

ALUMINIUM SURFACES  
CEILING APPLICATIONS



**bandoxaldecor™**





Shopping mall application



Airport application

## ALUMINIUM FOR CEILING

Aluminium is a unique metal with a positive image that naturally appeals to professional specifiers and installers. This incredibly versatile material, when combined with its alloys, can be folded, formed, machined or worked using a wide range of processes. Thanks to these excellent material properties, aluminium has become widely used within an extensive variety of architectural and related applications.

Metal ceiling tiles have been used in construction as decoration for thousands of years.

Aluminium is one of the lightest commercially available metals with a density approximately one third that of steel or copper, therefore it is particularly suitable for these applications. But there are more advantages! These are some of the most important characteristics that give preanodised aluminium its extreme versatility:

- ▼ Fire Class: non-combustible
- ▼ Corrosion resistance
- ▼ Scrub resistance
- ▼ Durability
- ▼ Easy maintenance
- ▼ Environmentally friendly
- ▼ 100% recyclable
- ▼ Non-toxic
- ▼ Non-magnetic
- ▼ No VOC: no formaldehyde, no paint, no laque

Almost daily, unique combinations of these properties are being put to work in new ways.

Aluminium ceilings are widely used in decorative projects in airports, stadiums, schools, banks, hotels, restaurants, offices, shopping centers, libraries, stations, factory buildings, hospitals, households and other public buildings.

Almecco produces two main types of surfaces, one specific for climate control mainly in ceiling and one suitable for cladding, both supplied according to Customer requirements.

## DIMENSIONS

Coils or sheet, max width 1250 mm. Possibility to get bent, concave or convex shapes under request.

Thickness: 0.5 - 1mm. Other sizes available per buyer request.



The ceiling from the polished metal at the airport of Hong Kong



Aton Showroom



Reflective ceiling application

## bandoxalε

### HIGH EMISSIVE ALUMINIUM FOR CLIMATE CONTROL

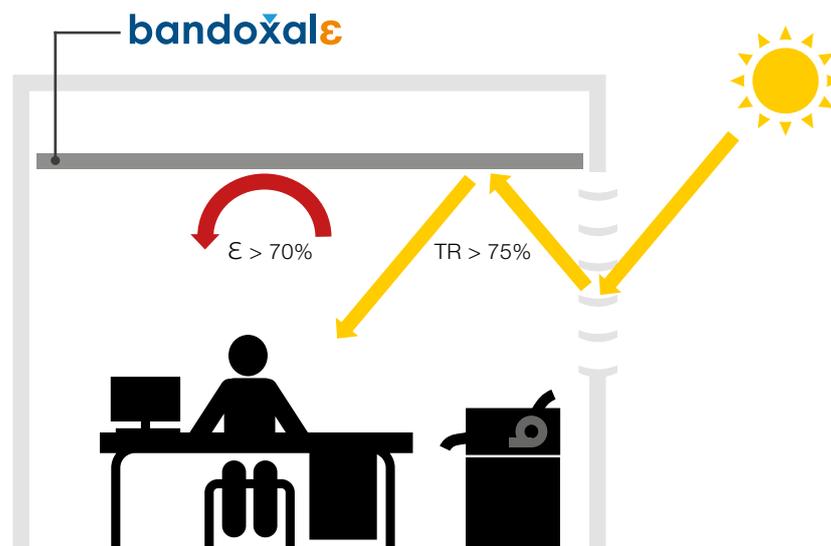
Climate control ceilings work is based on the principle of radiation.

Cooling/heating coils are hidden behind the climate-control panel which work as heat exchanger, while in summer the panel absorbs the heat from the room and transfers it to the cool water running into the coils, in winter it spreads the warm circulating in the pipes into the room without air movement and noise, ensuring a comfortable temperature gradient.

The climate-control panels look like any other suspended ceiling panel and can be used also in retrofitting. For this application Almecco R&D developed a special high emissive finish used in **bandoxalε**.

The reflectance spectrum of **bandoxalε** is determined by the oxide layer and its thickness.

Moreover, the emissivity in the thermal wavelength is related to the luminous reflectance, therefore it is important to find the right balance between the two characteristics, i.e. the mirror finish materials do not have the better thermal exchange properties.



### SPECIAL APPLICATION

Material suitable for ultrasonic or laser welding on the rear side is also available under request.

### FINISHES

Wide variety of aluminium finish and colours.

Contact our Staff to define together the finish more suitable to your needs.



Wall and ceiling application

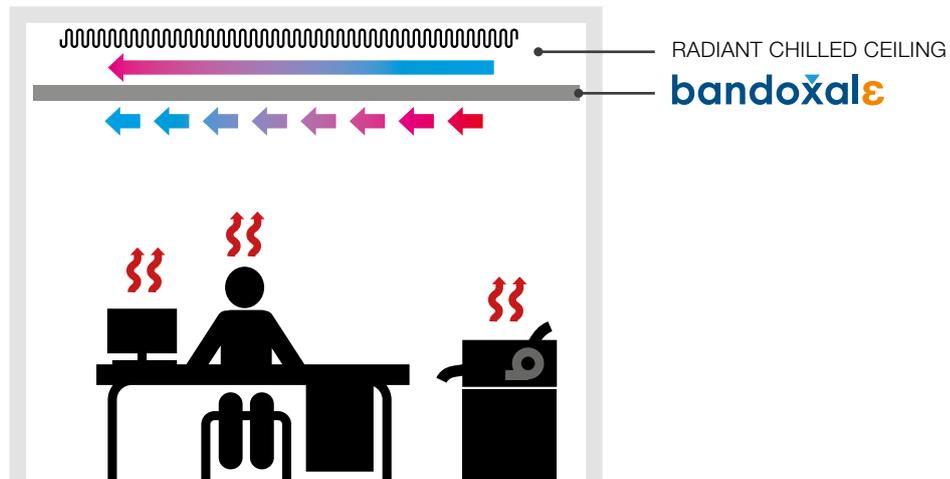


Foyer application



Architectural application

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In the table below there is an example of technical characteristics for two different finishes: 130/C (aluminium natural colour matt reflector diffuse) and a more specular 130/R (aluminium natural colour reflector diffuse).

		130/C	130/R		
<b>TECHNICAL DATA</b>					
FINISHING	EN 573-3	Specific brightening and anodizing for thermal application			
ALLOY		5005 – Al-Mg1			
<b>MECHANICAL VALUES</b>					
TEMPER	EN 515	H 24	H 24		
MINIMUM TENSILE STRENGTH R <sub>m</sub> [N/ mm <sup>2</sup> ]	EN 485-2	145-185	145-185		
MINIMUM YIELD STRENGTH R <sub>p</sub> 0.2 [N/ mm <sup>2</sup> ]	EN 485-2	110	120		
MINIMUM ELONGATION A <sub>z</sub> A <sub>10</sub> [%]	EN 485-2	4	2		
<b>OPTICAL VALUES</b>					
		Typical	Range	Typical	Range
TOTAL REFLECTANCE [%]	ASTM E 1651 (Technidyne TR2) DIN 5036-3 (Ulbricht Globe)	77	75-79	82	>80
DIFFUSE REFLECTANCE [%]	DIN 5036-3 (Ulbricht Globe)	77	>77	80	>76
SPECULAR REFLECTANCE - along (60° head) [%]	ISO 7668 (Refl. BYK micro tri-gloss)	12	10-15	30	26-34
SPECULAR REFLECTANCE - across (60° head) [%]	ISO 7668 (Refl. BYK micro tri-gloss)	5	4-8	9	6-12
IRIDESCENCE	INTERNAL	Very low		Very low	
<b>THERMAL VALUES</b>					
Emissivity	THERMAL VALUES	>0.73	>0.73	>0.73	>0.73

No iridescence.



P.O.S. Yves Saint Laurent



Provincia Lombardia,  
Dante O. Benini & Partners



Fair in Vicenza,  
Dante O. Benini & Partners

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### PRE-ANODISED ALUMINIUM FOR DECORATIVE CEILING

Preanodised aluminium can be used effectively for ceiling and cladding in general, also when the climate control is not an issue.

In particular the main reasons to install a dropped ceiling are:

**Aesthetic:** by using coloured panels in different shapes and combination, also to hide differences in height and material in the constructive ceiling

**Integration with infrastructure:** to hide the building infrastructure, including piping, wiring, and/or ductwork and to conceal the lighting and sprinkler systems.

**Acoustic:** to use perforated panel, with or without a rear absorbing core

**Daylight efficacy:** to use the ceiling plane to reflect daylight as well as electrical illumination to maximize lumen efficacy, which also improves the comfort and usability of interior spaces.

Almeco offers the wider range on the market of preanodised coloured and/or pattern surface for cladding application. The wide variety of aluminium finishes includes:

- ▼ Profiled: martelé, granite, décor 4000, diamond,...
- ▼ Brushed: mill finish, satiné brilliant, fini mat, lapidé,...
- ▼ Specular: brilliant, grand brilliant, brilliant special,...
- ▼ Textured: satin, cotton, satiné silk, sand finish,...

Available in more than **50** colours.

To better investigate the range have a look at: [www.almecogroup.com/en/decor](http://www.almecogroup.com/en/decor)

All surfaces can be supplied also with primer or adhesive tape to simplify the bonding.

Milan, Italy - Bernburg, Germany  
Atlanta, USA - Shenzhen, China



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