Technical information

Hesse Lignal
inspiring you

Hesse GmbH & Co. KG, Warendorfer Str. 21, D 59075 Hamm
www.hesse-lignal.de

General: Colour uniformity on different components

Description/features:

There are various aspects that need to be considered when the colours of different parts have to match. Difficulties arise in particular when

a) production occurs in different production facilities

b) different substrates are involved

c) different types of lacquers or stains are being applied

d) different application processes are being used

e) an item is being produced in addition to existing products

f) coatings have to match with foils or prints

g) lacquers made by different manufacturers are being used

h) there is a lack of quality control

i) assessment of colour uniformity is subjective.

So how can good colour results be achieved?

a) Agreement regarding the correct target colour tone is crucial if the work is being carried out **at different locations**. In this case it is advisable to create a physical test sample that can be used for colour tone adjustment and quality assurance. This test specimen should be inspected at regular intervals and be stored protected from yellowing.

b) The condition of substrates often has an impact on the colour tone. This needs to be reviewed and different colours may need to be configured for **different substrates**. This applies equally to colour lacquers and to coloured oils and stains.

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c) The lacquers must be matched to one another if **different surface systems are being combined** (such as colour lacquer surfaces involving HYDRO and PU lacquer). Selection merely based on collection number (RAL, NCS, …) is insufficient in such cases, because the different lacquer systems use different pigment systems. This can result in deviations in colour tone or in metamerism.
The same also applies to stain systems, here too the raw materials that are used have different colour properties. Achieving good colour uniformity requires the colouring lacquers, stains and oils to be formulated to match each other.

d) The same also applies to **different application methods**. A different coat thickness, different gloss level, different surface quality or different colour tone formation may necessitate coordinated selection of the colour tone.
Surfaces coated with a clear top coat should also not be combined with surfaces without a top coat.

e) Depending on the quality requirement, samples of the colour tone may need to be prepared if an item is to be produced **in addition to existing components**.

f) **Foils and printed substrates** are produced using other processes and colouring components. They often have minimal application quantities, are translucent and exhibit a different metamerism than colour lacquer or wood surfaces. This makes it difficult to achieve the optically equivalent reproduction of a colour tone. Excellent colour adjustment is required. It is not always possible to obtain optical equivalence.

g) Using **colour lacquers from different manufacturers** can result in colour differences, since the respective manufacturer may use different test templates for colour testing and different formulations. Here too it is advisable for all parties involved to agree on a binding sample.
The same is true when lacquers **produced directly by Hesse** are to me combined with lacquers **produced by its dealers**, or if different methods are used for lacquer production.

h) Each producer is responsible for complying with the quality standards. Colour differences can be prevented by means of **quality assurance** during production of the coatings, as well as prior to and during the process of coating the components.

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i) The same conditions must prevail to attain a proper **assessment of colours**. Many influencing factors including light type/metamerism, distance and viewing angle play an important role. Corresponding standards should therefore be observed.
Colorimetry devices are aids that are often used. Here, too, there are different qualities of devices in different price ranges and they may use different processes.
These devices often help in the assessment, but they also have special features. The employee needs to be intensely familiar with the topic, in particular the comparability of values determined using different devices, as well as the values that sometimes deviate from a visual impression.

Note:
This information is purely advisory and is based on the best knowledge available after careful research in line with current state of the art technology. It is not legally binding. We also refer you to our Terms and Conditions.
The material safety data sheet as per regulation (EC) No. 1907/2006 is available.