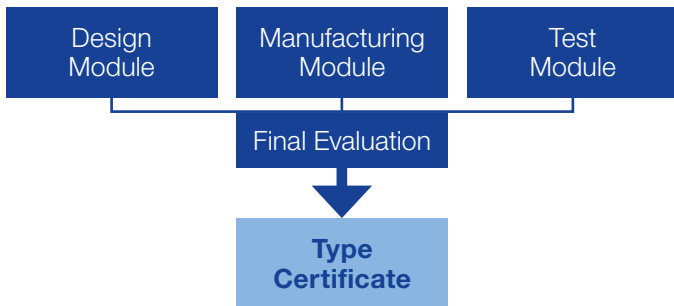


Type and Component Certification

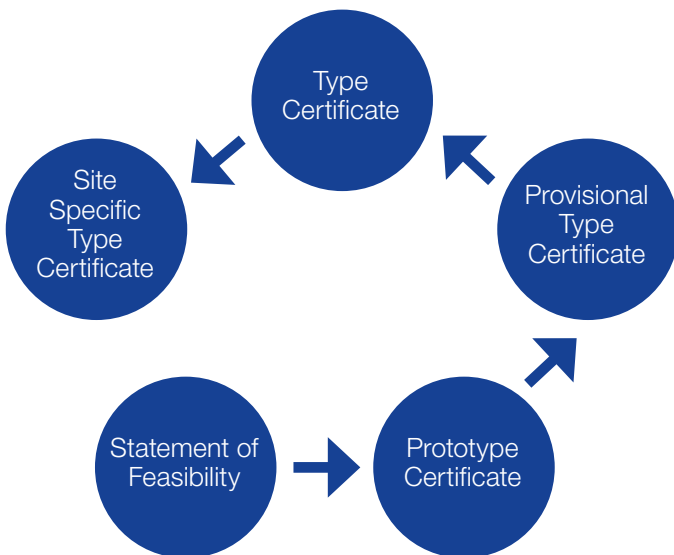
DNVGL-SE-0441

TÜV NORD is accredited for the Type and Component Certification Scheme DNVGL-SE-0441 and therefore is allowed to issue Type Certificates and Component Certificates according to this guideline written by DNVGL.

The Certification Scheme is similar to the sophisticated IEC and GL schemes. As shown below there are also the three main modules Design, Manufacturing and Test.



Different to IEC but well known from GL are different levels of the certification. Every module and certificate is available in the following five Levels:



The D-Level certification is applicable for the conceptual design stage.

The intention of the C level certification is to demonstrate that the wind turbine is sufficiently designed and documented for the prototype stage during the development of a new wind turbine type. This level has a Prototype Certificate as final deliverable.

For the B-Level there are small outstanding items allowed which are not safety related within the period of validity. A Provisional Type Certificate is issued for the B-Level. In the A-Level the complete scheme is fulfilled and end in a Type Certificate.

New level in this scheme is the Site-Level. With this level the integration in a project certification is much more transparent.

As technical requirements the mentioned standards in the scheme could be used. These are in particular:

- IEC 61400-1: Design Requirements
- IEC 61400-3: Design Requirements for Offshore
- DNVGL-ST-0437: Loads and site conditions
- DNVGL-ST-0438: Control and protection systems
- DNVGL-ST-0376: Rotor blades for wind turbines
- DNVGL-ST-0361: Machinery for wind turbines
- DNVGL-ST-0076: Electrical installations
- DNVGL-ST-0126: Design of wind turbine support structures

Of course other standards can be agreed if they fulfill the same safety level and all standards mentioned above are part of the DAkkS accredited scope.

Whenever it is mentioned in the scheme that something has to be agreed or aligned with DNV GL, it means to agree it with TÜV NORD, because we act as the Certification Body in this case.

Please contact us, if you need more information about this Type and Component Certification Scheme.