

Cast Aluminum 383-ADC12

Aluminum Alloy for Casting

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Technical Data: Cast Aluminum 383-ADC12

Product Description

The designation ADC12 follows the Japanese Industrial Standards (JIS) for aluminum die-casting alloys. The "A" in ADC12 indicates that it is an aluminum alloy, and "DC" stands for die-casting. "12" specifies the specific alloy composition within the ADC series.

ADC12 offers excellent castability, high corrosion resistance, and good mechanical properties. It is commonly used in automotive components, electrical housings, and other applications requiring lightweight and durable metal parts. The silicon content in ADC12 enhances fluidity during the casting process, contributing to intricate and precise mold filling.

In summary, Cast Aluminum 383 (ADC12) is a well-suited alloy for die casting. Its balanced properties make it famous for producing high-quality, intricate aluminum components in various industries.



Chemical Comparison

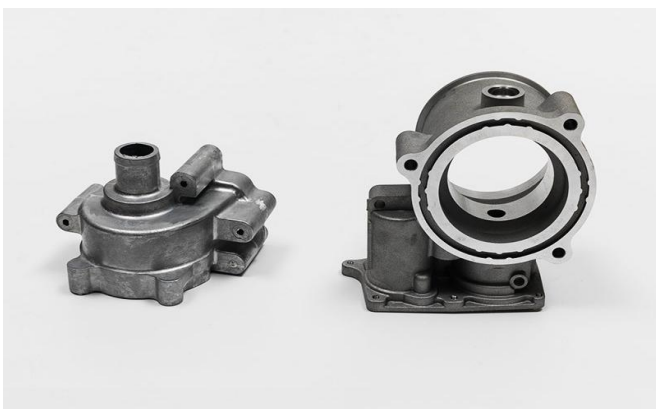
Si	Fe	Cu	Mn	Mg	Ni	Zn	Sn	Pb	Al
9.6-12.0	1.3	1.5-3.5	0.5	0.3-0.6	0.5	1	0.2	0.2	Balance

Physical and Mechanical Properties

Property	Tensile Strength (MPa)	Yield Strength (MPa)	Hardness (Brinell)	Shear Strength (MPa)	Impact Strength (J)	Fatigue Strength (MPa)	Thermal Conductivity (W/m·K)	Density (g/cm ³)	Melting Range (°C)
Value	305	230	82	185	8.5	70	96.2	2.68	570-640

Typical Applications

Aluminum 383 (ADC12) cast Automotive Components



Aluminum 383 (ADC12) is a favored material for casting automotive components due to its exceptional mechanical properties, lightweight nature, and corrosion resistance. One key advantage is its high tensile strength of 305 MPa, providing the structural integrity required for automotive applications. This strength, coupled with a yield strength of 230 MPa, ensures that the cast components can withstand the dynamic stresses experienced in automotive environments, contributing to the overall safety and durability of the vehicles.

The lightweight characteristics of Aluminum 383 (ADC12) play a pivotal role in enhancing fuel efficiency and reducing the vehicle's overall weight. With a density of 2.68 g/cm³, significantly lower than many alternative materials, the alloy allows for the production of lightweight yet sturdy automotive components. It contributes to improved fuel economy and enhances the overall performance and handling of the vehicle.

Note

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Aluminum 383 (ADC12) cast Consumer Electronics Housing

Due to its favorable properties, Aluminum 383 (ADC12) is preferred for casting consumer electronics housings. Its high fluidity during casting allows for intricate and complex mold designs commonly found in electronic device housings. The alloy's ability to fill detailed molds effectively ensures that the final castings exhibit the precise and intricate features necessary for modern consumer electronic products.

Secondly, ADC12 offers excellent machinability, allowing for post-casting processes such as machining and finishing. It is crucial in producing consumer electronics, where precise dimensions and smooth finishes are essential for aesthetic and functional purposes. The ease of machining also contributes to the cost-effectiveness of manufacturing electronic housings, making ADC12 a practical choice for mass production.

Lastly, the corrosion resistance of Aluminum 383 enhances the durability of consumer electronics housings. Electronic devices are often subjected to various environmental conditions, including exposure to moisture and temperature variations. The corrosion-resistant properties of ADC12 help protect the housing from degradation over time, ensuring the longevity and reliability of consumer electronics products. Overall, Aluminum 383 (ADC12) stands out as a versatile and reliable material for casting consumer electronics housings, meeting the stringent requirements of both form and function in the electronic manufacturing industry.

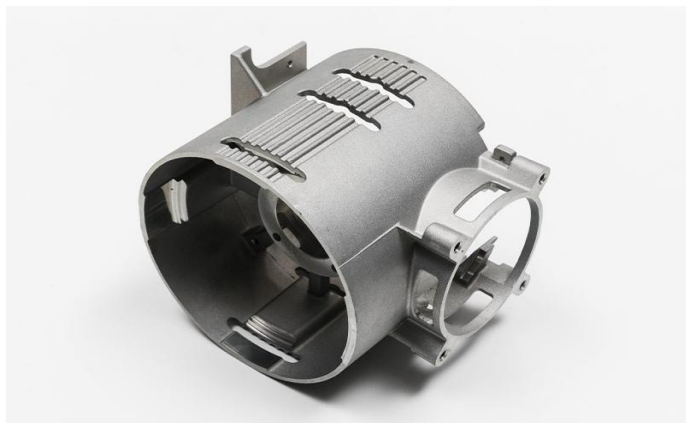


Aluminum 383 (ADC12) cast Industrial Components

Aluminum 383 (ADC12) is well-suited for casting industrial components due to its unique combination of mechanical properties and casting characteristics. Its high fluidity during the casting process allows for complex industrial components' detailed and intricate molding. It ensures that the final products have precise shapes and dimensions, meeting the stringent requirements often demanded in industrial applications.

Secondly, the alloy's excellent machinability contributes to its versatility in industrial component manufacturing. Machining processes like milling and drilling are commonly employed in producing industrial parts. The good machinability of ADC12 simplifies these post-casting processes, allowing for the efficient fabrication of intricate components with tight tolerances.

Thirdly, the inherent properties of Aluminum 383, including its high strength, corrosion resistance, and heat resistance, make it a reliable choice for industrial applications. Industrial components often face challenging operating conditions, and ADC12's ability to maintain its mechanical integrity at elevated temperatures and resist corrosion ensures the longevity and durability of the cast components in diverse industrial environments. In summary, Aluminum 383's combination of casting characteristics, machinability, and robust mechanical properties positions it as a favorable material for casting various industrial components.



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