

Wild bees love red pigments from LANXESS

- **Bayferrox pigments for bee hotels from Krefeld-based concrete manufacturer**
- **Bauhaus-style nature conservation**
- **A statement piece in bee-friendly gardens or green cityscapes**

Krefeld – The square is red, the circle is blue and the triangle is yellow. This connection can be traced back to the color and shape theory of the Bauhaus artist Wassily Kandinsky. The Krefeld-based concrete manufacturer Grellroth has consistently implemented this style in the design of its bee hotels. The nesting aids are made of self-compacting concrete, with edge lengths of around seven centimeters each, and are available as a red cube, a blue cylinder and a yellow pyramid. Weather-stable inorganic pigments from LANXESS ensure long-lasting color. According to Diana Schmidt-Rothmeier, Managing Director of Grellroth, wild bees particularly like the red variant, which is colored with the pigment Bayferrox 130. “The red hotels are always the first to be filled,” says the graduate designer.

The nesting aids, which are marketed as “beehaus,” are available not only in red, blue and yellow, but also in a light concrete gray. The iron oxide yellow pigment Bayferrox 920 and the black pigment Bayferrox 360 from LANXESS are also used to color the concrete.

Small works of art

Grellroth employs craftsmen, technicians and designers who conceptualize and design furniture and objects made of concrete and manufacture them as one-off items or in small-scale series. When it comes to the beehaus, the concrete manufacturer places particular emphasis on sustainability. Fragments and leftovers from the production of larger components are mixed with high-quality white cement, easily dispersible pigments and concrete additives and

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poured into specially created molds to create durable bee houses – all by hand.

“Developing and manufacturing the polyurethane molds for this purpose was a challenge in itself, because the necessary draft angles in the narrow tubes require a certain expertise,” explains Schmidt-Rothmeier, who previously worked for the automotive industry for several years and now contributes the knowledge of materials she gained there to the implementation of new ideas for concrete. For the good flow characteristics of self-compacting concrete, Grellroth uses an in-house formulation with a finely matched mixture of additives. “The concrete flows in like honey and comes out almost pore-free,” says Schmidt-Rothmeier. “This means that even difficult geometries can be realized and there is no need to shake the molds for venting,” explains the designer.

“State-of-the-art concretes such as self-compacting concrete are based on complex formulations, the constituents of which must be perfectly matched to meet requirements. This must also be kept in mind when iron oxide pigments are used, whether for small or large structures,” says Oliver Fleschentraeger, Market Segment Manager for Construction in the Inorganic Pigments business unit at LANXESS.

The readily dispersible iron oxide pigments from LANXESS give the concrete a uniform and durable shade. The small works of art are lightfast and weatherproof throughout, rather than just colored on the surface.

Survival support for recluses

While honey bees live exclusively in their thousands in beehives, wild bees are predominantly recluses. The worldwide more than 30,000 different species of wild bees have differing requirements for their nesting places. The beehaus offers an excellent place for the endangered wild bees to nest and hibernate.

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The various diameters of the holes attract different species of wild bees. They lay out their brood cells in the narrow and smooth tubes and provide the eggs with nectar and pollen. The bee then seals the tube with mud until the larvae hatch in spring and open it to fly out. The bee hotels can then be cleaned easily with a thin brush.

Easy to clean and robust

Insect hotels are usually made of wood or plant stems. However, bamboo tubes and other organic nesting boxes are often full of splintered parts that can injure the bee and its delicate wings. The advantage of concrete as a material is that the walls are nice and smooth. In addition, concrete is an extremely robust material and does not require any special care. Since the material does not rot due to fungal attack – unlike some wooden nesting boxes – the houses have a long life. The inorganic pigments are extremely weatherproof and ensure that the colorful nature is retained for a long time. The concrete “blocks” do not require any upkeep, and make a small contribution to the conservation and reproduction of bees, which are key pollinators for agriculture and garden owners.

For children, observing wild bees is fascinating and promotes awareness of nature and animals. Since the insects have neither a queen nor honey to protect, they are not aggressive and do not sting.

It is important to place insect hotels so that the opening faces south and, if possible, to hang them in a sunny spot that is protected from wind and rain. Having bee-friendly plants in the surrounding area is also helpful to provide them with food.

Detailed information about the bee hotels, which can be viewed in the great outdoors from mid-May to the beginning of October in the “Garden of Opposites” at the 2020 State Horticultural Show in Kamp-Lintfort, can be found on the website <https://grellroth.de/>.

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Sustainable supply chain

The sustainably produced LANXESS pigments used for the coloring come from the immediate vicinity of Grellroth Betonmanufaktur – the world's largest production facility for inorganic color pigments is just ten kilometers away as the crow flies. Specialty chemicals company LANXESS has been producing iron oxide and chrome oxide pigments for many applications at its Krefeld-Uerdingen site for over 90 years. LANXESS pigments are used around the world to color concrete, coatings, inks, paper and plastics.

The Bayferrox iron oxide pigments support the requirements of sustainable building and improve the classification of construction materials manufactured in resource-preserving processes through rating systems such as LEED (Leadership in Energy and Environmental Design) and DGNB (German Sustainable Building Council). As a result, LANXESS is the only pigment producer in the world to be SCS-certified. SCS Global Services Scientific Certification Systems, Inc. – one of the leading independent certification companies – has confirmed the large proportion of recycled raw materials in the production process for LANXESS iron oxide pigments.

At its most important site in Krefeld-Uerdingen, the business unit uses the entire value chain of iron oxide production – from synthesis to packaging. More detailed information can be found at <https://bayferrox.com/en/>.

LANXESS is a leading specialty chemicals company with sales of EUR 6.8 billion in 2019. The company currently has about 14,300 employees in 33 countries. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives, specialty chemicals and plastics. LANXESS is listed in the leading sustainability indices Dow Jones Sustainability Index (DJSI World and Europe) and FTSE4Good.

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