

SURFACE TREATMENT EFFECT

Aluminum Coating Processings and Effectiveness

Miyaki Coating Processings	Hardness	Lubricate	Surface Roughness	Corrosion Resistance	Chemical Resistance	Heat Resistance
Hard Anodize	○		○	○		
Kashima Coat (Abrasion & Wear Resistance)	○	◎	○			
Kurodize (Buckling Resistance)	◎					
MD Processing (Aluminum Die cast Corrosion Resistance)				◎		
WR Coat (Water Repellent &) (Electric Non-Conductance)				◎	◎	
Vill 12 (Aluminum Die cast Heat &) (Corrosion Resistance)			◎	○		◎
Oxalic Acid Anodizing (Improves Function) (for Aluminum)			◎	◎		○



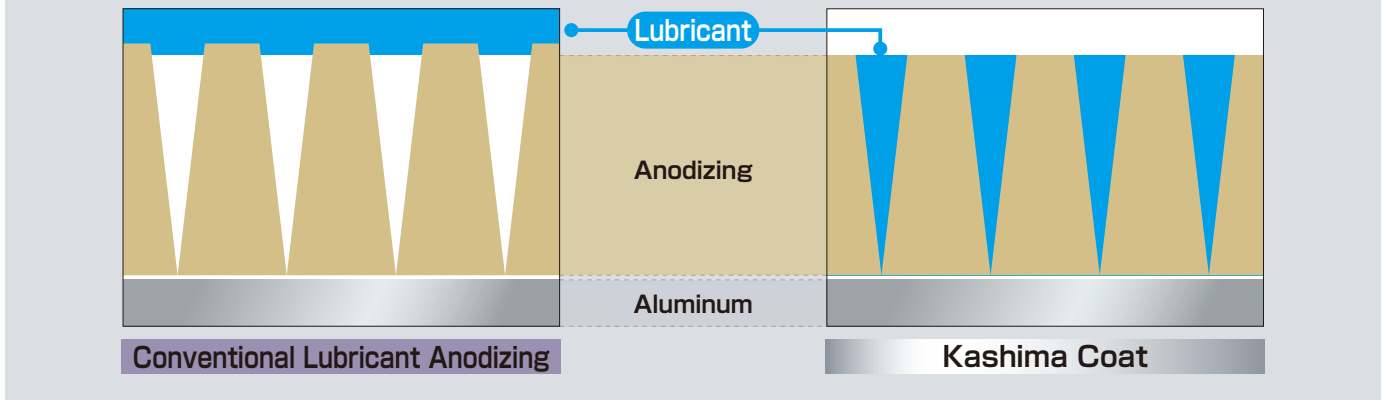
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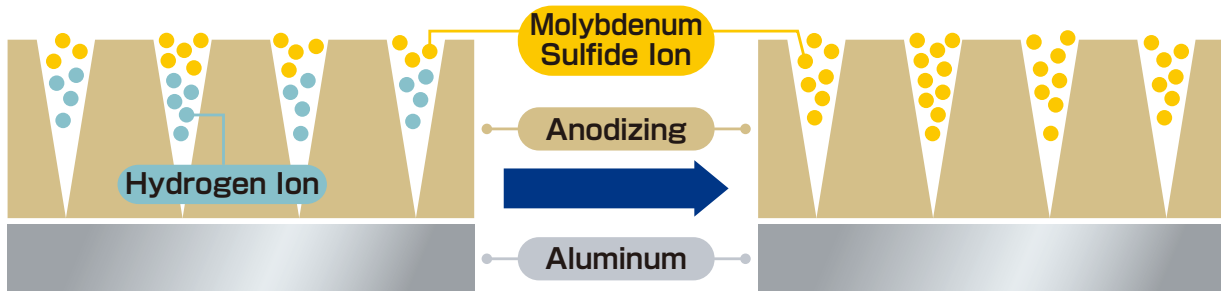
KASHIMA COAT

Kashima Coat is lubricating hard anodizing coat with higher abrasion resistance on aluminum and aluminum alloy parts and offers more reliable surface performance comparing to conventional anodizing coat.

◆ Coating Structure Comparison to Conventional Anodizing Coat

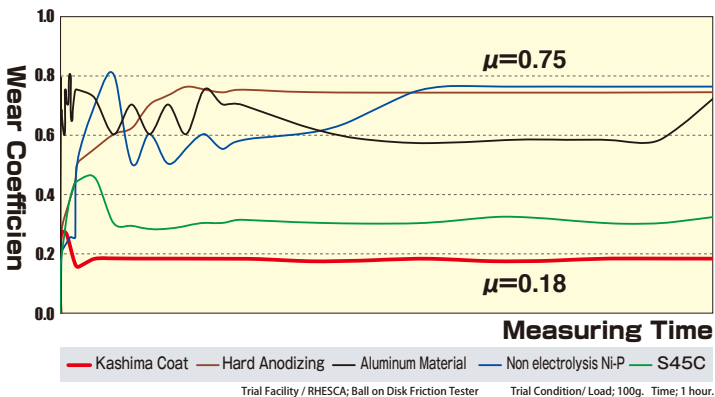


◆ React diagram of Kashima Coat



By secondary electrolysis, a hydrogen ion is made on the base aluminum material.

◆ Wear Coefficient Comparison



◆ Sample of Kashima Coat

Field	Application
Automobile	Arms Locker
precision Instrument	Pallet for Conveyance
Industrial Machine	Hydraulic, Pneumatic Cylinder. Piston
Semiconductor	Semiconductor Conveying Machine
Sports	Bike & Bicycle suspension



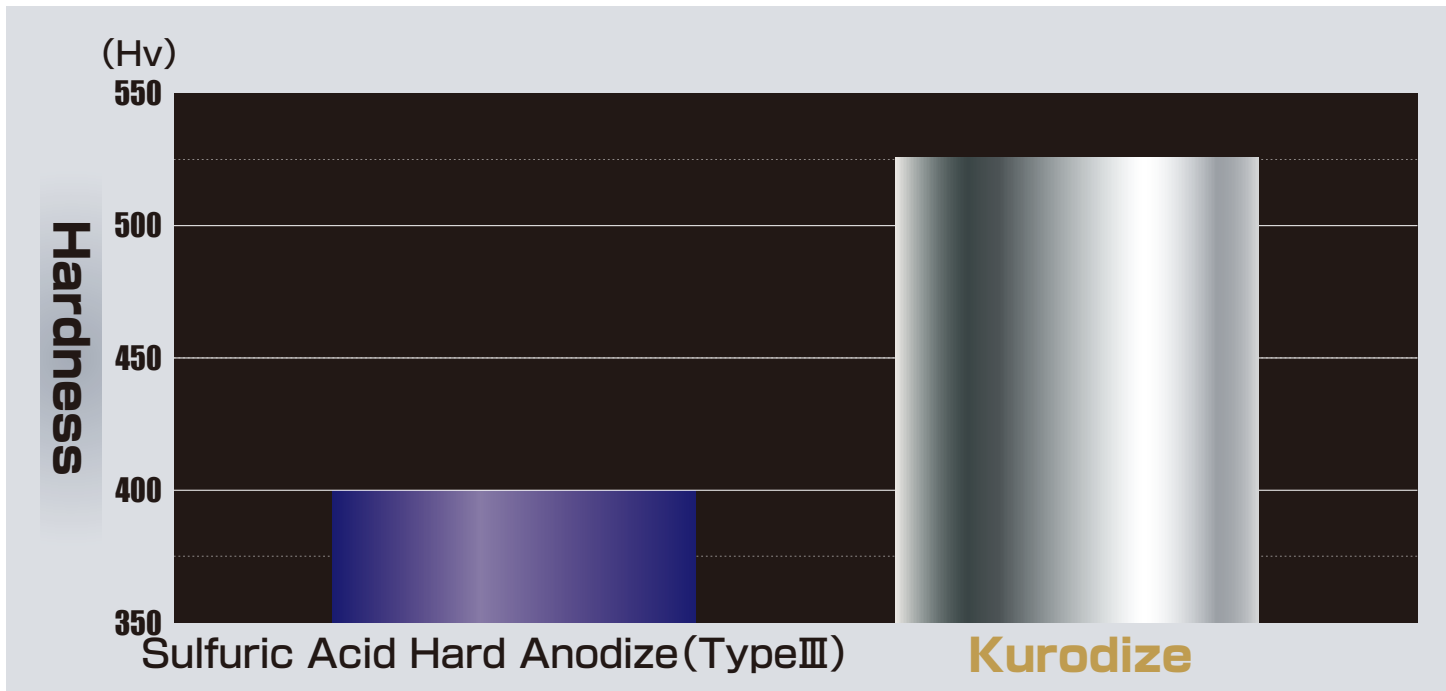
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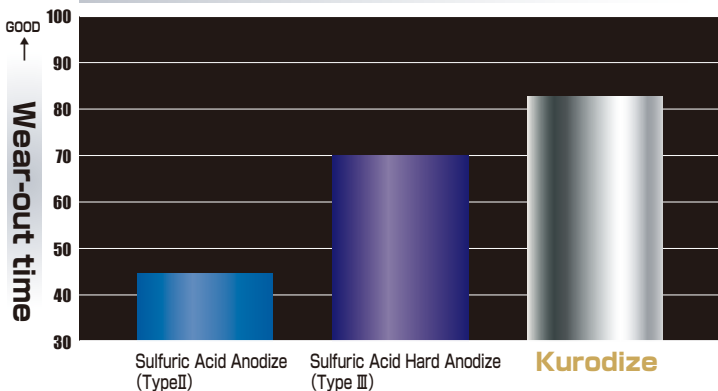
KURODIZE

KURODIZE

Fascinated Hardness



◆ Abrasion Resistance Assessment by Jet Test (JIS H 8682-1993)



More hardness is achieved

Kurodize improves 20% wear comparison with hard anodize (type III)

Able to change Stainless and Titanium to Aluminum, if you use KURODIZE.



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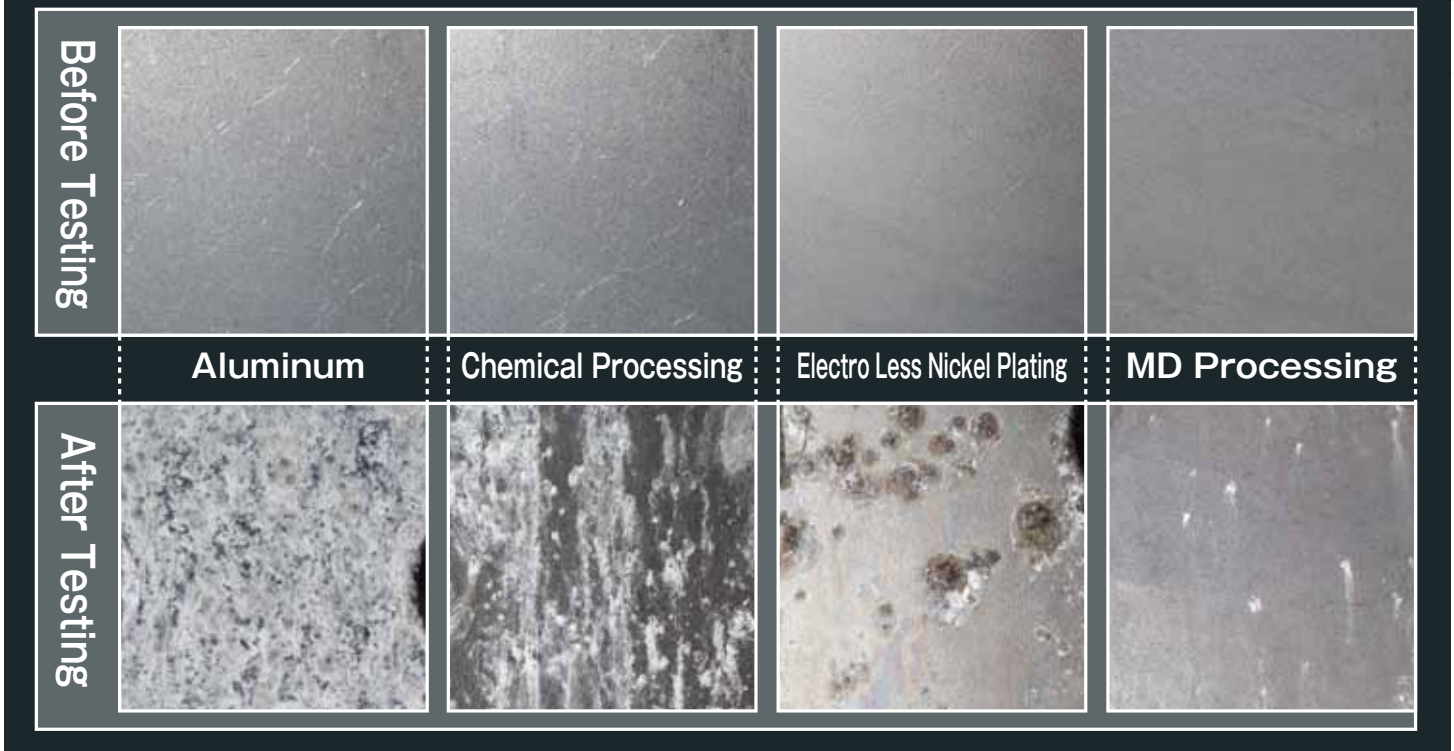
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<http://www.kashima-coat.com>

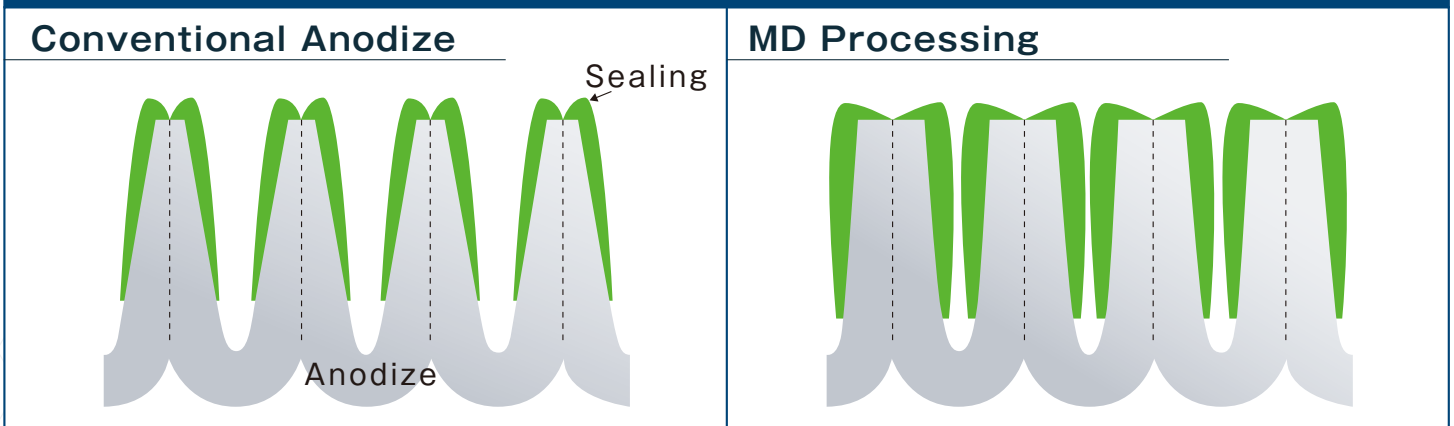
Aluminum Die cast Corrosion Resistance

MD PROCESSING

Corrosion Resistance Performance after Salt Spray Test 500 hours



Characteristics of MD Processing (IMAGE)



The anodized aluminum film of the die casting doesn't usually grow the cell good. Moreover, the sealing is not effective enough for corrosion resistance because there tends to be a lot of dissolve areas. MD processing on die casting possesses enough corrosion resistance for its smooth grown film.



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◆ Comparison between anodized aluminum and Vill 12

Higher Heat Resistance

▼400 Celsius / Hour



Vill 12

Anodize

Vill 12 performs higher heat resistance. No crack is detected even after heat test of 400 Celsius for 1 hour is done.

Higher Corrosion Resistance

▼CASS 16 hours



VILL 12 3 μ m
Rating No.9.5

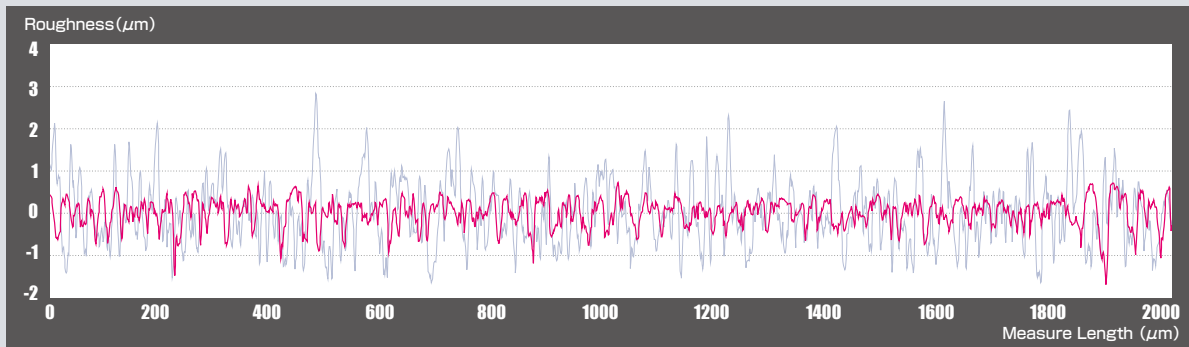
Anodize 10 μ m
Rating No.8

VILL 12 performs higher corrosion resistance at 3 μ m, comparing to conventional anodized film of 10 μ m.

Surface Fineness

Anodize (5 μ)

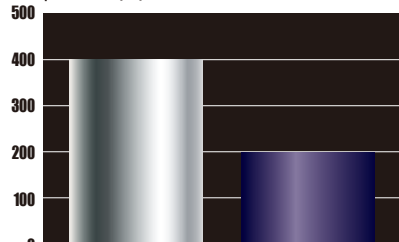
Vill12 (5 μ)



VILL 12 forms better surface fineness, comparing to conventional anodized film

Heat Resistance

Temperature (°C)

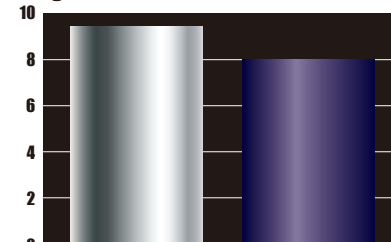


Vill12

Anodize

Corrosion Resistance

Rating Number

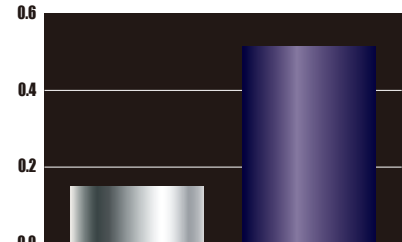


Vill12

Anodize

Surface Fineness

Ra



Vill12

Anodize



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**Water Repellent &
Electric Non-Conductance**

WR COAT

When it comes to non-electro conductivity, stainless steel is one of the most common materials; however, light-weighted aluminum with WR coat can even have better non-electro conductivity. Also as a replacement of plastic materials, aluminum with WR coat is used in both more strength and severe temperature (high & low) use.

◆ Comparison between anodized aluminum and WR Coat.

Chemical Proof Performance

▼ Chemical Dipping test 24 hours



Aluminum base material is protected by the film of WR chemical resistance from acidity and alkalinity

Corrosion Performance (JIS H 8681-1999)

▼ CASS 48 hours (CASS Test -- copper-accelerated acetic acid salt spray test)



Even after CASS test is done, a high corrosion performance is still demonstrated.

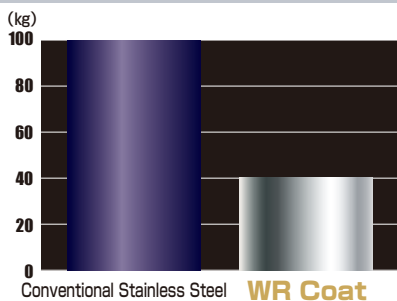
Water-Repellent Performance

Removing from water tank ▶

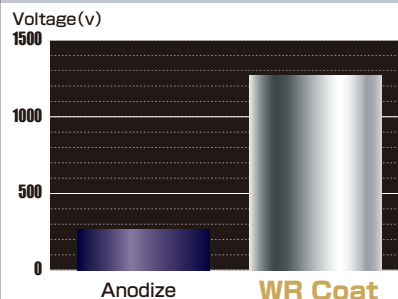


Higher water-repellent and less stain adhesiveness

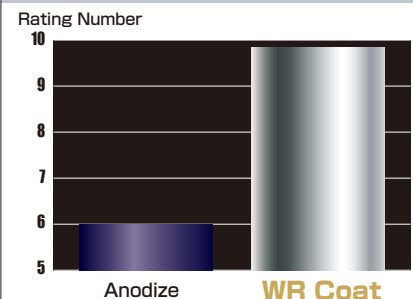
Mass weight



Dielectric strength test (JIS H 8687 1996) Circuit cutoff current 5mA Probe $\phi 24$



Corrosion Resistance (JIS H 8681-1999)



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