Application manus® award - example

Please describe your system/machine/project.*

What is the name of your system/machine/project? What is its function?

Our Wavebreaker water ski board is a water sports device that allows the rider to glide on the surface of the water. It is similar to a snowboard, but is used on the water. The rider stands sideways to the direction of travel on the board, the feet are attached with bindings.

The Wavebreaker is either pulled by a motorised boat or a cable car. The speed achieved enables the rider to stay on the surface of the water and perform various tricks and jumps. The wake of the pulling motorboat can be used as a ramp.

Where will your system/machine/project be used? In which industry?*

It is a recreational sports device that can be used in the water.

Where do you use bearings?

The bearings of a wakeboard are located in the bindings and the fins. The bindings, which hold the rider's feet in place, contain bearings to enable smooth movement and adjustment. The fins are located on the underside of the board and also require bearings to improve the stability of the board in the water and make it easier to control.

Please describe the operating conditions of the bearing points.

What are the operating/environmental conditions of the bearing points at the end user's location?* Please provide technical data on load, speed, number of cycles, service life, etc.

Load: up to 150kg

Speed: 30-40km/h; the bearing points must therefore be designed for these speeds.

Number of cycles: one million

Service life: the service life of the bearing points should amount to several years, even when they are used regularly. A service life of at least five years is envisaged.

What requirements did the bearings have to fulfil (e.g. resistance to dirt, temperatures, freedom from lubrication or other influences)?*

The bearing points must be waterproof and corrosion-free as they are constantly in contact with water. They should also be temperature-resistant so as to function perfectly in both cold

and warm conditions, and operate without lubrication.

What has been used so far? What alternative solutions were considered for the bearing positions?

Ceramic bearings would be an alternative. However, they require lubrication, so they were out of the question.

How were the polymer bearings able to meet your requirements?

What polymer bearing technology products (for example: plain bearings, linear plain bearings, linear guides, 3D-printed plain bearings, plain bearings made of bar stock, pillow block, flange and/or spherical bearings) do you use?*

iglidur Z
iglidur H

If you work with several bearings: please describe which products you are use where.

iglidur Z in the fins
iglidur H in the bindings

By using the products mentioned, to what extent do you or the end user save ...

Costs (e.g. compared to alternative solutions, costs for lubricants, other costs [please specify an amount per machine per year])?

€2.50 per board

Lubricant/grease (e.g. litres of lubricant/grease saved per machine per year)?

10g grease per board per year (for ceramic bearings)

CO_2 (e.g. weight saved in kg/g per machine per year)?

-

Other resources (e.g. working time saved or reduced downtime in hours per year)?

We would have needed to integrate an additional service for lubrication.

What was the nature of the co-operation with igus?

Application manus® award - example

How did you find out about the igus solutions (website, catalogue, sales force, chat)? How did the collaboration with igus go?

We quickly came across igus during our web research. We received excellent advice on the design from our employee Max Sauerfein.

How did you become aware of the manus® competition?*

E-mail

Upload files
Application photos, videos or sketches (at most 1GB/50 files)
Please upload any supporting material (pictures, drawings, videos) here as JPEG, PNG or MP4 for your participating documents.
The more media you send, the clearer the concept is for the judges who rate your application.*