



**Hesse Lignal**  
inspiring you

# Glass coating

Insights into aspects of coating glass



In addition to the conventional satin finishes, today's glass coatings offer custom surface solutions for virtually all interior areas



# Modern glass coatings for numerous application arease

This is a glass coating brochure issued by Hesse GmbH & Co. KG. We aim to use this brochure to provide you with an insight into aspects of coating glass, and in particular the coating of sheet glass. What options do you have when coating glass? What are the highlights and the limitations?

We will gladly assist you with your implementation. We will advise you on the coating products and lacquer systems that Hesse can offer to successfully realise the coating of glass.

We willgive you an overview of the various application techniques that can be used to coat sheet glass, both by craftspeople and in industry.

Should you have further questions on this topic, or if you want to know what else Hesse has to offer, then please contact your local Hesse sales representative or use the Hesse service hotline. You can reach our service hotline on +49 (0)2381 963 846 or via e-mail to [service@hesse-lignal.de](mailto:service@hesse-lignal.de).



# Our mission

We are Hesse Lignal. We develop and produce sustainable and functional lacquers and stains that create innovative indoor surfaces and we offer our customers pioneering consultancy and coating services. We don't consider lacquers and stains to be just technical products – they play a role in creating harmonious surface finishes and in moving the observer emotionally. Our mission is to be the most reliable, competent and inspiring partner to our industrial customers and those providing craftsmanship.

We are a medium-sized family business, so our staff also consider us to be an attractive employer. In over a century of corporate history, we have developed a value system that shapes our Hesse philosophy and influences the way our staff work.



**» Our conviction is that the world becomes more welcoming when we finish surfaces to create an impressive experience in rooms and on objects. «**



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# Glass coatings

Recent years have seen a clear trend towards the use of more glass in indoor and outdoor areas. Architects and designers enjoy greater opportunities with glass than they would with any other building material. Glass is translucent, clear and at the same time has good resistance to weathering. Both its chemical and mechanical resistance are moreover high. This means that glass is increasingly being used in interior and exterior areas.

One way of treating glass is to coat its surface. The options here include selecting an opaque lacquer layer in all possible colour variants or a clear lacquer layer, potentially in combination with a variety of effects. The opportunities are numerous and often very decorative, but they can also be extremely functional.



**» Adding a coating to the glass surface or applying different surface treatments considerably extends the opportunities for using glass. «**





# Functional uses

One example of functional use is as splashbacks for kitchens. Using a pane of glass whose rear surface has been coated with lacquer creates a high gloss splashback that is easy to thoroughly clean. Any desired colour tone can be applied to the splashback.

Another, increasingly popular use is adding a screen print. More and more glass is being equipped with a digital print that is very decorative, but is unable to withstand mechanical and chemical demands. One only needs to think of scratches caused by use, and of damage to a glass door or partition caused by the likes of hand perspiration. Coating the screen print with a clear lacquer layer prevents the print from being damaged.

Fire protection can be another reason for using glass wall panelling. The non-combustibility of glass and the fire-resistant properties of our glass colour lacquer have resulted in Hesse PU Glass Colour lacquer DB 4210x(gloss level)-(colour tone) being classified by independent testing institutes as having a fire rating of A2-s1, d0 (practically non-flammable) according to DIN EN 13501-1.



# Decorative uses

Glass panels in all possible colours and glass with a metallic lacquer or one of the many other effect lacquers can be used to create the most fantastic and decorative surfaces. These glass panels can be used as wall panelling or partitions in residential properties, offices and public buildings.



**» Using treated glass in combination with LED lighting enables spectacular creations to be produced, which can also be used in shopfitting, exhibition halls and trade fair construction. «**

# The inherent colour of glass

Glass has an inherent colour even though it is transparent. A small amount of iron oxide in glass produces a greenish hue. The thicker the glass, the more clearly this can be seen. It becomes most obvious when looking at the edge of a pane of glass. You can however choose low-iron glass instead of the usual float glass.



The difference between normal float glass and low-iron glass

In the case of low-iron glass, the proportion of iron oxide has been significantly reduced to around 1 percent. It is the crystal clear version of float glass, also known under the (brand) name Optiwhite glass. Yet even low-iron glass is not totally colourless – a small green tinge is still present.

We must take this inherent colour of the glass into account when we coat glass with a colour lacquer and then judge the colour through the glass. This green tinge will influence the colour tone. It is therefore always advisable to use low-iron glass as the substrate for glass coating.

Taking the inherent glass colour into account when configuring the colour tone for a glass coating will require a sample of the glass that is to be used..



# Hesse Glass lacquers

As a leading provider of interior lacquers, Hesse naturally also has a wide range of glass coatings. Hesse has not restricted itself to a single technology in developing its glass coating range. Our glass coatings were developed based both on conventional technology as well as on aqueous and also UV technology to cover as wide a spectrum of glass coating situations as possible. These technologies were used to develop multiple types of glass coating, such as sealers, colour lacquers, top coats and effect lacquers.

## Organic coating

Coating glass using organic Hesse lacquers has several advantages compared to the use of solid coloured glass or the use of ceramic colour layers.

Hesse colour mixing systems simplify the mixing of colours. This has the major benefit that customers have very flexible access to almost all glass colours. Producing small amounts for small series or even the coating of individual parts is possible at no extra charge. This is in contrast to ceramic staining, whereby a limited range of colours is available and which is only viable in large amounts.

The coating properties of Hesse Glass lacquers are moreover significantly better. Coverage with Hesse Colour lacquers is complete in places where ceramic staining leaves a certain transparency.

Applying organic lacquers is also much easier than ceramic staining. The well-known lacquer application methods can be used for the lacquer and there is no need for special equipment to achieve complete hardening of the lacquer layer.

Hesse Glass lacquers are especially light fast and resistant to chemicals and water, which makes them suitable for a wide variety of uses – such as in kitchens, shower cubicles, shop windows, entrance areas and some outdoor applications.



**» The most pleasing effects can be achieved using combinations of glass coating and laser etching. «**

## Modern water-based Hesse Glass lacquers

In addition to developments in the well-known area of conventional lacquers, Hesse is also introducing substantial developments in its more modern coating products, where eco-friendliness, sustainability and personal safety play an important role.

There is for instance a water-based coating range for glass whose quality has more than proven itself in recent years. Replacing volatile organic compounds (VOC) with water has many benefits, such as:

- They are almost odourless during application and drying
- They are low-emission in the sense of the VOC/Decopaint Directive There is therefore a minimum of VOC emissions during the entire processing phase
- The minimal proportion of system-related solvents means that our special water-based coatings (with a VOC content < 3%) even meet the VOC requirements stipulated in public tenders
- Our liquid water-based lacquer is neither highly flammable nor combustible (no danger of ignition during processing!) and is therefore not a hazardous material This may have a positive impact on the required explosion protection, permitted storage quantities and possibly even on insurance premiums

### Aromatics-free

Hesse HYDRO Glass lacquers do not contain any aromatic hydrocarbons (benzene, toluene, xylene, etc.).

### Isocyanate-free

Our water-based glass coatings have moreover been developed as a fully isocyanate-free glass coating range. The hardening process for our HYDRO glass coatings uses an isocyanate-free cross-linker rather than an isocyanate-based hardener. Their adverse health effects mean that isocyanates are increasingly and where technically possible being excluded from coatings, foams and adhesives.

## Modern radiation-curing Hesse Glass lacquers

We distinguish between two main techniques for radiation-curing glass coatings:

- Conventional UV lacquers
- Excimer-curing UV lacquers

Radiation-curing coatings are nothing new, but excimer technology is. Radiation-curing coatings have some important advantages over other curing techniques. UV glass coatings are practically solvent-free and have a solids content of almost 100 %, so are very eco-friendly. Renewable raw materials are moreover used in some cases.

UV curing also has a lower energy demand compared to other industrial production technologies. Very rapid thorough curing significantly shortens production times. Parts can be processed or packaged immediately after UV curing and large drying rooms are not required. Material usage is furthermore low, because the layer thicknesses are small and the rollers' application efficiency is very high.

# Excimer-curing

Excimer-curing produces a very scratch resistant surface. This scratch resistance is of course of great advantage when it comes to surfaces that are subject to heavy mechanical demands, as is the case with doors and partitions.



# Product range

## Glass cleaner

Glass has to be cleaned before it is coated. Glass becomes soiled during the production processes and especially in the further processing of the glass panels. This soiling consists mainly of dust and grease. It cannot simply be removed using a clean cloth, but requires a proper cleaning agent to which the dust adheres and that dissolves the grease. Hesse has developed special glass cleaner for this. A special glass cleaner for the polyurethane range (Hesse Cleaning thinner ZD 101) and a special cleaner for the HYDRO range (Hesse Cleaning agent HS 6601) have been developed to ensure optimal adhesion of the respective lacquer types to the glass. It is advisable to only use glass cleaner approved by Hesse. Investigations have revealed that using the wrong cleaning agent can result in delamination of the coating.

## Glass sealers

Glass sealers are very clear, non-yellowing lacquers that act as a bonding layer on glass. Other lacquers that have less inherent capacity to bond to glass can then be applied over the glass sealer. Using the correct glass sealer as a bonding layer enables almost every lacquer to be applied on a glass surface.

## Glass colour lacquer

Glass colour lacquers are used to apply an opaque colour lacquer coating on glass. They are generally applied to the rear of the glass. The visible surface is then the face of the glass. This enables a high-gloss surface with high chemical and mechanical resistance to be achieved. Well-known examples of such use are coated glass kitchen splashbacks.

## Clear glass coatings

Clear glass coatings can be used if the normal gloss level of glass is perceived to be too high and a satin gloss or even matt surface is preferable. Should the glass surface be too reflective or have a mirror effect, this can also be resolved using a clear glass coating.

A further use is the finishing of a screen print. Digital printing, even on glass, is an increasingly common phenomenon. Finishing the face of the screen print with a clear lacquer means the print on the glass remains visible from both sides.

## Glass effect coatings

Well-known effect lacquers on glass include lacquers that imitate satin, etched or sandblasted effects. Glass coatings are also available as metallic lacquers in a wide variety of finishes.

# The Hesse glass coating range

| Glass sealer                                                                 |      | Mixing information                 |  |
|------------------------------------------------------------------------------|------|------------------------------------|--|
| HYDRO Adhesion primer HDG 5701                                               |      | 100 : 3 HYDRO Crosslinker HDR 5002 |  |
| PU Special sealer DG 4749                                                    |      | 10 : 3 PU Hardener DR 4076-0001    |  |
| UV Adhesion primer UG 7007                                                   |      | 100 : 1 UV Additive UZ 7777        |  |
| Glass colour lacquer                                                         |      | Mixing information                 |  |
| HYDRO-PU Glass colour lacquer HDB 57485-(colour                              |      | 100 : 3 HYDRO Crosslinker HDR 5002 |  |
| PU Glass colour lacquer DB 42105-(colour tone)                               |      | 5 : 1 PU Hardener DR 4076-0001     |  |
| PU Glass colour lacquer DB 42395-(colour tone)                               |      | 5 : 1 PU Hardener DR 4076-0001     |  |
| Clear glass coatings                                                         |      | Mixing information                 |  |
| HYDRO-PU Glass lacquer HDU 57109                                             |      | 100 : 3 HYDRO Crosslinker HDR 5002 |  |
| PU Glass lacquer DE 4259x(gloss level)-0040                                  |      | 5 : 1 PU Hardener DR 4076-0001     |  |
| Metallic Glass lacquers                                                      |      | Mixing information                 |  |
| HYDRO-PU Glass colour lacquer HDB 57415-(metallic colour                     |      | 100 : 3 HYDRO Crosslinker HDR 5002 |  |
| CREATIVE-METALLIC DB 4655x(gloss level)-(colour tone)                        |      | 5 : 1 PU Hardener DR 4076-0001     |  |
| PU Metallic Glass lacquer DB 42074-(colour tone)                             |      | 5 : 1 PU Hardener DR 4076-0001     |  |
| Glass effect coatings                                                        |      | Mixing information                 |  |
| HYDRO-PU Glass lacquer HDU 57120 (satin effect)                              |      | 100 : 3 HYDRO Crosslinker HDR 5002 |  |
| HYDRO-PU Glass lacquer HDU 57260 (etched effect)                             |      | 100 : 3 HYDRO Crosslinker HDR 5002 |  |
| HYDRO-PU Glass lacquer HDU 57270 (sandblast effect)                          |      | 100 : 3 HYDRO Crosslinker HDR 5002 |  |
| Textured PU colour lacquer for glass coating DB 46712-(colour tone) (fine)   |      | 5 : 1 PU Hardener DR 4076-0001     |  |
| Textured PU colour lacquer for glass coating DB 45762-(colour tone) (medium) |      | 5 : 1 PU Hardener DR 4076-0001     |  |
| PU Mirror lacquer DB 46334-M0966                                             |      | 25 : 1 PUR Härter DR 4076-0002     |  |
| Glass additives and auxiliaries                                              |      | Glass cleaner                      |  |
| HYDRO Crosslinker HDR 5002                                                   | 3 %  | Cleaner HS 6601                    |  |
| Glass lacquer additive EL 460-0025                                           | 5 %  | Cleaning thinner ZD 101            |  |
| PU Hardener DR 4076-0001                                                     | 20 % |                                    |  |
| PU Hardener DR 4076-0002                                                     | 4 %  |                                    |  |
| UV Additive UZ 7777                                                          | 1 %  |                                    |  |

■ HYDRO product range
 ■ PU product range
 ■ UV product range

The lacquers on this list can be applied directly onto glass. Other lacquers can also be used to create a glass coating if one of the named adhesion bases is applied in advance. See for instance UV Finish Nos. 16 and 17 in the "Finishes" section. In addition to these general glass coatings, there are also customer-specific glass coatings for industrial use.

Please contact your local Hesse sales representative or the Hesse service hotline if you would like a glass coating for a specific application. You can reach our service hotline on +49 (0)2381 963 846 or via e-mail to [service@hesse-lignal.de](mailto:service@hesse-lignal.de).

# Functional uses

Glass coatings can be processed in different ways.

## Spraying

Craftspeople generally use a spray gun to apply the glass coating. This technique allows great flexibility. Small series or individual parts can be efficiently coated and even three-dimensional shapes are easy to coat. One aspect that needs to be considered during manual spraying is the risk of dust incursion. Dust in the lacquer layer will be very unsightly, particularly if the lacquer layer is not completely opaque. Another disadvantage when spraying panes of glass is the need to cover the remaining surfaces before spraying. These surfaces could be soiled by spray fog if this is not done.



## Rollers

Roller coating is a more suitable method for application on large amounts of glass. It enables a consistent quality of the lacquer layer to be more easily achieved. One restriction is that only sheet glass can be coated using rollers. The use of special rollers does however enable some structure in the glass to be simply be coated as well. The use of fast-drying lacquers, such as UV lacquers, and screening of the coating line can prevent dust incursion. Proper adjustment of the rolling line is extremely important, otherwise any sharp edges of the glass panes can damage the lacquer rollers. Damage to a lacquer roller will then be visible in every pane of glass that is coated.



## Curtain coating

Curtain coating using a lacquer curtain coating machine is a technique that can be used at even higher throughput speeds. In addition to the higher throughput speed, another advantage is that the risk of glass breakage in the lacquering unit (with all its consequences for the system and its lacquer stock) is significantly reduced. Even small irregularities in the glass surface do not result in disruption. Textured glass can also be coated by means of curtain coating. One disadvantage is that this application method is not very flexible. Smaller series are unprofitable and changing the lacquer is very labour-intensive.



Our Technical Information describes exactly which application method is suitable for the respective lacquer.

# Testing standards

Hesse Glass lacquers have been extensively tested. Based on the test results and years of practical experience, we have been able to determine which system is suitable for which application. Some of the most important standardized tests for this purpose are:

- Behaviour given chemical demands – DIN 68861-1
- Behaviour with regard to dry heat – DIN 68861-7
- Behaviour with regard to moist heat – DIN 68861-8
- Determination of the light resistance of surfaces – DIN EN 15187
- Adhesion of coating materials – DIN EN ISO 2409
- Determination of resistance against liquids, drip/stain method – DIN EN ISO 2812-4
- Artificial weathering of wood coatings – EN 927-6 UVA-340
- Testing with simulation of saliva – DIN 53160-1
- Testing with simulation of perspiration – DIN 53160-2
- Migration of certain elements – DIN EN 71-3
- Kitchen furniture, moisture climate resistance and AMK 005-1



Outdoor weathering of glass lacquer

\*Q-LAB ultraviolet testing. The QUV accelerated tester exposes materials to alternating cycles of UV light and moisture at controlled, elevated temperatures. It simulates the effects of natural sunlight and artificial irradiance using special fluorescent UV lamps and it simulates dew and rain using condensing humidity and/or water spray.



# Test procedure

Coated glass is also regularly used in the transition zone between indoors and outdoors, so tests were also conducted in relation to outdoor resistance. These included tests to investigate climate change characteristics and water resistance when immersed. Resistance to adhesives containing acetic acid and outdoor weathering on a rack were also investigated.

QUV test surfaces (\*) for testing resistance to UV radiation from sunlight



# Examples of use

Hesse Glass lacquers can be used to create many lacquer systems. This section contains some examples of these lacquer systems and their uses.



## Glass doors with a highly scratch-resistant coating

Doors have to put up with a lot. Mechanical demands from hands with rings, shoes kicking against them and exposure to skin grease and sweat upon contact. Hesse UV Excimer glass coatings are resistant to these.

## UV Glass lacquer for roller application





## Entrance area

Rear glass coating of a glass entrance exposed to sunlight and indirect weathering.

PU Glass colour lacquer for spraying



## Wall cladding

Rear-coated glass panels used as wall cladding in bathrooms. The panels are exposed to water vapour over long periods and are affixed to the wall using glass adhesive.

HYDRO-PU Glass colour lacquer for curtain coating

# Examples of use

## Kitchen doors and splashbacks

A kitchen should be easy to clean. What could be easier to clean than glass? The use of rear glass coating in kitchens is very popular for a reason. For instance using:

UV Glass lacquer for roller application





## Coating of digital printing

Glass coating the rear of a digitally printed glass pane to prevent light penetration. The coating will be exposed to mechanical demands as well as water and water vapour.

HYDRO-PU Glass colour lacquer for spraying



## Tabletop

Rear coating of a glass tabletop. This achieves a high-gloss surface with the resistance of glass.

HYDRO-PU Glass colour lacquer for spraying

# Examples of use

## Shop window

Rear glass coating of a shop window in which the glass coating is exposed to UV radiation from sunlight.

PU Glass colour lacquer for spraying





## Facade glass coating

Glass facade panels coated on the rear with a colourful palette of colours can be used to create inspiring and architectural highlights.

HYDRO-PU Glass colour lacquer for spraying



# Demands

## Use with demand classes

### A | Furniture

Indoor use, rear glass coating, normal furniture demand.

### B | Shower splashbacks

Wall cladding using glass, rear glass coating, demands due to water vapour and condensation.

### C | Shower partitions

Shower cubicle doors and freestanding shower panels, demands due to water, water vapour and also mechanical stress.

### D | Kitchen splashbacks

Wall cladding using glass, rear glass coating, demands due to adhesives.

### E | Door & partition walls

Indoor use of glass doors and walls, mechanical and chemical demands as usual with doors and walls.

### F | Shop windows

Windows coated on the inside. Demand due to sunlight and light mechanical stress during cleaning.

### G | Facade glass

Mechanically affixed, coated on the rear, demand due to moisture and UV radiation from sunlight, no mechanical stress.

| Demands                      | A       | B       | C       | D       | E       | F      | G      |
|------------------------------|---------|---------|---------|---------|---------|--------|--------|
| <b>Coloured</b>              |         |         |         |         |         |        |        |
| HYDRO                        | 1       | 1       | 1       | 1       | 1       | 1      | 1      |
| PU                           | 6, 7, 8 | 6, 7, 8 | 6, 7, 8 | 6, 7, 8 | 6, 7, 8 | 6, 7   | 6, 7   |
| UV                           | 13, 14  |         |         | 13, 14  |         |        |        |
| <b>Clear and transparent</b> |         |         |         |         |         |        |        |
| HYDRO                        | 2, 3    | 2, 3    | 2, 3    | 2, 3    | 2, 3    | 2, 3   | 2, 3   |
| PU                           | 9, 10   | 9, 10   | 10      | 9, 10   | 9, 10   |        |        |
| UV                           | 15      |         |         |         | 15      |        |        |
| <b>Metallic</b>              |         |         |         |         |         |        |        |
| HYDRO                        | 4       | 4       | 4       | 4       | 4       | 4      | 4      |
| PU                           | 11, 12  | 11, 12  |         | 11, 12  | 11, 12  | 11, 12 | 11, 12 |
| <b>Effects</b>               |         |         |         |         |         |        |        |
| HYDRO                        | 5       | 5       | 5       | 5       | 5       | 5      | 5      |
| UV                           | 16      |         |         |         | 16      |        |        |

\* Figures 1 to 17 denote the various lacquer finished that are described below.

 HYDRO product range

 PU product range

 UV product range

# Finishes

## 1 Water-based colour lacquer system

Cleaning: carefully clean the glass using Hesse Cleaning agent HS 6601. Coating: 1 x 130 - 160 g/m<sup>2</sup> Hesse HYDRO-PU Glass colour lacquer HDB 57485-(colour tone), mixing ratio (by volume) 100 : 3 with Hesse HYDRO Crosslinker HDR 5002, thinning of the mixture using no more than 5 % water. Drying: dry for 24 h / 20 °C or use forced drying (UL, IR drying, cooling) at temperatures up to 80 °C. Ready for mounting or gluing after drying for at least 5 d / 20 °C.

## 2 Water-based clear lacquer system

Cleaning: carefully clean the glass using Hesse Cleaning agent HS 6601. Coating: 1 x 100 - 120 g/m<sup>2</sup> Hesse HYDRO-PUR Glass lacquer HDU 57109 (potentially tinted with a glaze), mixing ratio (by volume) 100 : 3 with Hesse HYDRO Crosslinker HDR 5002, thinning of the mixture using no more than 5 % water, (working viscosity 20 - 25" / DIN 4mm). Drying: dry for 24 h / 20 °C or use forced drying (UL, IR drying, cooling) at temperatures up to 80 °C. Ready for mounting or gluing after drying for at least 5 d / 20 °C.

## 3 Water-based clear lacquer system with adhesion primer

Cleaning: carefully clean the glass using Hesse Cleaning agent HS 6601. Priming: 1 x 100 - 120 g/m<sup>2</sup> Hesse HYDRO Adhesion primer HDG 5701, mixing ratio (by volume) 100 : 3 with Hesse HYDRO Crosslinker HDR 5002, thinning of the mixture using no more than 5 % water. Drying: dry for 24 h / 20 °C or use forced drying (UL, IR drying, cooling) at temperatures up to 80 °C. Possibly apply a decorative print. Recoating: with a suitable Hesse HYDRO-PU Clear lacquer (e.g. HDU 57109). Drying: follow the specifications for the clear lacquer. Ready for mounting or gluing after drying for at least 5 d / 20 °C.

## 4 Water-based metallic lacquer system

Cleaning: carefully clean the glass using Hesse Cleaning agent HS 6601. Coating: 1 x 130 - 160 g/m<sup>2</sup> Hesse HYDRO-PU Glass colour lacquer HDB 57415-(metallic colour tone), mixing ratio (by volume) 100 : 3 with Hesse HYDRO Crosslinker HDR 5002, thinning of the mixture using no more than 5 % water. Drying: dry for 24 h / 20 °C or use forced drying (UL, IR drying, cooling) at temperatures up to 80 °C. Ready for mounting or gluing after drying for at least 5 d / 20 °C

## 5 Water-based effect lacquer system

Cleaning: carefully clean the glass using Hesse Cleaning agent HS 6601. Coating: 1 x 100 - 120 g/m<sup>2</sup> Hesse HYDRO-PU Glass lacquer HDU 57xxx (satin, etched or sandblast effect), mixing ratio (by volume) 100 : 3 with Hesse HYDRO Crosslinker HDR 5002, thinning of the mixture using no more than 5 % water. Drying: dry for 24 h / 20 °C or use forced drying (UL, IR drying, cooling) at temperatures up to 80 °C. Ready for mounting or gluing after drying for at least 5 d / 20 °C.

## 6 Solvent-based colour lacquer system

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Coating: 1 x 130 - 150 g/m<sup>2</sup> Hesse PU Glass colour lacquer DB 42105-(colour tone), mixing ratio (by volume) 5 : 1 with PU Hardener DR 4076-0001, addition of 5 - 10 % Thinner DV 4900 Drying: at least 16 h / 20 °C. Ready for mounting or gluing after drying for at least 5 d / 20 °C.

## 7 Solvent-based FANTASTIC-COLOR colour lacquer system

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Coating: 1 x 130 - 150 g/m<sup>2</sup> Hesse PU Glass colour lacquer DB 42395-(colour tone), which is formulated based on FANTASTIC-COLOR, mixing ratio (by volume) 5 : 1 with Hesse PU Hardener DR 4076-0001, addition of 20 - 25 % Thinner DV 4900. Drying: at least 16 h / 20 °C. Ready for mounting or gluing after drying for at least 5 d / 20 °C.

## 8 Solvent-based colour lacquer system with adhesion primer

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Priming: 1 x 120 - 140 g/m<sup>2</sup> Hesse PU Glass lacquer DE 4259x(gloss level)-0040, mixing ratio (by volume) 5 : 1 with Hesse PU Hardener DR 4076-0001, addition of 5 - 10 % Thinner DV 4994. Drying: at least 16 h / 20 °C. Recoating: with a suitable Hesse PU Colour lacquer, e.g. FANTASTIC-COLOR DB 48885-(colour tone). Drying: follow the specifications for the colour lacquer. Ready for mounting or gluing after drying for at least 7 d / 20 °C.

# Finishes

## 9 Solvent-based clear lacquer system

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Coating: wet-in-wet at 2 x 60 - 80 g/m<sup>2</sup> Hesse PU Glass lacquer DE 4259x(gloss level)-0040 (potentially tinted with a glaze), mixing ratio (by volume) 5 : 1 with Hesse PU Hardener DR 4076-0001, addition of 20 - 30 % Thinner DV 4900. Drying: at least 16 h / 20 °C. Ready for mounting or gluing after drying for at least 5 d / 20 °C.

## 10 Solvent-based clear lacquer system with adhesion primer

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Priming: 1 x 120 - 140 g/m<sup>2</sup> Hesse PU Glass lacquer DE4259x(gloss level)-0040, mixing ratio (by volume) 5 : 1 with Hesse PU Hardener DR 4076-0001, addition of 5 - 10 % Thinner DV 4994. Drying: at least 16 h / 20 °C. Recoating: with a suitable Hesse PU Clear lacquer, e.g. PU Acrylic Brilliant lacquer DU 45229, potentially tinted with a glaze. Drying: follow the specifications for the clear lacquer. Ready for mounting or gluing after drying for at least 7 d / 20 °C.

## 11 Solvent-based metallic lacquer system

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Coating: 1 x 130 - 150 g/m<sup>2</sup> Hesse PU Metallic Glass lacquer DB 4207x(gloss level)-(metallic colour tone), mixing ratio (by volume) 5 : 1 with Hesse PU Hardener DR 4076-0001, addition of 20 - 30 % Thinner DV 4900. Drying: at least 16 h / 20 °C. Ready for mounting or gluing after drying for at least 5 d / 20 °C.

## 12 Solvent-based CREATIVE-METALLIC lacquer system

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Coating: 1 x 130 - 160 g/m<sup>2</sup> Hesse CREATIVE-METALLIC DB 46555-(metallic colour tone), mixing ratio (by volume) 5 : 1 with Hesse PU Hardener DR 4076-0001, addition of thinner depending on colour tone, effect and component at 10 - 40 % Thinner DV 4900. Drying: at least 16 h / 20 °C. Ready for mounting or gluing after drying for at least 5 d / 20 °C.

## 13 Combination system with UV Colour lacquer and PU Adhesion primer

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Priming: roller application of 1 x 10 g/m<sup>2</sup> Hesse PU Special sealer DG 4749, mixing ratio (by volume) 10 : 3 with Hesse PU Hardener DR 4076- 0001. Drying: circulating air,

potentially a jet dryer. Recoating: 3 x 25 g/m<sup>2</sup> with a suitable Hesse UV Colour Top coat for roller coating, e.g. UB 74588-(colour tone). Drying: follow the specifications for the colour lacquer. Ready for mounting or gluing after drying for at least 7 d / 20 °C.

## 14 Radiation-curing colour lacquer system with adhesion primer

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Priming: roller application of 1 x 12 g/m<sup>2</sup> Hesse UV Adhesion primer UG 7007, mixing ratio (by volume) 98 : 1 with Hesse UV Additive UZ 7777. Drying: 1 x 15 m/min HG emitter (gelling). Recoating: 3 x 25 g/m<sup>2</sup> with a suitable Hesse UV Colour Top coat for roller coating, e.g. UB 74588-(colour tone). Drying: follow the complete hardening specifications for the colour lacquer. Ready for mounting or gluing after drying for at least 7 d / 20 °C.

## 15 Radiation-curing clear lacquer system with adhesion primer

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Priming: roller application of 1 x 12 g/m<sup>2</sup> Hesse UV Adhesion primer UG 7007, mixing ratio (by volume) 98 : 1 with Hesse UV Additive UZ 7777. Drying: 1 x 15 m/min HG emitter (gelling). Recoating: 2 x 6 - 8 g/m<sup>2</sup> with a suitable Hesse UV Top coat for roller coating (e.g. UU 7450x(gloss level) clear. Drying: follow the complete hardening specifications for the top coat. Ready for mounting or gluing after drying for at least 7 d / 20 °C.

## 16 Radiation-curing effect lacquer system with adhesion primer

Cleaning: carefully clean and de-grease the glass using Hesse Glass cleaning agent ZD 101. Priming: roller application of 1 x 12 g/m<sup>2</sup> Hesse UV Adhesion primer UG 7007, mixing ratio (by volume) 98 : 1 with Hesse UV Additive UZ 7777. Drying: 1 x 15 m/min HG emitter (gelling). Recoating: 2 x 6 - 8 g/m<sup>2</sup> with a suitable Hesse UV 3D Textured lacquer for excimers (e.g. UU 74191). Drying: follow the complete hardening specifications for the finishing lacquer. Ready for mounting or gluing after drying for at least 7 d / 20 °C.



# Adhesives

More and more architects are discovering the advantages of using glass in interiors. Glass is therefore increasingly being fixed to walls, for example as splashbacks in kitchens and bathrooms.

These uses mean it is often necessary to glue the coated glass. Albeit not every adhesive is suitable for gluing lacquered glass. The adhesive must not adversely affect the lacquer layer either visually or mechanically.

There should not be any stains or discolouration on the visible side of the glass.

The lacquer layer is located between the adhesive and the glass panel, so it is naturally very important to ensure proper adhesion of the lacquer to the glass.

Since there are many brands and types of adhesives on the market, it is impossible to test them all. Over the years, however, we have tested several adhesives, often at the request of customers. The adhesives that met our requirements are listed in an overview "Adhesives for lacquered glass surfaces", which is available on our website via [www.hesse-lignal.de/service/Technical\\_descriptions](http://www.hesse-lignal.de/service/Technical_descriptions). This list makes no claim as to topicality or completeness. It will be updated at irregular intervals.

It is however advisable for safety reasons to conduct your own tests under practical conditions, since our results only relate to the adhesive batches made available to us.

# Care



Hesse glass coatings are very hard-wearing and do not require any special care. The only aspect that needs to be taken into account when cleaning and caring for them is the general susceptibility of lacquered surfaces to scratches. Dry, hard cloths or the like should therefore not be used.

## Dry cleaning

Please use a soft dust cloth for normal dry cleaning.

## Damp cleaning

Suitable (soft) microfibre or leather cloths should be used for damp cleaning and care. Dampen the cloth with water, wring it out and use it to damp wipe.

## Cleaning agent

Please only use a mild household cleaner, especially on the coated side, and observe the manufacturer's instruction regarding the cleaner's concentration. Harsh household cleaners, abrasive substances and glass cleaners (spray cleaners containing alcohol) are unsuitable.

The following companies have provided  
photos for this brochure:

Colorimo®

Mochnik Sp. z o o. Sp. k.

Opole

Poland

Pages: 17, 18, 19 bottom, 25

Ulrich Schröer Tischlerei GmbH & Co. KG

Ahlen

Germany

Pages: 8, 16

Erkelenz Glas GmbH

Delbrück

Germany

Pages: 4, 6, 10, 19 top

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.

Version: January 2023



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