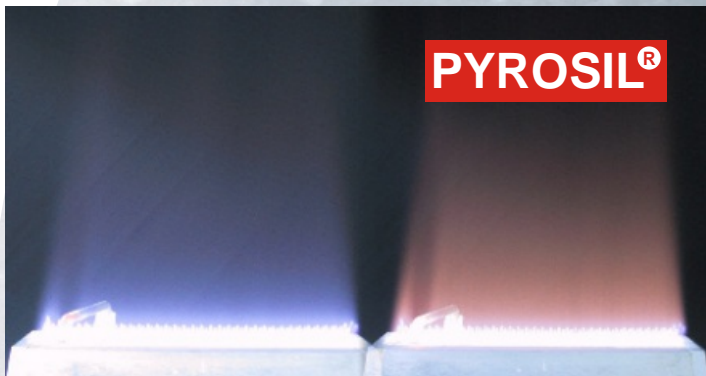
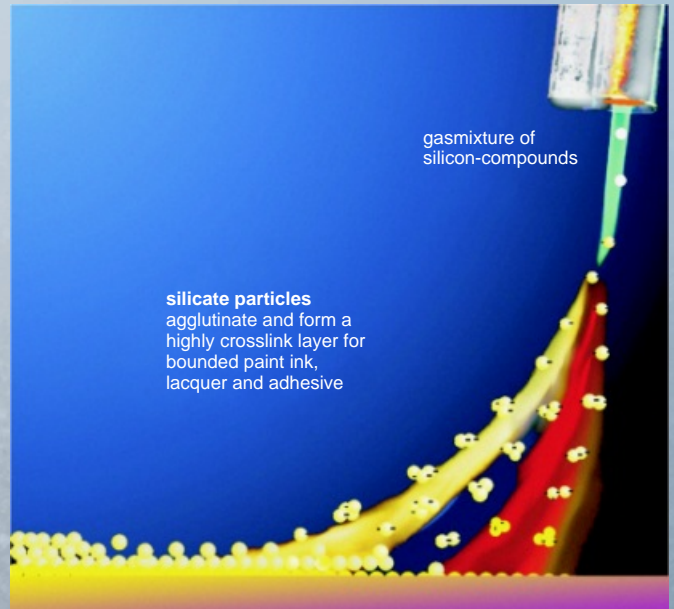


# The Pyrosil® - Technique

## Technology for improvement of adhesive strength of surfaces

### Pyrosil® - Technique

The Pyrosil® - process is a combustion chemical vapour deposition technology leading to an amorphous silicate layer on the treated substrate. Thereby, the surface is treated with the oxidising part of a gas flame, which contains the Precursor, an organosilicon compound. The precursor is pyrolysed during the process and the formed "ash" is deposited as amorphous silicate on the surface, leading to an ultra-thin (20 - 40 nm), strongly adhering coating. In other words a chemically highly reactive glass-like layer is formed.

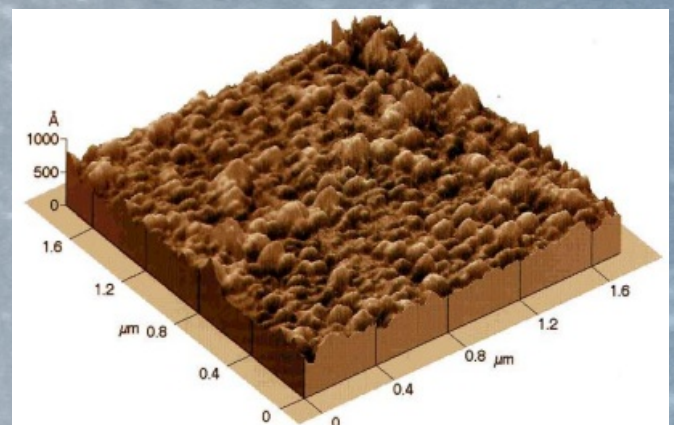


### Pyrosil® - Flames

A flame containing a silicon compound can be identified by its reddish colour.

### Pyrosil® - Layers

The surface morphology of a Pyrosil® - layer deposited on a silicon wafer is shown in the figure beside [measured by means of atomic force microscopy (AFM)].



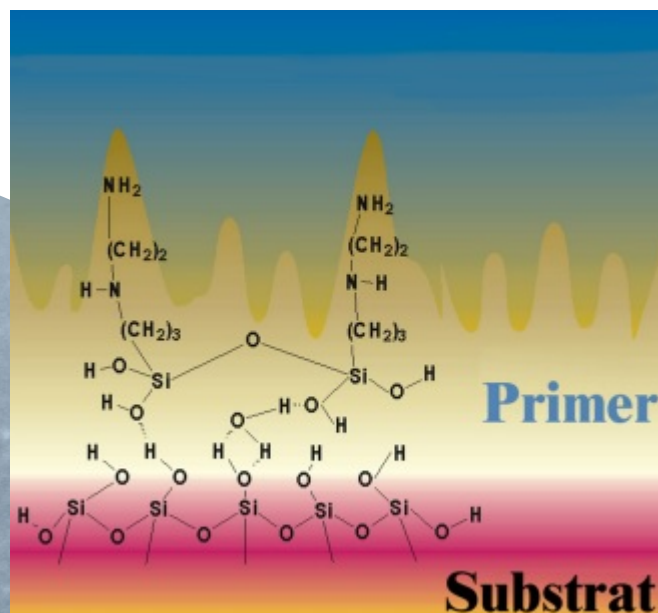
### Pyrosil® - Effect

The silicate layer increases adhesion due to :

- \* Change of the surface energy
- \* Introducing hydrophilicity
- \* Formation of well defined chemically reactive sites on the surface

## Pyrosil® - Primer

The great number of Si-OH groups on the surface of the amorphous silicate layer can be used for further chemical modifications. Therefore the substrate can be adapted to a variety of organic coatings.



## Pyrosil® - Test

The adhesion improving effect of the Pyrosil®-layer can easily be demonstrated by the combined scratch and corrosion test. Lacquer is applied to an untreated substrate and subsequently scratched. The figure beside shows the paint is spalled around the gash and the corrosion is creeping under the paint layer. In case of prior treatment with Pyrosil®, the lacquer is strongly adhering and no paint delamination occurs.

## Pyrosil® - low cost

Pyrosil® - is a low cost technique! If you are interested we will calculate the costs for your application.

## Pyrosil® - environmentally friendly

The Pyrosil® - technique does not produce toxic by-products.

## Pyrosil® - Instruments

Depending on the needs, the Pyrosil® - technique can be applied ranging from precise coating of small areas up to the continuous use in industrial facilities. In all cases the use is easy and