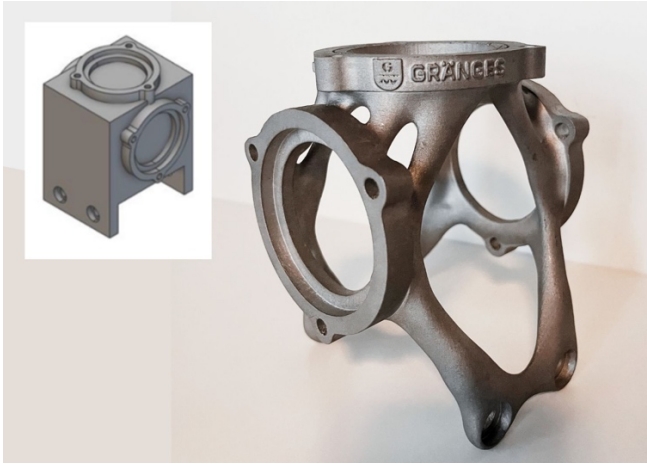


Case Study: Sensor Support Holder (DISPAL® S220 AM)



This case study explores the transformative journey driven by the pursuit of weight reduction, functional integration, and performance improvement. The Sensor Support Holder was designed to meet the evolving needs of satellite components.

Industry: Aerospace

Material used: DISPAL® S220 AM

Challenge: The aerospace industry is constantly dealing with the challenges of reducing weight without compromising structural integrity, integrating functions seamlessly, and enhancing the overall performance of components. In this case, traditional materials struggled to meet the rigorous demands of high stiffness required to minimize deformations during extended operational periods or required expensive and time-consuming operations such as coating.

Solution:

- ❑ **Material Selection:** DISPAL® S220 AM, with its 35% silicon content, emerged as the optimal solution. Recognizing the unique challenges posed by satellite components, the material was chosen for its ability to ensure high stiffness and mitigate deformations during prolonged operational times.
- ❑ **Functional Structure Optimization:** Leveraging the high silicon content of DISPAL® S220 AM, the Sensor Support Holder underwent a transformative redesign. This allowed for the optimization of its functional structure, ensuring a delicate balance between weight reduction and maintaining the high stiffness crucial for satellite components.
- ❑ **Low CTE Performance:** The properties of DISPAL® S220 AM facilitated the creation of a Sensor Support Holder with a low coefficient of thermal expansion (CTE). This was vital to maintaining reliability in the face of extreme temperature differentials.

Outcomes:

1. **Weight Reduction (30%):** The adoption of DISPAL® S220 AM resulted in a Sensor Support Holder that was 30% lighter.
2. **Functional Integration:** DISPAL® S220 AM allowed for seamless integration of functions within the Sensor Support Holder. The redesigned structure showcased not only technical prowess but also a holistic approach to functionality.
3. **Improved Performance:** The Sensor Support Holder's performance saw a marked improvement, thanks to the high stiffness achieved with DISPAL® S220 AM. This translated into enhanced operational reliability during extended mission durations.

The project stands as a testament to the power of material innovation in aerospace engineering. By choosing DISPAL® S220 AM, the Sensor Support Holder not only met but surpassed industry expectations. This case study serves as inspiration for future endeavors, emphasizing the importance of strategic material selection and design optimization in achieving weight reduction, functional integration, and improved performance in aerospace applications.