

## Winding machines for fabrication of ceramic matrix composites

### Description of facility

WHIPOX-components are fabricated using two computer-controlled winding facilities which were developed and assembled at the Institute of Materials Research.

Winding bodies with an inner diameter of 500 mm and a width of 800 mm can be obtained. The winding pattern can be varied in a broad range. The typical wall-thickness of components ranges from less than 0.5 up to more than 5 mm. The organic protective coating of as received fibres is thermally removed. After this the fibre roving is infiltrated with a water-based slurry of the matrix precursor powders. The infiltrated fibre roving is pre-dried and wound-up on the winding mandrel. After the winding-process the wound bodies are dried or cut-up and removed from the mandrel. These flexible tapes can be either stored or used immediately for laminating or shaping in the wet state. The final WHIPOX products are obtained after drying, firing and machining.

### Application

Fabrication of ceramic matrix composites

### Contact

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*This handout, and cross-references to related measurement techniques and facilities are available at: <http://messtec.dlr.de/link-282-en>.*