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Analysis on the Generation and Control of Strip Defects on the Surface of Color Coated Plates

Li Hai-ying
School of Higher Vocational Technology, University of Science and Technology Liaoning, Anshan, 114044, China E-mail:lnaslhy@163.com

Abstract: The strip defects on the surface of color coated plates occupy a large part of the defects of color coated plates, mainly dirty lines, drawing, stripes and so on. In this paper, according to the actual situation of color continuous production line, the reasons for the above-mentioned surface strip defects and some control measures of production site are discussed.

Key words: color coated plate bar defects cause control measures

First. Overview

Dirt lines, drawing, stripes, etc. are some common defects in the surface defects of color coated plates, accounting for a large part of the surface defects of color coated panels, seriously affecting the continuous production of color coated lines and product quality stability. These defects in the appearance of somewhat similar to the occurrence of some of the reasons are similar, but most of the situation or the occurrence of different mechanisms, treatment measures vary widely. According to the actual situation of the production site, from the various types of defects in the form, the occurrence of parts and other aspects of their analysis of some of the main reasons, and developed a corresponding control measures to reduce the production of these strip defects, so as to ensure continuous and stable production, The finished product rate.

Second. The color of the surface of the common strip defects and description

1. The dirt line for the strip coating surface showed continuous floral strip depression defects.

2. Drawing is the strip surface was wire-like, with the strip color defects. Generally non-continuous, irregular through the strip up and down the surface.

3. The stripes are regular surface of the coating surface transverse or longitudinal stripes marks.

As shown below:

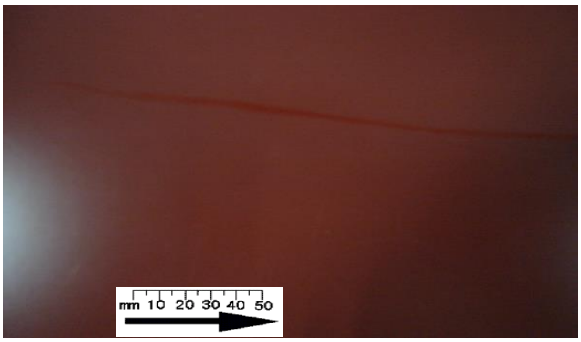

Figure 1 dirt line

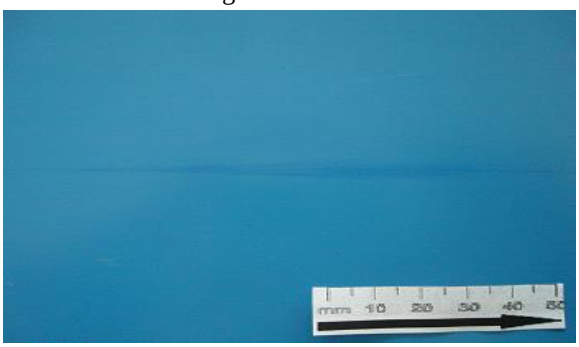

Figure 2 drawing

Figure 3 stripes

Third. The main reason for the common strip defects

1. The cause of the dirt line

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There is a floating foreign body between the coating roller and the strip or between the roller and the roller. The surface of the coating film is missing from the surface of the coating process, and the line is easy to travel.

1.1 the conversion of raw materials need to be connected to the need for suture, suture process prone to iron, burrs, the coating will fall when caught between the roller and the extraction roller, and then produce dirty line defects.

1.2 for a long time production, for the pump before the export pipe filter filter impurities increased, prone to clogging leakage, a filter into the paint, so that the slag material into the strip surface, resulting in dirt line.

1.3 painting roller, paint plate, scraper, foam device, the circulatory system and other equipment, pieces of cleaning is not complete, easy to cause dirt line.

1.4 paint in the mixing, transportation, construction and use of the process, by dust, mosquitoes and other debris pollution, prone to dirty lines.

2.The reason for drawing

2.1 paint plate paint bubble too much, the coating process with the transfer roller to the strip, resulting in drawing.

2.2 the surface of the paint floating color, coating process with the transfer of roller to the strip, resulting in drawing.

2.3 roller with no material, easy to produce during the drawing process.

3. The cause of the stripes

3.1 the surface of the substrate lattice, coated by the coating surface will still show the basic pattern marks.

3.2 roller surface is not smooth, there is into the knife pattern, resulting in here with the material and other parts of the difference, the product surface showing a continuous stripe-like defects.

3.3 paint viscosity is too large, the poor leveling of the paint, in the process of material with the strip prone to defects.

3.4 the coating roller ratio does not match, making the extraction roller with material is bad, easier to lead to stripe defects.

Fourth. Color coated strip-like defects on the scene of some control measures

1. dirt line prevention and control measures

1.1 strip suture, the need for strip suture joints to purge, in order to avoid suture iron clip caught in the suture into the coater caught in the roll gap between the defects.

1.2 for the paint pump need to install the filter, and regularly remove the pump filter cleaning, timely inspection, replace the filter to ensure the quality of filtration.

1.3 the need to strictly ensure that the coating environment and painting tools clean, clean and no foreign body, no variegated.

1.4 the need to strictly control the external environment of the coating area for anti-mosquito, such as operating room door status, lighting opening and closing, personnel access and other aspects of control.

2. Drawing the prevention and control measures

2.1 need to make suitable for two or three roller coating with a special baffle, and adjust to the correct position, the bubble on the outside, to prevent the foam onto the roller and then brought to the surface of the steel plate to produce drawing.

2.2 the paint should be fully uniform mixing, moderate increase in the rate of paint recycling, to a certain extent, reduce the foam and the foam can effectively return to keep the foam and roller with the material zone isolation, thus eliminating the bubble.

2.3 according to the production line speed, need to adjust the extraction roller, coating roller speed, roll ratio, to ensure that the quality of roller with material.

2.4 by increasing the amount of lacquer for the paint, to increase the depth of paint inside the paint, the quality of materials with a good effect.

3. Stripes prevention and control measures

3.1 the need to check the quality of raw materials on the surface, such as the existence of a touch on the surface drawing, can not be used as raw material feed production.

3.2 for the quality of the roll, you need to use the diluent before wiping and observe the surface and the use of coating before the immersion in the slow reverse rotation of the coating to observe, visual no pattern can effectively control the stripe defects.

3.3 by adding thinner appropriate to reduce the viscosity of paint, can effectively improve the control of the stripes.

3.4 according to the production line speed, reasonable adjustment of the roller speed, coating roller speed and the ratio of the two ratio, can improve the paint with a good material.

Five. Summary

Through the color plate on the surface of the formation of

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the reasons for the formation of strip defects we can see that to reduce the occurrence of these defects, need to focus on many aspects of preventive control and adaptive adjustment:

1. for the dirt line and stripe defects, in the raw material substrate, the need to pay attention to the suture joints generated by the iron control and the surface does not allow the feel of the tensile pattern.

2. by regulating the extraction roller, coating roller speed, roll ratio, moderate increase in the depth of the coating roller immersed in the paint, adjust the viscosity of the coating can effectively improve the coating material, so the above-mentioned strip defect control is very helpful , Especially the stripes and drawing effect is obvious.

3. in the color coated plate production process, the need to focus on the coating environment and painting tool parts maintenance cleaning, clean and thorough requirements, no foreign body pollution, no paint variegated, is an important measure to prevent the occurrence of dirt.

4. in the color coated plate production process, need to take the baffle, adjust the baffle position, control the speed of circulation and other measures, the supply of paint around the process of foam and floating color isolation prevention and control, is the key to control the drawing defects Measures.

5. in the coating roller quality control requirements are very high, normal visual difficult to determine the microscopic anomalies, can be wiping the diluent and coating roller adhesive coating reverse slow slow down to observe the fine effect of the quality of the roller, An important measure to prevent stripes.

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