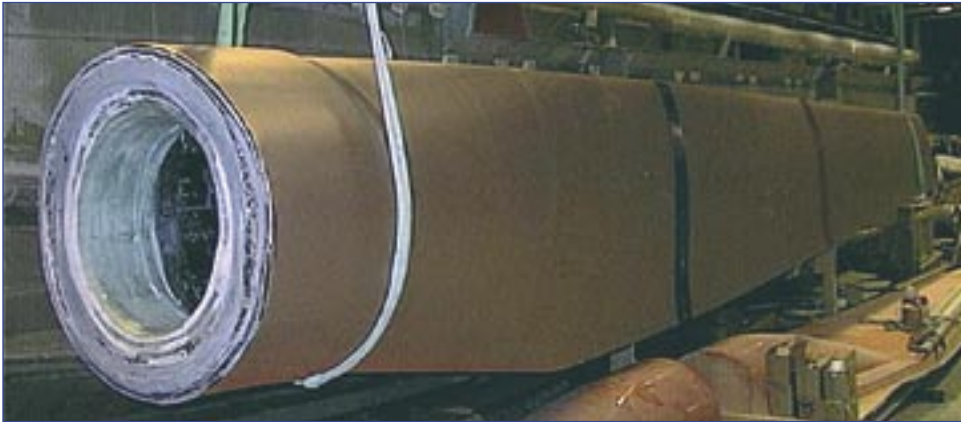


PRODUCTS IN ACTION

New Tidal Turbine System



One of the the tidal turbines.

DIAB in Norway and ABB Offshore Systems are involved in an exciting project to generate electricity using a tidal turbine system. Rather than re-invent the wheel the idea has been to use known technology in a new way.

A combination of today's wind turbine design and leading edge competence in sub-sea technology has led to the first installation in Kvalsundet, a narrow tidal channel near Hammerfest in Norway. The prototype generator weighs some 107 tonnes, has 12 meter long carbon fibre blades and is mounted on foundations weighing a total of 200 tonnes.

If the first installation is successful from a technical, economic and ecological standpoint, the plan is to build a sub-sea tidal farm comprising 20 turbines.

The principle advantage of this project is that tidal currents are totally predictable, increasing and decreasing in regular cycles throughout the year. This means that the equipment will be exposed to known forces. As the blades can move around their own axes they can be rotated through 180° when the tide turns. This approach eliminates the need for the complete nacelle to rotate.

Although the blades are much shorter than those used in wind turbines, they do need to be able to withstand the considerable forces of the tidal stream. An added advantage of using a Divinycell core is that the blades have neutral buoyancy in water.

