

## COVERSYS STEEL ROOF TILES

**Comparison of the COVERSYS SMOOTH POWDER COATED TILES versus The CHIPS/STONE COATED TILES of competitors using acrylic binders.**

<i>Criteria</i>	<i>Coversys smooth tiles</i>	<i>Chips coated tiles using acrylic binder</i>
<b>Galvanized steel and metallic coating</b>		
Steel supplier	We only use steel made by ArcelorMittal in Luxembourg with whom Coversys has a technical partnership for since 1996.	Various specifications supplied from various suppliers which may depend on price rather than quality considerations. It may be prudent to question the origin of the steel for these tiles and possibly ask for certification.
Nominal thickness of the metallic strip including galvanization and primer	0.45 or 0.60mm + / - 0.06mm	0.43mm +/-0.06mm
Minimum Thickness of steel as specified by EN10143	0.35 or 0.50mm	0.29mm
Metallic coating	We use only Aluzinc+® AZ150. Aluminium-Zinc proportions are 55%-45% which have been developed for better corrosion resistance.	Galvalume AZ150 or AZ185 or Zenzimir Z275. Galfan ZA220 or ZA255 or Magnelis ZAM 250. The specification of the steel chosen for certification tests is not necessarily the one used for mass production and supply to customers.

<b>Criteria</b>	<b>Coversys smooth tiles</b>	<b>Chips coated tiles using acrylic binder</b>
Performance under standard corrosion resistance Salt Spray test ASTM B117	For AZ150 the number of test hours before 'visible red rust' is 2412 hours.	For ZA255 the number of test hours before 'visible red rust' is 480 hours.
Primer coating	Colourless glaze without chromium 6. There is a EU directive for the steel industry to remove chromium from the manufacture of steel.	An epoxy-acrylic primer on top and a recycled polyester mix on back or colourless passivation with chromium on both sides.
<b>Shaping</b>		
Cutting from the coil strip	The protected sides of the steel coil strip become the sides of the tiles with its aluminium-zinc protection intact on the edges.	All four sides of the tile are cut edges which leave these sides unprotected from the elements.
Forming and installation advantages	Multi-successive die action during forming which provides a strong profile. Batten distance 400mm. Walking on the roof is easier.	Single action die tool using prepainted steel for stamping which provides a weaker tile. Batten distance 370mm or less. Care is to be taken whilst treading on the roof.
<b>Post coating</b>		
Composition	Superdurable dry polyester powder coating applied by electrostatic sprays and cured at 190°C without solvent extraction. Our paints do <b>NOT</b> contain TGIC (triglycidyl isocyanurate).	Water based acrylic adhesive sprayed with airless technology adding stone chips and biocide glaze cured at 105°C.

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Coating structure	Electrostatic spraying technology allows to have a homogeneous compact single layer with higher density of paint around edges due to electrostatic horn effect.	After drying, water based acrylic, remains porous which allowed water to go out of the thick film to avoid blistering the surface during drying.
Behaviour towards biological attacks	The surface is cleaned by runoff rain and the covercoat remains easy to maintain without mechanical or aggressive means.	Dust, bird manure, dead leaves attach more easily to the rough granular surfaces. These areas become a breeding ground for bacteria, lichens, mildew, moss, etc. Initially the biocide treatment kills off the live cultures on the roof. Over a period of time the biocide is depleted as it gets washed away with rain thereafter the areas are prone to the biological attack and compromises the porosity of protective adhesive film. Cleaning the affected areas remove lot of chips and needs the use of a strong biocide to kill remaining life in pores of the paint. These areas are likely to be contaminated again.

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<b>Technology</b>	Developed in 1997 with new technologies after experience of issues with Zennimir steel, bitumen and water based acrylic protections.	Most of our competitors started their production in the eighties and have not kept up with the latest materials' technology in the industry.
<b>Environmental considerations</b>	Dry paints are used and as a result there are no solvents, sprays and no waste water is produced.	Use of large quantities of water to clean booths, conveyors, plant and equipment. Danger of the biocide over-glaze in rainwater use systems. The chips are an additional difficulty for recycling.
<b>Corrosion resistance warranty</b>	Valid for the entire 30-year guarantee period for the tiles and accessories.	Some offer only 50% replacement cost after 15 years on a 30-year guarantee period.
<b>UV resistance</b>	The super durable polyester powder coatings are comparable to fluoride paint.	The acrylic glaze containing biocide is completely away after 10 years after which the tiles can be subjected to bacteria, lichens, mildew, moss, etc.
<b>Transport</b>	A maximum of 5000m <sup>2</sup> in a 20" container or on a truck.	A maximum of 3300m <sup>2</sup> in a 20" container or on a truck.

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