

## Comparison of PVDF vs. FEVE Coatings

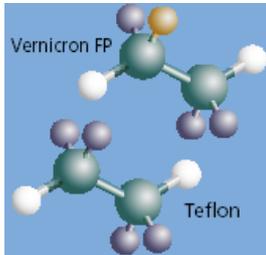
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Both coatings belong to the family of fluorocarbon coatings. Characteristics of both coatings:

PVDF stands for polyvinylidene fluorid which is based on a Kynar 500 or Hylar 5000 resin which has to be blended with 20 or 30 % with an acrylic resin. Developed 40 years ago, PVDF stands for long-term color and gloss retention and resistance to chalking.

As PVDF being an emulsion, bright and vivid colors will not be feasible. In addition the gloss range for PVDF coatings is limited to around 30 gloss units (25 – 35) wherefore design possibilities are limited.

Fluoropolymer (FEVE) coatings have been developed in early 1980 based on the good experiences made with PVDF and with the goal to improve it. The FEVE-polymer (= Fluoroethylene Vinylether) which has a similar molecular structure as PTFE (polytetra-fluoroethylene). PTFE is better known under the brand name of Teflon and stands for a hard and very abrasion resistant material. Following picture shows the similarity of the molecular structure between Vernicron FP and PTFE:



The fluorine part is responsible for the durability of the molecule and is also protecting the weaker Vinylether which is needed for the properties like transparency, gloss and flexibility.

As the FEVE resin is not a blend like PVDF there is a very strong linkage between the fluorine and the carbon atom wherefore it is very difficult to brake this linkage (no “zipper effect”). The surface is very dirt repellent due to a very low surface tension. This property is promoted today with different kinds of coatings under the aspect of “easy to clean”. The FEVE is also extremely resistant against acids and bases, oils etc.

### Advantages of FEVE coatings

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- ✓ Ideal for steel, aluminium, GRP, Composites and other substrates

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- ✓ Can be applied in factory, on-site and with 2-pack or aerosol can for touch-up and repairs

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- ✓ Full gloss range - from matt to glossy (10 - 85 Units)

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- ✓ No limitation in colors and limitless design possibilities e.g. high variety of special effects, metallic and anodize colors

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- ✓ High dirt repellency and easy-to-clean properties due to a contact angle near 100 °

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- ✓ High cleaning intervals

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- ✓ Compliant to GSB Premium, Qualicoat Class 3, AAMA 2605, ISO 12944 C5vh

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- ✓ All formulations are lead and chromate free.

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Monopol Colors has been producing fluoropolymer coatings since more than 20 years. Ask us for more details.