Colorcoat Prisma® for perforated facade applications

With regard to pre-finished steel elements in light metal construction, many planners associate steel with galvanized structural applications rather than with decorative and aesthetic facade elements. We would like to show you here that pre-finished steel with its diverse surface design options can also be a durable and sustainable variant in perforated design.

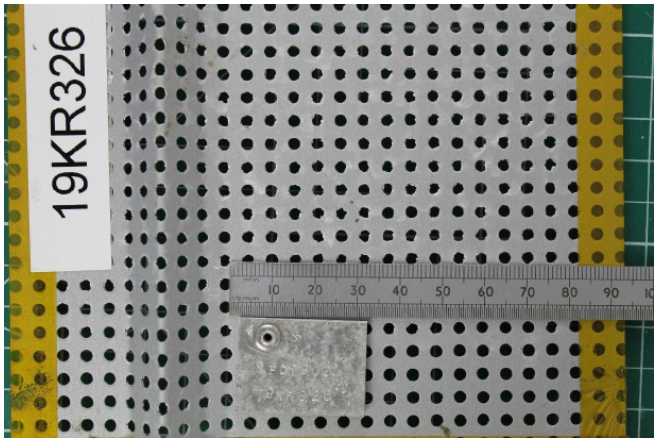
Colorcoat Prisma® pre-finished steel with three-layer technology has proven itself in even the most aggressive industrial environments as well as in the immediate vicinity of the coast thanks to its highly resistant properties in terms of corrosion protection by achieving RC5+ and UV resistance category $R_{UV}5$ as per EN10169:2022. Even in combination with photovoltaic elements, guarantees of up to 40 years are provided by Tata Steel for standard cladding applications.

The use of perforated facade elements is becoming increasingly popular as a design element. In addition to the sun-protecting function, this gives the facade a very special curtain effect, since window openings behind it are hardly perceived as such and a very homogeneous appearance is made possible. But what about the performance when the protective coating of the steel facade finish is perforated, i.e. penetrated?

Notes on application:

Colorcoat Prisma® has already been used successfully for years for perforated curtain walls. Under ambient conditions up to and including corrosivity category C3 (according to ISO9223), the high resistance can now be confirmed in the form of a **project-related guarantee of up to 10 years**. However, the following points must be taken into account, as they may affect the quality of workmanship of perforated Colorcoat Prisma®:

1. Perforations should only be made by punching/cold forming (to have the effect of smearing out the protective Galvalloy® metallic coating around the substrate edge) - the use of laser cutting or other hot cutting processes is not recommended.
2. Vertical facade applications only (no roof or horizontal applications, as increased water retention is to be expected).
3. A sufficient rear ventilation cross-section must be ensured to allow cyclical complete drying of the facade.
4. Recommended use up to ambient conditions of corrosivity category C3. It is important to note that the burr created during perforation must be on the side facing away from the weather.
5. Preferred perforation diameter ≥5mm.
6. The material thickness should not exceed 1.0 mm.



2 years natural weathering of perforated Colorcoat Prisma in a certified C3 weathering site

Some evidence of the performance of Colorcoat Prisma®

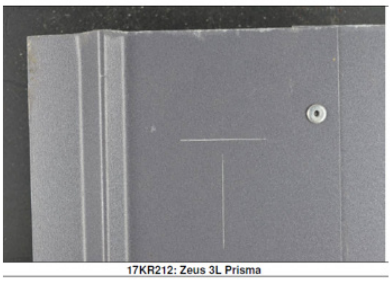
When used on typical external wall cladding specifications of industrial and commercial buildings, Colorcoat Prisma® comes with a 40 year Confidex® Guarantee which includes the duration of factory produced cut edges where the gauge is less than 1.0mm.

With the recent changes in the EN10169 coil coating standard, there is a new corrosion resistance category called RC5+ which requires 4 years weathering in Brest (C5 marine weathering site). Colorcoat Prisma® has easily achieved RC5+ certification. Photos below are after 4 years weathering in Brest and you can see minimal cut edge corrosion on the top edge and no blistering of the coating.

Solid colour Oyster RC5+


16KR316 : 3L PU Prisma (Oyster)

Metallic colour Zeus RC5+


17KR212: Zeus 3L Prisma

Matt colour Sirius Matt RC5+


16KR075: 3L Standard Prisma (Silver Metallic / Matt CC)

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