

Zinc and Health.

WHY GALVANIZE?

Hot dip galvanized coatings are applied to steel to improve the anti-corrosion performance of the steel to ensure that it lasts as long as possible with a minimum of maintenance

COATINGS DIFFER

Only hot-dip galvanizing gives a coating that can reach the 50 year life required of structural building products.

THICKNESS COUNTS

Compared to other zinc-rich coatings, hot-dipped galvanizing is:-

- THICKER
- HARDER
- FULLER

HOT-DIP GALVANIZED
PRODUCTS LAST
LONGER...



Healthy children in a crop field. Zinc is vital for life and is beneficial for humans and agriculture. *Photo: IZA*

Zinc is the 24th most common element in the earth's crust and is always present naturally at various levels depending on local soils and other environmental factors. In Sweden the average zinc concentration in soil is around 60mg/kg. In Australia, with its ancient soils, very low zinc levels occur in many areas that contributes to the infertility of these soils for cropping, in particular.

Emissions of zinc from point sources (factories, sewage treatment) have decreased dramatically since the 1970's to a level expected to be reduced by more than 80% by the early 21st Century.

It is estimated that in Sweden, where a major study has been done in the 1990's, zinc gets into the environment from the following sources and in the following volumes:

Source	Tonnes/yr
Corrosion and run-off	400
Tyre wear	150
Asphalt wear	50
Brake lining wear	50
Sewage	50
Landfills & mining	400
Sundry sources	50

The Swedish investigators have estimated that about one quarter of the zinc that ends up in the waterways and lakes comes from natural sources while the balance derives from human activity.

An interesting observation made by the researchers is that the atmospheric deposition of zinc in the forested areas of the country from industrial activity has contributed to maintaining the zinc levels in the humus layer in forest soils. As pollution controls continue to reduce the atmospheric zinc levels, there is now a risk of zinc deficiency becoming an issue in the future in Sweden's forest soils. In Australia, where 95% of the continent is not subjected to industrial activity of any kind, most soils are severely zinc depleted. As a result, most of the fertilizers used in Australia in cropping and agriculture have zinc as one of their major constituents.

Zinc and Health.

TRIED & PROVEN

Over 40 years of field testing shows that galvanized coatings perform well even in harsh environments.

ZINC AND HEALTH

Zinc is vital for life in humans, animals and crops. It occurs naturally in the earth, water and in the air. Despite that, many areas of the world are zinc-deficient, aggravating illnesses such as diarrhea, pneumonia and malaria. Inexpensive zinc supplements provide a quick, easy and effective remedy.

WHY GALVANIZE WITH INDUSTRIAL GALVANIZERS?

For steel users requiring fast, proven corrosion protection for local or national projects Industrial Galvanizers is the established hot dip galvanizer with nationwide coverage.

Zinc Requirements for Plants, Animals & Humans.

In human and plant biology, there are both essential, non-essential and toxic metals. These individual characteristics may not apply to all organisms and at all concentration levels, and even the most beneficial compounds may be toxic if their biological uptake is excessive.

Zinc is one of the essential metals and plays a central role in the function of a number of proteins in living organisms. Zinc participates in many vital biochemical reactions such as detoxification, maintenance of DNA and RNA genetic codes, protein synthesis and particularly in reproductive functions. It also plays a major part in the health of the human immune system.

Many plants are prone to zinc deficiency that dramatically reduces their fertility and productivity. The higher up the food chain, the greater the organism's ability to regulate its zinc intake and even in high natural zinc environments, mammals (including humans) and birds do not accumulate zinc in their tissues.

It appears from research done to date, that the life forms most susceptible to toxic effects from zinc are lower forms of plant life (micro-organisms, algae). This phenomenon is used deliberately through the addition of zinc chemicals to coatings and cosmetics as an anti-fungal treatment.

It is for this reason also, that zinc is used in many ointments and medications, particularly for the treatment of skin disorders.

While the research is incomplete, current findings indicate that levels of five times the background zinc level may have detrimental impact of these lower plant life forms.

The human body contains about 2.5g of zinc and more than 200 enzymes are known that require zinc to function correctly. This is a far higher number than any of the other metals essential to healthy body functions. (e.g. iron, magnesium, calcium, sodium and trace metals such as copper). Zinc has been identified as essential in wound healing, digestion, reproduction, kidney function, breathing, diabetes control, inheritance functions, tasting and skin health.

In humans, zinc is found in the highest concentrations in the reproductive system and lowest in the nerves and brain. Mother's milk, sperm and ova have very high concentrations of zinc and humans require around 20 mg/day of zinc, which is available in a normal balanced diet with a supply of fruit, vegetables, cereals, red meat and seafood.

Undernourished children in developing countries suffer most from zinc-deficiency related health problems. According to the International Zinc Association, (IZA) 450,000 children are at risk of dying every year due to the impact of zinc deficiency on diarrhea, pneumonia and malaria. A few extra milligrams of zinc every day can make a huge difference. Zinc-containing supplements are a quick and easy, effective and inexpensive remedy.

Zinc in soil is vital for cereal crops and the well being of a wide range of vegetation. For this reason, zinc compounds are widely used as additives in fertilizers.

The IZA's *Zinc Saves Kids™* programme aims to improve the survival, growth and development of undernourished children by funding UNICEF-supported zinc programs around the world.

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