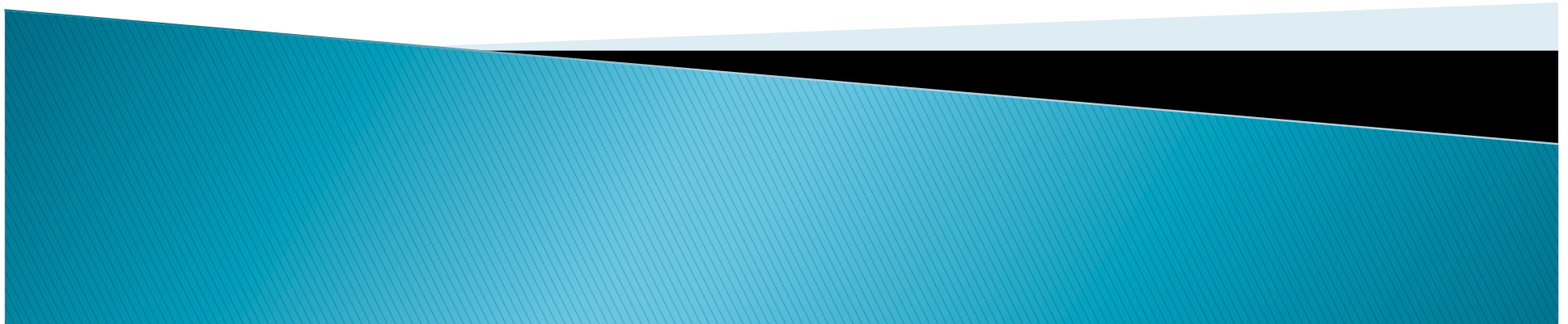




non-stick coatings

Common Problem Solving Techniques for NONSTICK COATINGS





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Common Problem Solving

	PROBLEM	Cause	Solution
1	Orange Peel	<ol style="list-style-type: none">1. Spray viscosity is too high2. Flash off time is too short3. Dry spray4. Low air pressure in spray	<ol style="list-style-type: none">1. Reduce spray viscosity2. Lower the line speed and increase flash-off time3. Improve the spray method4. Increase the spray pressure
2	Sagging	<ol style="list-style-type: none">1. Viscosity is too low2. Film thickness too high3. Ambient or substrate temperature is too low	<ol style="list-style-type: none">1. Decrease the reducer to increase spray viscosity2. Reduce the DFT as per PDS3. Preheat the substrate



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Common Problem Solving

	PROBLEM	Cause	Solution
3	Blistering	<ol style="list-style-type: none">1. Film build too high2. Flash-off temperature is too high3. Coatings contains foam4. Solid content is too high	<ol style="list-style-type: none">1. Control the DFT as per PDS2. Reduce the flash-off temperature or increase the curing time3. Remove foam4. Reduce the solid content
4	Craters/ Fisheye	<ol style="list-style-type: none">1. Contamination on surface2. Contamination in spray gun3. Cross contamination in spray line4. Unclean compressed air	<ol style="list-style-type: none">1. Improve the process in pretreatment2. Clean the spray gun3, Improve the line maintenance4, Improve the cleaning of the compressed air



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Common Problem Solving

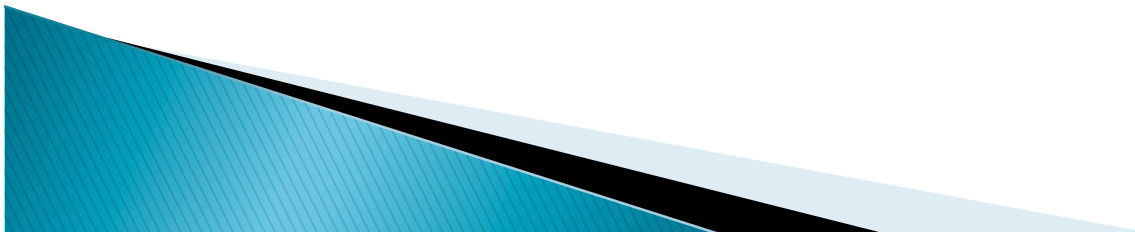
	PROBLEM	Cause	Solution
5	Particles in film	<ol style="list-style-type: none">1. Contamination in Paint2. Contamination in the spray booth3. Contamination in the oven line4. The paint is expired, or not stored properly5. Wrong pretreatment used on substrate	<ol style="list-style-type: none">1. Filter coating properly2. Clean the spray booth3. Clean the oven line4. Improve the storage condition, or discard expired material5, Ensure correct pretreatment
6	Peeling-Off	<ol style="list-style-type: none">1, Pretreatment is not good enough / rough enough2. The coating is not mixed well enough before spraying3. Curing temperature is not right	<ol style="list-style-type: none">1. Increase the roughness of the substrate2. Mix well before spray3. Cure at right temperature as per PDS



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Common Problem Solving

	PROBLEM	Cause	Solution
7	Color Variance	<ol style="list-style-type: none">1. DFT is not in specification2. Curing temperature is not right3. Spray method including suspect pressure, distance, spray volume	<ol style="list-style-type: none">1. Control the DFT2. Control the curing temperature3. Adjust the spray method and parameters
8	Low gloss	<ol style="list-style-type: none">1. Quality of the pretreatment is not good2. DFT is not in range3. Curing temperature is not right4. Coating may be expired	<ol style="list-style-type: none">1. Improve the pretreatment2. Control the DFT3. Adjust the temperature4. Renew the coating

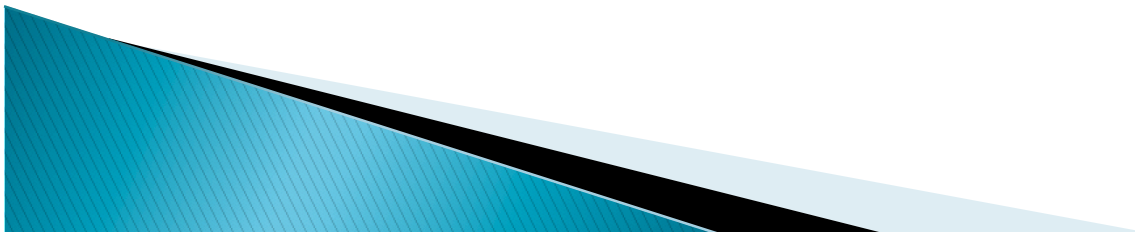




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Common Problem Solving

	PROBLEM	Cause	Solution
9	Poor Release	<ol style="list-style-type: none">1. DFT is not in range2. Curing temperature is not right	<ol style="list-style-type: none">1, Control the DFT as per PDS2, Cure the product in right temperature
10	Mud Cracking	<ol style="list-style-type: none">1. DFT is too high2. FLASH temperature is not right	<ol style="list-style-type: none">1. Adjust as per PDS2. Adjust as per PDS
11	Corrosion Resistance poor	<ol style="list-style-type: none">1. Roughness in pretreatment is too low2. DFT is not in specification3. Curing temperature is not right	<ol style="list-style-type: none">1. Improve the pretreatment2. Adjust DFT as per PDS3. Adjust the curing process





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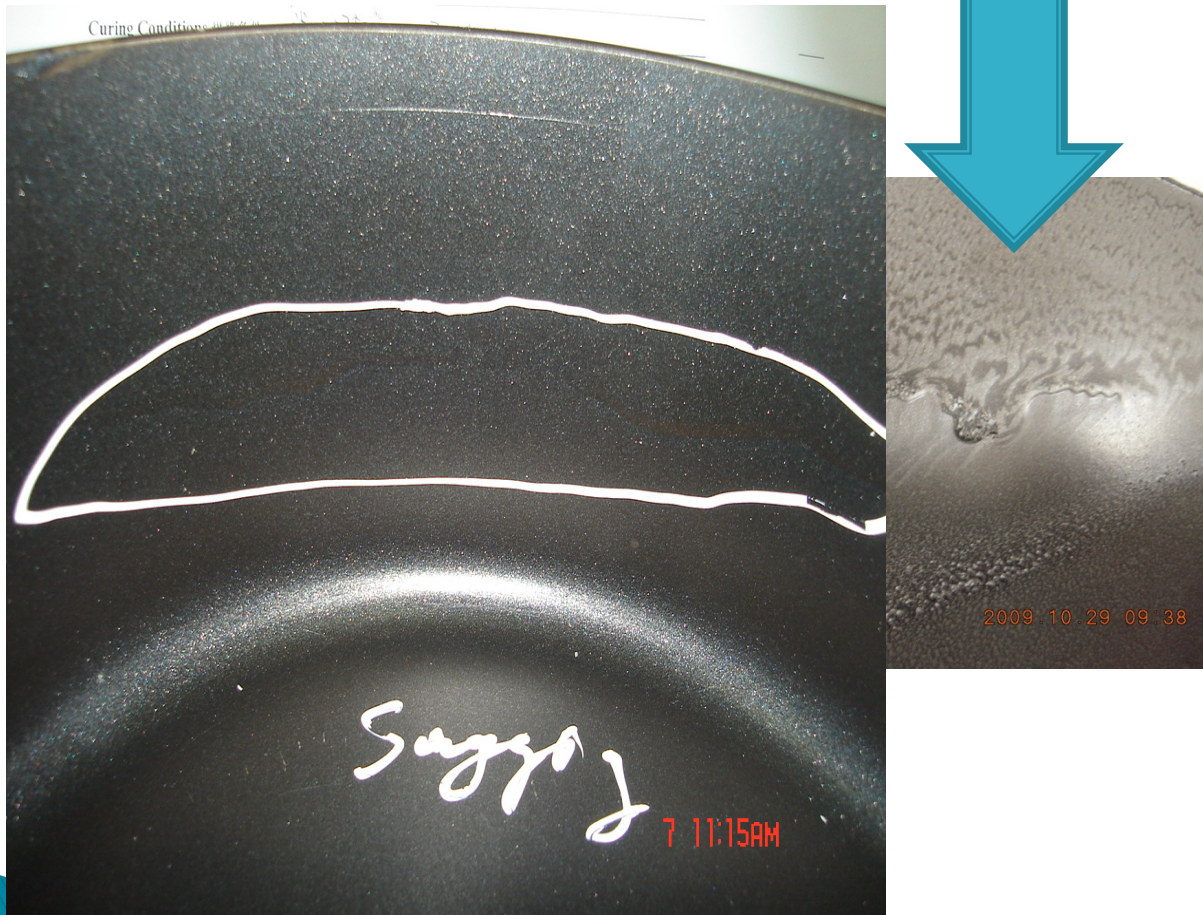
Common Problem Solving

	PROBLEM	Cause	Solution
12	Gelling	<ol style="list-style-type: none">1. Excessive mixing in coating2. Storage condition is not good	<ol style="list-style-type: none">1. Avoid over mixing2. Store material properly as per PDS
13	Rough Surface	<ol style="list-style-type: none">1. Coating may be expired2. Improper pretreatment3. Spray method is not right4. DFT too low5. Improper curing process	<ol style="list-style-type: none">1. Check coating shelf life2. Use proper sand size in Grit blasting3. Improve the spraying method4. Control the DFT5. Cure properly as per PDS
14	Eruption	<ol style="list-style-type: none">1. Die-cast aluminum process is not good2. Curing temperature is too high	<ol style="list-style-type: none">1. Preheat the substrate before spraying2. Control the temperature as per PDS3. Change to low cure product

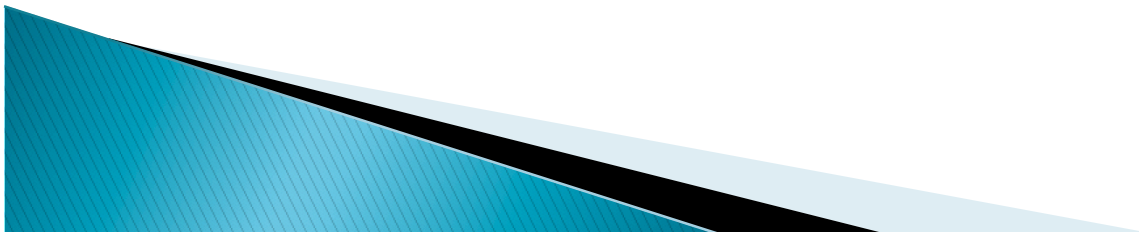
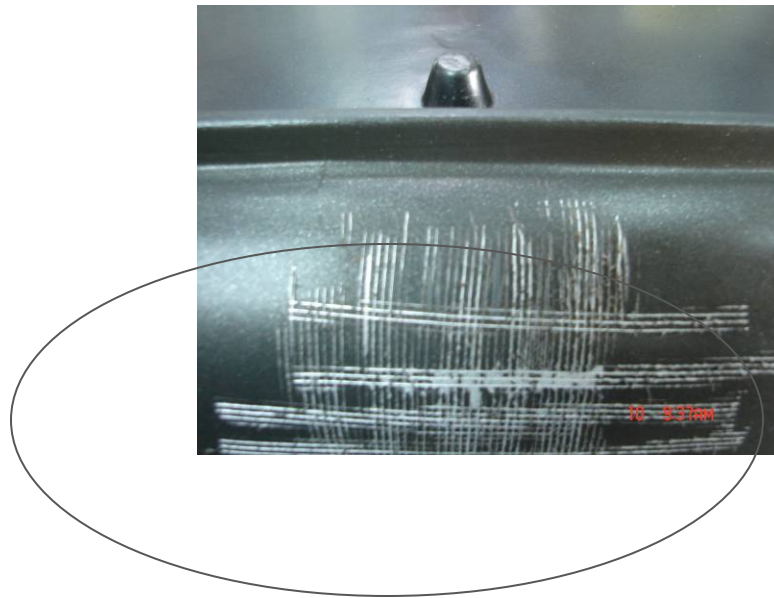
Corrosion After Boiling Salt -Water



Sagging



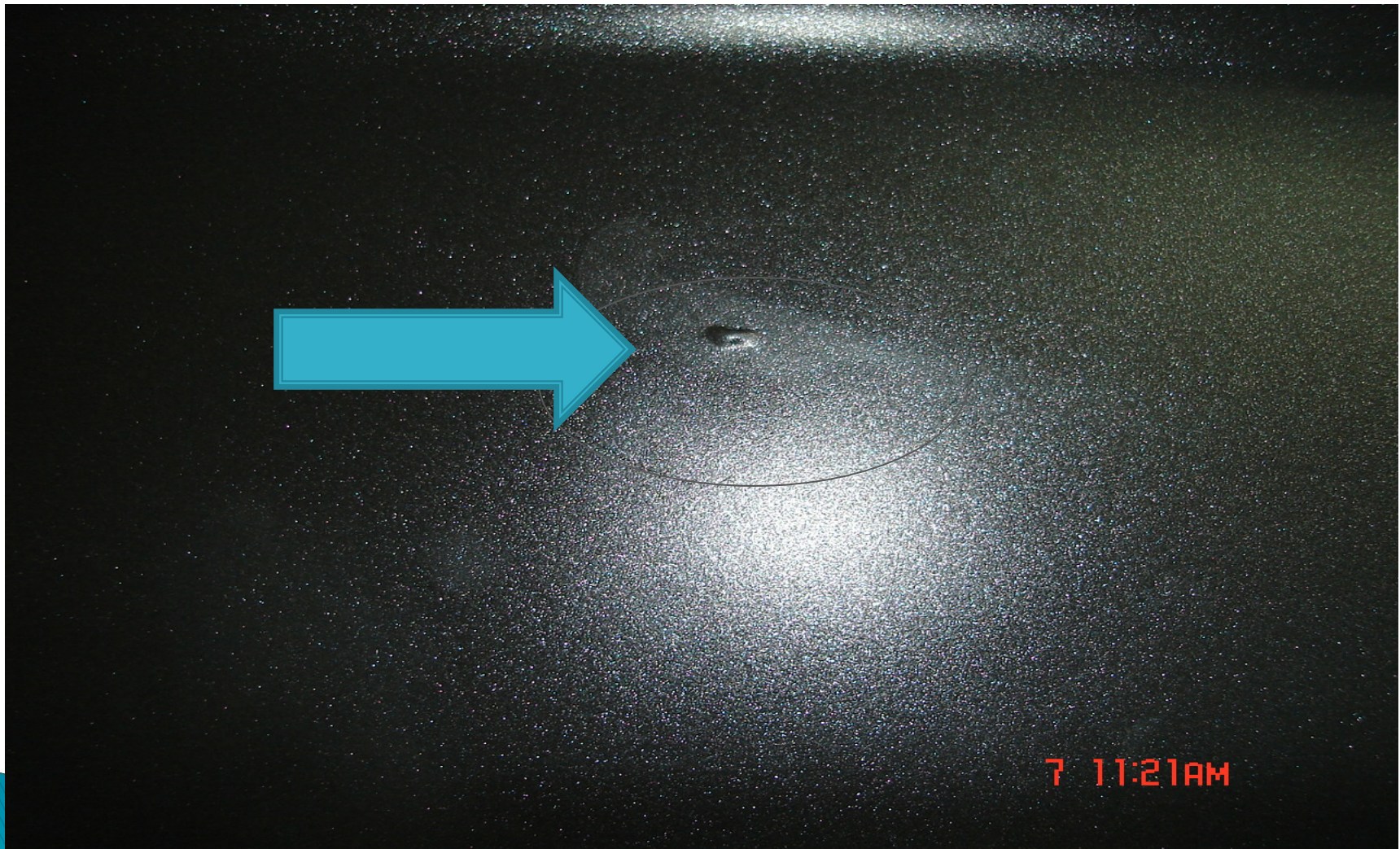
Peeling off/Poor Adhesion



Eruption in Die-cast Aluminum



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Poor Egg Release



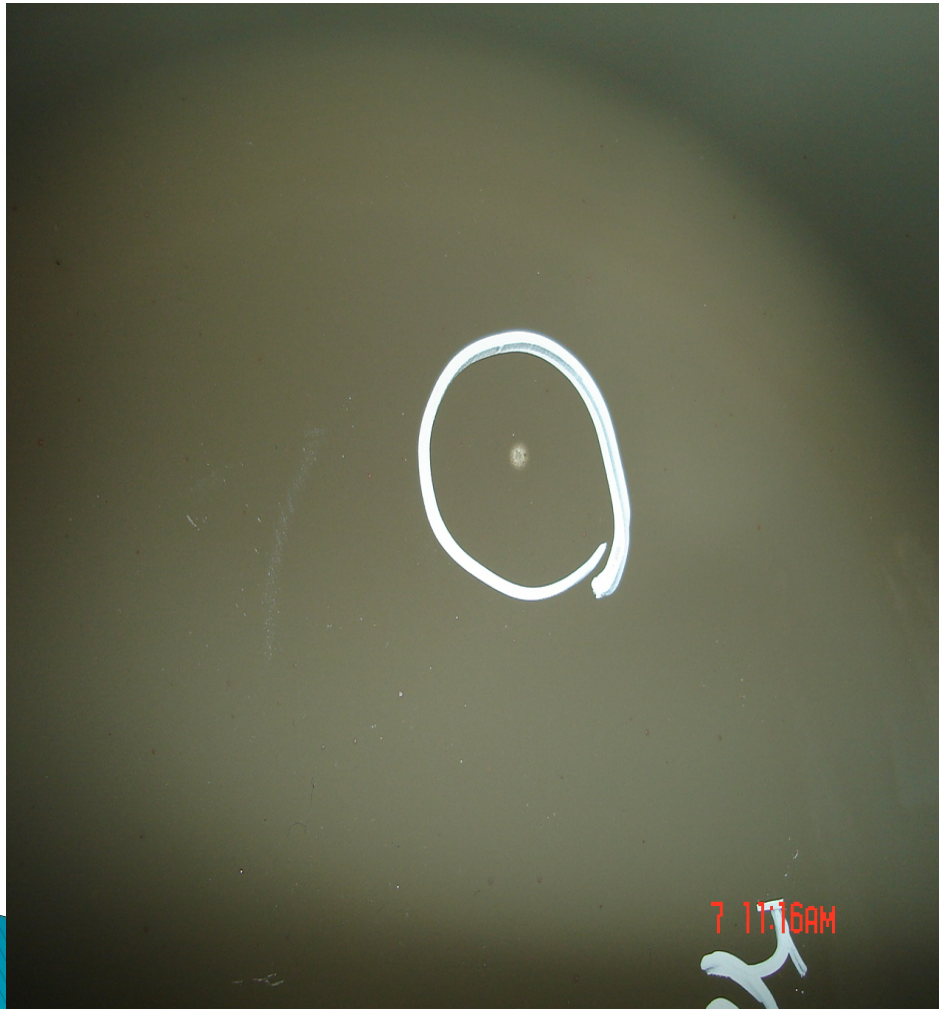
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Fish eye effect



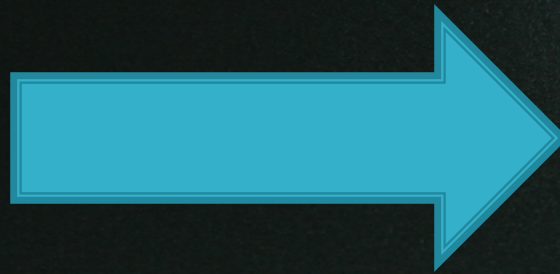
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Pinholes



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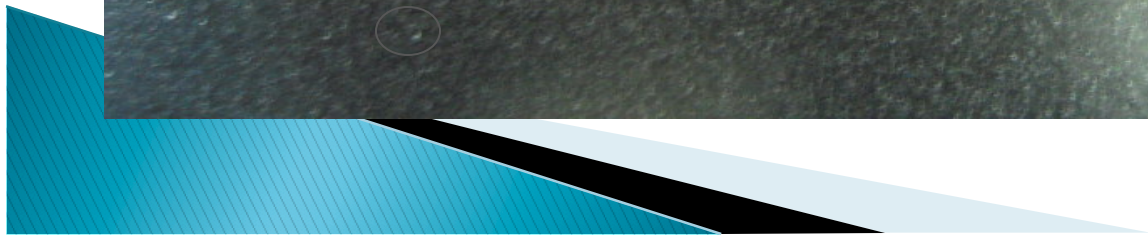
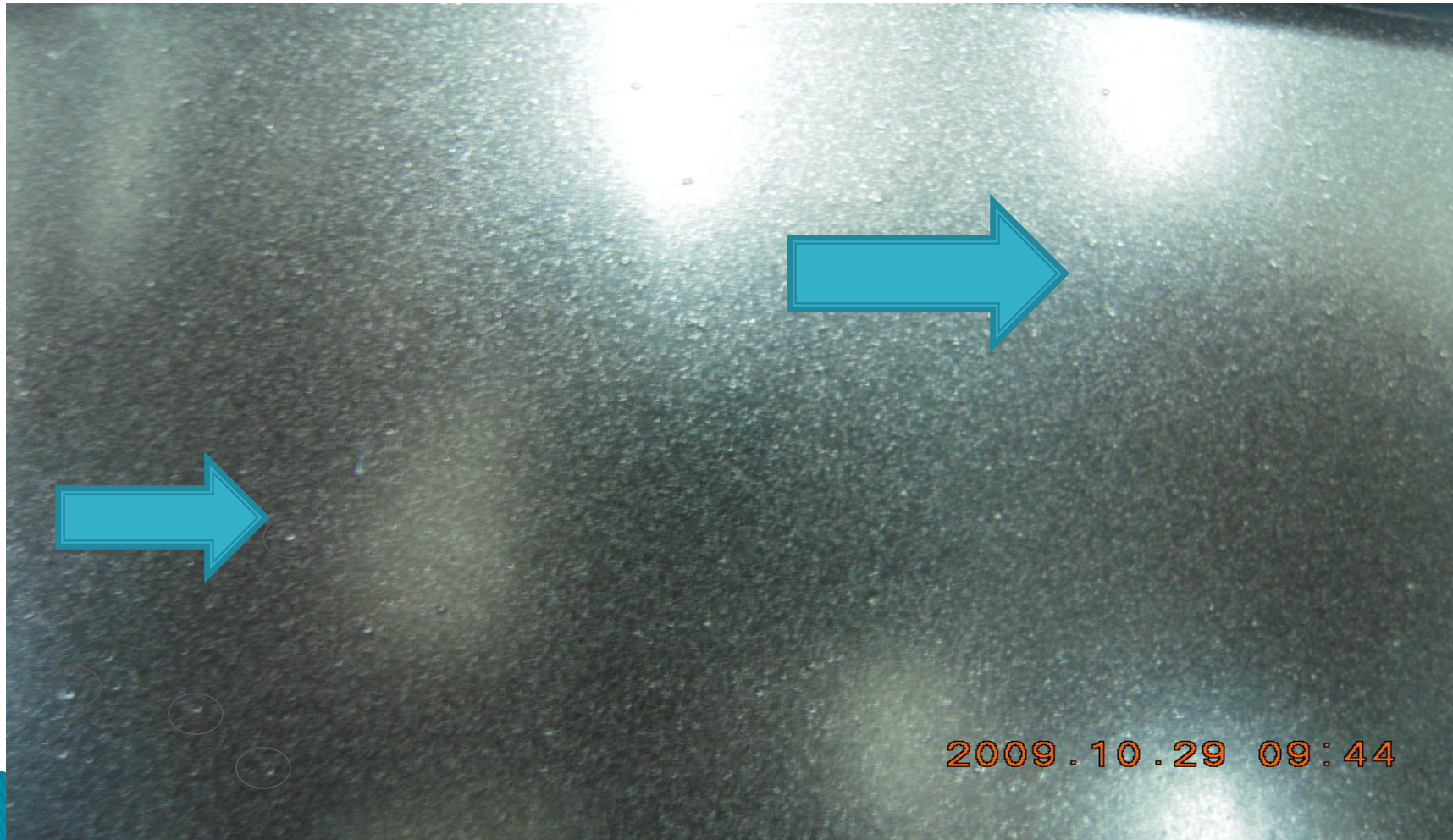


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Particles in the film



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SUMMARY

Critical points in manufacturing process:

- ▶ Substrate Pretreatment

Roughness and uniform of the sand blast will affect adhesion and performance

- ▶ Curing temperature and time

The curing process will affect the film forming, both over curing or under curing will lead to poor performance

- ▶ Dry film thickness (refer to PDS required)

- ▶ Reducer

