

PRODUCT TECHNICAL STATEMENT

<i>elZinc Product Range</i>	<i>Architectural Zinc: Natural, Alkema, Rainbow</i>
<i>Material, product, or form of construction</i>	<i>Architectural titanium zinc rolled to EN988 and ASTM B/69 for roofing, cladding and interior decoration</i>
<i>Issued by</i>	<i>Asturiana de Laminados, S.A. Pol. Ind. de Villallana, Parcela 1, 33695 Asturias, Spain.</i>
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PRODUCT DESCRIPTION

elZinc is architectural rolled pre-patinated titanium zinc sheet and coil material. Available in thicknesses 0.5mm to 2.0mm and standard widths up to 1,000mm. The product is used in traditional fully supported metal roofing and cladding, single skin and composite panel cladding systems, profiled roofing & cladding systems and interior decoration. It has a pre-patinated surface and being a natural material, tonal differences between panels can occur due to variations in the industrialised patinating process. As a natural material the patina surface will not blister, peel, flake, or develop discoloration. The surface of the material is typically supplied removable protective plastic film. Improper installation including failure to use compatible construction materials, membranes or fabrication systems may result in a shortening of the serviceable life of zinc.

APPLICATION AND INTENDED USE

Zinc has a long track record as a material used in roofing and cladding. It has been used throughout the world for many types of architectural applications in buildings. The product is mostly used as the external weathering layer on buildings for sloping flat roofs with a pitch $\geq 3^\circ$, pitched roofs, façades and soffits. elZinc design, fabrication and installation guidelines must be followed in order to optimise material performance and to avoid product failure or shortening of life of the material. elZinc recommends that only certified/qualified installers with a demonstrable experience in zinc be engaged to fabricate and install elZinc's products.

LIMITATIONS OF USE

Incompatible products: elZinc should not be installed where it is in contact with any of the materials below otherwise staining and potential corrosion of the zinc may occur. Also run-off, dust, discharge or emission of by-products from these materials may also stain and corrode elZinc such as but not limited to incompatible materials which are typically as follows: i) wood; ii) copper, brass, bronze iii) unprotected/uncoated steel; iv) concrete, cement, mortar and grouting and any residual dust and debris; v) silicone and bitumen based products; v) corrosive chemicals, in particular chlorides (such as saline and chlorine products), phosphates, acids, magnesium oxide.

Construction: elZinc should not be installed on roofs pitched below 3° . Not recommended for use on non-ventilated build-ups unless supplied with an elZinc Protect+ (protective back coating) – see elZinc technical literature.

Environmental: Where elZinc is used within 1.5kms from the coastline then additional regular maintenance is required, including the washing protected areas with fresh water, to avoid the build-up of salt deposits. In close proximity to coastlines elZinc Advance must be used for added protection.

Temperature: Cold weather fabrication and installation requires the material to be warmed to $> 10^\circ\text{C}$ with the application of cold weather working instructions – see www.elZinc.es/en

INSTRUCTIONS FOR DESIGN, FABRICATION, AND INSTALLATION

The product must be installed according to professionally qualified trade standards, as well as elZinc's recommendations regarding design (such as vapour barriers and ventilation), thermal movement and compatibility with other products. In order to assist with appropriate design elZinc has made available the following on its website located at www.elZinc.es/en/: i) architectural literature, including technical information and roof build-ups; ii) detailed drawings; iii) 3d models in Sketchup; iv) BIM objects; v) Specifications; and vi) Installation manuals. The product comes with a protective film. If the information required is not available at on the elZinc website then elZinc recommends that you consult your appointed architect, materials consultant, or qualified installer for further advice. The recommended maximum storage time is 12 months. The maximum time for removal of any protective film after installation is 13 weeks. Panels turned 90° may show a different tone when observed from a certain position due to the grain like structure of the elZinc products.

REASONABLE CONDITION & APPEARANCE

General: elZinc is a natural material which may present with minor variations and irregularities which arise during the original manufacture of the material such as differences in colour, flatness, tension (oil canning), minor dents, buckles, creases and surface spotting. elZinc may also apply surface coats to the zinc surface to change the aesthetic texture, age, and colour of the material. Due to the application of these surface coats to the natural zinc material variation in the aesthetic finished surface of the zinc material may occur within the coil itself or when compared to similar coils. All metals used in traditional fully supported roofing and cladding, including zinc, can exhibit a degree of oil canning which is a well understood and common characteristic. Evidence of the hand-crafted nature of traditional zinc detailing may also be subtly visible depending on the qualification and experience of the installer. elZinc most often comes with plastic film to protect the finished surface during transport and installation. The plastic film on occasion may develop minor irregular surface bubbling during the plastic application and adhesion process which may result in minor marks or discolouration on removal of the plastic. elZinc does not accept responsibility for variations, irregularities, and defects once the zinc is installed and the plastic is removed.

Pre-patinated Finishes: elZinc may come with a pre-patinated zinc finish which is intended to look like naturally patinated zinc. It has an industrially produced artificial real patina on both faces. In the medium term, the pre-patinated surface is designed to be replaced with the natural patina process where the exterior surface exposed to the weather and external conditions reacts with its local environment. Tonal differences that may be apparent across a roof or façade will progressively weather and even out over time. The process is faster time on exposed areas and slower on protected areas. Frequent pooling of water is likely to cause white residues to form on the patinated surface. It is recommended that all areas be self-draining to allow the surface to promptly dry out and to prevent white residues from forming. Ultimately, the ageing process and patina of zinc over time may not be uniform. The level of variability will depend on the aggressiveness of the environmental and climatic conditions. The final patina that is formed will be highly dependent on the specific project location and the regularity of rainfall received. elZinc recommends regular inspections of roofs and facades be undertaken at least once a year with regular cleaning and maintenance by washing with fresh water. This cleaning process must follow elZinc's maintenance manual.

Coastal Climates: Whilst zinc is generally regarded to be corrosion resistant, elZinc advises that in coastal climates that the following may occur subject to exact site conditions: i) salt deposits and residues may build up on the zinc surface due to the accumulation of sea spray which contains salt which then condenses on the surface of zinc material. This is a natural phenomenon on using zinc in a coastal climate and not a product defect; ii) salt residue may react with zinc to form a residue which is white in appearance. This white residue should normally be washed from zinc which is exposed to regular rainfall. However, in drier marine environments or unexpected drier climatic periods these residues will remain on the surface and gradually accumulate resulting in the residue being permanently affixed. Salt deposits should be removed from the zinc surface as soon as they detected to ensure a long service life; and iii) on covered protected areas of buildings, and in particular soffits, eaves, flashings, gutter undersides not washed frequently by rainwater, the salt residue may also build up to leave visible deposits or white residue. elZinc recommends the following procedures be followed for coastal environments: i) avoid installation of zinc in areas where rainwater cannot wash the zinc; ii) avoid installing zinc in horizontal seams or joint systems; iii) use lighter coloured zinc products to avoid salt deposits and white residue from being more visible; iv) undertake a quarterly inspection of the building and then wash the zinc with fresh water to remove salt deposits or white residue. This cleaning process must follow elZinc's maintenance manual.

Exogenous Agents: Zinc is a natural material that may react with exogenous agents which may impact the patination and aging process of the natural material. The most common sources of exogenous agents are the incompatible products listed earlier in this disclosure, such as chlorides, caustic cleaning agents, acids, fertilisers, bore water, chlorinated water, pool water and any type of water runoff with an incompatible PH level (PH levels below 5.0 and above 7.0 are not compatible). Vegetation in close proximity to the zinc material may impact PH levels. Other exogenous agents maybe found in building products such as cement dust, plasterboard, particle board, magnesium board and bitumen materials etc. In conclusion, elZinc's products are natural materials where the surface maybe impacted by exogenous agents resulting in minor aesthetic imperfections and surface variations, however in some circumstances higher concentrations of these exogenous agents may cause pitting of the surface of the material.

PROTECTIVE COATINGS

elZinc is available with additional protective coatings to improve the durability and life span of the product in more aggressive environmental conditions:

elZinc Protect+: elZinc Protect+ is a 60-micron protective white paint coating to the read unexposed surface of the zinc material. Recommended to allow the zinc to be installed over otherwise incompatible substrates or where the

façade and roofing build-up is not ventilated. Note that there are specific design, fabrication and installation guidelines issued by elZinc that must be followed to avoid compromising the protective capabilities of the product. **elZinc Advance:** elZinc Advance is a transparent 35-micron organic layer applied to the external surface of the zinc material. This coating improves the resilience of the zinc surface by creating: i) Barrier effect – to impede corrosive atmospheric elements; and b) Inhibitor – to reduce the adhesion of salt and inorganic substances that may cause white oxidation and corrosion particularly in coastal climates.

Note: elZinc does not guarantee performance of the Protect and Advance coatings, but these products will improve resilience to exogenous agents or the prevailing environmental conditions and in particular coastal climates. They are recommended to provide longer-term protection to roofs and façades located in more harsh environments.

MAINTENANCE INSTRUCTIONS

Whilst elZinc maintains a protective patina it does require ongoing maintenance. In the event the patina is removed due to scratching or wearing the surface will self-heal over time. Regular maintenance, and in particular harsh environments, will keep the zinc in good condition and maximise longevity. Failure to undertake regular maintenance will limit the serviceable life leaving the surface with stains and accumulation of dirt, salt, and white residue. Annual visual inspections of the roofing and cladding must be conducted. Keep the cladding free of salt deposits if located near to the coastline de-iced highways. Damage to panels should be repaired or replaced by a specialist zinc tradesperson. Cleaning methods depend on the stains/dirt/graffiti etc. to be removed. Please refer to the cleaning guides located at – www.elZinc.es/en

TECHNICAL DATA (Please refer to - www.elZinc.es/en)

Zinc is Rolled to EN988. Compliant with ASTM B69. Independently audited and certified KOMO.

Reaction to fire classification: A1-s1, d0. See our technical literature for further information. See www.elZinc.es/en.

Fire performance: Class B_{roof}(t1/t2/t3). See our technical literature for further information. See www.elZinc.es/en

AS 1530.1-1994 (R2016) - Methods for fire tests on building materials, components and structures combustibility test for materials - combustibility tests for materials: Complies with National Construction Code (Australia)

AS1530.3:1999 - Methods for fire tests on building materials, components and structures simultaneous determination of ignitability, flame propagation, heat release and smoke release: Complies with National Construction Code (Australia).

SUPPORT

Manufacturer:

Asturiana de Laminados S.A.

Poligono Industrial de Villallana, Parcela 1,

Pola de Lena,

33695,

Spain

www.elZinc.es/en

Distributor:

CASA

Unit 6, 39 King Rd

Hornsby NSW 2077

Australia

+61 2 9482 4166

www.casa-group.com.au

Disclaimer

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