

Product information

TECASINT 8591 – New material for space applications

Tribological grade with superior sliding properties under space conditions

Ensinger Sintimid developed in collaboration with ESA and our project partner Aerospace & Advanced Composites GmbH (AAC) a brand-new tribological grade for sliding applications in space. Typical use are ball & linear bearing cages as well as sliding guides.

TECASINT 8591 meets extreme tribological requirements under space conditions such as low friction and wear at slow sliding speeds without stick-slip-effects. Even at cryogenic temperatures and under vacuum that grade shows excellent gliding properties. This product is the result of an European collaboration and an equivalent alternative to the well-known Duroid 5813 (obsolete) and PGM-HT.

You can find comprehensive information regarding the SLPMP2 Project on the ESA-homepage.
(<https://connectivity.esa.int/projects/slpmp2>)

Link to ESA article



Typical properties

- Low CoF
- No stick slip effects
- Less wear & friction
- Low bearing torque
- Tight tolerances & no shrinkage
- Low outgassing according to ECSS Q 70-02
- CTE comparable to PGM-HT

Typical applications and description

- LDA - Large Deployment Antenna
- LDR(S) - Large Deployment Reflector (Subsystems)
- ABDM - Articulated Booms Deployment Mechanism

**Ball bearing cage with
40mm outer diameter
TECASINT 8591**

Low friction & wear tested with
more than 20 mio revolutions.



Target industries

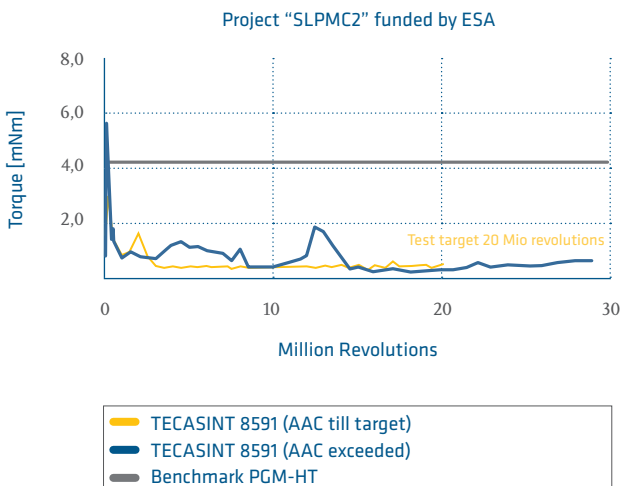
- Tribology in Aerospace
- Vacuum
- Cryotechnology
- Drive technology

The trend for smaller satellites and light weight leads to more complexity for space missions. The result are large deployment systems like antennas and reflectors (LDA, LDR(S) and ABDM).

LDA and LDR(S) can be deployed to more than 10 meters of diameter in space. Therefore a good deployment mechanism is mandatory to guarantee a sustainable function.

TECASINT 8591 will provide all required key properties to gain the benefits for the ball bearings and sliding applications used in those systems.

Bearing test TECASINT 8591 versus PGM-HT



**Small bearing crown cage with
10mm outer diameter**
TECASINT 8591
Low torque.
Tight tolerances.
High sophisticated design.



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