

DISCOLOURATION OF VENEERS IN DAMP OR HUMID SERVICE CONDITIONS

Some veneered products are prone to dark brown/grey staining when exposed to hot and humid conditions. From the literature review and from industry experience it is believed that the staining is caused by the result of the reaction between tannin in veneer and iron particles resulting in dark iron tannates. Many species have a high tannin content which reacts with iron to form black/grey and insoluble iron tannates if the wood is in a wet condition. Such stain is limited to the surface. It has been proved that high humidity or water contamination of the veneer is essential for the process of staining to occur.

Dark brown/grey discolouration of veneers occurs particularly along the panel edges, holes, hinges and fittings, sometimes with a blotching effect on the veneer surface. The following recommendations have been developed to prevent the dark staining of veneers in hot and humid service conditions:

- When handling the veneers, it is critical to minimise contamination with iron containing fragments or solutions from such sources as saw blades, veneer slicing blades, surface sanding (e.g., steel wool), nails, screws and metal joints, contaminated water and contamination of glues and lacquers due to storage in metal containers which have an iron component
- A durable coating system, such as polyurethane or acrylic-urethane coating, should be used. Refer to the TVAA 'Veneer Information Manual' pages 14-16.
- It is essential that all surfaces in veneered furniture/products be carefully coated to provide a protective seal against changes in humidity. Failure to do so will be detrimental to the quality of the veneered products as moisture penetrates through the unsealed surface during any ambient change in relative humidity. The sealing of all surfaces is a critical factor in maintaining high quality veneered wood products.
- Sharp edges, which allow moisture to readily penetrate to the veneer, should be avoided or carefully coated.
- The moisture content of veneer and substrate should be within the specified range of between 8% and 10%.
- Veneered panels should not be stored in damp, draughty or hot warehouses or factories before being transported to a manufacturing company.
- Final veneered products should be carefully packed to protect against mechanical and/or environmental damage during transport and storage. Particular care should be taken of veneered products that are being shipped, as the Moisture Content of veneer in a shipping container may be as high as 20%. In addition, temperature may be high, not only permitting rapid diffusion of moisture into the veneer but also providing the most suitable conditions for checking and staining. One suitable method of protection of furniture in transit is to seal it in polythene, which is cheap and a nearly ideal moisture seal that also provides some protection against surface markings. M/ ANITA/ TVAA/ 2013/ Disclaimer for Staining of Veneers
- Products should not be placed or installed in wet, damp or very hot rooms/buildings. These extreme conditions may cause serious damage to the veneered products. Early installation of the products in newly constructed buildings may be particularly devastating. There have been instances of severe staining of the veneered products (such as desks, tables and panelling) delivered to a site before contractors have finished internal work.
- It is essential that a proper cleaning agent is used on veneered products. If an inappropriate cleaning agent is used regularly, it will damage the coating and allowing the ingress of moisture. This will lead to the loss of gloss, staining and veneer checking.
- It is important that all of the recommended steps are followed to minimise the risk of product failure. Specific expert advice should be obtained and followed where veneer products are to be used in hot and humid conditions.

DISCLAIMER: The recommendations in this practice guide are general in nature and represent current good practice. The recommendations are not intended to be and may not be relied upon as a substitute for specific expert advice for the type of veneer being used and the conditions of the intended service location.