



## The alsecco Creative Colour System – An Overview.

Designing in Colour.



ARCHITECTURAL FINISHES

## Designing in Colour: The Natural Inspiration

Can you imagine nature without colour? A summer meadow, butterflies, mountains and forests, the rainbow, the ocean? Of course not. Nature is colour. And so colour is also a basic human need. This is reflected in our daily lives: whether in fashion or furniture, art or make-up, colours accompany us and stimulate us, colours are symbols and signals, decoration, orientation and fun.

Now it is time to use colour deliberately in the world of building as well. Architecture is our constructed environment. It is designed to serve us, to provide for our working and leisure needs. Architecture should therefore convey harmony and enjoyment of life, using colour in particular to create a relation to and identity with nature.

Material, structure and form – these are the major design elements of the facade. In addition there is the interplay of light and shade. But also the colour of the structural joints is a major element of planning and design. It must be in keeping with the properties of the material. It must respect and enhance the architectural idea.

We invite you to use our colour system for a new and creative design of our structured environment.



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Colour provides one of the most significant visual stimuli for people. With its evocative effect it helps to influence how we evaluate things.



## Designing with a System: The alsecco Creative Colour System

The alsecco Creative Colour System (aCCS) has been developed exclusively for alsecco by Friedrich Ernst v. Sinner, the colour designer whose fame has spread far beyond the borders of Germany. It is the result of the search for a colourfulness guided by the necessities of a colour spectrum that is predominantly used for the façade. It was created on the basis of practical experience, for practical application. With its series of shades designed for planning architectural colourways, it provides a bright future for building design.

It offers a range of colours backed by a method, and provides every user with clear answers to the question: "How do we use colour so that the building can become a welcoming and integral element in our environment?"

Harmony in colours must be based on a profound knowledge of the theory of colours and the effect of colours. The alsecco Creative Colour System makes the medium of colour easy to handle, since it pre-orders colour structures into groups of shades.



The alsecco Creative Colour System is specifically concerned with colour, not colourfulness. It encompasses warm, attractive shades that – combined in colour families – are designed to create a pleasing long-term effect. The range extends across the whole colour spectrum and, with its particular grouping, ensures that colour can be handled with style and creativity.



## Harmony of Colours: A matched Colour System

This system is based on 25 colour groups that have been selected on the basis of criteria related to colour psychology and pigment technology. By mixing these colours with black or white, 12 harmoniously matched tints are created in each group of colours. Each colour group consists of an active colour range, one that is modified with light grey and one that is modified with dark grey.

The colour groups are supplemented by seven groups of grey with a low colour content, each in four dark and four light gradations. In total, therefore, the *alisco* Creative Colour System consists of 390 different shades.



Easy application as a result of well-thought-out aids: Shade planners and colour samples help at the planning stage.



The *alisco* Creative Colour System dispenses with extremely light gradations of the basic colours. These are superfluous when designing large architectural surfaces because they are insipid, they are not distinctive, they are leveling and therefore ineffective. Consequently a material-based colour can be created for surfaces made from mineral substances, such as concrete or plaster.

To make the colour selection easier, we have combined the shades of the *alisco* Creative Colour System in a planning aid. This planning aid contains for instance a colour planner with a patented slot design and colour samples where the colours can be juxtaposed without distracting gaps. These tools make it much easier to assess the interplay of colours.



State-of-the-art use of purely inorganic pigments gives colour optimum technical reliability.

This ensures a maximum of lightfastness and weathering resistance even on difficult substrates.



## Recommendations for choosing the right colour for your design

**1** Every group of colours consists of an active series, a series that is modified with light grey, and one that is modified with dark grey. By combining the individual shades, a wide variety of possibilities offering optimum harmony can be achieved. All the colour groups are matched and can therefore be combined with one another.

**2** The shades in one of the 25 harmoniously matched colour groups are usually sufficient to ensure a good colour design. These colours allow many facades to appear welcoming and integrating rather than overly aggressive.

**3** Various shades from the active series of the individual colour groups can also be combined for placing more lively accents on the façade. However, bold and bright colours should be avoided if a wide variety of shades are to be used on the one project. Such colours lack elegance and their effect rapidly wears off.

**4** A material-like colourfulness is conferred on surfaces made of mineral substances, such as concrete or plaster, when they are enhanced with ACS shades. Façade highlights, e.g. special colours used for windows, balcony railings, guttering or other metal components, can be taken from the RAL 9000 range.

**5** Subtle contrasts can be used to divide large facades around windows, doors, fascias, plaster strips and moldings. Adjacent shades within the same colour group should be used here. Structure and rhythm can be created in this way to confer character on a façade.

**6** As a rule, the darker shades can be said to carry the lighter shades. Consequently dividing elements appear lighter if they are coated in a lighter shade than the surrounding area. The reverse is true if the dividing elements are darker than the shade of the main surface.



**7** In the design of large areas, it is the warm shades that should generally dominate. This creates a harmonious image that conveys homely cheerfulness.

**8** The characteristics and use of a building should influence the shades selected. Particularly when planning closed estate structures and whole districts of a city, subtle and forward-looking colour planning sets the standard for acceptance and a feeling of well-being for the people living there.

**9** Take the landscape and the architectural environment into account and the way that different colours can offset and harmonise with one another.



**Legend:**

2902 = Stroke designation

■ = Suitable for synthetic resin-based plaster

□ = Suitable for synthetic resin-based paint

▲ = Suitable for silicone and silicate plaster

△ = Suitable for silicone and silicate paint

■ = Suitable for mineral plaster

■ = Special choice – suitable for mineral

plaster, sun-protective mineral plaster.

Other – further colour on request.

● = Suitable for External Wall Insulation Systems

(EWIS)

○ = Also suitable for sealed concrete coating

RFR = Brightness reference value in %

TA = Tint additive in %

If there is no symbol, then the product is not available in that shade. Mineral renders with RFR &gt; 50% have to be worked over with paint.

**Group 36**3631  
■ □ ●  
RFR25% TA 1%3641  
■ ▲ △ ● ○ ●  
RFR45% TA 1%3632  
■ □ ●  
RFR25% TA 1%3642  
■ ▲ △ ● ○ ●  
RFR45% TA 2%3633  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3643  
■ ▲ △ ● ○ ●  
RFR45% TA 2%3634  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3644  
■ ▲ △ ● ○ ●  
RFR45% TA 2%**Group 38**3831  
■ □ ●  
RFR25% TA 2%3841  
■ ▲ △ ● ○ ●  
RFR45% TA 2%3832  
■ □ ●  
RFR25% TA 0%3842  
■ ▲ △ ● ○ ●  
RFR45% TA 2%3833  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3843  
■ ▲ △ ● ○ ●  
RFR45% TA 2%3834  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3844  
■ ▲ △ ● ○ ●  
RFR45% TA 2%**Group 40**4031  
■ □  
RFR25% TA 10%4041  
■ ▲ △ ● ○ ●  
RFR25% TA 0%4032  
■ □ ●  
RFR25% TA 0%4042  
■ ▲ △ ● ○ ●  
RFR25% TA 0%4033  
■ ▲ △ ● ○ ●  
RFR25% TA 0%4043  
■ ▲ △ ● ○ ●  
RFR25% TA 0%4034  
■ ▲ △ ● ○ ●  
RFR25% TA 0%4044  
■ ▲ △ ● ○ ●  
RFR25% TA 0%**The 2 colour series  
of the 7 grey groups****Group 35**3531  
■ □ ●  
RFR25% TA 0%3541  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3532  
■ □ ●  
RFR25% TA 0%3542  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3533  
■ ▲ △ ● ○ ●  
RFR25% TA 2%3543  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3534  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3544  
■ ▲ △ ● ○ ●  
RFR25% TA 0%**Group 37**3731  
■ □ ●  
RFR25% TA 0%3741  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3732  
■ □ ●  
RFR25% TA 0%3742  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3733  
■ ▲ △ ● ○ ●  
RFR25% TA 2%3743  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3734  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3744  
■ ▲ △ ● ○ ●  
RFR25% TA 0%**Group 39**3931  
■ □ ●  
RFR25% TA 0%3941  
■ ▲ △ ● ○ ●  
RFR45% TA 0%3932  
■ □ ●  
RFR25% TA 0%3942  
■ ▲ △ ● ○ ●  
RFR45% TA 0%3933  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3943  
■ ▲ △ ● ○ ●  
RFR45% TA 0%3934  
■ ▲ △ ● ○ ●  
RFR25% TA 0%3944  
■ ▲ △ ● ○ ●  
RFR45% TA 0%**Group 41**4131  
■ □  
RFR25% TA 20%4141  
■ ▲ △ ● ○ ●  
RFR25% TA 0%4132  
■ □ ●  
RFR25% TA 10%4142  
■ ▲ △ ● ○ ●  
RFR25% TA 0%4133  
■ ▲ △ ● ○ ●  
RFR25% TA 0%4143  
■ ▲ △ ● ○ ●  
RFR25% TA 0%4134  
■ ▲ △ ● ○ ●  
RFR25% TA 0%4144  
■ ▲ △ ● ○ ●  
RFR25% TA 0%

## Group 29



2901  
■ □  
8902% TA 2%

2911  
■ □  
8929% TA 2%

2921  
■ □  
8929% TA 9%



2902  
■ □  
8929% TA 8%

2912  
■ □  
8929% TA 9%

2922  
■ □  
8948% TA 9%



2903  
■ □  
8945% TA 2%

2913  
■ □  
8948% TA 9%

2923  
■ □  
8959% TA 2%



2904  
■ □  
8948% TA 9%

2914  
■ □  
8959% TA 9%

2924  
■ □  
8959% TA 2%

## Group 31



3101  
■ □  
8929% TA 2%

3111  
■ □  
8929% TA 9%

3121  
■ □  
8945% TA 9%



3102  
■ □  
8929% TA 9%

3112  
■ □  
8945% TA 2%

3122  
■ □  
8929% TA 7%



3103  
■ □  
8945% TA 9%

3113  
■ □  
8929% TA 9%

3123  
■ □  
8929% TA 6%



3104  
■ □  
8959% TA 2%

3114  
■ □  
8948% TA 9%

3124  
■ □  
8929% TA 2%

## Group 33



3301  
■ □  
8929% TA 2%

3311  
■ □  
8948% TA 9%

3321  
■ □  
8929% TA 9%



3302  
■ □  
8948% TA 9%

3312  
■ □  
8948% TA 2%

3322  
■ □  
8929% TA 2%



3303  
■ □  
8929% TA 9%

3313  
■ □  
8929% TA 9%

3323  
■ □  
8929% TA 9%



3304  
■ □  
8929% TA 9%

3314  
■ □  
8929% TA 2%

3324  
■ □  
8929% TA 9%

## Group 30



3001  
■ □  
8929% TA 9%

3011  
■ □  
8929% TA 2%

3021  
■ □  
8945% TA 9%



3002  
■ □  
8929% TA 2%

3012  
■ □  
8945% TA 2%

3022  
■ □  
8959% TA 2%



3003  
■ □  
8945% TA 9%

3013  
■ □  
8929% TA 9%

3023  
■ □  
8948% TA 9%



3004  
■ □  
8959% TA 9%

3014  
■ □  
8959% TA 9%

3024  
■ □  
8929% TA 2%

## Group 32



3201  
■ □  
8929% TA 9%

3211  
■ □  
8929% TA 9%

3221  
■ □  
8929% TA 9%



3202  
■ □  
8959% TA 9%

3212  
■ □  
8945% TA 2%

3222  
■ □  
8929% TA 9%



3203  
■ □  
8945% TA 9%

3213  
■ □  
8935% TA 9%

3223  
■ □  
8929% TA 9%



3204  
■ □  
8929% TA 9%

3214  
■ □  
8929% TA 2%

3224  
■ □  
8929% TA 9%

## Group 34



3401  
■ □  
8945% TA 2%

3411  
■ □  
8959% TA 9%

3421  
■ □  
8948% TA 9%



3402  
■ □  
8959% TA 9%

3412  
■ □  
8948% TA 2%

3422  
■ □  
8929% TA 9%



3403  
■ □  
8948% TA 2%

3413  
■ □  
8929% TA 9%

3423  
■ □  
8929% TA 2%



3404  
■ □  
8929% TA 9%

3414  
■ □  
8948% TA 9%

3424  
■ □  
8929% TA 9%

## Group 23

2301  
■ ▲ ● ○ □  
P902% TA 30%2311  
■ ▲ ● ○ □  
P918% TA 32%2321  
■ ▲ ● ○ □  
P934% TA 34%2300  
■ ▲ ● ○ □  
P941% TA 32%2312  
■ ▲ ● ○ □  
P956% TA 32%2322  
■ ▲ ● ○ □  
P972% TA 31%2303  
■ ▲ ● ○ □  
P953% TA 33%2313  
■ ▲ ● ○ □  
P969% TA 33%2323  
■ ▲ ● ○ □  
P985% TA 32%2304  
■ ▲ ● ○ □  
P967% TA 31%2314  
■ ▲ ● ○ □  
P981% TA 28%2324  
■ ▲ ● ○ □  
P997% TA 26%

## Group 25

2501  
■ ▲ ● ○ □  
P902% TA 30%2511  
■ ▲ ● ○ □  
P920% TA 32%2521  
■ ▲ ● ○ □  
P940% TA 34%2502  
■ ▲ ● ○ □  
P928% TA 31%2512  
■ ▲ ● ○ □  
P946% TA 33%2522  
■ ▲ ● ○ □  
P964% TA 31%2503  
■ ▲ ● ○ □  
P936% TA 31%2513  
■ ▲ ● ○ □  
P952% TA 33%2523  
■ ▲ ● ○ □  
P969% TA 31%2504  
■ ▲ ● ○ □  
P944% TA 31%2514  
■ ▲ ● ○ □  
P960% TA 28%2524  
■ ▲ ● ○ □  
P976% TA 26%

## Group 27

2701  
■ ▲ ● ○ □  
P902% TA 30%2711  
■ ▲ ● ○ □  
P920% TA 32%2721  
■ ▲ ● ○ □  
P938% TA 34%2702  
■ ▲ ● ○ □  
P930% TA 31%2712  
■ ▲ ● ○ □  
P948% TA 33%2722  
■ ▲ ● ○ □  
P966% TA 31%2703  
■ ▲ ● ○ □  
P940% TA 31%2713  
■ ▲ ● ○ □  
P958% TA 33%2723  
■ ▲ ● ○ □  
P976% TA 31%2704  
■ ▲ ● ○ □  
P950% TA 30%2714  
■ ▲ ● ○ □  
P968% TA 28%2724  
■ ▲ ● ○ □  
P986% TA 26%

## Group 24

2401  
■ ▲ ● ○ □  
P902% TA 30%2411  
■ ▲ ● ○ □  
P920% TA 32%2421  
■ ▲ ● ○ □  
P938% TA 34%2402  
■ ▲ ● ○ □  
P936% TA 32%2412  
■ ▲ ● ○ □  
P954% TA 32%2422  
■ ▲ ● ○ □  
P972% TA 30%2403  
■ ▲ ● ○ □  
P944% TA 31%2413  
■ ▲ ● ○ □  
P962% TA 33%2423  
■ ▲ ● ○ □  
P980% TA 31%2404  
■ ▲ ● ○ □  
P952% TA 31%2414  
■ ▲ ● ○ □  
P970% TA 28%2424  
■ ▲ ● ○ □  
P988% TA 26%

## Group 26

2601  
■ ▲ ● ○ □  
P902% TA 30%2611  
■ ▲ ● ○ □  
P920% TA 32%2621  
■ ▲ ● ○ □  
P938% TA 34%2602  
■ ▲ ● ○ □  
P928% TA 31%2612  
■ ▲ ● ○ □  
P946% TA 33%2622  
■ ▲ ● ○ □  
P964% TA 31%2603  
■ ▲ ● ○ □  
P936% TA 31%2613  
■ ▲ ● ○ □  
P954% TA 33%2623  
■ ▲ ● ○ □  
P972% TA 31%2604  
■ ▲ ● ○ □  
P944% TA 31%2614  
■ ▲ ● ○ □  
P962% TA 28%2624  
■ ▲ ● ○ □  
P980% TA 26%

## Group 28

2801  
■ ▲ ● ○ □  
P902% TA 30%2811  
■ ▲ ● ○ □  
P920% TA 32%2821  
■ ▲ ● ○ □  
P938% TA 34%2802  
■ ▲ ● ○ □  
P930% TA 31%2812  
■ ▲ ● ○ □  
P948% TA 33%2822  
■ ▲ ● ○ □  
P966% TA 31%2803  
■ ▲ ● ○ □  
P940% TA 31%2813  
■ ▲ ● ○ □  
P958% TA 33%2823  
■ ▲ ● ○ □  
P976% TA 31%2804  
■ ▲ ● ○ □  
P950% TA 31%2814  
■ ▲ ● ○ □  
P968% TA 28%2824  
■ ▲ ● ○ □  
P986% TA 26%



## Group 17



1701  
 8978% TA 30%  
 1711  
 8921% TA 30%  
 1721  
 8937% TA 30%



1702  
 8933% TA 30%  
 1712  
 8928% TA 30%  
 1722  
 8932% TA 30%



1703  
 8925% TA 30%  
 1713  
 8929% TA 30%  
 1723  
 8949% TA 30%



1704  
 8945% TA 30%  
 1714  
 8949% TA 30%  
 1724  
 8938% TA 30%

## Group 19



1901  
 8973% TA 30%  
 1911  
 8932% TA 30%  
 1921  
 8926% TA 30%



1902  
 8924% TA 30%  
 1912  
 8922% TA 30%  
 1922  
 8923% TA 30%




1903  
 8922% TA 30%  
 1913  
 8936% TA 30%  
 1923  
 8919% TA 30%



1904  
 8945% TA 30%  
 1914  
 8946% TA 30%  
 1924  
 8935% TA 30%

## Group 21



2101  
 8913% TA 30%  
 2111  
 8928% TA 30%  
 2121  
 8923% TA 30%



2102  
 8922% TA 30%  
 2112  
 8925% TA 30%  
 2122  
 8928% TA 30%



2103  
 8922% TA 30%  
 2113  
 8948% TA 30%  
 2123  
 8945% TA 30%



2104  
 8941% TA 30%  
 2114  
 8925% TA 30%  
 2124  
 8927% TA 30%

## Group 18



1801  
 8978% TA 30%  
 1811  
 8921% TA 30%  
 1821  
 8922% TA 30%



1802  
 8933% TA 30%  
 1812  
 8921% TA 30%  
 1822  
 8941% TA 30%



1803  
 8925% TA 30%  
 1813  
 8946% TA 30%  
 1823  
 8917% TA 30%



1804  
 8945% TA 30%  
 1814  
 8925% TA 30%  
 1824  
 8937% TA 30%

## Group 20



2001  
 8973% TA 30%  
 2011  
 8921% TA 30%  
 2021  
 8922% TA 30%



2002  
 8924% TA 30%  
 2012  
 8926% TA 30%  
 2022  
 8944% TA 30%



2003  
 8922% TA 30%  
 2013  
 8932% TA 30%  
 2023  
 8917% TA 30%



2004  
 8945% TA 30%  
 2014  
 8946% TA 30%  
 2024  
 8937% TA 30%

## Group 22



2201  
 8921% TA 30%  
 2211  
 8936% TA 30%  
 2221  
 8928% TA 30%



2202  
 8922% TA 30%  
 2212  
 8925% TA 30%  
 2222  
 8947% TA 30%



2203  
 8922% TA 30%  
 2213  
 8946% TA 30%  
 2223  
 8945% TA 30%



2204  
 8945% TA 30%  
 2214  
 8925% TA 30%  
 2224  
 8927% TA 30%

**Orange (neutral) color group.** Includes the warmest colors in the color wheel and the lightest and darkest colors in the color wheel. Not as vibrant as reds, oranges, or yellows. Neutral colors are considered the base for secondary colors and, with blue, are the primary colors.

Neutrals often are combined with vibrant colors to add contrast. Neutrals are also used to separate the vibrant colors. Neutrals are considered light and dark. The only neutrals that are vibrant are reds and oranges. Neutrals are used in a range of colors to create the base level of contrast and to create a neutral base for other colors.

Like neutrals, vibrant colors are used in a range of colors to create the base level of contrast. Vibrant colors are used in a range of colors to create the base level of contrast. The vibrant colors are used in a range of colors to create the base level of contrast.

Use neutrals to create the base level of contrast. Vibrant colors are used in a range of colors to create the base level of contrast.



**Orange (vibrant) color group.**



**Orange**

- 1 000000
- 2 111111
- 3 222222
- 4 333333
- 5 444444
- 6 555555
- 7 666666
- 8 777777
- 9 888888
- 10 999999
- 11 FFFFFFFF

The vibrant colors are used in a range of colors to create the base level of contrast. Vibrant colors are used in a range of colors to create the base level of contrast.

**The 3 color swatches of the 10 color group.**



Group 11



1101  
R 10.56 Y 12.24 B 1.20

1102  
R 12.51 Y 14.29 B 1.20

1103  
R 14.46 Y 16.34 B 1.20



1104  
R 16.41 Y 18.39 B 1.20

1105  
R 18.36 Y 20.44 B 1.20

1106  
R 20.31 Y 22.49 B 1.20



1107  
R 22.26 Y 24.54 B 1.20

1108  
R 24.21 Y 26.59 B 1.20

1109  
R 26.16 Y 28.64 B 1.20



1110  
R 28.11 Y 30.69 B 1.20

1111  
R 30.06 Y 32.74 B 1.20

1112  
R 32.01 Y 34.79 B 1.20

Group 12



1201  
R 8.44 Y 4.22 B 18.84

1202  
R 10.39 Y 6.27 B 16.89

1203  
R 12.34 Y 8.32 B 14.94



1204  
R 14.29 Y 10.37 B 13.00

1205  
R 16.24 Y 12.42 B 11.05

1206  
R 18.19 Y 14.47 B 9.10



1207  
R 20.14 Y 16.52 B 7.16

1208  
R 22.09 Y 18.57 B 5.21

1209  
R 24.04 Y 20.62 B 3.26



1210  
R 25.99 Y 22.67 B 1.32

1211  
R 27.94 Y 24.72 B 0.37

1212  
R 29.89 Y 26.77 B 0.42

Group 13



1301  
R 3.44 Y 0.22 B 93.34

1302  
R 5.39 Y 2.27 B 91.39

1303  
R 7.34 Y 4.32 B 89.44



1304  
R 9.29 Y 6.37 B 87.50

1305  
R 11.24 Y 8.42 B 85.55

1306  
R 13.19 Y 10.47 B 83.60



1307  
R 15.14 Y 12.52 B 81.66

1308  
R 17.09 Y 14.57 B 79.71

1309  
R 19.04 Y 16.62 B 77.76



1310  
R 20.99 Y 18.67 B 75.82

1311  
R 22.94 Y 20.72 B 73.87

1312  
R 24.89 Y 22.77 B 71.92

Group 14



1401  
R 10.56 Y 12.24 B 1.20

1402  
R 12.51 Y 14.29 B 1.20

1403  
R 14.46 Y 16.34 B 1.20



1404  
R 16.41 Y 18.39 B 1.20

1405  
R 18.36 Y 20.44 B 1.20

1406  
R 20.31 Y 22.49 B 1.20



1407  
R 22.26 Y 24.54 B 1.20

1408  
R 24.21 Y 26.59 B 1.20

1409  
R 26.16 Y 28.64 B 1.20



1410  
R 28.11 Y 30.69 B 1.20

1411  
R 30.06 Y 32.74 B 1.20

1412  
R 32.01 Y 34.79 B 1.20

Group 15



1501  
R 8.44 Y 4.22 B 18.84

1502  
R 10.39 Y 6.27 B 16.89

1503  
R 12.34 Y 8.32 B 14.94



1504  
R 14.29 Y 10.37 B 13.00

1505  
R 16.24 Y 12.42 B 11.05

1506  
R 18.19 Y 14.47 B 9.10



1507  
R 20.14 Y 16.52 B 7.16

1508  
R 22.09 Y 18.57 B 5.21

1509  
R 24.04 Y 20.62 B 3.26



1510  
R 25.99 Y 22.67 B 1.32

1511  
R 27.94 Y 24.72 B 0.37

1512  
R 29.89 Y 26.77 B 0.42

Group 16



1601  
R 3.44 Y 0.22 B 93.34

1602  
R 5.39 Y 2.27 B 91.39

1603  
R 7.34 Y 4.32 B 89.44



1604  
R 9.29 Y 6.37 B 87.50

1605  
R 11.24 Y 8.42 B 85.55

1606  
R 13.19 Y 10.47 B 83.60



1607  
R 15.14 Y 12.52 B 81.66

1608  
R 17.09 Y 14.57 B 79.71

1609  
R 19.04 Y 16.62 B 77.76



1610  
R 20.99 Y 18.67 B 75.82

1611  
R 22.94 Y 20.72 B 73.87

1612  
R 24.89 Y 22.77 B 71.92