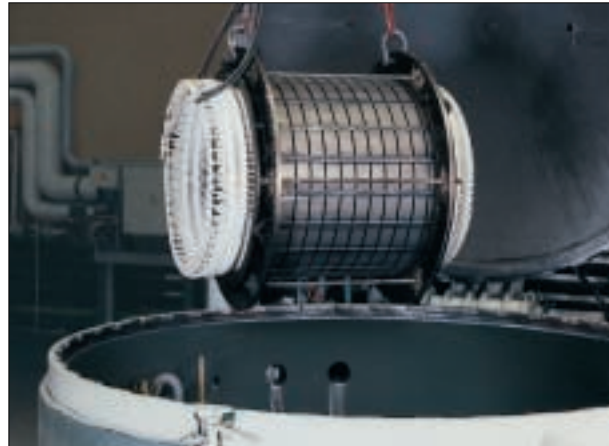


# V-CELASTIK®-VPI winding insulation

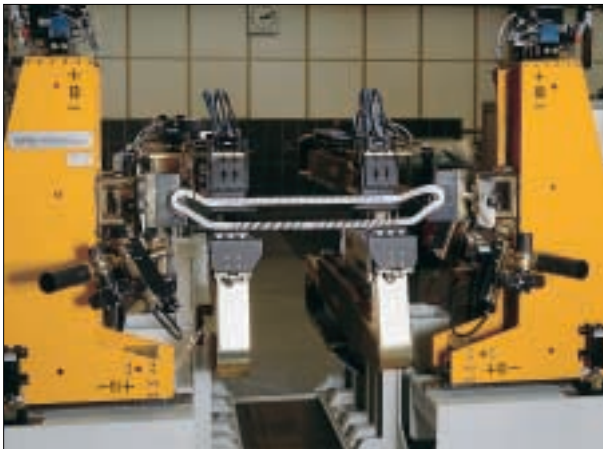
Developments in the field of insulation led in the 80's to the introduction of the V-Celastik® insulating system. This is a system using the VPI technique which corresponds to Class F.

**VPI means that the complete stator (core and windings) is impregnated with artificial resin in a vacuum/pressure process. The result is a winding with excellent thermal, electrical and mechanical properties.**

**The constantly high quality of the high-voltage insulation is ensured by the latest in manufacturing equipment.**



Wound stator prior to impregnation



Coil-spreading machine

## Impulse withstand capability

The impulse withstand level of the windings is well above the specified minimum of  $4 xU_N + 5 \text{ kV}$  so that additional protective measures against overvoltages have to be taken only in exceptional cases.

## Mechanical stability

Windings are designed to meet all mechanical stresses occurring in service. The bracing of each winding is calculated, using a special computer program developed at Hanover University.

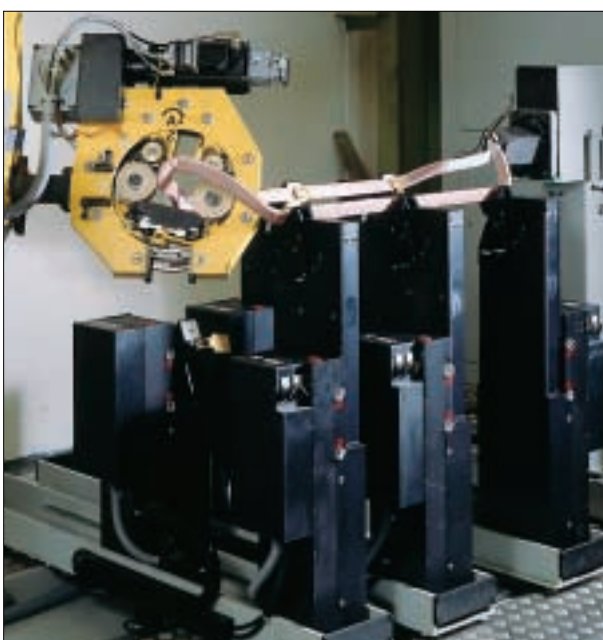
**This calculation is based on the highest stresses to be expected, e. g. reconnection against 100 % residual voltage in phase opposition.**

## Quality assurance

The manufacture of windings is, as is the entire company, subject to a certified QA system to DIN EN ISO 9001.

**Materials, manufacturing techniques and processes are continually monitored and the results recorded. Additional tests on winding elements, or complete windings, can be carried out on request.**

® Registered Trademark



Coil-taping machine