IGP POWDER COATINGS

TI109 – Ecolabels - Protecting the environment with IGP powder coatings

Introduction

The definition of sustainability in construction has given rise to important certification systems and building labels. Taking into account social, economic and ecological aspects (three-pillar principle of "sustainable development"), the aim is to ensure balanced sustainability. The weighting of the requirements within these three pillars varies greatly in some cases. This TI is intended to clarify the relationship between powder coatings and individual green building labels and support decision-making.

Green building labels such as MINERGIE-ECO, LEED, BREEAM or DGNB are property labels with exclusion criteria regarding the degree of fulfilment of ecological and health-related building standards in the following substance groups:

VOC (volatile organic compound), solvent-based products
Heavy metals such as lead, zinc or compounds containing heavy metals
Emission of pollutants (indoor toxins) such as formaldehyde, biocides

Consequently, these substances must not be contained in material preparations of coatings in order to fulfil the above requirements.

IGP coating systems do not emit any detectable toxic, mutagenic or carcinogenic components in the cross-linking agent state (paint films). IGP powder coatings are free from solvents. IGP powder coatings are free from heavy metals. Furthermore, the paint stripping sludge resulting from the reclaiming of metals is free from volatile, toxic or water-polluting substances.

IGP Pulvertechnik AG purchases raw materials whose extraction conditions and rarity are known and whose manufacturers supply from regions with efficient transport conditions wherever possible.

IGP Pulvertechnik recommends the following powder coating systems for the coating of building components made of Aluminium and Steel, which meet the requirements of Green Building Labels and comply with the requirements of the Qualicoat and GSB certification bodies for the coating of (aluminium) components:

IGP-HWFsuperior- coating product made of modified polyester, super durable+

IGP-HWFclassic- coating product made from modified polyester, super durable

IGP- DURA®face- coating product made of polyester, weather-proof

IGP- DURA®xal- ecologically particularly interesting substitute for anodised (anodised) surfaces

Conversion layers are created by chemical reaction of the metal surface with the treatment solution, forming a firmly bonded, usually inorganic layer.

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Below are two examples of the contribution that IGP powder coatings can make to fulfilling the criteria of Green Building Labels:

Example BREEAM

BREEAM stands for "Building Research Establishment Environmental Assessment Method" and provides information on the overall environmental performance of a building, from planning and construction through to utilisation. The environmentally relevant overall performance is described by dividing it into categories:

Management: Aspects of general processes
Health and comfort: Interior and exterior aspects
Energy: Operating energy and CO_2 aspects
Water: Consumption and loss-related aspects
Materials: Ecological influences of the materials used
Property ecology: Aspects of the ecological property value
Pollution: air and water pollution aspects

Powder coating contribution

Powder coatings can make a contribution mainly in the area of "materials". This essentially concerns environmentally hazardous substances.

IGP powder coatings are free of solvents and generally do not contain any environmentally hazardous substances, so they can support a positive assessment in the "Materials" category.

Example DGNB

In addition to ecological aspects, the German Sustainable Building Council also increasingly takes economic and socio-cultural issues into account in its classification. This means that all three pillars of sustainability are taken into account for certification by the DGNB. The assessment categories are divided into

Ecology
Economy
Social and functional aspects
Technology
Processes
Location

Weaknesses in one of these categories cannot be offset by strengths in another. Depending on the degree of fulfilment achieved, the property is classified in the corresponding award category (gold, silver, bronze).

Contribution IGP powder coatings

In the area of economic evaluation, powder coatings can have a positive influence on the degree of fulfilment of this category through improved life cycle costs (e.g. IGP-HWF products) and/or optimised maintenance costs (e.g. extension of façade cleaning intervals).

In terms of ecology, the aspects of solvent-free products and the avoidance of the use of environmentally hazardous substances also have a positive effect here. The environmental impact and the possibility of deconstruction are also assessed in this category.

In terms of environmental impact, powder coatings can essentially be influenced by optimised reactivity (NT powder with low curing temperatures).