ABOUT ANODISING

Our New anodizing plant was commissioned in October 2012. Ours is a fully automated plant and the plant is completely designed and commissioned by the Monti Engineering from Italy. The plant capacity is 60,000 Amps, with each rectifier capacity of 15,000 Amps. The rectifier is supplied by RGB Heythekker from Germany and also electro-coloring transformer of 10000 Amps. The chemicals being used in our plant are from reputed supplier M/s Metachem from Germany.

Each anodizing load can take up a Maximum load of 100 m^2 and a minimum load of 26 m^2 during the anodizing process and we can anodize up to 25 Microns of anodic thickness or as desired by the customer in lower and higher range i.e 18 to 30 microns.

Our plant is equipped with 4 anodizing tanks and two electro-coloring tanks; in which different shades of bronze are developed as per the needs of the customer and we have established our own standards.

We can anodize profiles to a maximum length of 7 meters only but maximum production is carried out on 6 mtr profiles. The section dimensions varying from 10x10 or 3x15 mm (Minimum) and 160x160 or 70x250 mm (Maximum) can be anodized in our set up. The plant designed capacity is 4500 mt/Year with different product mix.

What is anodizing?

Anodizing is a protective and decorative surface treatment used to enhance the working qualities and visual appeal of items. The treatment involves manipulation of the natural oxide layers on the metals to produce thicker and more durable films.
These enhanced oxide layers lend the items increased resistance to wear and corrosion and provide surfaces which are more receptive to paints, dyes, and adhesives. When applied thinly, anodized films also tend to cause light interference resulting in attractive surface patterns and multicolor effects. In addition to the improved wear and corrosion resistance offered by anodizing, treated parts are also less inclined to exhibit galling of friction surfaces.

The anodizing process involves passing an electric current through an electrolyte solution between a positively charged anode, in this case the anodized item, and a negatively charged cathode. This resultant reaction changes the crystal structure of the anode surface and causes a layer of oxide to be deposited on it in what is known as an electrolytic passivation process. The characteristics of this oxide film can be manipulated during this process, thereby allowing for a high degree of control over the end result. Generally the synthesized layers are more robust than those occurring naturally. As a matter of interest, the anode role played by the product is the source of the anodizing name.
Anodized oxide layers are generally fairly porous by nature and require the application of sealant to ensure maximum corrosion and wear resistance. The film's adhesion to the metal is far stronger than conventional plating or painting films though, thus making anodized finishes particularly durable. This durability offers an excellent base for the post-treatment application of paints and dyes, with colored anodized finishes exhibiting outstanding longevity even with continuous use. Anodizing also helps prevent galling, or adhesive wear, of threaded or sliding parts at their points of friction.

Why Balexco?

Balexco is one of the pioneering anodizers in the Middle East with years of experience and well known for Quality. Ours was the first anodizing plant in ME which started in the year 1977. We are using one of the best qualities of chemicals from the M/s Metachem Germany, which reflects on our quality of surface finish after the anodizing process.

All our process parameters are well controlled, and we are assisted by a well-equipped state of the art laboratory, which continuously monitors all the process parameters.

Anodizing is an important surface treatment, by which the surface remains protected from hostile atmosphere, be it cold, hot or humid and profiles will not be corroded.

The new anodizing came into production on October 2012, a fully automated (software) one. The process has become user friendly and further improved reducing color variations.

How?

Currently there are 30 tanks in total in anodizing for degreasing, etching, anodizing, electro-coloring process and sealing stages including rinsing process between every stage. One electro-coloring tank in place and plans to increase it to two. All the colors are produced from the same tank.

Anodising is the process where Aluminum Oxide film is created on the section to avoid corrosion. (The tanks used are nos. 16, 17, 19 and 20)

The beam load is dipped in the anodising tank. Anodising parameters (exposed surface area in m2 and the required film thickness in Microns) shall be set by the anodising Controller and the program will calculate the dipping time and the required voltage.

Thickness of the anodised film is measured by the Anodising Controller for each load, and the results are recorded in the Anodising report. The results of the coat thickness gauge verification shall be included in the Anodising Report.

After that, the load is dipped in the electro-coloring tank, prior to that the voltage and the timing shall be set by the Anodizing Controller to get the required color. The color shall be inspected by the Controllers and Anodizing Lead-man before further processing.

Sealing is carried out in tanks No.30, 31, 32 and 33 to seal the pores created by the anodising process.

The anodizing Controller shall set the sealing process parameters as per chemical supplier data sheet depending on film thickness.

After sealing, sections shall be inspected for surface finish and colour by the Anodising Leadman. If the results are not satisfactory, Head of Surface Treatment shall be informed.

The colors available are:

1. Plain matt (Matt silver)
2. Col.16
3. Col.10
4. Col.17
5. Col.21
6. Col.30
7. Col.40
8. Plain Brush (shining silver)
9. Matt black
10. Brush black
12. Brush 5
13. Brush 8

Other special color range can be produced based on the customer requirements

ANODISING FLOW CHART