Liquid Preparation

The liquid preparation takes a key role in pre-metered coating. Depending on the range of different liquids to be prepared and dosed, the selection of pump and degassing unit has to take in account the different behaviors of each liquid. The capacity range of the pumps has to cover the entire flow rates, while the operating window of the dosing pumps should not be utilized to its minimum or maximum. Hence the pumps should operate in the middle of its working ranges. Very high as well as very low pump loads should be avoided and can lead to strips, pulsations or other unwanted effects in the coating. TSE can make some advises on the design of such liquid preparations or can offer entire systems with capable partners in this field.

Liquid Preparation
- Ability to disperse materials
- Liquid stability (Does stuff drop out?)

Mixing
- Power requirements
- Bubble formation

Pump
- Power requirements
- Back pressure

Purging Liquid
- Efficiency of purging
- Ability to displace resident liquid
- Efficiency in product changes

Degassing
- Higher viscosities are more difficult

Coating
- Range of operability
- May affect lay down

Web

To avoid die distortions during operation, the temperature of the die as well as the entering liquid must be equal in small tolerances. A water circuit using tempering holes in the die keep the temperatures in the die at constant levels. The liquid preparation must also be equipped with a temperature control system which is coupled with the system of the die in order to guarantee that both temperatures are equal.

For some applications multi component liquids must be dosed. The pre-metered coating method allows the mixing in a static mixer located short before the entrance into the die. The varieties in the coating industry with different substrates and liquids are extremely wide. TSE has strong knowledge basis to cope with all different requirements.