



MTS-Test Workmanship Standards

Workmanship Standards Number: 05-04

Rev: A

1.1 Name: **Plated Surfaces**

1.2 Workmanship Standards Category: Protective Finishes


1.3 Purpose/Description (why/when/how): Standard of Work applicable to plated surfaces for all deliverable product. The standard applies to the results from plating operations. This Workmanship Standard shall be used for checking surface quality and making “Accept/Reject” decisions. The standard is intended to be used in conjunction with WS-05-02, “Identification Methods for Finished Surface Classes.”

1.4 Illustration:

The following illustrations depict “Acceptable” and “Unacceptable” workmanship results.

Class 1 per WS 05-02.

User interface or closely observed areas.




Acceptable Workmanship	Acceptable Notes
	<p>This is a surface that the end customer sees.</p> <p>At a distance of 18” there is no inconsistency or discontinuances in the finish.</p> <p>There are no machining marks, scratches, abrasions, rainbow effects, pits, protrusions or bare metal showing.</p>



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Unacceptable Workmanship	Notes
 <p data-bbox="412 791 557 825">Scratches</p>	<p data-bbox="873 659 1461 695">Applicable to pages 2-4 of this document;</p> <p data-bbox="883 760 1461 835">Visible inconsistencies in the surface are not acceptable.</p>
 <p data-bbox="368 1230 602 1264">Marks and Runs</p>	<p data-bbox="883 1003 1461 1079">Any change from original color, intended color or inconsistent color.</p> <p data-bbox="893 1194 1451 1270">Bleed outs, water runs/marks and hook marks.</p>
 <p data-bbox="412 1682 557 1715">Bleed Out</p>	<p data-bbox="899 1339 1445 1415">Any mark, pit, scratch or gouge should not penetrate the plating.</p>



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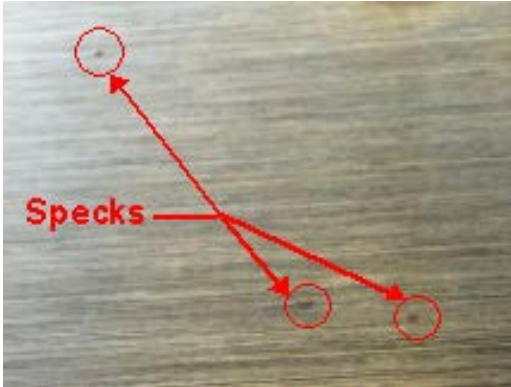
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Rainbow effect



Protrusions



Grit/Dust/Lint/Speck



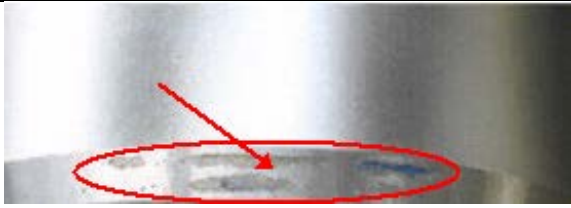
Marks/Pits



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Tooling Marks



Fingerprints



Rust/Oxidation

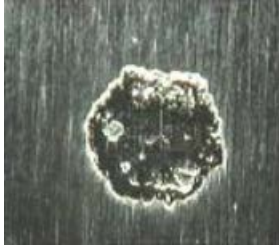
Rust/Oxidation is not acceptable.



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Gouge

Surface imperfections penetrating plating are not acceptable.






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Class 2 per WS 05-02.

Areas subject to casual observation during routine operation of equipment. If a finish class is NOT specified, it will default to a class 2.



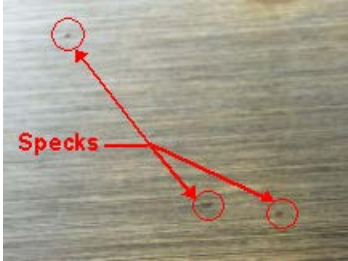

Acceptable Workmanship	Acceptable Notes										
 <p>Rainbow effect (apparent with Zinc plating)</p>	<p>When these do not compromise protective finish.</p>										
 <p>Discoloration</p>	<p>When these do not compromise protective finish.</p>										
 <p>Scratches</p>	<p>When these do not compromise protective finish.</p> <p>For scratches which are within 0.25”L x .015”W:</p> <table border="1"> <thead> <tr> <th><u>Part Surface Area</u></th> <th><u># of Scratches Allowed</u></th> </tr> </thead> <tbody> <tr> <td>10 – 20 sq. in</td> <td>3</td> </tr> <tr> <td>21 – 50 sq. in</td> <td>6</td> </tr> <tr> <td>51 – 200 sq. in</td> <td>10</td> </tr> <tr> <td>201 + sq. in</td> <td>20</td> </tr> </tbody> </table>	<u>Part Surface Area</u>	<u># of Scratches Allowed</u>	10 – 20 sq. in	3	21 – 50 sq. in	6	51 – 200 sq. in	10	201 + sq. in	20
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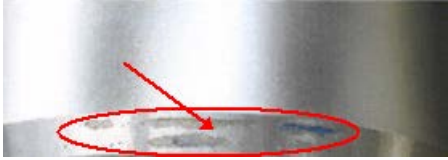
	<p>Quantity (2) Max per 50 sq. in. area. Max Dim: .06" W x 5" L.</p>
	<p>When these do not compromise protective finish.</p>
	<p>When these do not compromise protective finish, fit or function of the material's intended use.</p>
	<p>Quantity (4) Max per 50 sq. in. Area Max Dim: 0.06" Dia x .010" H.</p>





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 <p>Marks/Pits</p>	<p>Quantity (4) Max per 50 sq. in. Area Max Dim: 0.06" Dia x .010" DP.</p>
 <p>Tooling Marks</p>	<p>When these do not compromise protective finish, fit or function of the material's intended use.</p>

Unacceptable Workmanship	Notes
 <p>Rust/Oxidation</p>	<p>Rust/Oxidation is not acceptable.</p>
 <p>Gouge</p>	<p>Surface imperfections penetrating plating are not acceptable.</p>



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	<p>Cosmetic defect that negatively impacts perception of quality.</p>
<p>Fingerprints</p>	

Class 3 per WS 05-02.

Typically areas are internal surfaces that are not seen, are viewed from long distances, or only occasionally observed by the customer or service technician for routine maintenance.




Acceptable Workmanship	Acceptable Notes
	<p>When these do not compromise protective finish.</p>
<p>Rainbow effect (apparent with Zinc plating)</p>	
	<p>Acceptable on sheared edges.</p>
<p>Rust/Oxidation</p>	<p>Touch-up allowed for rust spots on surfaces up to 0.35" diameter.</p>



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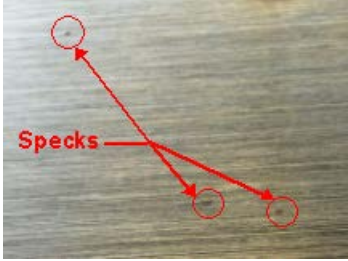


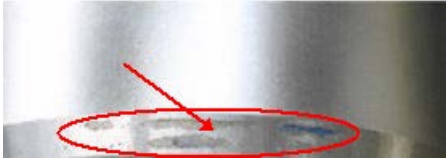
 <p>Discoloration</p>	<p>When these do not compromise protective finish</p>
 <p>Scratches</p>	<p>When these do not compromise protective finish.</p>
 <p>Plating Marks and Runs</p>	<p>When these do not compromise protective finish</p>



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 <p>Bleed outs</p>	<p>When these do not compromise protective finish</p>
 <p>Grit/Dust/Lint/Speck</p>	<p>When these do not compromise protective finish</p>
 <p>Protrusions</p>	<p>When these do not compromise protective finish, fit or function of the material's intended use.</p>
 <p>Marks/Pits</p>	<p>When these do not compromise protective finish, fit or function of the material's intended use.</p>
 <p>Tooling Marks</p>	<p>When these do not compromise protective finish, fit or function of the material's intended use.</p>



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Unacceptable Workmanship	Unacceptable Notes
 <p data-bbox="354 617 613 653">Gouge - Oxidation</p>	<p data-bbox="873 468 1560 548">Surface imperfections penetrating plating are not acceptable</p>



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2 REVISION HISTORY & APPROVAL

REVISION HISTORY			
Rev	Description of Change	Author	Effective Date
A	Initial release	J. Moua, D. Chua, J. South, S Jordheim	

APPROVAL OF CURRENT REVISION		
Name / Function	Signature	Date
Stephen Jordheim / Workmanship Standards Process Owner	(approval on file)	
Dave Winslow / Workmanship Standard Co- pilot	(approval on file)	
Tom Bannon / Director of Global Sourcing	(approval on file)	