Characteristics and Properties of ATECSE3D Laminators through Centrifugal Casting.

Introduction:

In the constant desire to improve the efficiency, durability and quality of industrial processes, ATECSE3D is pleased to present a significant advance in the interior design of roller shells, specifically focused on the use of centrifugal casting. This change represents an improvement in rolling engineering, promoting a notable transformation in the structure and performance of these fundamental consumables in the metalworking industry.

Expanded Working Layer and Improved Durability

One of the main improvements introduced through the use of centrifugal casting in rolling mills is the expansion of the working layer, going from occupying 1/3 to 2/3 of the thickness of the rolling mill. This increase not only implies a physical expansion, but also translates into a significant extension of the rolling mill's durability over time. The working layer, covering a greater volume, experiences a more equitable distribution of forces, thus reducing the incidence of premature wear and increasing the useful life of the rolling mill.

Homogeneity of Hardness and Elimination of Discontinuities

Another outstanding aspect of centrifugal casting in the interior design of rolling mills is the obtaining of homogeneous hardness throughout the perimeter of the equipment. This uniformity in mechanical properties guarantees a balanced distribution of stresses during the lamination process, thus avoiding concentration points that could lead to the formation of cracks or fissures. In addition, centrifugal casting technology allows the complete elimination of discontinuities inside the ceramic laminator, ensuring smooth and uninterrupted operation.

Positive Assessment of Structural Homogeneity

It is crucial to highlight the importance of structural homogeneity in roller shells, both in pearlitic and bainitic nodular structure jackets and in cast white iron. This uniformity in the metal structure guarantees greater resistance to fatigue and a better ability to withstand dynamic loads, critical aspects in demanding work environments such as clay grinding. In addition, structural homogeneity contributes to minimizing the risk of catastrophic failures and optimizing the operating efficiency of the rolling mill.

Conclusions:

In conclusion, the adoption of centrifugal casting in the interior design of the rolling mills at ATECSE3D represents a significant advance in the metallurgical process, offering tangible benefits in terms of durability, performance and quality of the final product. The expansion of the working layer, the homogeneity of hardness and the elimination of discontinuities are just some of the improvements that this approach brings to the lamination process. We are convinced and experience has shown us that this technology will continue to set the standard in the evolution of rolling mills, thus driving the continuous progress of the industry.

Control and Audit of Foundry Processes by ATECSE3D

ATECSE3D presents its comprehensive approach to process control and auditing in the casting of alloyed metallic materials. Our experience as experts in metallurgical casting positions us as leaders in guaranteeing quality and excellence in the production of complex products from their initial stage to the final phase in their workshops.

Process Control in the Foundry

In the first stage of the process, ATECSE3D implements rigorous controls to ensure the integrity and consistency of the materials used in the foundry. From checking that the foundry selects the best raw materials to pouring into molds, each step is meticulously supervised and analyzed to ensure the quality of the final product. Chemical composition testing, metallographic analysis and microstructure evaluations are performed to verify compliance with required standards.

Audit in the Workshop as a Final Stage

The final stage of our control and audit process takes place in our workshops, where the quality and precision of each cast part is verified. Our foundry experts perform visual inspections, dimensional measurements, and non-destructive testing to detect potential internal defects and ensure the structural integrity of parts.

Providing Added Value

ATECSE3D is committed to offering added value to our clients through excellence in the casting of alloyed metal materials. Our focus on process control and auditing allows us to ensure the reliability, durability and optimal performance of each product. By leveraging our experience and technical knowledge, we help our customers obtain superior quality products that meet their highest expectations and requirements.

In summary, ATECSE3D's focus on process control and auditing in the casting of alloyed metal materials ensures the production of complex products of the highest quality. From the initial casting stage to the final phase in our workshops, we are committed to providing products that meet the highest standards of excellence and satisfy the specific needs of each customer. Trust ATECSE3D to ensure quality and reliability in every step of the casting process until the final delivery of your product.