sto

Building with conscience.

StoColor System
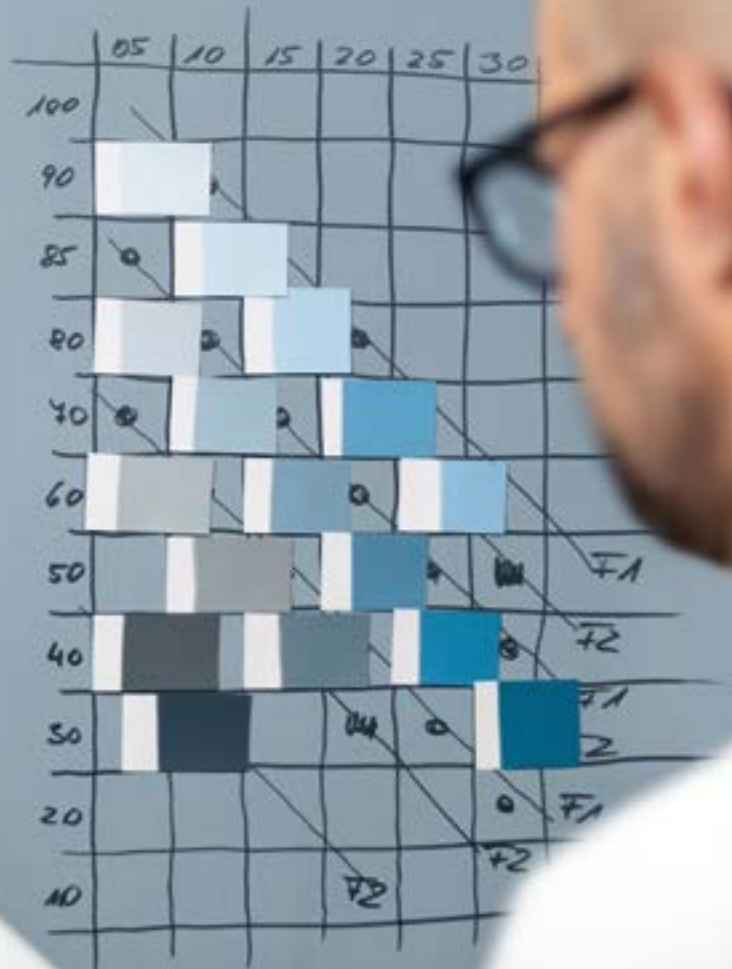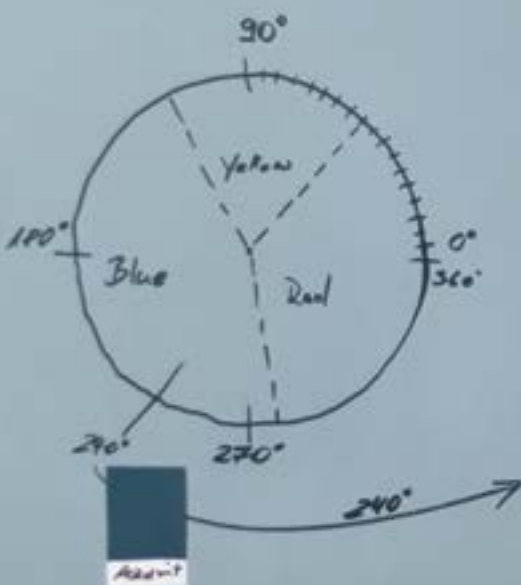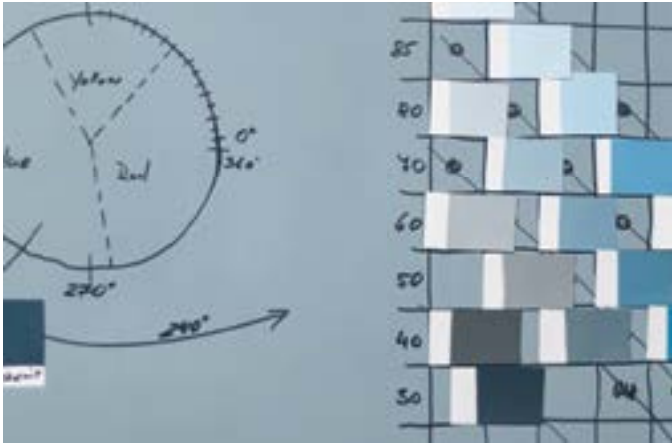
Colour is your material.

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

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

It should be noted that the details, illustrations, general technical information, and drawings contained in this brochure are only general proposals and details which describe the functions. They are not dimensionally accurate. The applicator/customer is independently responsible for determining the suitability and completeness for the product in question. Neighbouring works are only described schematically. All specifications and information must be adjusted or agreed in the light of local conditions and do not constitute work, detail or installation plans. The technical specifications and product information in the Technical Data Sheets and in system descriptions/approvals must be observed.

One concept, perfect tools, reliable application

Service

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.
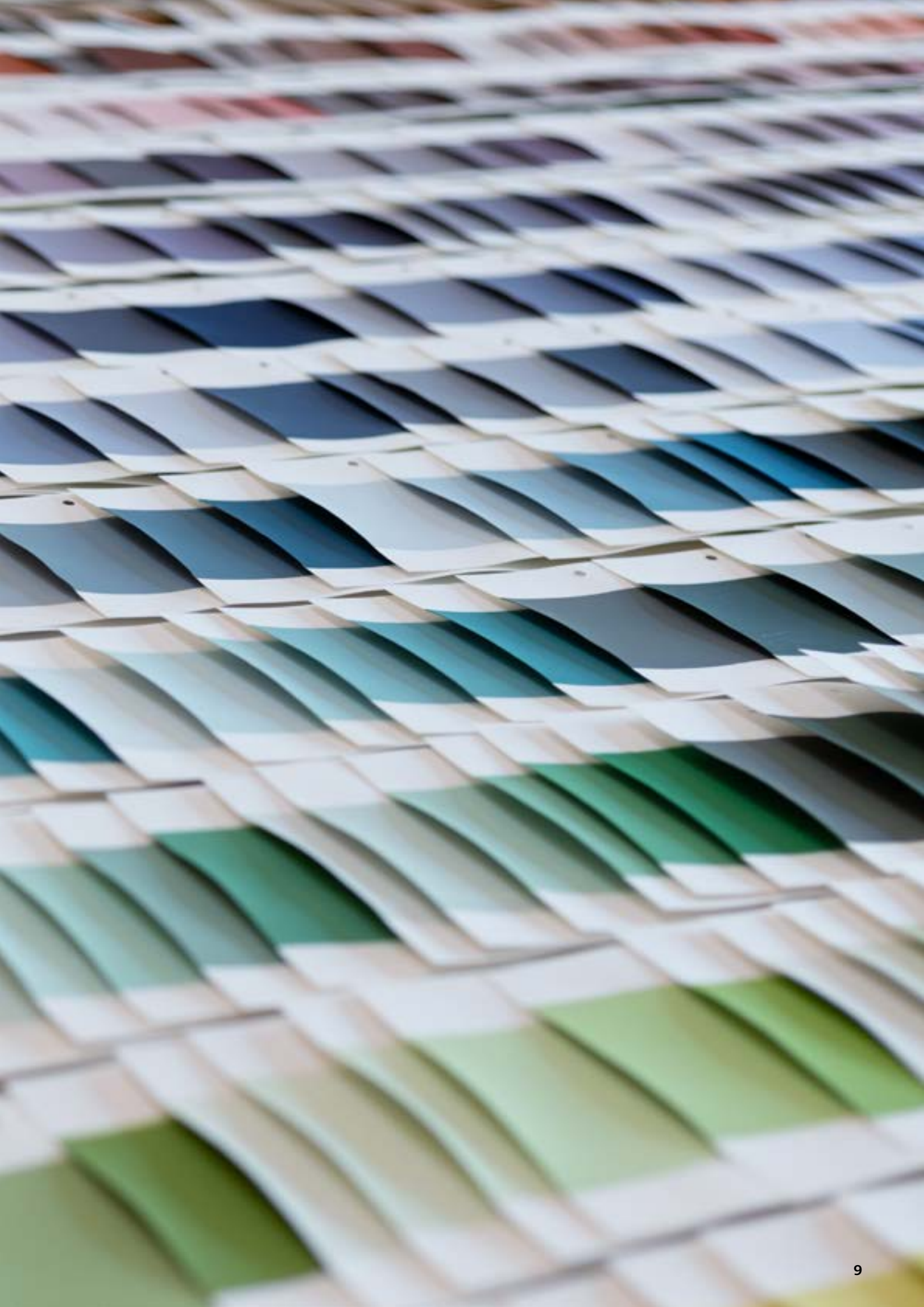
Colour shades for architectural design

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.
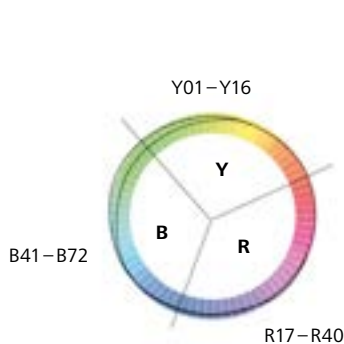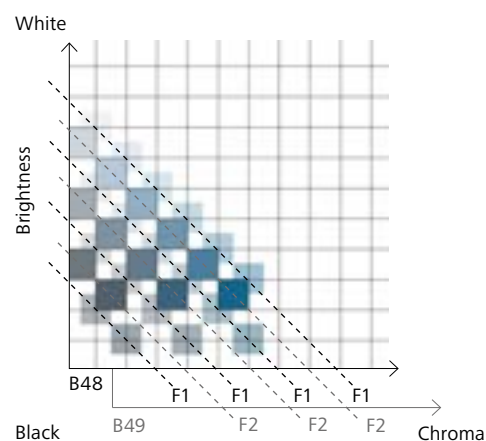

Colour wheel
72 colour areas in 5° increments
Yellow colour space (Y) with 249 colour shades
Red colour space (R) with 282 colour shades
Blue colour space (B) with 330 colour shades
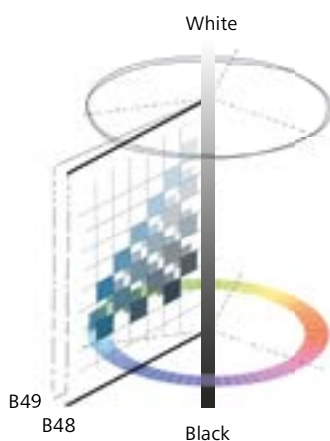
Colour space
Colour area B49 = hue angle 240°
Colour area B48 = hue angle 245°

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.
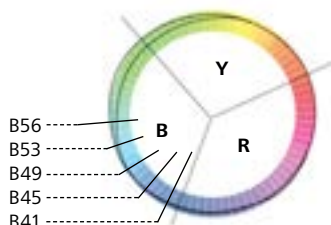
Combinability of colour shades between adjacent hue angles
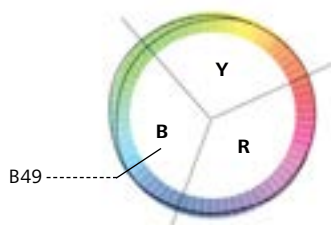
Monochromatic design – 1 hue angle

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°

One concept, perfect tools, reliable application

The overall concept of the new StoColor System comprises 1000 colour shades for facades, 225 colour shades specifically for interiors, and over 240 lacquer and wood stain colour shades. Professional tools make planning and composition easier.

The feasibility of the selected colour shades in different products gives you the assurance you need for your application.

Have everything at hand: fan, box, edition

Excellent tools that can be relied upon for your colour design. From the idea and concept to application.

The StoColor System is designed for every area of application in architecture. The 1000 new facade colour shades are a core element of it. Each is assigned to one of the 3 primary colour shades of yellow (Y), red (R), and blue (B) as well as to the neutral and nature range (N) using designations (colour shade number). In addition to the colour shades from the 72 colour areas, 24 white and cream nuances are integrated alongside 6 black shades, 1 neutral grey shade with 16 brightness levels, 8 tinted grey shades with 3 % chroma as well as 65 historically and culturally relevant colour shades. Our colour fan decks contain these 1000 colour shades and can be used to provide an overview and for pre-selection. The box contains individual cards for all 1000 colour shades in DIN A6 format to help users evaluate colour and

contrast more effectively. In the edition, the 4 areas of yellow, red, blue, and neutral and nature are each represented in a fan. The alternating presentation of the colour shades on one full page and on half a page demonstrates possible compositions for the colour design.

These 4 fans with the 1000 facade colour shades are supplemented by a fan with 225 colour shades specifically for interior design as well as a fan with over 240 colour shades for lacquers and wood stains. This makes the edition the perfect tool for creating a holistic facade and interior design. With all 3 tools, the colour shades are shown in material-specific, matt, and sanded surfaces to aid assessment.

Image below:
Colour fan decks: 1000 colour shades for facades

Images on right:
Box: 1000 colour shades for facades in DIN A6, divided into 4 integrated individual boxes with the segments yellow / red / blue / neutral and nature
Edition: 1000 colour shades in 4 fans with the segments yellow / red / blue / neutral and nature
+1 interiors fan with 225 colour shades
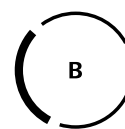+1 fan with over 240 colour shades for lacquers, glazes, and stains
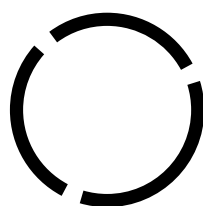
StoColor overall system
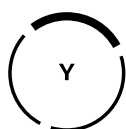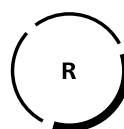
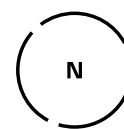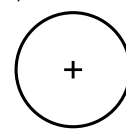| Y	R	B	N
Yellow colour space (Y)	Red colour space (R)	Blue colour space (B)	Neutral and nature shades (N)

+	+
Additional interior colour shades fan	Additional lacquers, glazes, and stains fan
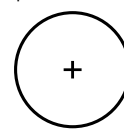
At a glance: reliable identification

Clear identification of the colour shades and their feasibility in tintable products guarantees quality and reliability when using the new StoColor System.

Aesthetics and technology form an inseparable unit in the development of the new StoColor System. Every colour shade has been analysed by the Sto colour lab and formulated for all tintable products.

Application engineering data, such as the light reflectance value, colour class, feasibility in different products, TSR value for X-black Technology to reduce solar heating, clearly accompany each colour shade in all tools as key information.

As a matter of principle, only dyestuffs and tinting pastes that meet the requirements for maximum weathering resistance and UV light fastness are used in the manufacture of tinted products. All colour shades of the system are available in StoColor Dryonic® and StoColor Maxicryl.

Image on right:
Quality and colour shade accuracy are checked in the Sto colour lab.

Image below:
The markings on each individual colour shade provide all key technical parameters.

R17 60 20   **R17 34 29**   ▮28   C2   △   ○   Xb25/Xb30

Colour no.

Colour code/order no. R17 = position in the colour wheel
60 = brightness
20 = chroma

Colour no.

Codes with a black background indicate historically significant or material-specific colour shades.

Light reflectance value (LRV)

Value denoting the visible quantity of light reflected by a surface.
Measured in per cent:
100 % = white 0 % = black

Colour class

Definition of colour shade surcharge – see price list

**Lotusan/StoColor Lotusan
StoColor Silco**

Colour shade is feasible.

**Sto silicate paints
StoLotusan® K/MP** ⎯ LRV not
Sto silicate renders ⎯ below 30

Colour shade is feasible.

X-black Technology

Represents products tinted in X-black Technology with a TSR (Total Solar Reflectance) value of more than 25 or 30.

StoColor Dryonic®

All colour shades in the system are feasible as a facade coating;
e.g. in StoColor Dryonic®.

Service

A wide range of services are available for the new StoColor
System. StoDesign colour shade and material concepts,
downloadable colour shade and texture ranges, the
Sto-Colorix app, and the StoColor simulator, as well as
colour charts and original samples.

StoDesign: colour shade and material concepts

A team of architects, colour specialists, and design experts will help you with every aesthetic aspect of your building project – from identifying the perfect concept to visualisation

StoDesign can bring your design ideas to life by providing project-specific and other tailored consultancy services for facades and interiors at the various stages of the design and implementation process. Material, texture, and colour shade influence how a room feels and the overall atmosphere of a space. Colour design for architecture means more than just the arrangement of coloured surfaces. The plans incorporate a differentiated analysis of the existing architecture and the use and function of the project alongside a consideration of the surroundings and regional contexts. Preliminary designs and studies incorporating colour and material concepts illustrate design options and lead to detailed layouts including concrete specifications

regarding materials, textures, and colour shades. Documentation is provided in the form of 2D building views or 3D representations and is supplemented by genuine samples.

You will always be kept informed at every stage of these consultancy services.

From the first sketch to the finished project: the use of material and colour shade determines the atmosphere of the space.

Digital tools for architects and planners

Download StoColor System colour ranges

The 1000 colour shades of the StoColor System and the 225 colour shades of the interiors colour chart are available for visualising colour concepts.

For practical use in planning, we provide a download of the colour ranges in different file formats for various design or CAD programmes:

· Ranges for ADOBE
· Ranges for SketchUp
· Colour textures in BMP/JPG for import into all CAD programmes
· *.csv, *.xml scripts, and Excel data as a cross-programme database

Download StoSignature texture ranges

The effect of different colour shades is influenced by texture. The StoSignature texture ranges include a wide variety of surfaces, from simple texture depictions to complex mapping data for high-end visualisation.

They can be imported into a design file as a finished seamless pattern to enable realistic layout planning in all commonly used programmes. The following are available:

· Zip files with the standard mapping data for all StoSignature textures

Fine 10　　Fine 40

Rough 1　　Rough 2

Rough 10　　Rough 40

Linear 2　　Linear 10

Graphic 40

For more information on the system, please visit **www.sto.com/stocolorsystem**
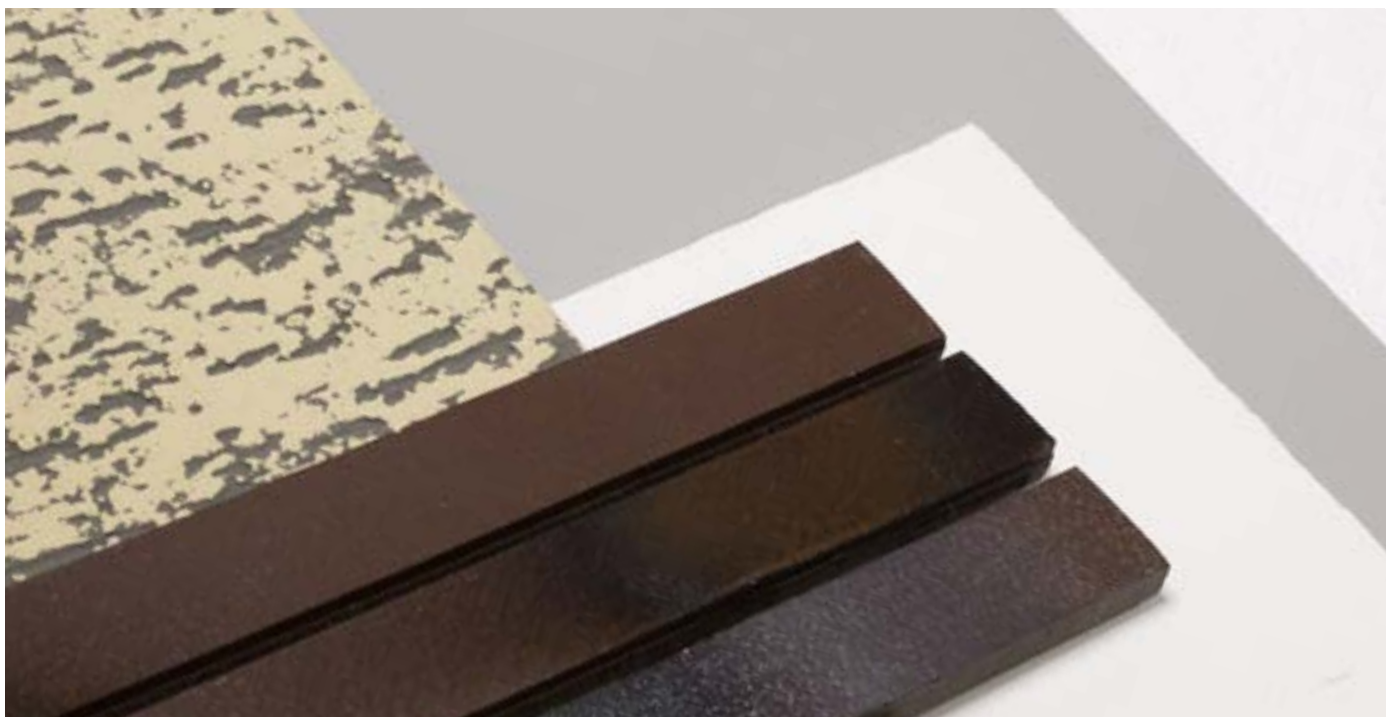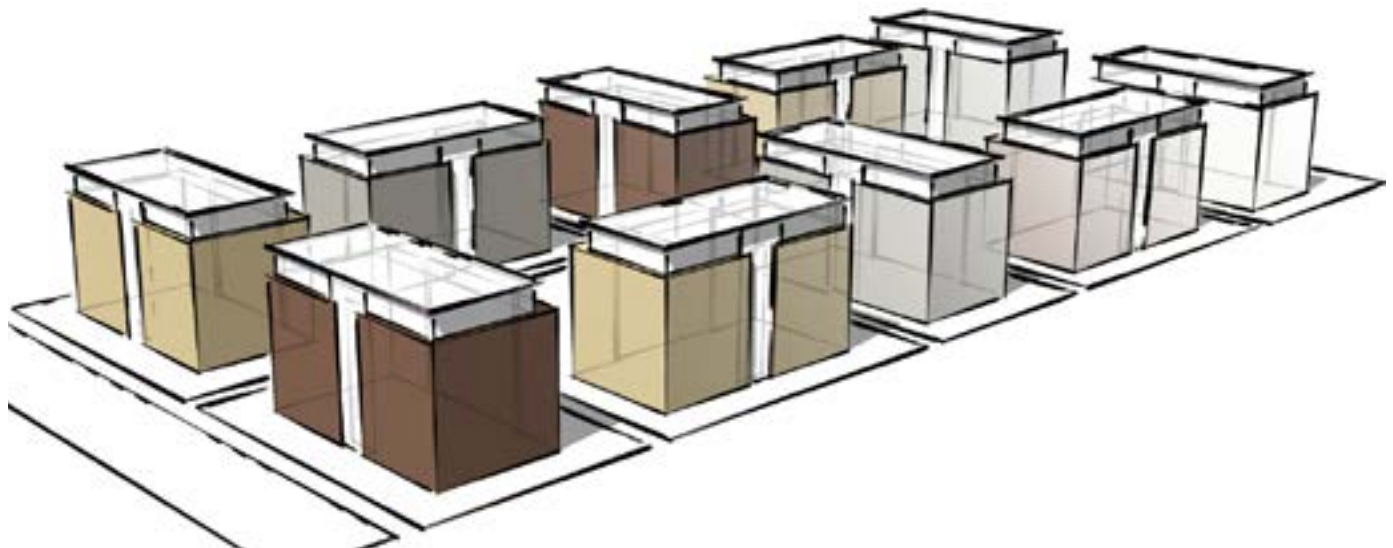
Digital tools for you to use

Colour shades are perceived visually and individually. Digital planning tools allow you to visualise and examine your own ideas and concepts.

Whether you need inspiration or want to test out a design idea, digital visualisation tools help you find the perfect colour shade for a facade or interior. The Sto-Colorix app and the StoColor simulator offer numerous pre-masked sample projects that can be used to visualise a range of colour variants quickly. Can't find a suitable project? No problem! Simply upload a photo of your own project, mask it yourself with minimal effort, and colour it using the colour shades available in the StoColor System as you wish. Assessing the interaction of different colour shades, surfaces, and proportions on

a facade or in an interior space using digital on-screen visualisation is a good basis for making decisions about design ideas. However, virtually reproduced colour shades do not perfectly reflect the original colour shades due to different screen calibrations. Ideally, you should always make your final decisions on colour using a colour fan or original sample. The COLORCATCH NANO colour measuring device from Colorix allows you to measure colour shades on any surface, translate them into the StoColor System, and use them in the Sto-Colorix app.

Images on right:
Application example with various design options from the Sto-Colorix app.
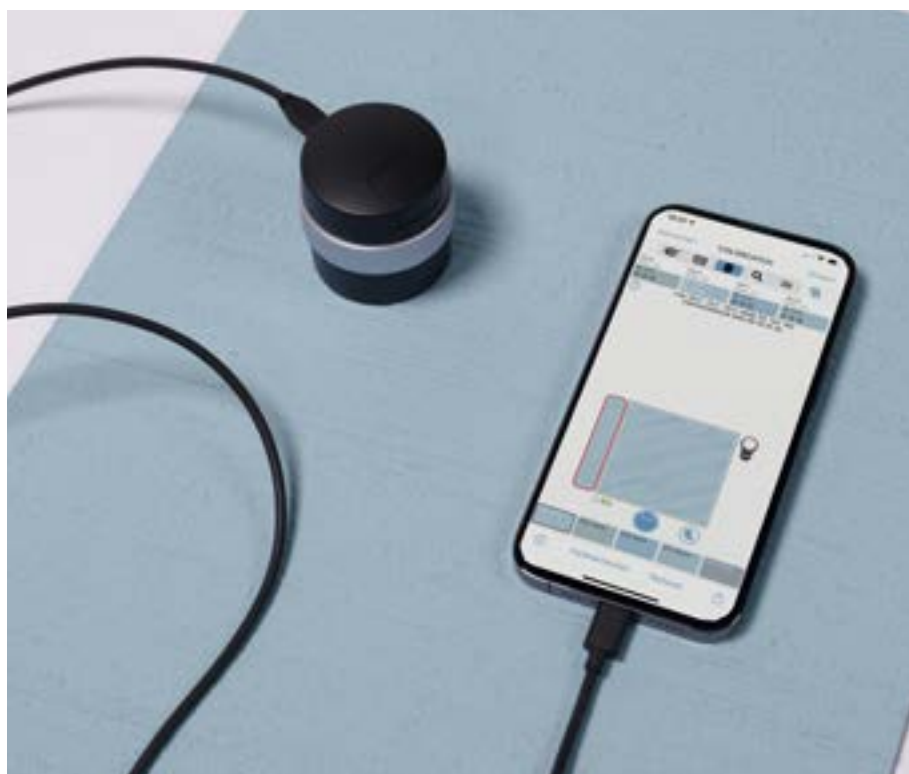
Colour measuring device

Colorix COLORCATCH NANO

We recommend the COLORCATCH NANO, a patented colour measuring device that produces very accurate results, especially with textured surfaces. The colourimeter is equipped with a camera that can be connected to a smartphone via Bluetooth. Up to five measurable colour shades are captured from over 50,000 individual measured pixels. The magnification of the camera allows the user to define precisely where on the surface the desired colour shade is to be measured. This means that soiling on older facades can be easily excluded.

For more information, visit
www.colorix.com/products/ colorcatch-nano

or simply scan the QR code

Sto-Colorix app and StoColor simulator

Inspiration for new ideas

In the Sto-Colorix app or browser application, a project gallery provides inspiring design ideas on a variety of contemporary facades and interiors. These compositions act as a basis and the colour shades can easily be altered and further developed as required. In addition to all the colour shades of the StoColor System, a wide range of StoSignature surfaces are also available for your design.

Log in to the StoColor simulator online
www.sto.colors-simulator.com

Download the Sto-Colorix app
**Visit the Play Store for Android or
App Store for iOS**

or simply scan
the QR code

Your own projects

Based on your own project photo, custom design ideas can be implemented in the Sto-Colorix app or browser application in just a few clicks thanks to technically advanced surface recognition in the application using artificial intelligence. This allows you to quickly create a strong basis for decision-making for each of your projects, which can be archived for documentation and further processing.

To this end, simple export functions for saved projects are also available, which ensure a seamless exchange between all parties involved.

StoColor System: tools and sample service

StoColor System – colour fan

Application	· The 1000 colour shades of the new StoColor System in the form of a fan complete with all key data, including light reflectance value, colour shade surcharge class, feasibilities, and limiting values for the TSR value · All colour shades can be implemented on facades, depending on the product in question · 65 historically significant or material-specific colour shades are featured in the fan
Art. no. 09663-103	StoColor – colour fan

StoColor System – edition

Application	· Comprising 6 individual fans, this edition serves as a comprehensive tool for professional colour design in the field of architecture · The 1000 colour shades of the StoColor System in four fans (yellow/red/blue/neutral and nature) · 225 special interior colour shades grouped together in one fan · One fan with 38 wood stain shades, more than 200 RAL paint shades, and 14 DB colour shades
Art. no. 09663-106	StoColor System – edition

StoColor System – box

Application	· The box contains 1000 colour cards as indicative samples in approx. DIN A6 size · The cards are sorted into yellow/red/blue/neutral areas to provide a clear overview and additional cards can be ordered on an individual basis · Tabs for the individual colour areas and numbers on the back from 1 to 1000 make it easy to keep the contents of the box in order
Art. no. 09663-104	StoColor System – box

StoColor – interiors

Application	· 225 colour shades specifically intended for interior design in one fan · The perfect addition to the StoColor System · Including 5 gloss levels for interiors
Art. no. 09663-105	StoColor – interiors

StoColor – lacquers, glazes, and stains

Application	· 1 fan with 38 wood stain shades, the RAL paint shades, and 14 DB colour shades · RAL gloss paints are printed with a slightly glossy effect · Wood stains are shown on real wood veneer
Art. no. 09663-083	StoColor – lacquers, glazes, and stains

Our tools can bring your colour concepts to life quickly and precisely. These are adapted to the application from theory to practice: from the colour fan to a genuine sample in the specific colour shade.
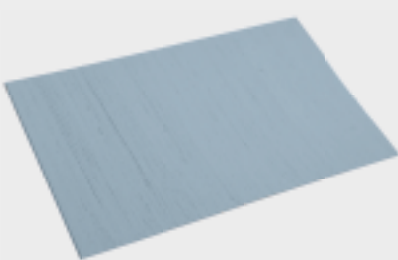
Colour shade sheet sample

Application	· All 1000 colour shades from the StoColor System box can be re-ordered as individual cards in approx. DIN A6 size · The surface of the colour shades is lightly sanded, as is the case in the colour fans · The colour cards are an excellent way to determine colour preferences and colour combinations more effectively · Order via: infoservice.international@sto.com
	Colour shade sheet sample

Wet sample (1 litre)

Application	· Small quantities are available as wet samples for self-application for colour shade assessment on a sample surface or directly on the building itself · The product quality (facade, interiors, gloss level, etc.) must be defined in more detail when ordering > please contact your Sto contact person for more information
	Wet sample

Genuine samples

Application	· Coloured render samples are available in our StoSignature surfaces to assess the selected shade on the correct substrate · The product quality (facade, interiors, tinted render, surface, etc.) must be defined in more detail when ordering > please contact your Sto contact person for more information
	Genuine samples

Colour measuring device

Application	· High-quality colour measuring device, which is perfect for textured substrates, provides exact colour values and the corresponding colour shade according to the StoColor System or a colour range of your choice · Wireless connection to mobile device via Bluetooth · Digital camera with zoom function ensures completely accurate identification of colour measurement points · Application in conjunction with the Sto-Colorix app · Available from: www.colorix.com
	COLORCATCH NANO

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