Future Coat Technology

High corrosion- resistant polyurethane cathodic bright electophoretic coating

ELECTROBOND 3000

ELECTROBOND 3000is cathodic electrophoretic coating using acrylic polyurethane resin. This coating is high-gloss, scratch resistant, high corrosion resistant and low temperature curing which applies to all kinds of electroplating products such as hardware, lighting, pens, electrical appliances, imitation jewellary etc.

Characteristics

1. The coating has uniform appearance, high gloss and good leveling which applies to transparent coating:

2. The coating film begins cross-linking curing at 120^0c baking temperature. The curing temperature can improve the coating film hardness, solvent resistance and abrasion resistance. The cured coating film at 150^0c to 170^0c has the performance of anti-artificial sweat.Less yellowing in high temperature curing and shortens the baking time:

3. The coating has strong salt spray resistance. Electroplating products of all kinds of metal material with bright acid copper-nickel thin coating processing, the neutral salt spray resistance test can reach the level of more than 100 hours:

4. Performance of the coating is stable and easy to manage.

Raw material parameter

Maternal name	Solid content	Solvents content	Viscosity(25^0c,mpa.s)	Others
Electro bond 3000	62-66%	10-15%	6000-12000	Brownish yellow

Formulation Process

Raw material	Composition range	Commonly used formula
Electro bond 3000	120-160g/l	120g/l
Solvent No.2	0-2g/l	
Solids content	8-10%	8%
p^H	3.6-4.4	3.6-4.4
Conductivity(μs/cm)	300-650	400-500
Film thickness(50v/30s25^{0}c)	15-22μ	10-15μ

Operating conditions

Item	Conditions
Temperature	20-26^{0}c
Voltage	20-80V
Time	10-30S
Anode	Stainless steel
Electrode spacing	15-30cm
Stirring	Filter or pump cycle
Filter	1-10μ cotton core filter

curing conditions

Predrying	100^{0}c	10minutes
Curing conditions	120-130^{0}c	30-40minuts

Predrying	100^{0}c	10 minutes
Curing conditions	150-170^{0}c	15-30 minutes

Coating formulated and supplement

Formulated the operating fluid of 8% solids content for the 100L tank body

1. Weigh the original paint 12kg, and then add the DI water 12kg(5μs/cm below) in to the paint slowly with stirring. Note start adding water will increase the viscosity of the coating, do not add too fast. Each time add water after the water sufficiently uniformly dissolved, the process is completed within 1 hour.

2. Then add 20-30kg of DI water and stirred for 30 min utes. Pour the paint in to the overflow tank of electrophoresis tank, and then in to the tank throw the filter. Water was added to the 100L (about 100kg), and stirred for 1-2hours to complete the process of formulating.

10kg supplementary coatings formulated (25-30% solids content)

1. Weigh the original paint 4kg and then add the operating fluid(10% below) or DI water 6kg into the paint slowly with stirring not start adding water will increase the viscosity of the coating, do not add too fast .Each time add water after the water sufficiently uniformly dissolved, the process is completed within I hour.

2. Stirred for 1-2 hours, pour the supplementary coatings in to the over flow tank of electrophoresis tank, then in to the tank through the filter.

Coating formulated and advice

1. Low solids content formulation of fresh operating fluid can reduce shrinking and promote the coating leveling. The solvent content of the newly formulated coating wet film is high, preferably continuously stirred for 24 hours after the operation.

2. The color electrophoretic suggested neutral waterborne electrophoresis paste. The paste is preferably appropriately diluted with water before adding to the operating fluid. When oily or dye –type color paste is used, you need to add these color paste to the original paint coating and stirred for 10-20 minutes. DI water was slowly added to operate fluid prepared by the above method coatings.

3. The proportion of color paste supplement should be in accordance with the formulated proportion. Avoid performing that color by a separate supplement except for the small adjustments to color.

4. Miscibility of deferent water based or oil based paste and Electro bond 3000 is different. To be tested before use recommended to use our company's color paste.

Treatment process

The electrolytic degreasing –washing-electrophoretic coating-recovery-washing-dehydration-predrying –cured.

Coating managements

Solids management of day-to-day production management5 control

1. In day to day management, the supplement of the coating is according to the coating consumption by 30-40g coating concentrated liquid per square meter (thickness of 10μ). Determination of solids content of the operating fluid on a regular basis and to compliment and regulation.

2. The coating can fix it myself. The thickness of the coating, the coating performance and the usually problems like uneven, craters , pinholes etc can be managed and adjusted by supplementing or profiling 10-30% of the new coating .

3. A large number of impurity ions in the coatings caused the high conductivity, pH or appearance abnormality. Recommended update from 20-30% of the operating fluid or ultra filtration.

4. After ultra filtration, the coating may be the lack of the neutralizer. You can add 0.5-1g/L of stabilizer to adjust. The method of adding stabilizer 1. The stabilizer must be mixed and dissolved with the coating concentrated liquid2. Add water formulated as supplementary coatings 3. Add in to the coating.

5. The long time placement of the coating operating fluid will be aging , so that the coating film becomes thin, and performance deterioration . You can add 5-10ml/L solvent EX adjusts. Update the operating fluid of 20-40% according to the actual situation.

6. If there are fine particles on the coating, available 1 micron precision filter for continuous filtration or filtered through celite.

7. The coating does not require a continuous agitation when not in use.

Electro bond 3000 Management table1

1. Solids content
Solid content increased, the film thickness, the gloss and leveling is good. The solids content is less than 5% ,the gloss and leveling is worse, the thickness has declained, and easy to produce the inverted light and rough coating film.
2. Operating temperature
Rising the temperature to increase the film thickness, uniformity of the film is also improved; the high temperature will cause orange peel. The thickness of the coating film will decrease if the temperature is low.
3. Voltage operation
High operating voltage can increase the film thickness and gloss, and get good leveling. The operating voltage is low, the thickness of the film is thin, and leveling and gloss decreased.
4. The pH of the coating(coating concentrate or adjusted)
PH is usually the range of 3.6-4.4, the aging of the coating coating or ultra filtration will increase the PH and add new coating can be decreased: PH is too low, the coating film will easily have pin hole points or orange peel, etc,ultra filtration or supplement to a new coating material or diluted with water can adjust:
5. The conductivity of the coating(to adjust by updating coating or ultra filtration)
Conductivity is too low usually because of the low solids content of the coating, and the gloss and the leveling is bad. The conductivity is too high is usually caused by too much impurity ions in the coating, ultra filtration or add new coating or diluted with water can adjust.