

Horizontal Hot-Dip Galvanized Line



The hot-dip galvanization process is one of the most commonly used and applicable anti-corrosive treatments to steel strip products. There are two types of the annealing methods: (1) the off-line annealing; and (2) the on-line annealing manufacturing process methods. The on-line annealing method is first to treat, leveling, cleaning, etc., the steel strip (cold or hot rolled strip coil), on-line; then the strip is galvanized in the zinc pot when the strip is passing through the production line. There are several examples of the well proven on-line annealing methods in the world, such as Sendzimir and United American Steel galvanization process methods.

The Horizontal Hot-Dip Galvanized Line ("Galvanized Line") offered from Brighton Equipment Corporation referred herein adapts the processing method from the United American Steel, which applies the horizontal galvanization production process. The process flow starts from the cleaning section, then non-oxidizing annealing, then hot-dip galvanizing, then cooling after galvanization, then skin-passing, then stretch leveling, then chroming, then oiling, etc. Please see the enclosed flow chart for more details.

A typical Horizontal Galvanized Line would comprise with the following major manufacturing equipment and devices:

- Payoff reel
- Entry looper (degrease)
- Annealing furnace
- Zinc pot
- Skin pass
- Leveler
- Exit looper
- Tension reel
- All optional auxiliary equipment and infrastructure.

The most important piece of equipment within a Galvanized Line is the annealing furnace, which is the heart of the plant. Thus, the referred annealing furnace in this production line is the well selected and proven products from the markets. The equipment offered herein has been installed and operated since in no less than twenty different Galvanized Lines in various markets in the last ten plus years.

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Presently, there are primarily three-layer of markets for the galvanized steel coils; namely: (1) Automotive industry; (2) Appliance Industry; and (3) Construction Industry. Within these market layers, the automotive industry requires the highest quality of the galvanized products; and the appliance industry requires the second best products.

On the other hand, there are two methods of producing galvanized coils; namely, it is the vertical line and the horizontal line. For the higher quality galvanized coils, the manufacturing galvanization treatment requires the vertical manufacturing process technology; such as in the cases for automotive and appliance industries. For the lower quality galvanized coils, the manufacturing process would accept the horizontal galvanization treatment technology.



The difference between the two processes is that in the vertical line, the coil would travel up-and-down many routes within the annealing furnace, which would allow the steel strip being heated much longer in the oven. The net result is that the elasticity of the coil would be improved substantially due to the softening effect on the steel strip by the long period of heating. Therefore, it is in comparison to the horizontal processing line, the quality of the end products from the vertical line is with higher quality. However, the costs of the construction of a vertical galvanization line are almost doubling the similar costs of a horizontal galvanization line. In this data sheet, Brighton Equipment Corporation introduces the lower-cost and lower-quality, horizontal hot-dip galvanization line. If one requires better quality of galvanized products, then please refer to The Hot-Dip Vertical Galvanized Line offered by Brighton Equipment Corporation.

Key Technical Parameters of a Horizontal Galvanized Line

- Width of the coil is between 800 – 1250 mm;
- Thickness of the coil is between 0.4 – 2.0 mm;
- The maximum processing speed is about 60 meter per minute;
- Total length of the line is about 210 meters;
- Production capacity is between 100,000 to 300,000 tons per annum;
- Weight entry:

Minimum	4 kg/1 mm of the width
Maximum	10 kg/1 mm of the width
Exit	The same

Incoming Raw Material

- Options:
- Full hard coils/strips
 - CRC/strips
 - Electro-galvanized coils/strips
 - Pickled coils/strips

Output Production Range

Thickness	0.57 mm	40 %
	1.40 mm	40 %
	1.90 mm	10%
	Others	10%
Coating	Minimum 100 gr/m2	90 %
	110 – 300 gr/m2	10 %

Physical Dimensions

Length x Width x Height = 210 x 9 x 12 m

