

PAINTED SURFACE COSMETIC INSPECTION CRITERIA FOR DIE CAST PARTS

Courtesy of A&B Die Casting Company , Inc.
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Definition of Surface Classes

Surface Class	A	B	C	D
Typical Surface (example)	Part Front Face	Part Top, Sides	Part Bottom, Rear	Internal
Surface Location	External Surface	External Surface	External Surface	Internal
Surface Viewed by User	Usually	Often	Seldom	Never

Inspection Guidelines

- 1.0** Inspect parts using "Time, Distance, and Conditions" criteria specified for the Surface Class
- 1.1** If no cosmetic flaws are discovered following 1.0 criteria, the part is considered acceptable.
 - 1.2** Repetitive inspection will make a flaw that recurs in a specific location more noticeable.
If a flaw is acceptable at the beginning of the inspection run, the same should be true at the end.
- 2.0** If cosmetic flaws are discovered following 1.0 criteria, follow Defect Acceptance Level criteria.
- 2.1** Note: "Defect Acceptance Level" criteria determine whether or not a visible defect is acceptable.

Time, Distance, and Conditions

Viewing Distance (inches)	18	18	18	24
Inspection Time (seconds)	10	5	5	3
Illumination required for Inspection	80 to 150 foot-candles, uniform, non-directional, no direct reflection NOTE: good fluorescent office lighting typically meets these criteria			
Viewing Angle Per Surface	Constant 90° ± 15° (no manipulation of part or light source)			
Magnification	None			

Definition of Terms

Discoloration	Any change from original color or unintended inconsistency in color.
Glossiness	Any area with a different level of shine or luster than the rest of the surface.
Specks	Small particles.
Lint	Any unintended foreign substance in the coating or on the surface.
Scratches	Shallow grooves.
Marks	Pits, sanding, or other marks on base material that are visible after coating.
Runs	Excessive coating that causes drips.
Nonadhesion	Lack of proper adhesion of the coating to the surface.
Nonuniform coverage	Areas with an insufficient or excessive amount of coating.

Defect Acceptance Level

Discoloration, Glossiness, Specks	2 Max .02"	4 Max .06"	6 Max .13"	See QMF 301 Casting Cosmetic Matrix
Lint and Scratches	2 Max .01"x.03"	4 Max .02"x.09"	4 Max .02"x.25"	
Marks and Runs	None	2 Max .06"	4 Max .13"	
Nonadhesion, Nonuniform coverage	None	2 Max .09"	4 Max .13"	