Building with conscience.

StoColor System

Colour is your material.

Facade

Interiors

72 basic colour shades. Countless design possibilities. The new StoColor System brings your ideas to life.

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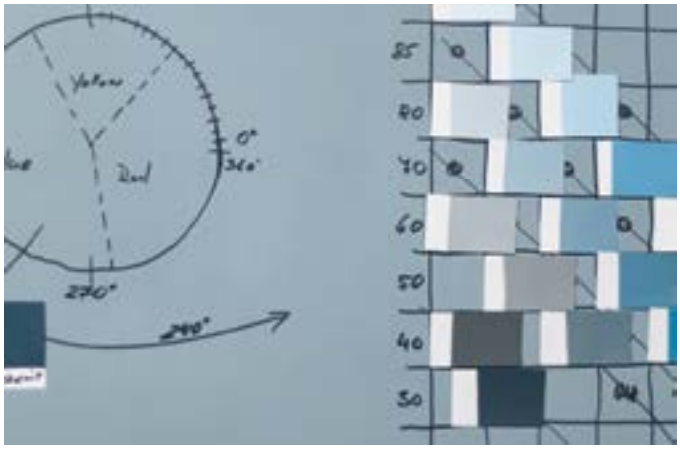


Editorial

Colour shades for architectural design

For further information on the system, please visit
www.sto.com/stocolorsystem

Colour shades are our passion – colour shades are our area of expertise

The human eye can distinguish ten million colour nuances. The resulting number of possible colour combinations is practically unlimited. A good colour system represents a selection of colour shades as required by the user. The user's perspective is paramount.

Peter Appenzeller and Antonio Romano from StoDesign were instrumental in the development of the new StoColor System.

Why has this new colour system been developed?
A. Romano: The existing colour systems provide a precise definition for each colour shade based on the colour value, the saturation, and the brightness. But what use is this in practice? One motivation was to provide formulations for the composition of colour shades using an intelligent system, taking the user's perspective into account.

P. Appenzeller: The goal is always to find the perfect solution for the individual project from the many possibilities on offer. We show users how to achieve customised formulations. The result is an extremely carefully coordinated colour wheel containing 72 hue angles/colour areas and a systematic pre-selection of colour shades within the individual colour areas. In this case, the system also means that the chroma and brightness of the colour shades were altered from one angle to the next during the selection process in such a way that the individual angles perfectly complement one another. And this "intelligent" selection can be used to derive excellent solutions.

A. Romano: To explain, I like to use the analogy of enjoying a meal in a restaurant. A good chef makes a selection from a large number of possible dishes and creates different, but optimally coordinated menus for the guest.

What are the special features of the content in addition to this system?
A. Romano: A comprehensive and long-term conceptual approach: a system with 1000 new colour shades for the facade at the centre of all considerations. And there is a focus on the feasibility of the colour shades in our products. This is supplemented by 225 colour shades specifically for interiors and a further 246 colour shades for lacquers, glazes, and stains. These are implemented for the user using professional consulting tools, enabling a complete project to be created with just one tool. It was also particularly important to us to integrate a total of 72 historically or culturally

Image on right:
Peter Appenzeller, Head of StoDesign, and Antonio Romano, Head of StoDesign Italy, evaluating colour nuances.

Image below:
The colour shade Iron Oxide Red – from the original pigment to the paint samples and finished material.

significant colour shades, 24 distinctive white shades, and 8 new, tinted grey shades.

How does the StoColor System work?
A. Romano: The StoColor System has been conceived by thinking from within the application – based on a scientific, theoretical framework. There is the analytical type who proceeds methodically and seeks rationale for a colour palette. For them, increments in chroma and brightness are key to creating the perfect formulation, while emotional types work with colour fans from the perspective of the application. Which colour shades work in harmony and produce new design solutions? Depending on the area of application, there are also colour shades that are chosen much more frequently than others, regardless of current trends. This is why we have also given ourselves the freedom to give greater consideration to certain colour areas over others within what is a methodically structured system.

P. Appenzeller: Alongside ease of use in the application, there was a second important factor. The StoColor System is also a response to the raw materials market and the further development of innovative products that also take sustainability into account. Further development guarantees that the colour shades are feasible for the products and ensures a high quality standard and the longevity of the pigments and colour pastes used. If this was not possible, colour formulations were corrected rather than leaving the product out. Only formulations that can be used in practice and that are available in at least one Sto product are included. The new system is designed for long-term reliability – for the company and for users.

Historic colour shades system

Alabaster White, Berlin Blue, English Red, French Ochre, or Terra di Siena. Our work with colour holds an inextricable link to the cultural and design elements of the past.

The most beautiful colours have natural origins. They have a long history of use in cultural and architectural contexts. The rarity or availability of pigments and dyestuffs meant that the use of colours also represented a social code for certain eras and their symbolism. Colours with a mineral and organic origin were being used as early as prehistoric times. The regional occurrence of certain stones, soils, and plants as raw materials for the production of dyestuffs shaped the culture, architecture, and craft traditions of the region. In this way, colour also conveys identity and particular values. The essence of these colour shades endures despite the fact that their dyestuffs are no longer produced from the natural raw materials that were originally used. The new StoColor System contains 72 historically relevant and material-specific colour shades designed to uphold the cultural tradition that underpins them. These days, precious raw materials are no longer taken from nature to be industrially processed. The new formulation for the historic colour shades is based on precise matching of swatch samples from genuine pigments and dyestuffs with organic and mineral colour pastes.

Image on right: Historic white shades in the new StoColor System

Chalk cliffs on the island of Rügen, origin of the Rügen Chalk white pigment.

Colour shades for architectural design

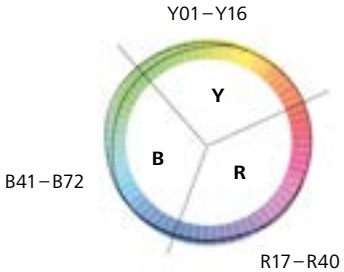
The new coordinates-based StoColor System delivers a whole host of composition options for architectural design situations based on a colour wheel with 72 colour areas.

Solution-oriented: structure and system

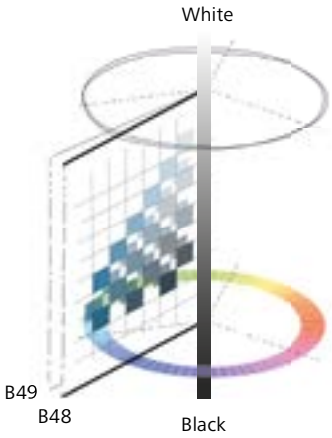
Starting with the three primary colour shades of yellow, red, and blue, an extremely finely graded colour wheel with 72 colour areas forms the basis of the colour system. A specific selection of colour shades per colour area facilitates composition in the design.

Coordinates-based systems such as the new StoColor System precisely define the position of each colour shade in the three-dimensional colour space using the colour shade, brightness, and chroma. In contrast to other coordinates-based systems, the StoColor System divides the colour wheel into 72 colour areas over increments of just 5 degrees. In practice, this reduced increment results in very precisely nuanced compositions of colour shades with minimal difference in colour shade. Colour shades in colour areas with immediate borders also demonstrate a slight offset in brightness and chroma, complementing one another perfectly. The purpose of this system is to expand design options. Monochromatic compositions (colour shades of one colour area) as well as polychromatic (multicolour composition with colour shade contrast) and polychromatic/monochromatic compositions (colour shades that border one another directly in the colour wheel with a focus on contrast using brightness and chroma differences) are possible.
The unequal number of yellow, red, and blue colour areas in a coordinates-based colour wheel is compensated for in the StoColor System by a higher number of colour shades in the yellow and red segments and a lower number of colour shades in the blue segment. The result is a roughly equal number of colour shades available per segment.

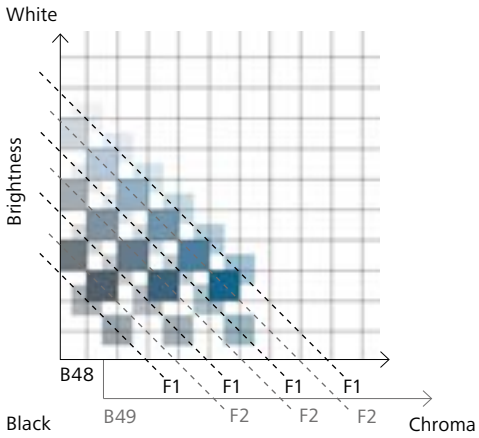
Image on right:
The high density of colour areas in the colour wheel enables smooth transitions from one colour area to another.



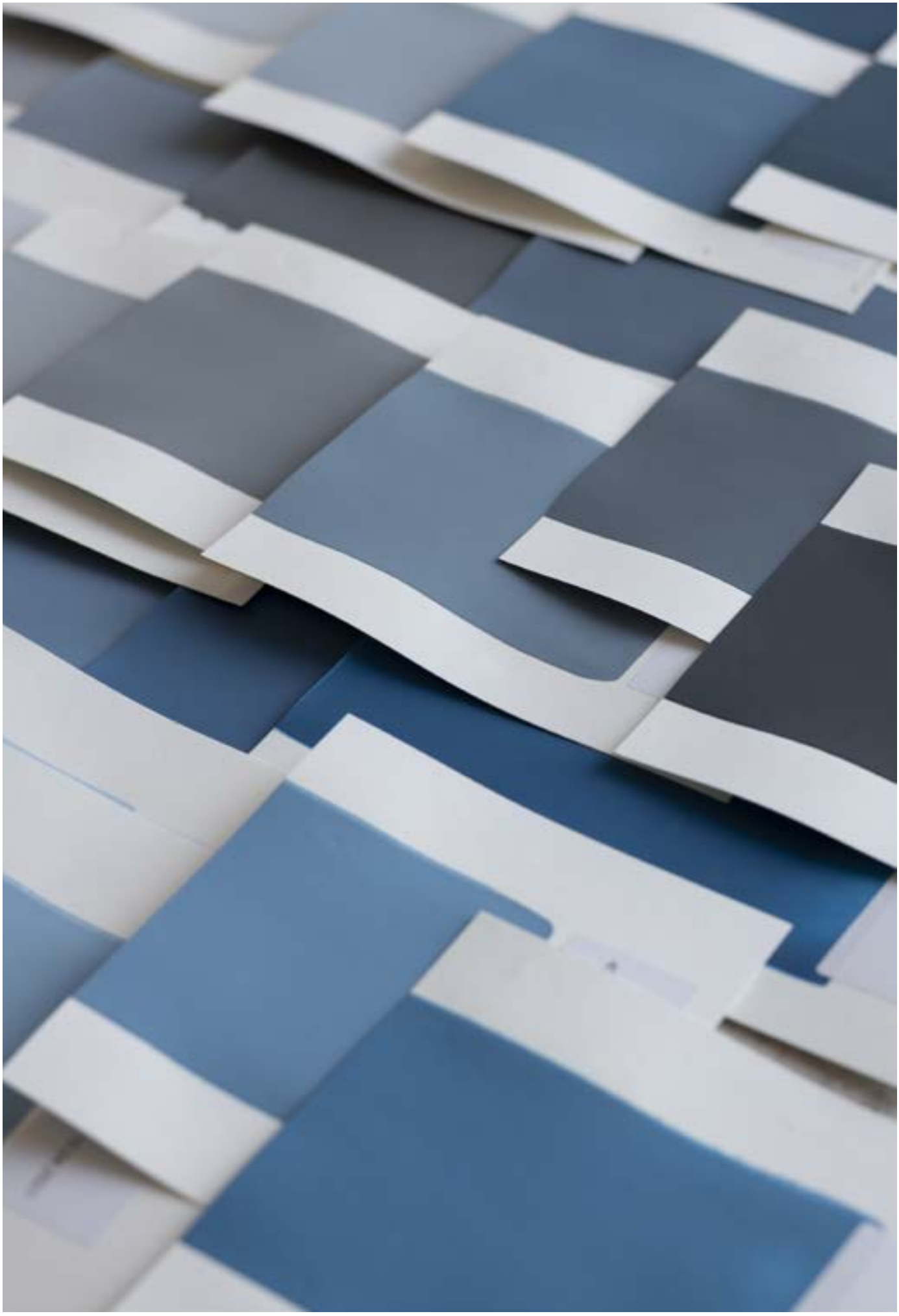
Colour wheel
72 colour areas in 5° increments
Yellow colour space (Y) with 249 colour shades
Red colour space (R) with 282 colour shades
Blue colour space (B) with 330 colour shades



Colour space
Colour area B49 = hue angle 240°
Colour area B48 = hue angle 245°



Hue angle
Combinability due to the diagonal offset of adjacent angles (F1 = 240° and F2 = 245°)



From theory to practice

Colour shades selected in urban planning contexts need to stay current over the long term. The new StoColor System allows you to develop a wide variety of compositions and implement them in different facade materials, depending on the concept idea.

The examples shown here (monochromatic and polychromatic/monochromatic compositions) illustrate the difference between the two approaches to design.

The "monochromatic design" diagram shows colour shades with differences in brightness and chroma in relation to a single colour area.

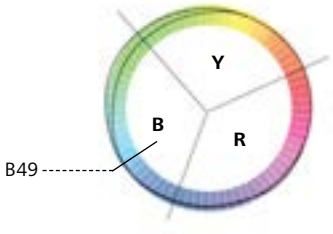
The "polychromatic/monochromatic design" diagram shows colour shades with differences in brightness and chroma, relating to multiple colour areas that border one another directly. As a result, the second version shows a somewhat broader colour spectrum, with shades ranging from reddish to greenish.

Planning and managing the impact of a colour scheme is key to creating a sound concept. Texture, shadows, and various gloss levels change the aesthetic impact and how the colour shade itself is perceived. These aspects affect colour shade, brightness, and chroma.

For this reason, you should only make a final decision on the colour scheme using genuine samples.

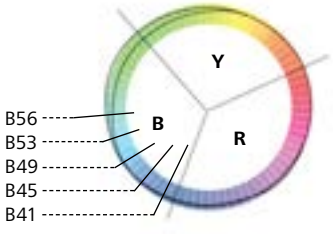
Image on right:
There are various factors that determine the quality of a colour composition: the selected colour shades and their properties (hue/chroma/brightness), the material, the texture, and the proportions.

Combinability of colour shades between adjacent hue angles



Monochromatic design – 1 hue angle

Colour shade B49 70 10 Hue angle 240°	Colour shade B49 30 10 Hue angle 240°	Colour shade B49 80 05 Hue angle 240°	Colour shade B49 40 20 Hue angle 240°	Colour shade B49 60 25 Hue angle 240°



Polychromatic/monochromatic design – 5 hue angles

Colour shade B49 70 10 Hue angle 240°	Colour shade B45 30 10 Hue angle 260°	Colour shade B41 80 05 Hue angle 280°	Colour shade B56 40 15 Hue angle 205°	Colour shade B53 60 15 Hue angle 220°

Headquarters

Sto SE & Co. KGaA
Market Development
Ehrenbachstrasse 1
79780 Stühlingen
Germany

Phone +49 7744 57-1131
Fax +49 7744 57-2428
info.international@sto.com
www.sto.com

Your Contact

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