



TECHNICAL BULLETIN

DELAMINATION



Delamination is the failure to adhere it may be:

- Off a substrate (the base material the coating is applied to, eg. cork, strip timber, particle board, etc).
- Inter-coat failure to adhere (may be failure off the sealer of the subsequent build coats, typically seen in a failed recoat situation)

The 3 Basic Causes of Delamination are:

- CONTAMINATION OF UNDERLYING SURFACE
- SUITABILITY OF COATING FOR SURFACE BEING COATED
- INADEQUATE SURFACE PREPARATION

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The information in this Technical Bulletin represents typical values. Application variables affect product performance therefore this information should be used as a guide. The user must satisfy themselves as to the suitability of this product for their requirements. Era Polymers assumes no liability for use of this information.

Contamination

Contamination is the most common cause of failure of a coating to adhere to a surface. Sources of contamination can be:

The Floor Surface

- Silicone sealants from the job site may be deposited on ones shoe soles.
- Carpet treatments may be Scotch guard or similar Teflon based materials which are most difficult to adhere to.
- Bituminous sealants were used some years ago under linoleum
- In platform construction, linseed oil, Bardecay, or other timber protection treatments might be used.
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Existing Coating

- Contaminants from aerosols eg. insecticides, furniture treatments
- Contaminants introduces by application equipment

The Importance Of Cleaning Of A Surface To Be Re-Coated


Floors to be recoated are often surface contaminated with:

- Grease and detergent residue in kitchen areas.
- Furniture polishes eg. Silicones, in dining rooms.

Simply giving a floor to be recoated a good sanding or screening may only serve to spread and not remove the contaminant.

Floors to be recoated, are best cleaned with a mop-on wax stripper and rinsed thoroughly prior to surface abrasion.

Wiping of a floor with Thinners 3310 prior to surface abrasion is essential to maximising the potential for good adhesion and will reduce the risk of delamination. To greatly minimise the possibilities of delamination and rejection on a re-coat Sureflow Additives 3350 has proven to be most successful anti-rejection additives. Many floor sanders will only use Sureflow Additives 3350 when re-coating as it is specifically designed for this purpose.

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Coating Selection

Some coatings are unsuitable for certain timber species eg. oily, waxy, timbers such as Spotted Gum, Brush Box, Tallowwood, will not allow for good adhesion with non-urethane sealers such as Fast Sealer 3018. Oily and waxy timber species should be coated directly with Polyurethane with the addition of Sureflow Additives 3350.

FASTASEAL 3030 Sealer is suitable for Brush Box and other difficult timber species. It will dry in less than half an hour in temperatures of 25 deg.C making it equivalent in speed of drying to products like 1602 Formaldehyde resin sealer.

Use Of Mixed Systems

Chemical incompatibility can exist between different manufacturers' products.

Delamination is the most obvious consequence of chemical incompatibility.

It should also be noted that the delamination from a 'marginal' adhesion situation may not occur for some appreciable time after the coatings are mix applied.

This is why all manufacturers insist that their products do not go under or on top of another manufacturer's products.

Surface Preparation

Surface preparation is critical to achieving good adhesion as well as being a key factor in rejection resistance. Inadequate surface preparation can contribute to rejection problems as well as inter-coat adhesion problems.

A 'window of opportunity' exists after a coat has been applied whereby the next coat will fully adhere without the need for extensive surface abrasion.

This is generally in the 8 - 16 hours for a one pack and is invariably less for a 2 pack but will vary with coating type, temperature, humidity, etc.

Always screen lightly with 120 grade or 150 grade sandpaper or sanding screens, between coats, as coating outside this 'window' without surface abrasion will invariably lead to adhesion or delamination problems.

The purpose of surface abrading via sanding/screening is to;

- Provide 'mechanical anchorage' of the wet coat onto the previous coat.
- Increase the 'surface energy' to improve 'wetting' of the wet on the dry coat via capillary action in the 'micro' grooves.

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