

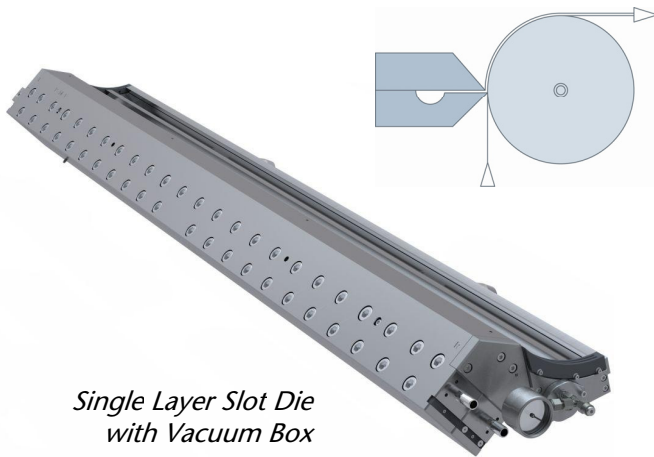
## Slot Dies

Of all the pre-metered coating methods, slot coating can be the most demanding of die design and precision fabrication. First, the internal manifold of the die must supply a uniformly-distributed flow to the coating transfer gap region. However, complex liquid rheology and/or significant flow effects may require the use of an optimized manifold design with varying slot length and cavity cross-section (coat-hanger design). Even with optimized design, excellent coating weight uniformity requires exacting slot depth uniformity.

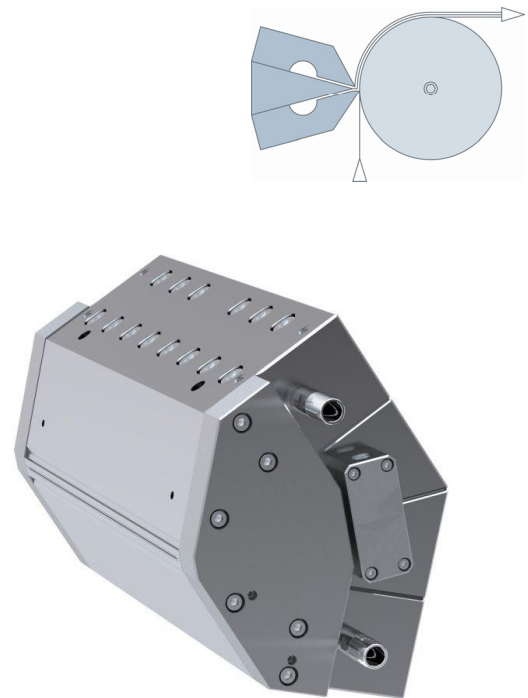
Achieving desired slot coating transfer flow is also challenging. Process-capable lip designs

carried out with superb straightness, uniform lip lands and well-defined, uniform lip corners are all required to maximize coating windows and to enhance coating robustness within these windows.

TSE is certainly up to this task. With unmatched fabrication precision, optimized design capability with advanced flow modeling, coating know-how and decades of supplying precision dies to the world's most demanding companies. Supplying dies that conquer challenging, demanding coating applications is our niche!



*Single Layer Slot Die  
with Vacuum Box*



*Three Layer Slot Die*

### Range of Application (order of magnitude only)

- |                             |                      |              |
|-----------------------------|----------------------|--------------|
| • Viscosity range:          | [mPas]               | 1 – 10'000   |
| • Surface tension:          | [mN/m]               | –            |
| • Coating speed:            | [m/s]                | 0.1 – 10     |
| • Wet thickness $H_{wet}$ : | [ $\mu$ m]           | > 5          |
| • Dry thickness $H_{dry}$ : | [ $\mu$ m]           | < 1          |
| • Number of layers:         |                      | 1 – $\leq$ 3 |
| • Minimum flow rate:        | [cm <sup>2</sup> /s] | –            |