



WI23.3 Cosmetic Standards

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CODE DEFINITIONS AND ACCEPTABILITY CRITERIA

SURFACE RATINGS INCLUDING VIEWING TIME AND DISTANCE

LOCATION CATEGORY	SURFACE CLASS	IMPORTANCE OF SURFACE SEEN BY USER	VIEWING DISTANCE	VIEWING TIME IN SECONDS
I – EXTERNAL	A	High grade visibility area always seen	260 mm (10in.)	10 sec.
II – EXTERNAL	A	Always visible	460 mm (18 in.)	10 sec.
II – EXTERNAL	B	Usually visible	460 mm (18 in.)	5 sec.
II – EXTERNAL	C	Not visible	610 mm (24 in.)	3 sec.

- IA – Critical surfaces; i.e. plastic windows and the silkscreening of those surfaces
- IIA – External, always seen; i.e. keycaps, top covers, etc.
- IIB – External, usually seen; i.e. sides, back panels, etc.
- IIC – External, not seen; i.e. bottom of unit, undersides only seen if extremely tilted, etc.

Parts shall be inspected and viewed under the following conditions:

1. Uniform, non-directional illumination between 80 and 150 foot-candles (normal work area lighting).
2. Parts shall not be manipulated to reflect a single light source in order to accentuate surface flaws.
3. Magnification is not to be used for cosmetic inspection.

SURFACE FINISH STANDARDS

Machined Aluminum

1. All machined metal surfaces will use a surface finish of at most 125 μ -in before any coating products are applied.
2. Surface must be free of machining marks and brushed to look uniform.
3. Discoloration of metal is specified in the table COSMETIC REFERENCE STANDARD FOR FLAWS.



Example surface

Sheet Metal

1. The manufacturer can choose the grain direction for the best yield unless specified on the drawing.
2. Surface must be free of any tooling marks and look uniform across the top surface.



Example surface

COSMETIC REFERENCE STANDARD FOR FLAWS

FLAWS	IIA	IIB	IIC
Smearing	NONE	ONE (1)	TWO (2)
Bleeding and Haze	NONE	ONE (1)	TWO (2)
Voids, Fill-ins, Specks	TWO PER SURFACE (2) Max. = .02"	FOUR PER SURFACE (4) Max. = .03"	FOUR PER SURFACE (4) Max. = .09"
Scratches	TWO PER SURFACE (2) Max. = .01" x .03"	TWO PER SURFACE (2) Max. = .02" x .09"	FOUR PER SURFACE (4) Max. = .02" x .25"
Inconsistency	NONE	TWO (2)	FOUR (4)
Discoloration	NONE	2 allowed with max dim of 0.020"	4 allowed with max dim of .100"
Fingerprints	None allowed under plating	None allowed under plating	None allowed under plating

COSMETIC DEFINITIONS

Bleeding (silkscreen):

The evidence of one color altering another where they overlap.

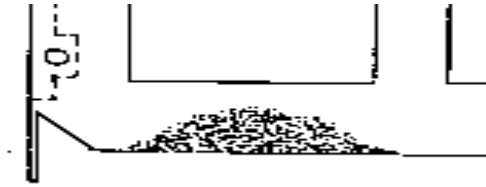
Fill-ins:

An excess of ink that alters the form of a screened feature not affecting legibility.

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VISUAL CONDITIONS – Definitions and standards

ORANGE PEEL – Is characterized by very small surface irregularities that form a distinct pattern over a painted surface. It gets its name from its similarity to the surface of an orange.

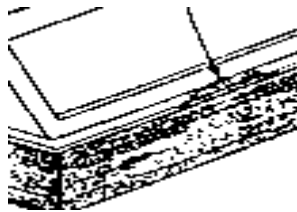


example of orange peel

Surface coding

IA & IIB	Unacceptable
IIB & IIC	Orange Peel < 1 sq. in..

OVERSPRAY – As referenced to a painted surface where a dimensional line limits a painted surface. Paint should not cross that line, whether it be a masked dimensional line or a natural dividing line. The paint that crosses that line is considered OVERSPRAY.



example of overspray

Surface coding

IA & IIB	Unacceptable
IIB & IIC	Unacceptable
IIIB & IIIC	Acceptable on inside surfaces not visible

PAD PRINTING – Method used to apply logos, name, or patterns on plastic or painted metal.

PREFERRED – No deformities or flaws. Lettering/markings should be clear in form and color.

MINIMUM ACCEPTABLE – No significant deformities. Color of lettering can be slightly diminished, but must match shade of surrounding area. Voids in pad printing must not be seen at 18".

UNACCEPTABLE – Raised surfaces, voids readily observed, nicks, scratches, cracks, deformed or distorted characters, discoloring, missing and silkscreen are unacceptable.

Rev	Desc	Date	Approved by
C	Release doc	9/2/1999	B Windward
D	Updated Spec	1/5/2021	M Hunter