ZEDEX® in
Tribological Polymer Solutions

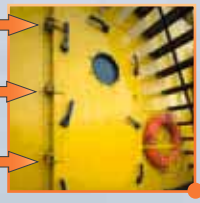
Shipbuilding, Port Industry and Offshore

HIGH PERFORMANCE PLASTIC SOLUTIONS

EN 2.0

ZEDEX® in action

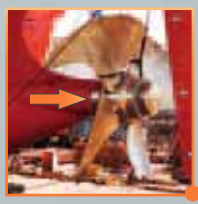
SHIPBUILDING



Door hinge

Bushing in deck equipment

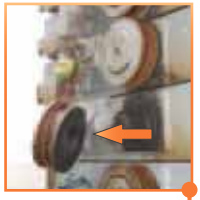
Bushing in anchor winch



Propeller bushing

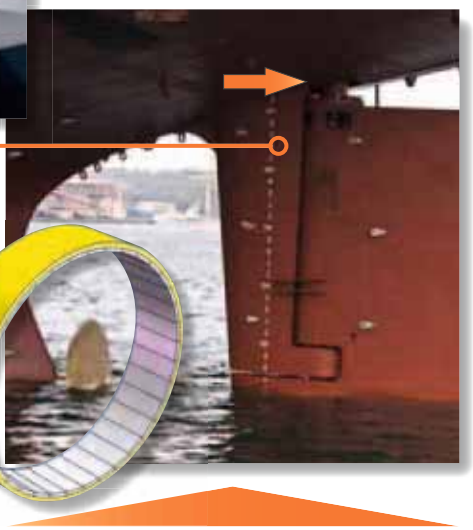
Bearing bushing in engine of a sport boat

Rudder plain bearing



Plain bearing bush and thrust washer in rollers of a cargo hatch cover

ZX-100K and ZX-100A in boats
In the suspension of a sport boat outboard motor originally bushings made from PA11 were used. The previously used PA11 should be replaced, since this material did not meet the requirements. Plain bearing bush made of ZX-100K and injected moulded bushing made of ZX-100A are now used instead of PA11.



ZX-100K in hatch covers
The material ZX-100K is used here as a substitute for bronze. The washer and bushing made from ZX-100K are assembled in track rollers that allow hatch covers to slide over the others. The use of ZX-100K has got the following advantages: dry running conditions and through it cost savings and reduced environmental impact were reached.

ZX-100K as rudder bearing
Normally are installed bearings made of PU and bronze, which have to be lubricated and therefore are very expensive to maintain. Through the use of plain bearings of ZX-100K this application became environmentally friendly and the previously necessary lubrication was completely eliminated, with the result in significant cost savings. There was also a portentous improvement in the tribological properties, i.e. the friction and wear were greatly reduced. The outer diameter of the ZX-100K plain bearings is unlimited, since they assembled with the segment-principle. This positively affects also the transport costs, because the segments can be transported in a suitcase saving time and costs, instead to plan the transport with a forwarder of e.g. a 2 meter diameter bushing.

ZEDEX® in action

PORT INDUSTRY

Crane hook bushing

Winch bushing

Bushing for track rollers

Plain bearing bush in the steering of straddle carriers

Plain bearing for track rollers

ZX-100K in straddle carriers
Straddle carriers are lift trucks, that transport ship containers in the harbour. The containers are lifted in the middle of the straddle carrier base frame and can be carried to the desired location. The plain bearing bushes of ZX-100K are used in the steering mechanism of the wheels and allow their rotation. Previously, bronze has been used for the bushings.

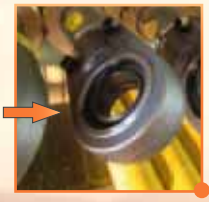
ZX-100K in track rollers of a stacking trolley for vassels
The plain bearing bush of a epoxy resin compound was replaced by our material ZX-100K. This application is subjected to high shock impacts which led the previously used material to failure, i.e. break. Thanks the astonishing impact values and damping of ZX-100K, its bearings were able to withstand extreme working conditions. The costs, friction, wear and the consequent associated maintenance costs were reduced.

ZX-100K as bearing for the worm gear on boat
Earlier PE-plates were used as bearing, causing big problems with the wear. The wear values were so high that it was necessary to replace the bearing every month, which had led to large maintenance efforts and therefore costs. Thanks to the installation of half shell ZX-100K bearings, the tribological properties, such as friction and wear, were significantly improved and the maintenance significantly reduced. Since 5 months our bearing is tested in the real life and it is still working perfectly.

ZEDEX® in action

Bushing in a crane hook

Bushing in a deep sea hammer



Convex bushing as replacement for a joint bearing

OFFSHORE

ZX-530CD3 in wind turbine
Earlier plain bearings of bronze were built in the gears of a wind turbine, but they had to be replaced by our material ZX-530CD3, because of their too high wear and because they were not environmentally friendly. The plain bearing of ZX-530CD3 has got much lower wear values and it is environmentally friendly, because it works in dry running condition, without any necessary lubrication. The maintenance efforts and costs were reduced dramatically.

ZX-750V5T in deep-sea hammer
This segmental bearing, made of ZX-750V5T (Ø 700 mm), guides and leads into water the floating weight of 28 tons in a deep-sea hammer. This extreme stress subjected part operates in non lubricated conditions, with a 50 Hz impact frequency and a drop height of 1 m. The bearing segmented of ZX-750V5T holds the extreme conditions and runs maintenance free.

ZX-100K in cranes
In this application, a suitable bearing material for the storage of the telescopic boom has been searched. The slideway is located in the rectangular guiding bar in which the boom is guided. For aesthetical reasons the lacquer mating surface of the boom must not be damaged by the sliding movement. The bearing is also subjected to weathering and direct sunlight exposure. Slide ways made of ZX-100K are now used. In addition, the boom was painted with a sliding coating. In the future, also other bronze bearings should be changed with the ZX-100K ones. Even under load with ZX-100K slide ways, an extension of the telescopic arm is possible. Preservation of the painting, no problems for outdoor use and low maintenance, thanks to dry running conditions, were reached.

ZX-100K and ZX-410 in clamshell grabber
The previously used of bronze had problems with oxidation, wear and friction because it came in contact to salt water, sand and other particles. Depending on the load, ZX-100K or ZX-410 are used. Advantages: environment friendly dry running, substantial reduction of wear and friction, enormous maintenance costs saving, elongation of the working life.

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