

# G-METAL<sup>®</sup> GSM YAW PUCK

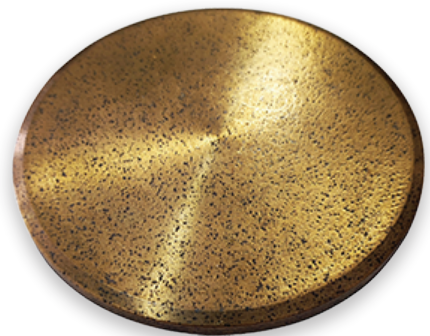
## for Wind Turbine Brakes

### G-METAL<sup>®</sup> PRODUCTS

G-Metal<sup>®</sup> products are made in Europe from high quality materials. Glebus Alloys has more than 20 years' experience in the manufacturing and engineering of sintered sliding material with graphite solid lubricant. G-Metal<sup>®</sup> products and formulas are used in many industrial applications worldwide in different markets.

### G-METAL<sup>®</sup> GSM YAW PUCKS

G-Metal<sup>®</sup> GSM yaw pucks offer wind turbines an excellent solution as brake pad material in both active and passive yaw braking systems. The material exhibits excellent coefficient of friction properties achieved through the sintering process and homogenized graphite throughout the metallic matrix. The material maintains exceptional tensile and compressive strength which is well-matched for a lifetime of operations. G-Metal<sup>®</sup> yaw pucks, as braking pad materials, maximizes the efficient and quiet operation of wind turbine yaw drive system preventing stick slip (fog-horning) that can stop operations. G-Metal<sup>®</sup> GSM is entirely self-lubricating. The material is maintenance-free but can also be greased due to protection of YAW rim against corrosion. Any eventual oil leakage will not affect the performance of the pads. GSM could also be customized in its shapes and geometry to fit current or new design parameters.



### G-METAL<sup>®</sup> GSM 105W SELF-LUBRICATING BEARING MATERIAL

Self-Lubricated sliding bearing alloy material with graphite solid lubricant equally distributed throughout the metallic matrix

#### MECHANICAL PROPERTIES & APPLICATION DATA

Tensile Strength $R_p$ [MPa]	85	$p$ max Stat [MPa]	230
Compressive Strength $\sigma_{DB}$ [MPa]	350	$p$ max Dyn [MPa]	115
E-Modul [N/mm <sup>2</sup> ]	--	Max. Sliding Speed $v_{max}$ [m/s]	0.35
Min. Hardness [HB]	65	$p$ v-Value [MPa*m/s]	1.5
Lin.Coef.of Therm.Exp. $\alpha$ [10 <sup>-6</sup> /K]	18	Coefficient of Friction [dry]	0.12 - 0.18*
Density $\rho$ [kg/dm <sup>3</sup> ]	6.4	Coefficient of Friction [wet]	0.11 - 0.17**
Operation temperature $t_{min}$ [°C]	-100	Min. Shaft Hardness	>35 HRC
Operation temperature $t_{max}$ [°C]	350	Shaft Roughness Ra [ $\mu$ m]	0.2 - 0.8

The above mentioned properties, in particular the coefficient of friction, are not assured properties. They are used as guideline for selecting the sliding alloy for your application.  
 \* Up to 0.45 under special conditions (dry) \*\* Up to 0.43 under special conditions (wet)