y	Q	Y	N/A	N/A	N/A	N/A
Mechanical polishing	Natural (shiny)	n/a	n/a	Y	Y	N/A	Q	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	N/A	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y	Y	N/A	N/A	N/A	N/A
Silver Delta®-Seal GZ	Silver	480	n/a	Q	Y	N/A	Q	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Y	N/A	Q	Q	Y	Q	Y	N/A	Q	Q	Y	Q	Y	N/A	N/A	N/A	N/A
<b>Steel</b>																																	
Black oxide	Black			Q	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Q	Q	Y	N/A	N/A	Q	Q	Q	Y	Q	Y	Q	Y	Q	Q	Q
Black oxide coating	Black			Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Y	Y	Q	Q	Q	Q
Bright tin	Silver	n/a	n/a	Q	Q	N/A	N/A	N/A	Q	N/A	Q	N/A	N/A	N/A	N/A	N/A	Q	Q	Q	Q	N/A	N/A	N/A	Q	Q	Q	Q	Q	N/A	Q	N/A	Q	Q
Clear Delta®-Seal	Clear	480		Y	Y	N/A	N/A	N/A	Q	N/A	Q	N/A	N/A	N/A	N/A	N/A	Q	Y	Y	N/A	N/A	N/A	Q	Y	Y	Y	Y	Y	N/A	Q	N/A	Q	Q



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			white rust	red rust	Stem	Body	Stem	Body (alu)	Stem	Body (steel)	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body

### Steel

Corrosion prevention of unplated items					Y	Y	Q	N/A	N/A	N/A	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q			
Electroplated zinc base coat + aluminium-rich organic top coat (Magni 560)	Silver/Grey		860		Q	Q	Q	N/A	Q	N/A	N/A	Q	N/A	N/A	N/A	N/A	N/A	Q	Q	Q	Q	N/A	N/A	N/A	Q	Q	Q	Q	Q	Q	N/A	Q	N/A	Q	
Epoxy painting	As required				Y	Y	N/A	N/A	N/A	Y	N/A	Q	N/A	N/A	N/A	N/A	N/A	Q	Y	Y	N/A	N/A	N/A	Q	Y	Y	Y	Y	N/A	Q	N/A	N/A	N/A		
Heat treatment black oxide	Black/Blue				Y	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	N/A	N/A	N/A	N/A	Y	Y	Y	Y	N/A	N/A	N/A	N/A	N/A		
Inorganic zinc-rich base coat + aluminium-rich top coat (Magni 565)	Silver/Grey		860		Y	Y	Q	N/A	Q	N/A	Q	N/A	N/A	N/A	N/A	N/A	N/A	Q	N/A	Y	Y	N/A	N/A	Q	N/A	Y	Y	Y	Y	Q	N/A	Q	N/A		
Light blue Delta®-Seal Duplex	Blue				Q	Q	Q	N/A	Q	Q	N/A	Q	N/A	N/A	N/A	N/A	N/A	Q	Q	Q	Q	N/A	N/A	N/A	Q	Q	Q	Q	Q	Q	N/A	Q	N/A	N/A	
Mechanical aluminium/zinc + clear	Silver		96		Y	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	N/A	N/A	N/A	N/A	N/A	
Mechanical zinc + clear passivation	Clear	72	240		Y	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	N/A	N/A	N/A	
Mechanical zinc + clear passivation + top coat	Silver/Grey	72	384		Y	Y	Q	N/A	Q	Q	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q	Q	
Molybdenum Disulphide Lube	Grey/Black				Q	Q	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Q	Q	Q	N/A	N/A	Q	Q	Q	Q	Q	Q	Q	Q	N/A	N/A	N/A	N/A
Phosphate	Black		7		Q	Y	Y	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	N/A	Q	Q	Q	Y	N/A	N/A	Q	Q	Q	Y	Q	Y	Q	Q	Q	Q	Q	



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			white rust	red rust	Stem	Body	Stem	Body (alu)	Stem	Body (steel)	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body

### Steel

Phosphate + Delta®-Seal	As required		120	Y	Y	N/A	N/A	N/A	Q	N/A	Q	N/A	N/A	N/A	N/A	Q	Y	Y	N/A	N/A	N/A	Q	Y	Y	Y	Y	N/A	Q	N/A	Q
Phosphate + Delta®-Tone + black Delta®-Seal GZ	Black (matt)		240	Y	Y	N/A	N/A	N/A	Q	N/A	Q	N/A	N/A	N/A	N/A	Q	Y	Y	N/A	N/A	N/A	Q	Y	Y	Y	Y	N/A	Q	N/A	N/A
Phosphate + silver Delta®-Tone + silver Delta®-Seal	Silver/Grey	120	240	Y	Y	Q	N/A	Q	Q	N/A	Q	N/A	N/A	N/A	N/A	Q	Y	Y	N/A	N/A	N/A	Q	Y	Y	Y	Y	N/A	Q	Q	N/A
Tin/Zinc self colour	Grey	48	1000	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q
Zinc + black Delta®-Seal GZ	Black (matt)	120	240	Y	Y	N/A	N/A	N/A	Q	N/A	Q	N/A	N/A	N/A	N/A	Q	Y	Y	N/A	N/A	N/A	Q	Y	Y	Y	Y	N/A	Q	N/A	N/A
Zinc + black passivation / Class 5 Type 11	Black (matt)	24	72	Q	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	N/A	N/A	Q	Q	Q	Y	Q	Y	Q	Q	Q	Q
Zinc + clear passivation	Clear	96	240	Y	Y	Y	N/A	Y	Y	Q	Y	N/A	N/A	N/A	N/A	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Y	Y	Q	Q
Zinc + clear passivation 18µm	Clear	96	240	Q	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Y	N/A	N/A	N/A	N/A	Q	Y	Q	Y	N/A	N/A	N/A	N/A	
Zinc (5µm) + clear passivation	Clear	72	120	Y	Y	Q	N/A	Q	Q	Y	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Y	Q	Y
Zinc + clear passivation + top seal	Clear	96	384	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q
Zinc (5µm) + clear passivation + top seal	Clear	96	120	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q
Zinc + clear passivation + leach and seal / Class 5 Type 1 (Ford S437)	Clear	120	400	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q



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			white rust	red rust	Stem	Body	Stem	Body (alu)	Stem	Body (steel)	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body

### Steel

Zinc + clear passivation + top seal/torque modifier	Clear	96	240	Y	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	N/A	N/A	N/A	N/A
Zinc + silver Delta®-Seal	Silver/Grey	240	480	Y	Y	N/A	N/A	N/A	Q	N/A	Q	N/A	N/A	N/A	N/A	N/A	N/A	Q	Y	Y	N/A	N/A	N/A	Q	Y	Y	Y	Y	N/A	Q	N/A	N/A
Zinc phosphate (dry)	Grey/Black			Q	Q	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	Q	Q	Q	N/A	N/A	Q	Q	Q	Q	Q	Q	Q	Q	Q
Zinc/Iron + black passivation	Black	120	480	Q	Q	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	N/A	Q	Q	Q	Q	N/A	N/A	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Zinc/Nickel + black Delta®-Seal	Black (matt)	48	480	Q	Q	N/A	N/A	N/A	Q	N/A	Q	N/A	N/A	N/A	N/A	N/A	N/A	Q	Q	Q	N/A	N/A	N/A	Q	Q	Q	Q	Q	N/A	Q	N/A	Q
Zinc/Nickel + black passivation + seal	Black	240	720	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q
Zinc/Nickel + clear passivation /C1T3	Clear	120	720	Y	Y	Q	N/A	Q	Y	Q	Q	N/A	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q
Zinc/Nickel + clear passivation + seal	Clear	240	720	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q
Zinc/Nickel + clear passivation + seal (Spec. for VW "r643")	Clear	240	720	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q
Zinc/Nickel + clear passivation + seal/torque modifier (Spec. for VW, DBL & BMW)	Clear	240	720	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q



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			white rust	red rust	Stem	Body	Stem	Body (alu)	Stem	Body (steel)	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body

### Steel

Zinc/Nickel + clear passivation + TnT 15	Clear	240	720	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q	
Zinc/Nickel + KTL	Black (bright)	360		Q	Q	N/A	N/A	N/A	Q	N/A	Q	N/A	N/A	N/A	N/A	Q	Q	Q	Q	N/A	N/A	N/A	Q	Q	Q	Q	Q	Q	N/A	Q	N/A	Q
Zinc/Nickel no passivation	Grey	24	500	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q	
Zinc/Nickel (6µm) + trivalent black passivation + top seal	Black	72	240	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q	
Zinc/Nickel + trivalent black + top seal	Black	72	240	Y	Y	Q	N/A	Q	Q	Q	Q	N/A	N/A	N/A	N/A	Q	Q	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	Q	Q	

### Stainless Steel

Black Delta®-Seal	Black (matt)		480	Y	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Q	N/A	N/A	N/A	N/A	Y	Y	N/A	N/A	N/A	Q	Y	Y	Y	Y	N/A	Y	N/A	N/A
Black oxide and oiling	Black			Y	Y	Q	N/A	N/A	N/A	N/A	N/A	Y	Y	N/A	N/A	N/A	N/A	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	N/A	N/A
Clean + nitric acid passivation	Natural (shiny)			Y	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	Y	Y	N/A	N/A	Y	Y	Y	Y	Y	Y	N/A	Y	N/A	N/A
Epoxy painting	As required			Y	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	Y	Y	N/A	N/A	N/A	Q	Y	Y	Y	Y	N/A	Y	N/A	N/A
Mechanical polishing	Natural (shiny)			Y	Y	Q	N/A	N/A	N/A	N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	Y	Y	N/A	N/A	N/A	Y	Y	Y	Y	Y	N/A	Y	N/A	N/A
Temper colouring	Pale Straw	n/a	n/a	Y	Y	Q	N/A	N/A	N/A	N/A	N/A	Y	Y	N/A	N/A	N/A	N/A	Y	Y	N/A	N/A	Q	Q	Y	Y	Y	Y	Q	Q	N/A	N/A



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Surface Finish	Colour	white rust	red rust	Stem	Body	Stem	Body (alu)	Stem	Body (steel)	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body	Stem	Body		
Component Base Material	Colour																														

### Brass

Black Delta®-Seal GZ	Black			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Black oxide coating	Black			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bright tin	Silver	n/a	n/a	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brighten	Natural (shiny)			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Molybdenum Disulphide Lube	Grey/Black			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

