

# Orkot<sup>®</sup> Hydro Bearings



**Your Partner for Sealing Technology**

## A Global Approach

Orkot® is a world-leading brand of composite bearing material, with Orkot® hydro bearings being specified for the hydro industry. Orkot® is manufactured by three Trelleborg Sealing Solutions manufacturing plants in the Americas, Europe and Asia, and is sold through an extensive global network of regional marketing companies, agents and distributors. Orkot® hydro bearings are offered at the highest level of quality and service expected from a leading global company. Orkot® hydro bearings have been successfully installed in American, European and Asian hydro markets for the past 20 years.



## Hydro bearing materials

### Orkot® TXMM Bearings

#### Key Features

- **Low coefficient of friction** – Orkot® TXMM bearings exhibit a very low coefficient of friction whether operating in a wet or dry application. Another benefit of the Orkot® material is that the coefficient of friction is reduced as the load increases.

- **Self-lubrication** – The addition of solid lubricants during the manufacturing process enhances the bearings self-lubricating properties, thereby allowing the bearings to operate without the benefit of oil, grease or water lubrication, while at the same time demonstrating low coefficients of friction.
- **Excellent dimensional stability** – Orkot® TXMM has virtually no swell in water.
- **High load capabilities** – Orkot® TXMM bearing material has high ultimate compressive strength and yield strength. Generally, Orkot® TXMM bearing material fits within the same design envelope as traditional bronze bearings.
- **Proven wear resistance** – The excellent wear resistance of Orkot® TXMM material has been proven over many years of service in hydro, marine and civil engineering applications.
- **Environmentally-friendly** – Orkot® low-friction bearings require no lubrication, eliminating any pollution concerns associated with petroleum-based greases or lubricants.
- **Excellent shock capabilities** – Orkot® TXMM material has excellent shock load capabilities, making it ideal for use in hydropower applications where frequent high impact and low amplitude oscillation cause a pounding out that can shorten bearing life or lead to bearing failure.
- **Easily machined** – Orkot® TXMM material is easily machined using conventional machining techniques, and as a general guide may be treated as aluminum or bronze and must be machined dry. Its exceptional mechanical and physical properties lend it to the tight running clearances associated with the hydro industry.
- **Operates in wet and dry conditions** – The unique formulation is suitable for wet and dry operating conditions.
- **Outstanding edge loading capabilities** – The mechanical properties of Orkot® TXMM material allows the bearing to operate effectively under severe edge loading conditions.

#### Characteristics

Orkot® TXMM is an advanced, reinforced, medium-weave polymer material incorporating a unique low-friction bearing surface, and with the addition of solid lubricants greatly reduces the coefficient of friction.

# Supplier of Composite Bearings

In areas without lubrication, such as upper wicket gate/guide vane bearings, Orkot® TXMM bearing material has been especially effective in eliminating stick-slip problems associated with dry running conditions, giving the material a broad range of hydro applications.

## Qualifications & References

- Stringent quality procedures are maintained to ISO 9001 standards, allowing full traceability of product from raw materials to finished parts.
- Orkot® TXMM bearing material has been tested at Power Tech Laboratories at the specific request of the U.S. Army Corps of Engineers and is approved for use in hydro applications.
- In Europe, Orkot® materials have been exhaustively tested by technical institutions and end users, including Dinorwig Power Station in the UK. Dinorwig Power Station has performed extensive field testing of Orkot® TXMM bearing material with excellent results.

## Service and Support

A team of highly experienced and skilled engineers offer complete engineering services tailored to your specific requirements.

Some of the services available include:

- Technical assistance providing complete design recommendations and drawings for your specific application
- Extensive support service is complimented by a comprehensive range of technical documentation and the Orkot® hydro bearing calculation program.
- Calculation of bearing dimensions for internal or on-site machining is also available.
- On-site engineering and technical assistance is available upon request

## Availability

Orkot® TXMM bearing products can be supplied fully machined to specifications and is also available in tube and sheet forms.



## Applications

Orkot® TXMM bearing material has a wide range of proven applications, including:

- **Wicket gate/guide vane bearings**
- **Wicket gate linkage bearings**
- **Vertical/horizontal main guide bearings**
- **Trash rake bearings & wear pads**
- **Lock gate bearings**
- **Kaplan runner blade bearings**
- **Fish screen bearings & wear pads**
- **Operating rings, vertical & horizontal wearpads**
- **Butterfly valve shaft bearings**
- **Control gate bearings**
- **Wicket gate thrust bearings**
- **Servo motor bearings**
- **Eccentric pin bearings**
- **Segmented face seal rings**
- **Fish pump steady bearings**
- **Bulkhead wear pads**
- **Spillway gate trunnion bearings**
- **Spillway gate thrust washers**

Contact your local marketing company for further information:

Europe	Telephone	Americas	Telephone
<b>AUSTRIA - Vienna</b> (ALBANIA, BOSNIA AND HERZEGOVINA, MACEDONIA, SERBIA AND MONTENEGRO, SLOVENIA)	+43 (0) 1 406 47 33	<b>AMERICAS - REGIONAL</b>	+1 260 749 9631
<b>BELGIUM - Dion-Valmont</b> (LUXEMBOURG)	+32 (0) 10 22 57 50	<b>BRAZIL - São Paulo</b>	+55 11 3372 4500
<b>BULGARIA - Sofia</b> (ROMANIA)	+359 (0)2 969 95 99	<b>CANADA - Etobicoke, ON</b>	+1 416 213 9444
<b>CROATIA - Zagreb</b>	+385 (0) 1 24 56 387	<b>MEXICO - Mexico City</b>	+52 55 57 19 50 05
<b>CZECH REPUBLIC - Rakovník</b> (SLOVAKIA)	+420 313 529 111	<b>USA, East - Conshohocken, PA</b>	+1 610 828 3209
<b>DENMARK - Hillerød</b>	+45 48 22 80 80	<b>USA, Great Lakes - Fort Wayne, IN</b>	+1 260 482 4050
<b>FINLAND - Vantaa</b> (ESTONIA, LATVIA)	+358 (0) 207 12 13 50	<b>USA, Midwest - Lombard, IL</b>	+1 630 268 9915
<b>FRANCE - Maisons-Laffitte</b>	+33 (0) 1 30 86 56 00	<b>USA, Mountain - Broomfield, CO</b>	+1 303 469 1357
<b>GERMANY - Stuttgart</b>	+49 (0) 711 7864 0	<b>USA, Northern California - Fresno, CA</b>	+1 559 449 6070
<b>GREECE</b>	+41 (0) 21 631 41 11	<b>USA, Northwest - Portland, OR</b>	+1 503 595 6565
<b>HUNGARY - Budaörs</b>	+36 (06) 23 50 21 21	<b>USA, South - N. Charleston, SC</b>	+1 843 747 7656
<b>ITALY - Livorno</b>	+39 0586 22 6111	<b>USA, Southwest - Houston, TX</b>	+1 713 461 3495
<b>THE NETHERLANDS - Barendrecht</b>	+31 (0) 10 29 22 111	<b>USA, West - Torrance, CA</b>	+1 310 371 1025
<b>NORWAY - Oslo</b>	+47 22 64 60 80		
<b>POLAND - Warsaw</b> (LITHUANIA, UKRAINE, BELARUS)	+48 (0) 22 863 30 11	<b>Asia Pacific</b>	<b>Telephone</b>
<b>RUSSIA - Moscow</b>	+7 495 982 39 21	<b>ASIA PACIFIC REGIONAL</b>	+65 6 577 1778
<b>SPAIN - Madrid</b> (PORTUGAL)	+34 (0) 91 71057 30	<b>CHINA - Hong Kong</b>	+852 2366 9165
<b>SWEDEN - Jönköping</b>	+46 (0) 36 34 15 00	<b>CHINA - Shanghai</b>	+86 (0) 21 6145 1830
<b>SWITZERLAND - Crissier</b>	+41 (0) 21 631 41 11	<b>INDIA - Bangalore</b>	+91 (0) 80 2245 5157
<b>TURKEY</b>	+41 (0) 21 631 41 11	<b>JAPAN - Tokyo</b>	+81 (0) 3 5633 8008
<b>UNITED KINGDOM - Solihull</b> (EIRE)	+44 (0) 121 744 1221	<b>KOREA - Anyang</b>	+82 (0) 31 386 3283
<b>AFRICA REGIONAL</b>	+41 (0) 21 631 41 11	<b>MALAYSIA - Kuala Lumpur</b>	+60 (0) 3 9059 6388
<b>MIDDLE EAST REGIONAL</b>	+41 (0) 21 631 41 11	<b>TAIWAN - Taichung</b>	+886 4 2382 8886
		<b>THAILAND - Bangkok</b>	+66 (0) 2732-2861
		<b>SINGAPORE</b>	
		<b>and all other countries in Asia</b>	+65 6 577 1778

[www.tss.trelleborg.com/us](http://www.tss.trelleborg.com/us)

**Global Head Office**

Trelleborg Sealing Solutions Rotherham  
Bradmarsh Business Park  
Rotherham S60 1BX United Kingdom

Tel: +44 (0) 1709 789 826  
Fax: +44 (0) 1709 374 819

**North & South America**

Trelleborg Sealing Solutions Streamwood  
901 Phoenix Lake Avenue  
Streamwood, Illinois 60107 USA

Tel: +1 (630) 289 1500  
Fax: +1 (630) 289 5434

