Production Process

Application fields

Long continuous produced profiles are currently used in aerospace applications. Profiles with various section and curved shapes are also possible. One of the big advantages of thermoplastic-based composites is their thermal formability. Because of this, the production of flat panels opens up a wide field for series production of parts in an automated process chain.

Fibers and matrix raw materials are supplied to the machine as dry fiber fabrics and thermoplastic films, UD-tapes or hybrid materials.

Fibers and matrix will be consolidated on the CCM machines to create semi-finished organo sheets with a consolidation grade of 99.9%.

The organo sheets can then be formed on thermoforming presses or directly in injection molding systems. When forming in injection molding systems, a direct combination with injection molding elements is possible.

The following profiles are theoretically possible with additional developments:
Continuous Compression Molding (CCM)

Is an intermittent but continuous production process to consolidate endless fibers (glass fiber, carbon fiber, aramid fiber, etc.) with a thermoplastic matrix (PP, PEKK, PEEK, PA, etc.) to create organic sheets / structural profiles with high mechanical resistance at an extreme low weight. PEEK, PA, etc.) to create organic sheets / structural profiles with high mechanical resistance at an extreme low weight.

**HIGHLIGHTS**

- Continuous production process
- Production of flat panels/profiles
- Processing up to 420°C
- Top quality
- High flexibility
- High production speed
- User-friendly
- Low man power requirements
- Minimum material waste at startup and production end

**Material Combinations**

- UD-Tape (Unidirectional fiber with pre-impregnated matrix)
- Hybrid fabric (Fiber with matrix interwove)
- Film-stack (Thermoplastic films with fibers)

Combinations of different fiber materials, for instance a glass fiber core with a carbon fiber cover can also be used. Moreover, it is possible to integrate additional layers for visual effects or functional foils for technical applications (e.g. conduction tracks), or combinations with injection molding.

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The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The requested features should therefore be specified in each individual case at the time of placing an order.