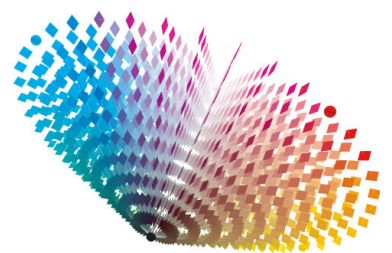


Stockholm, 15 February 2021

# NCS PRE-ORDER PRODUCTION 2016 Quality Results Index

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## NCS Pre-Order 2016

To ensure a high quality and problem-free colour communication process, NCS Colour AB in Stockholm has set up the NCS Quality Centre, which guarantees and documents its work in order to provide accurate colour products to meet various professional needs. NCS Quality Management ensures that the NCS samples are produced with EU-approved pigments and according to the primary standard on global-leading colour accuracy and consistency.

All productions of NCS Colour Cards are rigorously checked, controlled and certified by the NCS Quality Centre to ensure that the final products have the perfect colour appearance. The target for the colour matching is a tolerance below  $0.3 \Delta E_{CMC(1:1)}$  to ensure the best final result. The final result is always controlled on random samples.

Each production of certified NCS Original or customized colour tools is documented. This report includes graphs for the quality outcome of this specific production. Please note that shown results are from the final production.

For the final products, NCS Quality Centre has launched three clear quality levels to meet professional requirements: NCS Calibrated Matching Standards, NCS Quality Level 1 and NCS Quality Level 2.

The production have achieved exceptionally good result. 99.7% of the colours have a maximum deviation of  $0.6 \Delta E$  and 73.2% less than  $0.3 \Delta E$ .

We are proud to be able to say that we can offer you the best quality on the market that ensures your quality, colour communication and your customer trust and confidence.

Please note that NCS - Natural Colour System<sup>®©</sup> is a registered trademark and may only be used commercially after a license agreement has been signed with NCS Colour AB.

*Controlled and Certified,*

A handwritten signature in black ink that reads 'Anders Nilsson'.

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Anders Nilsson  
NCS Quality Centre Manager



### **NCS Primary Standards**

A set of well-defined deep-frozen unique NCS Primary Standards has been developed and kept at NCS Quality Centre. The NCS Primary Standards are checked annually, and the readings are stored and form the base for the production and control of any further NCS Calibrated Matching Standards and for the control of any quality assured production.

### **NCS Calibrated Matching Standards**

NCS Calibrated Matching Standards are commercially available from NCS Quality Centre for customers and with the highest level of quality in 1950 NCS Calibrated Colour Samples!

In NCS Calibrated Matching Standards each colour standard sample is individually measured, checked and calibrated by the NCS Quality Centre on the date of sale. Differences from the unique NCS Primary Standard are specified on each sample. Guarantees are given for world-leading minimum tolerances, with a deviation of less than 0.5  $\Delta E$ . (Mean value of 0.27  $\Delta E$  through the years)

### **NCS Quality Level 1**

Professional working tools for industry, research and design.

Tolerances:

80%  $\Delta E < 0.6$

100%  $\Delta E < 1.0$

Gloss 15-20

Recent years' results in practice: 99.9%  $< \Delta E 0.6$

### **NCS Quality Level 2**

Fans, take-away cards.

Tolerances:

70%  $\Delta E < 0.6$

90%  $\Delta E < 1.0$

100%  $\Delta E < 1.5$

Gloss 13-22

Recent years' results in practice: 99.8 %  $< \Delta E 0.6$

### **Light sources: D65, A, F11**

All evaluation of colour differences is done in the three light sources D65, A and F11. D65 is standard daylight, A is tungsten light and F11 is a representative three-band fluorescent light.

### **Measurement Conditions**

Measurement values are evaluated according to CIE 15:2004. Measurement geometry  $di:8^\circ$  (diffuse illumination, specular component included), UV component included, readings every 10 nm from 360 to 750 nm. All  $\Delta E$  values are calculated according to CMC (1:1) in accordance with BS 6923:1988. NCS S 0500-N (white) is used as a sample backing in reflectance measurement. Standard light sources used are D65, A and F11 (CIE 15:2004). Gloss measurements in accordance to ISO 2813,  $60^\circ$ .

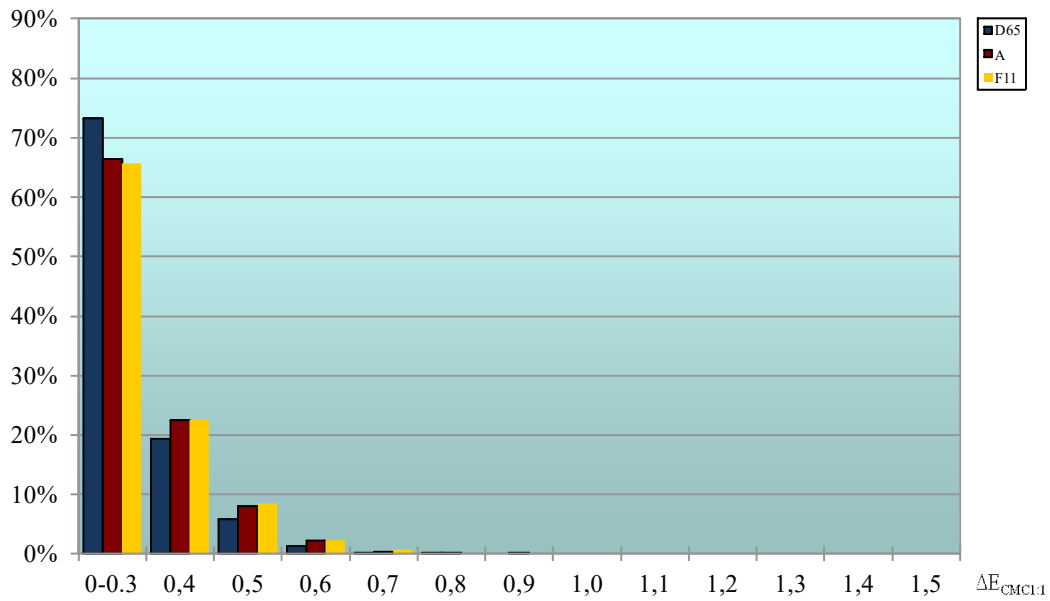
### **Controlled and Certified**

Products that are controlled by NCS Quality Centre and meet all the NCS Quality Management requirements may be marked with the "Controlled and Certified" symbol.

# Production Results

## Index, QL2 2016

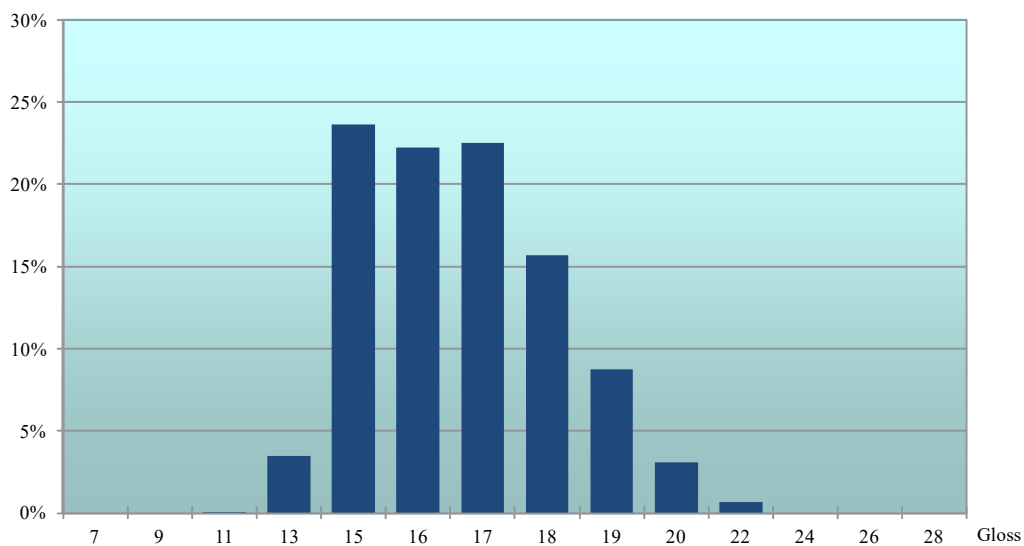
Difference between production and the NCS Primary standard, colour accuracy



| NCS Quality Level 2 2016 (Index) |            |          |            |
|----------------------------------|------------|----------|------------|
| $\Delta E_{CMC(1:1)}$            | <i>D65</i> | <i>A</i> | <i>F11</i> |
| 0-0.6                            | 99,7%      | 99,2%    | 99,0%      |
| 0.6-1.0                          | 0,3%       | 0,8%     | 1,0%       |
| 1.0-1.5                          | 0,0%       | 0,0%     | 0,0%       |
| <b>Sum:</b>                      | 100,0%     | 100,0%   | 100,0%     |

## Index, QL2 2016

### Gloss accuracy



| Gloss NCS Quality Level 2 2016 (Index) |                 |            |
|--|-----------------|------------|
| <i>Gloss</i>                           | <i>Fraction</i> | <i>Aim</i> |
| 7                                      | 0,0%            |            |
| 9                                      | 0,0%            |            |
| 11                                     | 0,1%            |            |
| 13                                     | 3,5%            | x          |
| 15                                     | 23,6%           | x          |
| 16                                     | 22,2%           | x          |
| 17                                     | 22,5%           | x          |
| 18                                     | 15,7%           | x          |
| 19                                     | 8,8%            | x          |
| 20                                     | 3,1%            | x          |
| 22                                     | 0,7%            | x          |
| 24                                     | 0,0%            |            |
| 26                                     | 0,0%            |            |
| 28                                     | 0,0%            |            |
| 30                                     | 0,0%            |            |
| summa                                  | 100%            |            |