FOOD AND BEVERAGE INDUSTRY EQUIPMENT

R-V INDUSTRIES INC.

INDUSTRIAL DESIGN AND MANUFACTURING

SUPPLY SUPERIOR PRODUCTS AND SERVICES

By partnering our knowledge and experience with your specifications we can custom design and manufacture your equipment to the highest level of satisfaction. We have experience with many different types of equipment including:

- Pressure cookers
- Custom process valves
- Toasting ovens
- Drying equipment
- Coating equipment
- Puffing and expansion equipment
- Storage tanks and vessels
- Belt conveyors (custom or special)
- Flaking mills
- Storage and waste containers
- Mixing and blending equipment
- Process vessels
- Food processing plant (containing fabricated cooker and chiller units, additional loading, weighing, and packaging equipment)

Providing Complete Agitation Vessels Up To 6 Ra Finish

We proudly offer a unique combination of small company attention to **customer service** and large company capabilities, processes and technologies

"To Supply Superior Products and Services at a Competitive Price With Integrity"

For over 39 years, R-V Industries has partnered our engineering and manufacturing expertise with customer ideas to product quality products. Our experienced and dedicated sales staff is prepared to offer you:

- Complete and total confidentiality
- Prompt, professional RFQ response
- On-time delivery "Guaranteed"
- Competitive pricing
- Will not cut corners in "Service To Our Customers"

Production Information

- 180,000 sq. ft. of fabrication facilities
- 26,000 sq. ft. stainless and alloy only facility
- 280 dedicated and skilled employees
- 300,000+ annual production hours
- Design, engineering, machining, fabrication, finishing, assembly and testing all in-house
- R-V project management team to ensure compliance and delivery

SHARP
Safety & Health Achievement Recognition Program
R-V INDUSTRIES, INC.
CERTIFIED SINCE 2007

SAFETY AND QUALITY IS A TOP COMMITMENT
SAFETY & QUALITY
R-V INDUSTRIES, INC.
HONEY BROOK, PA

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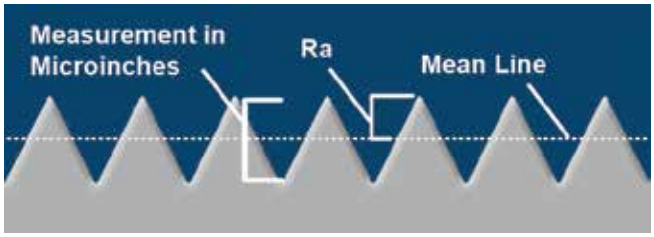
SURFACE ENHANCEMENT

All metal surfaces have a profile consisting of peaks and valleys. If the peaks and valleys have a large vertical distance between them, light will enter the valley and not bounce or reflect back. This set of circumstances produces a relative “dull” surface.

Surface finish enhancement by means of metal removal generally accomplished by utilizing abrasives on belts, grinding wheels and other media, changes the profile of the surface finish.

During the surface enhancement process, the vertical distance between the peaks and valleys is minimized allowing for greater light reflection and a brighter surface finish. The closer the peak distance is to the valley and the greater uniformity of the finite scratches, the higher the reflectance resulting in a brighter surface.

Surface profile or finish is measured in microinches. A microinch is 1/1,000,000 of one inch. Surface profile is measured by evaluating the distance above and below an established “mean line”. Historically, microinch measuring has utilized (2) processes:



Ra - Roughness Average is an absolute average height whereby you establish a mean line and a number of height samples i.e. H1, H2, H3 etc. above and below the line:
H1 +H2 + H3etc. = Ra N (number of samples)

RMS - Is a value calculated from taking the square root of all (H) samples divided by the number of samples.

RMS numbers usually run 11% to 25% higher than the Ra numbers for the same surface profile. Ra has become the industry standard and should be measured in microinches rather than microns.

Surface profile can only be measured by a Profilometer. It has a stylus probe that, when calibrated properly, runs across the grain of the surface and provides a digital readout of the surface profile or finish.

Grit is sand like particles utilized as an abrasive in the metal industry for surface enhancement. The most commonly used grit is an artificial aluminum oxide which is a sharp, hard and fast cutting product.

Grits are given grades or numbers relative to their roughness. Standard grades are:

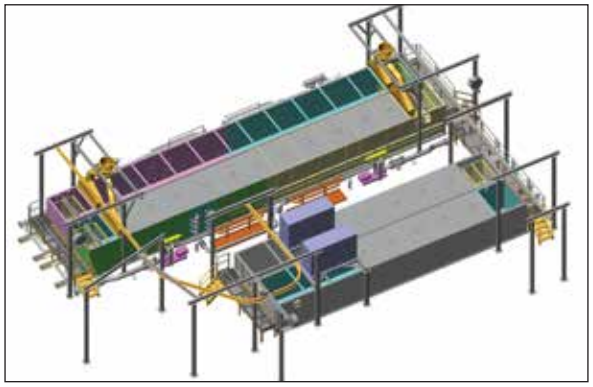
- 80 Grit	- 120 Grit	- 150 Grit
- 180 Grit	- 240 Grit	- 320 Grit

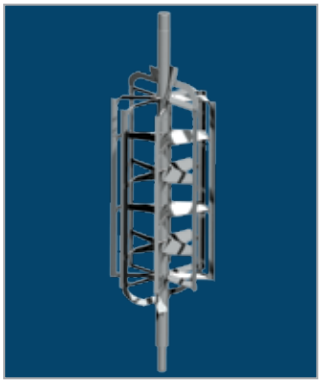
People in our industry regularly spell out surface finish requirements as standard grit grades i.e. 120 Grit, 180 Grit, etc. This is not the proper way to identify an end result because a.) grit is a product or tool utilized in removing metal, results will vary relative to a variety of variables, b.) grit cannot be measured. How would you know if a fabricator polished your vessel to a 180 grit finish?

Surface finish requirements must be specified to an Ra or RMS measurement. A 20 to 30 Ra range is recommended, or a “not to exceed” of 20 Ra to pinpoint your measurable requirements.

Surface Measurement Comparison

Grit Size	Ra (Micro-Inch)	Ra (Micron)	RMS (Micro-Inch)	RMS (Micron)	Finish
36	142	3.61	160	4.06	
80	71	1.80	80	2.03	
120	52	1.32	58	1.47	
150	42	1.06	47	1.20	
180	20-30	0.76	24-34	0.86	#4 Finish
240	15	0.38	17	0.43	#6 Finish
320	8-12	0.30	10-14	0.36	#7 Finish





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ELECTROPOLISHING

Electropolishing is a surface enhancement procedure that produces a smooth, bright finish by leveling or rounding off both the peaks and the valleys in a process similar to electroplating except material is removed rather than deposited.

Utilizing an electrolyte subjected to a low voltage electric current, surface roughness is removed by anodic dissolution resulting in an extremely smooth finish.

Vessel surfaces are usually mechanically polished to a 20 to 30 Ra followed by Electropolishing which greatly improves anti-cling and sterility characteristics.

The surface enhancement of Nickel Alloy Fermenters, Reactors, Tanks and Vessels is accomplished by utilizing grit abrasives on belts, grinding wheels and other media in an effort to smooth out the surface profile, minimizing scratches, pits and other defects.

End users of our process equipment typically specify surface enhancement for the following four reasons:

1. Improvement of anti-cling characteristics.
2. Improvement of sanitary characteristics.
3. Improvement of resistance to corrosion characteristics.
4. Improved appearance.

All of these “value added” options increase front end costs but produce a return on investment over the life time of the vessel.

We look forward to working with you in identifying solutions to satisfy your vessel surface enhancement requirements. Feel free to contact us with any of your vessel questions and concerns.

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