# Surface Finish

## TABLE SF-5 ACCEPTANCE CRITERIA FOR INTERIOR SURFACE FINISHES OF VALVE BODIES

| Anomaly or Indication | Acceptance Criteria |
|---|---|
| Cluster of pits | No more than 4 pits per each 1/2 in. X 1/2 in. inspection window. The cumulative total of all relevant pits shall not exceed 0.040 in. |
| Demarcation | If <5% of the total area when visually inspected and Ra max. is met. |
| Dents | None accepted. |
| Grit lines | If Ra max. is met. |
| Nicks | If depth <0.010 in. |
| Pits | If diameter <0.020 in. and bottom is shiny. Pits <0.003 in. diameter are irrelevant and acceptable. |
| Porosity | If diameter <0.010 in. and bottom is shiny. |
| Scratches | If length <0.25 in., depth <0.003 in., and Ra max. is met. |
| Surface cracks | None accepted. |
| Surface inclusions | If Ra max. is met and there is no liquid penetrant indication. |
| Surface residuals | None accepted, visual inspection. |
| Surface roughness(Ra) | See Table SF-6. |
| Weld slag | None accepted. |

## TABLE SF-6 Ra READINGS FOR VALVES

| Surface Designation | Mechanically Polished 【note(1)】 Ra, max. | |
|---|---|---|
| | μ-in. | μm |
| SFV1 | 20 | 0.5 |
| SFV2 | 25 | 0.625 |
| SFV3 | 30 | 0.75 |
| | **Mechanically Polished and Electropolished** Ra, max. | |
| | μ-in. | μm |
| SFV4 | 15 | 0.375 |
| SFV5 | 20 | 0.5 |
| SFV6 | 25 | 0.625 |

GENERAL NOTES:
(a) All Ra readings are taken across the lay, wherever possible.
(b) No single Ra reading shall exceed the Ra Ra max. value in this table.
(c) Other Ra readings are available if agreed upon between owner/user and manufacturer, not to exceed values in this table.

NOTES:
(1) Or any other finishing method that meets the Ra max.

| Conversion Chart | | | | |
|---|---|---|---|---|
| Standard Grit | Ra | | RMS | |
| | μ-in. | μm | μ-in. | μm |
| 150g | 27-32 | .68-.80 | 30-35 | .76-.89 |
| 180g | 18-23 | .46-.58 | 20-25 | .51-.64 |
| 240g | 14-18 | .34-.46 | 15-20 | .38-.51 |
| 320g | 8-10 | .21-.25 | 9-11 | .23-.28 |

Grit : Measures the number of scratches per linear inch of abrasive pad. Higher numbers indicate a smoother finish.
RMS : Defined as Root Mean Square roughness, this method measures a sample for peaks and valleys. Lower numbers indicate a smoother finish.
Ra : Known as the Arithmetic Mean, this measurement represents the average value of all peaks and valleys. Lower numbers indicate a smooth finish.


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