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more than bonding

Adhesion Promoter

What are adhesion promoters

The purpose of adhesion promoters is to improve the wetting and adhesion of adhesives and sealants to the substrates and fusion faces to be bonded. They function as an adapter between the assembly part and the adhesive / sealant, enabling improved adhesive force and long-term consistency.

There are basically two different types:

- **Film-forming adhesion promoter** for porous substrates
- **Non-film-forming adhesion promoter** for non-porous, smooth substrates

Apart from the improved adhesion, the film-forming adhesion promoter closes the pores and increases the wetting surface. In addition, a suitable adhesion promoter is effective as a barrier and as protection against moisture which could seep in behind the bonded joint.

Adhesion promoters for non-porous substrates are applied in a very thin layer and do not leave behind any film. Their function is to improve the adhesion and ensure long-term consistency.

Adhesion promoters consist largely of solvent. The appropriate protection measures for humans and the environment are to be adhered to during the transport, storage and processing. More detailed information can be found on the corresponding safety data sheet.

Adhesion Promoter

Preparation of the substrate

Before the adhesion promoter can be applied, the surface of the assembly parts must be prepared. This includes the following steps:

Cleaning
The surface must be clean. The choice of cleaning agent should be chosen based on the soiling and the substrate. Surfaces should be wiped cleaned using a clean, lint-free cloth . The compatibility of the cleaning agent with the substrate must be determined in advance.

Rubbing alcohol, acetone or isopropanol suffice for the cleaning of non-absorbent, closed porous substrates (metals, plastics, glass) that have a low grade of soiling.

Absorbent substrates (concrete, timber, brick, etc.) must be free of dust and any possible soiling must be removed. Brushing, high-pressure cleaning processes, etc., are also suitable. All loose, non-load-bearing parts must be removed. If need be, the surface must be polished or sanded to maintain a load-bearing structure.

Drying
The assembly parts must be dry. Moist / wet areas must be dried. During the application, the areas to be treated must be protected against moisture penetration.

Strengthening
Loose, non-load-bearing parts must be removed. The substrate must have enough bearing capacity in accordance with the requirements. Joint edges should have an adhesive strength of at least 0.6 N/mm^2.

Protect adjoining surfaces
Adhesion promoters leave behind spots which are difficult to remove. For awkward substrates, it is a good idea to protect the adjoining working area. Joint edges can be protected against soiling with masking tape.

Application of adhesion promoter

- Check and adhere to the shelf life of the adhesive promoter. It is recommended that you note the batch number of the product used . Please note: Gelatinised or discoloured adhesion promoters may no longer be used.
- Make note of the date the package was first opened and used.

Adhesion promoters contain elements which react with air humidity. The packaging should therefore only be opened as briefly as possible and the transfer of soiling into the packaging must be prevented.

- The quantity required for the application should be placed into a clean container and the original packaging quickly closed back up.
- Apply a thin, even layer of adhesion promoter to the prepared substrate.
- Adhere to the minimum and maximum drying time
- Apply the adhesive / sealant

Adhesion Promoter

The right adhesion promoter for every application

Name Adhesion Promoter	Application	Application	Drying time min./max.	Notes
V2	Non-absorbent, closed porous surfaces such as metal, plastics, glass, etc.	Using lint-free cloth, brush, sponge, felt or similar	10 min. – 2 h	Mainly used as a wash primer. V2 primarily cleans the substrate, therefore the use of a cloth is recommended. Apply a very thin layer of adhesion promoter V2.
V17	Used as adhesion promoter and barrier layer on porous substrates such as concrete, mortar, timber, etc. Applicable in special cases when there are high demands for water resistance, for example for swimming pools, industrial kitchens, etc.	With the use of a brush or roller	1 – 4 h	Adhesion promoter V17 creates a layer which closes the pores and fills in uneven areas on open-pore substrates With a suitable brush / roller, evenly apply the thinnest layer possible to the substrate, leaving no areas uncovered
V21	Used as adhesion promoter and barrier layer on porous substrates such as concrete, mortar, untreated timber, etc. Recommended in particular in building construction for facade joints.	With the use of a brush or roller	1 – 4 h	Adhesion promoter V21 creates a layer which closes the pores and fills in uneven areas of porous substrates With a suitable brush / roller, evenly apply the thinnest layer possible to the substrate, leaving no areas uncovered
V40	Non-absorbent substrates. In particular thermocoated, or powder-coated surfaces, including metals (e.g. chrome steel) and plastics.	Using a lint-free cloth, brush, sponge, felt or similar	30 min. – 2 h	Adhesion promoter V40 is recommended for joints and bonding of non-absorbent substrates in cases of high adhesion demands and in cases when external influences have an impact, e.g. moisture. The compatibility of the adhesion promoter with the substrate must be determined. Pre-tests are recommended.
Black Glass	Used as protection barrier against UV-radiation with transparent substrates. Especially for the bonding of windscreens in vehicles and cabins, including marine applications.	Shake well prior to use. Apply with the use of a sponge, felt or brush	10 min. – 4 h	Adhesion promoter Black Glass counters the impact of UV-radiation on the bonding surface. In order to ensure this protection, the adhesion promoter must be thoroughly applied to all areas of the substrate. There may be no uncovered areas or blemishes in the coat. Compatibility is to be determined prior to applications with plastics. The thinnest layer possible is to be applied to the substrate.
SP	Adhesion promoter SP is used with porous substrates that have joints which are subject to heavy water pressure and dynamic loadings, e.g. joints on ship decks (teak), terraces, etc.	With the use of a brush or roller	1 – 4 h	Adhesion promoter HP creates a layer which closes the pores and fills in uneven areas of porous substrates With a suitable brush / roller, evenly apply the thinnest layer possible to the substrate, leaving no areas uncovered.

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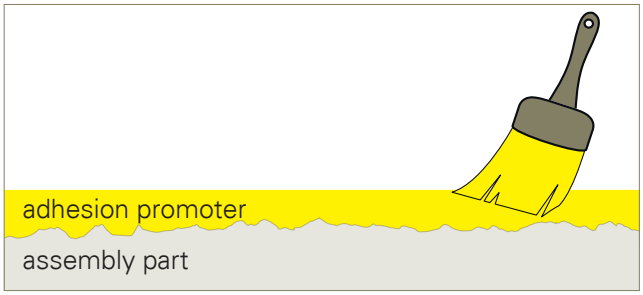
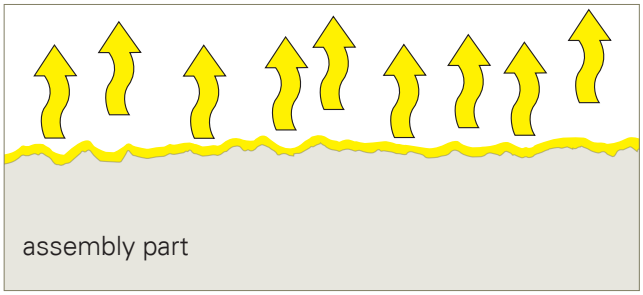
How adhesion promoters work

In applications without an adhesion promoter, the adhesive / sealant cannot completely moisten the surfaces (in particular porous surfaces). Air pockets form between the adhesive / sealant and the substrate.

The adhesion promoter is applied with the applicable tools.

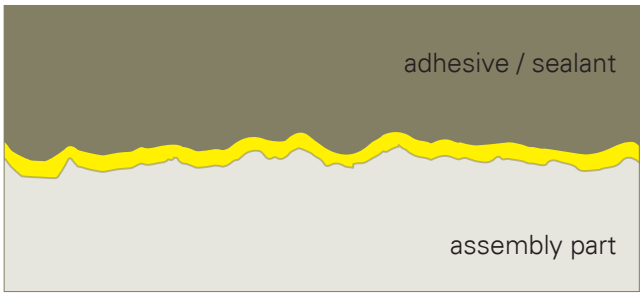


When the solvent evaporates, the adhesive / sealant can moisten the surface completely. Air pockets are prevented and the contact area is increased.



Film-forming adhesion promoters act as a barrier layer against moisture seepage and potential migration of substances.

In addition, chemical bonds form between the adhesion promoter and the adhesive / sealant, increasing the bond strength. However, this reaction is only possible with freshly applied adhesion promoter. If the waiting time is too long, the adhesion promoter reacts with environmental influences, e.g. moisture, dirt, dust, etc.



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