



Lindab Rainline™

Aluzinc

– Gain a competitive edge

7 benefits of Aluzinc

1. Extremely long useful life

The corrosion rate, i.e. the thickness of the aluminium-zinc coating that is lost every year in a normal environment to which Aluzinc is freely exposed, is a maximum of 20% of one micron (0.2 µm).

It could therefore be said in theory that the useful life of Aluzinc in a normal environment is more than 100 years. In real life Aluzinc has lasted more than 20 years in severe marine environment although in the first year the coating loses up to 0.4 µm.

2. Low cost in relation to useful life

Due to the long useful life of Aluzinc, the total life cost of a product in Aluzinc is very low compared to other materials, including aluminium and stainless steel. You will often be able to “fit and forget”.

3. Protection against mechanical damage

Aluzinc can obviously be scratched and damaged mechanically, but it will still retain its good resistance to corrosion, its long useful life and its attractive surface.

4. Attractive silvery surface

Aluzinc has a clean, natural and bright silvery surface. The surface includes small spangles that give it a lustrous and striking appearance as light conditions change.



5. The surface retains its appearance

Since 80 percent of the volume of the aluminium-zinc coating is aluminium, the surface will retain its appearance for many years, dulling off slowly, depending on atmospheric contaminants.

So Aluzinc is a very appropriate material if the visible surfaces of a product are required to retain their appearance for a very long time.

6. Hard surface

The surface of Aluzinc is twice as hard as that of hot-dip galvanized steel. The hard surface has high wear resistance, which increases the life length.

7. Good environmental choice

The long useful life of Aluzinc compared to hot-dip galvanized sheet steel, offers major environmental benefits. The long useful life will enable your products to last longer and will contribute to conservation of resources.

Steel offers three unique environmental benefits:

- Steel always contains recycled material
- Steel is always 100% recyclable, and the metal coating poses no problems in remelting
- Steel can be made into exactly the same product again without loss of quality.

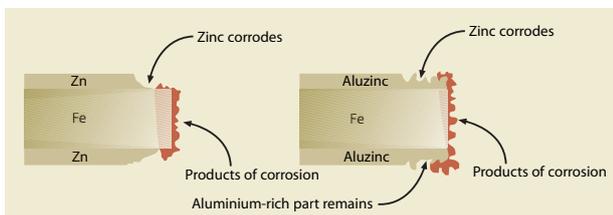
Steel is the world's most recycled material. Half of all steel produced in the world consists of recycled steel, an efficient recycling infrastructure is available throughout the world.



Aluzinc versus hot-dip galvanized steel

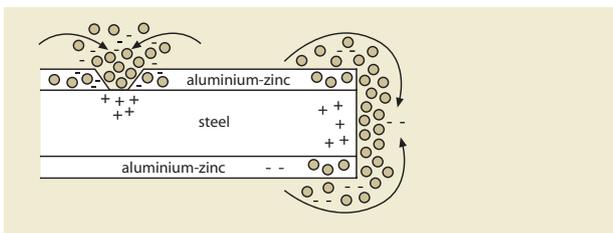
Galvanic corrosion

If two different metallic materials in contact with one another are exposed to a humid environment, one of the materials will corrode more than it would have done if it had been exposed on its own.



Edge corrosion of hot-dip galvanized steel (left) and of Aluzinc (right).

The protective effect on the cut edges and the duration of the protection depend on the environment, the thickness of the coating, and the thickness of the steel sheet. The protective mechanisms for Aluzinc and hot-dip galvanized steel are such that the hot-dip galvanized coating initially protects better. The zinc coat will gradually corrode away more and more in the vicinity of the edge, and the protective effect will be lost. The aluminium part of the Aluzinc coating will persist for a longer period of time, and the edge protection will thereby remain.



Example of galvanic corrosion at a damaged area of the coating and at the cut edge.

Thickness of steel sheet

As a rule of thumb, Aluzinc coating is unable to protect a cut edge that is thicker than 1 - 2 mm.

Unsuitable materials in combination with Aluzinc

Metallic materials

If Aluzinc is used together with other metals in a product, galvanic corrosion is likely to occur. Combinations with copper, brass and lead should be avoided. Also avoid water run-off from components containing these metals on roofs. For the same reason, lead pencils should not be used for marking Aluzinc.

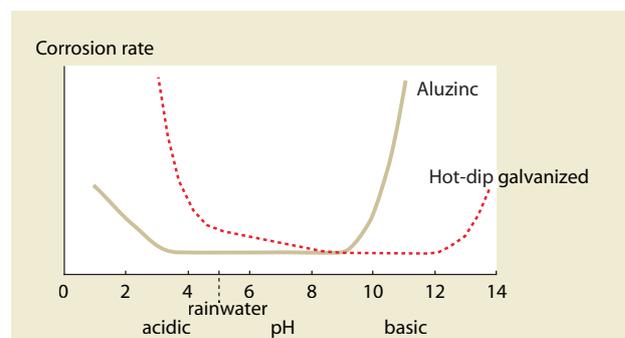
In aggressive environments, stainless steel and nickel may also accelerate the corrosion of Aluzinc.

Non-metallic materials

Certain non-metallic materials may cause corrosion of Aluzinc by leaking some corrosive substance or by retaining moisture over a long period of time. Impregnated wood containing copper should be avoided. If copper leaks out of the wood, it may cause accelerated corrosion as described in earlier section.

Bitumen is a petrochemical product and may form corrosive products of decomposition when exposed to UV light. So materials containing bitumen without UV stabilizer should not be used in combination with Aluzinc. On the other hand, materials with UV stabilizer are acceptable.

Wet cement, concrete and plaster are highly basic materials and are not suitable for use in combination with Aluzinc.



Transport, handling and storage

Black rust

The protective oxide film that forms on the surface of Aluzinc during open exposure to the atmosphere gives the material a very long useful life in air. If water or moisture penetrates between tightly packed products, like gutters, rapid corrosion will take place. Due to the limited access to oxygen, the oxide film will not re-form sufficiently quickly, and corrosion attack will occur. In this case, the products of corrosion will be black and are known as black rust. Black rust is normally very thin and does not affect the anti-corrosion properties of the coating, and is only an aesthetic blemish.

SPT (surface protection treatment)

SPT treatment provides excellent protection against fingerprinting during handling of the products.

Enhanced anti-corrosion protection

SPT also provides enhanced anticorrosion protection during transport and storage. The protection against discoloration on contact with stagnant water is substantially improved.

The SPT coating does not have a significant effect on the technical useful life of the products, but it provides a finer surface over a longer period of time.

Aluzinc or hot-dip galvanized steel?

Outdoor exposure tests have been in progress in Scandinavia for almost 20 years and have demonstrated that the corrosion rate of Aluzinc is 3-7 times lower than that of hot-dip galvanized steel.

- 3 times longer in a rural environment
- 4 times longer in an urban environment
- 4 times longer in a marine environment
- 7 times longer in an industrial environment

Similar results have been obtained in studies that have been in progress for more than 30 years in the USA, in which Aluzinc was compared with hot-dip galvanized steel. These confirm that Aluzinc is 3-7 times better.

