

Aluminium Casting Solutions | Your Global Partner



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The history of Alteams stretches back over half a century, with roots in industrial foundry operations in Finland and Sweden in the 1940s. Alteams is today a privately owned Finnish company.

Building on this solid foundation in the northern industrial environment, Alteams has expanded into a truly global enterprise with annual sales level of one hundred million Euros, international support services, and five production facilities located in Finland, China, Poland, and India. Alteams employs over 1,700 real professionals. The company has regional customer support units in all manufacturing locations, as well as in Sweden and Japan.

Alteams offers more than aluminium casting using four different casting methods. The company has its own dedicated tool design and manufacturing facility in China. In cooperation with its long-term strategic partners, the company offers an even broader range of castings. This means that

Alteams has a wide capacity range, from single prototype units to mass production and from one hundred grams up to one ton.

Technological development has given Alteams a range of competencies that goes beyond regular foundry operations, from initial R&D and prototyping all the way to mass production and deliveries. Alteams has its own R&D operations and a vast experience in producing innovations in aluminium casting and added value processes. This makes Alteams your excellent partner and ideal choice for you at every stage of your product development and manufacturing. Alteams works closely with customers to solve their casting design, aluminium alloy, heat transfer, shielding, and sealing challenges.

Alteams Quality Management System is certified according to the ISO 9001, I4001 and the automotive standard IATF 16949 requirements in Alteams factories in Poland, China, Finland, and India.







# High quality and continuous improvement

The quality objectives at Alteams are to produce high-quality products on time and at a cost effective and competitive price level. It results in the best customer satisfaction and continuous improvements in process efficiency.

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Strong focus on sustainability is an essential part of our operations. Alteams has been awarded with Silver Medal by EcoVadis. This is in recognition of dedicated effort by Alteams and commitment to sustainability activities. Operational Excellence is a part of the continuous improvement program. The target is to minimize non-value-added activities in daily operations and minimize quality costs. Best practices are shared systematically between our factories.



Alteams - Your Partner from early development until delivery with full value chain.

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ALLOYS \_\_\_\_\_ CASTING METHODS

# Aluminium alloys used at Alteams and approximate equivalences against common standards

Note. Standards are not equal with each others. Specified alloy composition to be clarifed case by case.

S = Sand Casting, K = Permanent Die Casting (Low Pressure Casting), D = High Pressure Die Casting, HTC Alloy = High Thermal Conductivity \* old national standard

| Alloy types | asting method | European | International | Finnish | Swedish | German | German | English | American   | Italian | French | Japanese |
|-------------|---------------|----------|---------------|---------|---------|--------|--------|---------|------------|---------|--------|----------|
|             | ပဳ            | EN 1706  | ISO 3522      | SFS*    | SS*     | DIN*   | VDS    | BS*     | AA<br>ASTM | UNI*    | NF*    | JIS      |

# **Aluminium Alloys**

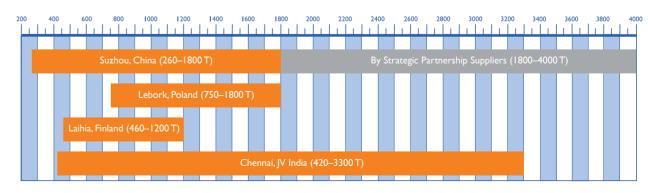
| Aluminiur  | n Allo                     | oys   |   |                                  |                               |                                  |             |  |                            |                      |                             |                                |
|--|----------------------------|---|---|----------------------------------|-------------------------------|----------------------------------|-------------|--|----------------------------|----------------------|-----------------------------|--------------------------------|
| AlSi 12<br>AlSi 12<br>AlSi 12  | D<br>S/K<br>D              | -<br>EN AC-44100<br>EN AC-44300   | -<br>AlSi12<br>AlSi12(Fe)   | -<br>SFS 2566<br>SFS 2566        | -<br>SS 14 4261<br>SS 14 4263 | -<br>3.2581<br>3.2582            | 230A<br>230 | -<br>LM 6<br>LM 20                       | -<br>B413.0<br>A413.0      | -<br>4514<br>5079    | -<br>A-S13<br>A-S12         | -<br>AC3A<br>ADC1              |
| AlSi10Mg<br>AlSi10Mg<br>AlSi7Mg  | S/K<br>D<br>S/K            | EN AC-43100<br>EN AC-43400<br>EN AC-42100                               | AlSi10Mg<br>AlSi10(Fe)<br>AlSi7Mg0,3                              | SFS 2567<br>SFS 2567<br>SFS 2574 | SS 14 4253<br>SS 14 4245      | 3.2381<br>3.2382<br>3.2371       | 239A<br>239 | LM 9<br>LM 25                            | A361.0<br>A356.0           | 3049<br>5074<br>3599 | A-S10G<br>A-S9<br>A-S7G     | AC4A<br>ADC3<br>AC4CH          |
| AlSi9Cu3<br>AlSi9Cu3<br>AlSi10Cu2<br>AlSi7Cu2<br>AlSi6Cu4Ni<br>HTC Alloy | S<br>D<br>D<br>S<br>S<br>D | EN AC-46200<br>EN AC-46000<br>EN AC-46100<br>EN AC-46600<br>EN AC-45000 | AlSi8Cu3<br>AlSi9Cu3(Fe)<br>AlSi10Cu2(Fe)<br>AlSi7Cu2<br>AlSi6Cu4 | SFS 2568<br>SFS 2568<br>SFS 2570 | SS 14 4251<br>SS 14 4250      | 3.2163.01<br>3.2163.05<br>3.2151 |             | LM 24<br>LM 24<br>LM 2<br>LM 27<br>LM 21 | A380.0<br>A380.0<br>A383.0 | 5075<br>5076<br>7369 | A-S9U3A<br>A-S9U3<br>A-S5U2 | AC4B<br>ADC10<br>ADC12<br>AC2B |



# Comparison of Alteams casting methods

|                                   | Sand<br>casting                              | Shell mould casting   | Low pressure die casting                     | High pressure<br>die casting   |  |  |
|-----------------------------------|--|---|--|--|--|--|
| Weight of the casting, kg         | 0.1 - 800                                    | 0.1 - 15  | I - 70                                       | 0.05-30  |  |  |
| Annual volume, pcs                | I - 5 000                                    | 50 - 10 000   | 100 - 10 000                                 | 5 000 - 500 000  |  |  |
| Pattern/mould cost                | Relatively low                               | Relatively low/<br>moderate                                     | Moderate                                     | Relatively high  |  |  |
| Cost of changes                   | Low  | Relatively low/<br>moderate                                     | Moderate                                     | Relatively high  |  |  |
| Flexibility of design             | Very high                                    | High  | Relatively high                              | Relatively high  |  |  |
| Minimun wall thickness, mm        | 4 - 6  | 2 - 4   | 3 - 4  | 0.8 - 1.5  |  |  |
| Dimension accuracy                | Fairly good                                  | Good  | Good   | Very good  |  |  |
| Possible surface roughness,<br>Ra | ≥6.3 (12.3)                                  | ≥6.3  | ≥3.2   | ≥1.6 (0.8)   |  |  |
| Casting alloys                    | AISi10Mg<br>AISi7Mg<br>AISi9Cu2<br>AISi7Cu2  | AISi10Mg<br>AISi7Mg<br>AIMg3                                    | AlSi10Mg<br>AlSi12                           | AlSi9Cu3Fe<br>AlSi12<br>AlSi10Mg<br>AlSi10Cu2(Fe)<br>HTC                 |  |  |
| Delivery time for samples, weeks  | 3 - 6  | 2 - 4   | 8 - 15                                       | 8 - 20   |  |  |
| Special features                  | Heat-treatable<br>Friction stir-<br>weldable | With sand cores<br>Heat-treatable<br>Friction stir-<br>weldable | Heat-treatable<br>Friction stir-<br>weldable | Heat-treatable<br>Friction stir-<br>weldable<br>HTC                      |  |  |
| Alteams factory                   | Loppi (Finland)                              | Loppi (Finland)   | Laihia (Finland)                             | Laihia (Finland)<br>Lebork (Poland)<br>Suzhou (China)<br>Chennai (India) |  |  |

# Range of Alteams high pressure die casting machines (tons)







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