



anodized aluminium roofing

Tectal



Tectal is devoted to excellence in roofing



Who we are

Tectal was founded in 1997 by the present president, Pierre Tremblay, who holds degrees in engineering from McGill University of Montreal, University of London and Imperial College of London. He has worked for twenty-five years in engineering and R&D in the aluminium industry.

The business objective of Tectal is to commercialize up-scale building products made of anodized aluminium.

Excellence in choice of materials

Tectal proposes to use, for roof cover construction, only stable and recyclable metals or minerals, recognized over a long period of time for their resistance to the elements.



Excellence in design

Through proper design incorporating technical as well as other knowledge, we materialize roofing covers second to none other in aesthetics and durability.



Tectal's roofing system, in brief

Tectal's roof cover has been designed as an up-scale, distinctive system. It is comparable in aesthetics and durability to roof covers made of slate, ceramic, concrete or copper. The basic elements of the roofing system are sturdy anodized aluminium tiles and mouldings, featuring a colored ceramic coating resistant to abrasion. A Tectal roof cover is completely mineral and thus essentially inert to heat, fire, ultra-violet rays, rain, snow and ice.

Installation is based on standard tinsmith techniques, such as measuring, cutting, folding and riveting, performed on the roof using standard portable equipment.

U.S. patent granted in 2002

Tectal's roofing system U.S. patent (6,557,315 B2) is now expired

Excellence in safety

We apply the best available safety standards to the fabrication of Tectal roof covers.

Likewise, we develop or incorporate into our designs what is required to create a safe working environment for the installation of a Tectal roof.



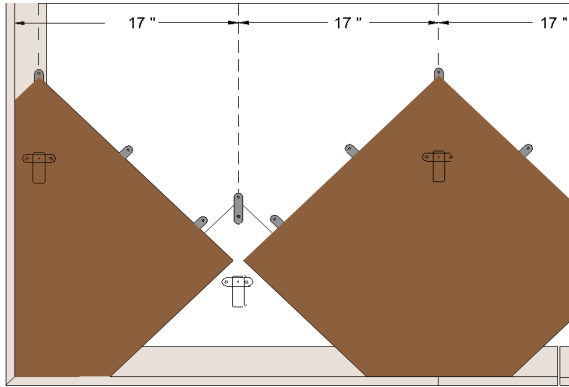
Excellence in the protection of the environment

We recycle 100% of the process scrap. As for installation scrap, we work closely with roofers to achieve 100% collection on the job site.

Excellence in energy savings

A Tectal roof is designed to limit heat flow to the building so that the air conditioning load is reduced.





Mechanical strength is key to roof cover resistance

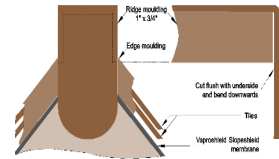
Sturdy aluminium tiles...

The basic element of Tectal's roofing system is an aluminium tile 60 cm x 60 cm x 1,3 mm. Tile thickness is about double that of typical roofing sheet metal. Doubling the thickness multiplies sturdiness by a factor of 8.



...very strongly fastened to the support

Tectal tiles are screwed to the support through 5 tabs. The number of fasteners per m² of tile is thus 14, about 50% over the normal value. The tabs are made of 6061 T6, a heat-treated, very strong aluminium alloy.



Roof edges are mechanically resistant and present a perfectly finished look

Ridges, rakes, eaves, hips and valleys are constructed using J or U-shaped extruded mouldings, in which the cut edge of tiles is inserted.



Mouldings are fastened to the substrate in ways that ensure strong attachment while allowing thermal expansion.

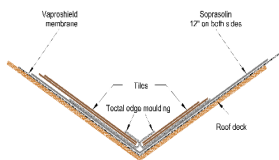
Tiles fold up around rectangular or round projections

Tiles triangular fold-ups, with flexible aluminium flashing in-between, form a strong and durable waterproof barrier. A second barrier is created with a silicone bead applied on the roof surface just inside the perimeter of the architectural cone which covers the whole work.



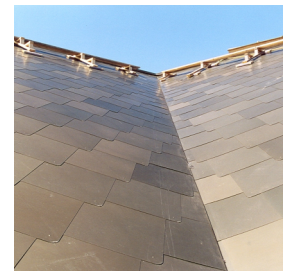
At valleys, several barriers are superposed

Valleys are protected by three barriers: the roof membrane, the Soprasolin aluminium flashing and finally the aluminium roof cover, edge mouldings and tiles.



Resistance to wind uplift is very high

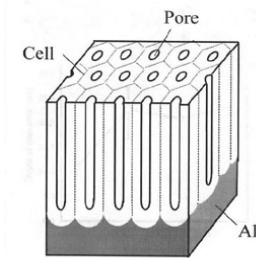
Tests conducted at the Institute for Research in Construction of the National Research Council of Canada have demonstrated that Tectal tiles can resist winds over 350 km/h, when screwed to 15 mm wood panels.



WHY ANODIZED ALUMINIUM IS BETTER Anodized aluminium defies comparison to most other materials through superior corrosion resistance, recyclability, flexibility, formability and weight		Anodized	Painted
	Corrosion resistance	Excellent	Subject to filiform corrosion
	Base metal quality	Excellent	Variable
	Durability of surface	Excellent	Limited
	Environmental friendliness	Excellent	Poor
	Resistance to scratches	Excellent	Poor
	Colour range	Limited for exterior use	Extensive
	Authenticity of metallic aspect	Just touch and see it	None
	Price	A premium product at a competitive price	Varies. Can exceed the price of anodized aluminium

Table reproduced by permission of COIL, a world leader in aluminium anodization

A Tectal roof cover features the best surface treatment for aluminium



All elements of Tectal's roofing system are anodized

Anodization is an electrochemical process which creates an integral, very hard ceramic coating at the surface of aluminium, effectively protecting the surface from abrasion.

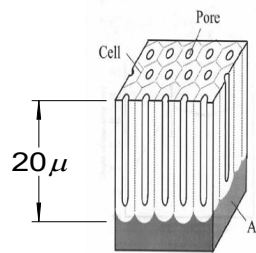
Anodization preserves the surface characteristic of aluminium

Unlike paint which masks entirely the original surface aspect of the substrate, anodization preserves the metallic appearance of aluminium and thus, its authenticity and distinctiveness.



Tectal proposes thick anodic coatings

In North America, the standard thickness for architectural anodic coatings is 18 microns. Tectal anodizes to 20 microns, and up to 25 microns for applications in a marine environment.

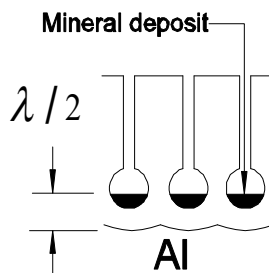


Tectal tiles are anodized to the standards of the art

Tectal's anodizers apply quality assurance programs (ISO as well as others, for their civil and military clients). The thickness and quality of the ceramic coating is controlled according to appropriate ASTM standards.

Anodization provides a very tough surface

The hard ceramic coating of Tectal's anodized aluminium tiles makes them practically impervious to damage during installation and very resistant to abrasion from snow, ice and sand. Use of scaffolds and walking over do not in any way represent surface damage risks.



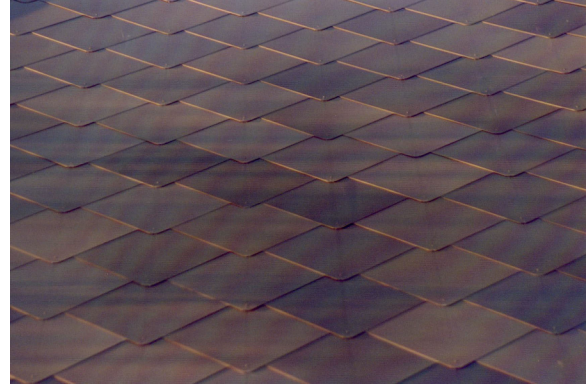
Color is scratch resistant

The coating comprises an array of longitudinal pores, initially open at the top. To create color, a mineral salt is deposited through electrolysis at the very bottom, upon which the coating is made to expand, sealing the pores. The mineral deposit is thus behind the ceramic coating, protected from scratch and other hazards.

Anodized aluminium is well suited to seashore applications

Peter Sheasby, world-renowned expert in aluminium anodization and consultant to Tectal, writes this about seashore applications: "One of the strengths of anodized aluminium is its high resistance to marine atmospheres. Its resistance is very much higher than that of paint." (Private communication to Tectal).





A Tectal roof cover expresses the beauty of anodized aluminium



Rich mineral colors appear through special light effects

Tectal uses Italtectno's Multicolour™ process to obtain colors through light interference in the normally transparent ceramic coating. Beautiful colors appear without loss of metallic aspect.

Roof aspect keeps in harmony with the sky

Varying sunlight conditions throughout the day — under diverse angles of incidence, with either overcast or blue sky, and even in the rain — bring out a variety of roof appearances. The richness and light responsiveness of anodized aluminum transform the roof into a beautiful architectural element forever attuned to the sun.

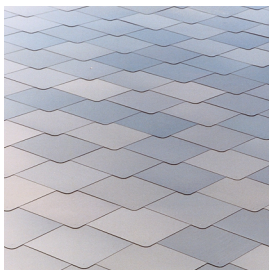
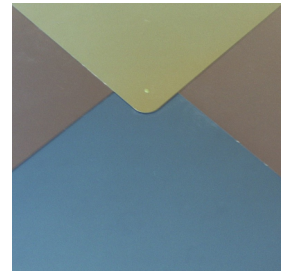


Tectal roofs feature a classical yet distinctive geometric style...

Tectal's classical diamond tiling pattern, softened and harmonized by the rounded corners of the tiles, creates a traditionally pleasing yet distinctive geometry.

Blue, green, graphite, bronze, and other colors are available

Several nuances of bronze, blue, green and graphite are available. Exclusive colors can also be developed on special order.

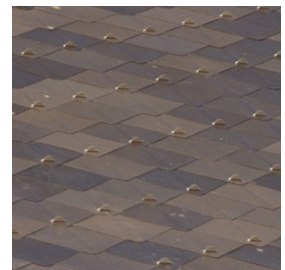


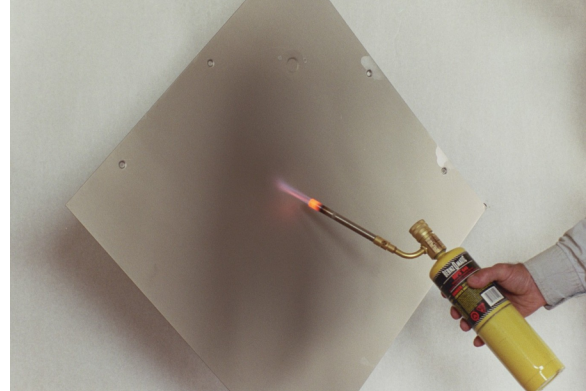
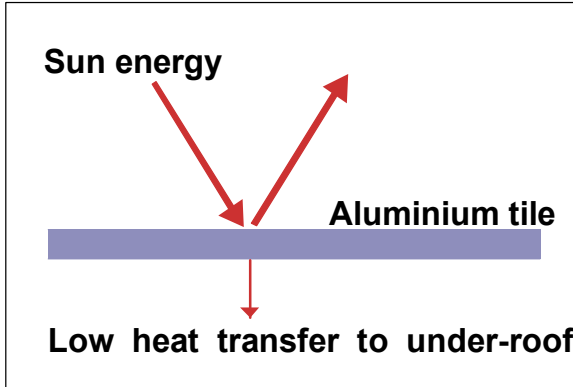
Colors are UV-fast

Light interference colors are created by deposition of a mineral at the bottom of the pores of the ceramic coating. Due to their mineral base, such colors are resistant to UV radiation, unlike those obtained by pigments such as in paints, which gradually shift under the sun UV rays.

Permanent safety features are aesthetically integrated

Tiles of specific positions can be fitted with sheet metal elements, part of which projects perpendicularly upwards from the plane of the roof. When access is desired, a level footstep adapts to the part projecting upwards. These elements can be installed when the roof cover is built or afterwards.





A Tectal roof is environmentally friendly



The anodizing process is environmentally sound

Anodization is performed at room temperature, does not release volatile by-products, and is increasingly practiced at zero effluent.

Anodized aluminium can be recycled very easily, without any obnoxious emission

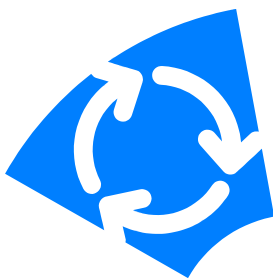
Anodized aluminium is completely mineral. Scrap from process and installation is thus easily recycled because, being free of organics, nothing burns in the remelting furnace.



Eventually, some future generation will likewise recycle the entire roof cover at full metal value.

A Tectal roof transfers little heat to the building

Heat transfer to the support is controlled in two ways. Firstly, the tile undersurface and underlying membrane are separated by a layer of air of about 4 mm. Heat conduction is thus reduced to a minimum. Secondly, heat radiation from the undersurface of the tiles to the support is limited by the very low emissivity of uncolored aluminium.



Thus, heat transfer to the building is limited, for increased comfort or valuable energy savings

Zero landfill from fabrication and installation

The fabrication of Tectal tiles generates only 0,2 % process scrap, easily recyclable because it is free of paint and other organics. Furthermore, we work in close cooperation with roofers so that all the installation scrap is collected in large bags and recycled. No aluminium scrap attributable to the installation of a Tectal roof ends up in landfill.





Installation is safe and fully documented



The installation of a Tectal roofing system is based on Standard tinsmith techniques, performed on the roof using portable and cordless equipment

It mainly involves cutting and folding 1,3 mm aluminium sheet, using cordless shears and a portable 90 cm brake that can be moved on the scaffold to be near the actual work area.



Other key tools required are hand riveter, cordless jigsaw, special miter box to cut mouldings, cordless drill, and special ruler to measure up tiles for cutting and folding.



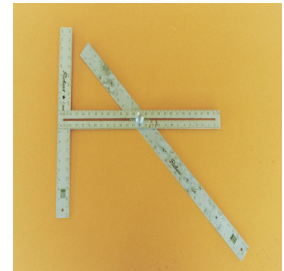
A scaffolding system exhibiting world-class safety standards can be used

We have developed a special bracket that allows roofers to create a very safe working environment for the installation of a Tectal roof cover, at any slope.



The proper method of installation is documented

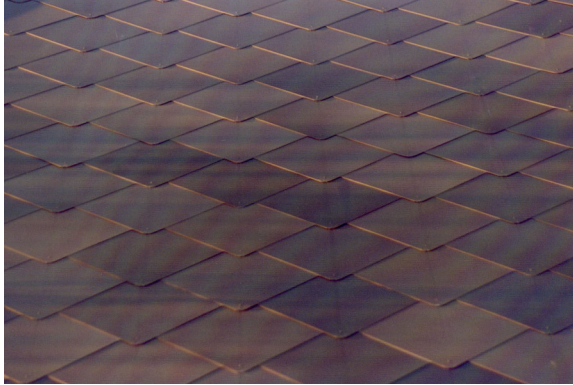
An illustrated manual comprising 43 drawings several in 3D, describes in detail the installation of a Tectal roof cover and comprises a list of required tools and materials.



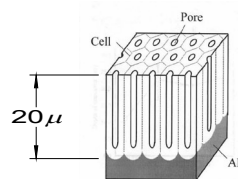
Tectal's installation standards are respected on every project

Roofers installing our anodized aluminium roof covers have been trained by Tectal experts. Furthermore, every installation is documented through a standard set of notes and photos for future reference.





A Tectal roof is beautiful, distinctive and durable



Thick ceramic coating on aluminium surface

A classical yet distinctive roof cover

Our classical diamond tiling pattern creates a traditional yet distinctive geometry on the roof.

Edges subtly highlight roof geometry

Edges, at valleys, rakes, ridges, eaves, etc. are fitted with extruded mouldings, for a perfectly finished look.

Tectal's aluminium tiles feature a ceramic coating...

Through anodization, a very hard ceramic coating forms over the surface of aluminium while the metallic aspect is preserved.

...colored by light effects

Subsequent application of the Multicolour™ process creates color through special light effects in the normally clear ceramic coating.

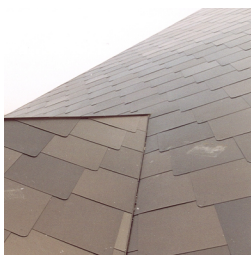


Roof cover is inert to UV

The roof tiles are completely mineral and thus inherently inert to the action of sun rays, which ultimately alter paints and colors obtained through organic pigments.

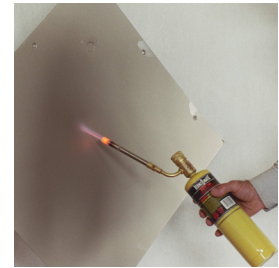
Tectal roofs respond to light conditions

As a result of anodization and Multicolour™, Tectal roofs offer a variety of beautiful appearances under varying sunlight conditions.



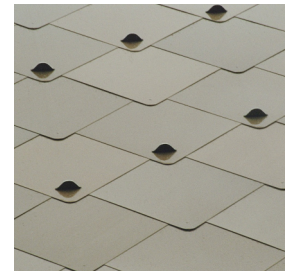
Excellent materials and sound design ensure superior resistance to the elements...

The durability of Tectal's roof covers stems firstly from the use of thick aluminium sheet. Tough ceramic surface coating, very strong attachment to support and sound design are the other important factors ensuring superior resistance to water, ice, snow, wind, fire, UV rays and atmospheric corrosion.



...to wind uplifting...

Wind uplifting resistance has been measured at the National Research Council of Canada. It surpasses 350 km/h.



...jobsite hazards...

Scaffolding and other installation requirements, such as frequent walking over, do not damage the roof cover in any way.

...and the assaults of time

Expected resistance of Tectal's roof covers can be appreciated by the famous case of San Gioacchino's church in Rome, erected in 1897. The cupola is covered with untreated aluminium sheet of the same thickness as that we use but its composition is somewhat less resistant to atmospheric corrosion. Yet, experts marvel at the pristine condition of the roof.



Tectal

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