



bandoxalpro™ – Application Manual

bandoxalpro™, aluminium surfaces specially designed for outdoor use.

The continuously anodized aluminium coils of **bandoxalPRO** have metal gauge up to 3mm thick and 2000mm wide; they are available in a wide palette so to satisfy each design requirement.

The **applications** suitable for these surfaces are cladding for roofs & facades (i.e sandwich panels, honeycomb panels, composite panels, perforated panels,...) welded tubes, automotive, cassettes,...

Transformation possibilities

Cutting

bandoxalpro™ can be cut on the same type of machine as for trimming metal by incorporating specific tools and taking great care with the state of product surfaces.

Laser cutting is always possible. It is recommended to use protection tape specific for laser cut.

Bending and shaping

bandoxalpro™ can be folded, and shaped in a wide variety of ways, even with minimum angles. It can be used in a large range of shapes, from flat to curved, folded and pre-shaped. Shaping **bandoxalpro™** without adversely affecting its finish will depend on the thickness and alloy for the base metal, the specific treatment for the product that you have requested, and of course your requirements in terms of the final appearance.

Depending on the metal substrate, there will be a difference in bending behavior between bending parallel and opposite to the rolling direction. The bending radius can slightly affect the aesthetical appearance due to crazing, but the resistance to corrosion will not be affected.

The EN-485-2 “Aluminium and aluminium alloys - Sheet, strip and plate - Part 2: Mechanical properties” standard contains the minimum ‘recommended’ bending radius per alloy and temper at which no cracking (of the metal) is observed.



Almeco S.p.A. recommends the use of the smallest bending radius possible as specified in the EN 485-2 standard.

We suggest a deformation test, to optimised bending tools and radius.

Punching

Volatile lubricants applied in minute quantities can improve the final result, in case of residual or stagnation, rinsing is required. Protective film shall be carried out before punching.

Gluing

bandoxalpro™ is also treated on the rear and is therefore suitable for gluing to other materials with different types of adhesives. The selection of the correct glue depends on numerous factors, such as the nature of material to join with anodised aluminium, the climatic and environmental conditions, the mechanical performance, therefore an open speech with glue manufacturer is highly recommended.

It can be applied on all materials, provided that their surfaces are smooth, dry and free from oil. It may also be stuck to other metals. However, we advise against gluing it directly to plaster, cement, etc. In such cases, a suitable material should be used between the metal and the other surface.

The thermal process should be tested as the mix of gauge and oxide thickness can react differently to temperature exposure, causing disomogeneity in the appearance.

Assembly

To avoid shadow spots, and obtain the expected performance in terms of distribution and efficiency, the rolling direction has to be taken into consideration while assembling. Vertical installation is recommended. Sheets protected by a film with arrows to indicate rolling direction can be used.

All connectors and adhesive should be placed on the rear side of the sheets in flat position. The front side should be protected while assembling.

It is important to avoid the accumulation of liquid or fluid on the surface. Panels should be washed by rain water and the concentration of humidity and local chemical variations should be avoided.



Aluminum is a good heat conductor, sensitive to temperature variations, therefore dilatation joints must be foreseen between each panel to permit dimensional variations.

To avoid galvanic corrosion, electrical insulation with other metals is highly suggested, so to prevent also structural defect.

Immediately after installation, film should be removed as due to high temperature and UV exposure film adhesive can polymerise leaving some traces on the surface or making removal difficult.

Special notice

In accordance to best practice, surfaces could be oiled and coils can be delivered with or without film.

Please note that any transformation of the coil will leave edges not protected anymore by oxide layer, in these areas aluminium will oxide spontaneously in a short time.

Please pay special attention to the sharpness and temperature of the cutting tools, as this might influence the quality of the material adjacent to the cutting edge. Lubrication fluid or cooling liquid can be used if necessary, but should be previously tested. Moreover, the cutting edges should be rinsed with water to remove any residual deposit and/or stagnation.

Handling and storage

Handling

bandoxalpro™ is a product with a finished surface. It must therefore be handled with care. We recommend using the protective film in order to prevent the surface from being bumped or scratched when the metal is being handled.

Machining can cause sharpen edges, use of protective glove is recommended while handling.

Storage

Products with protective tape are guaranteed for 6 months after delivery, if stored inside (temperature 20-30°C and relative humidity 50-60%) and away from sunlight and sheltered from heat. Protective tape is not UV resistant. If the surface is covered with a protective



film, direct exposure to UV rays may cause polymerisation and therefore a hardening of the film's glue, making it very difficult or even impossible to remove the covering from the surface. In addition, exposure to sources of heat could result in various phenomena linked to the film's glue transferring to the metallic surface.

For formats, storage in the original crate is strongly recommended. For format transfers, the best solution is to store them with the film facing upwards, away from light and dust.

Cleaning

Cleaning should be performed regularly and at least annually. In specific environmental conditions, i.e. marine or industrial locations, cleaning should be more frequent.

Regular cleaning consists in washing with water added with a neutral soft detergent (pH range between 5 and 8) using non-abrasive pads. After cleaning, any residual deposit should be washed out. Stagnation should be avoided.

To optimise results, do not wash surfaces while directly exposed to sunlight or over heated.

It is recommended to previously test the cleaning in an unobtrusive area to verify the use of proper detergent concentration and cleaning tool.

Fire and explosion data

Almeco products are classified A1 according to the international standard UNI-EN 13501 ("Fire classification of construction products and building elements").

All the items supplied by Almeco are classed as non-flammable according to British standard BS 476 and to ASTM test E136.

There is no evidence that Almeco anodized aluminium give off any smoke or toxic gases when heated up.

According to IMO Fire Test Procedures Code 2010 Annex 2 Almeco products are considered non-combustible materials and for this reason they can be installed without testing and approval.

Risk for fire or explosion subsists only for powder of aluminium.

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