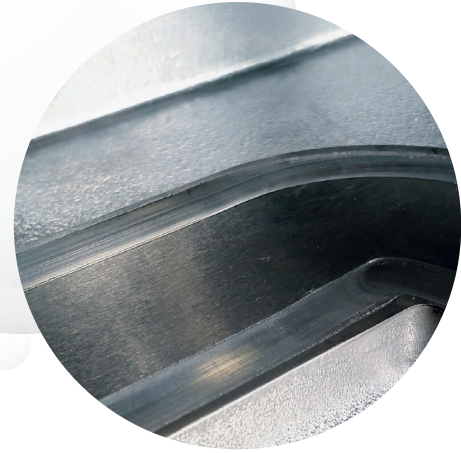
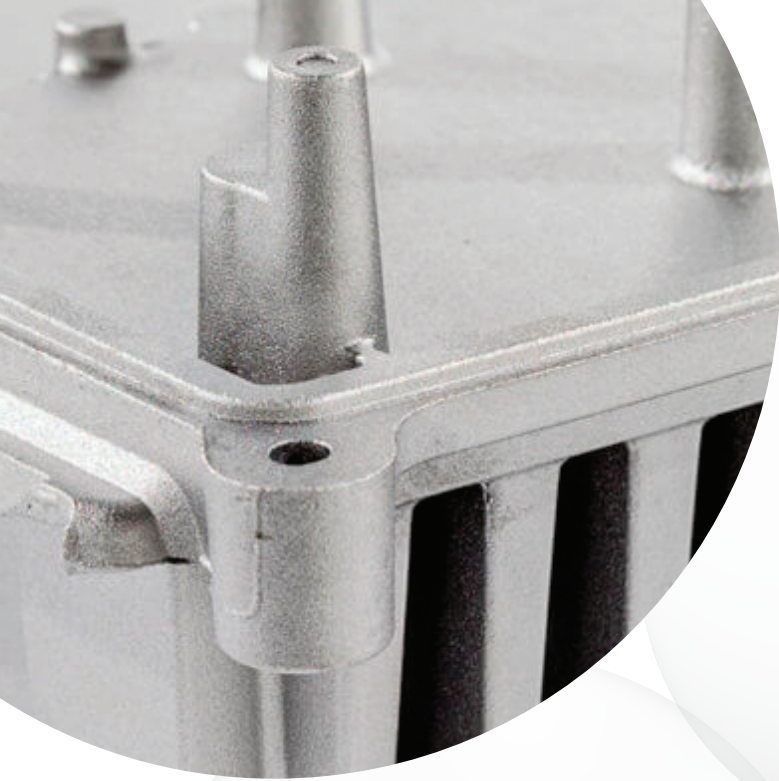




**Alteams**



**Aluminium Casting Solutions** | Your Global Partner



Alteams’ history 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 Nordic industry, Alteams has expanded into a truly global enterprise with a sales level of over €80 million in 2020, international support services, and five production facilities located in Finland, China, Poland, and India. Alteams employs over 1,600 top professionals. The company has regional customer support units in all manufacturing locations as well as in Sweden and Japan.

Alteams offers more than just aluminium casting by five different casting methods. It has its own dedicated tool design and manufacturing facility. In cooperation with its long-term strategic

partners, the company can offer an even broader range of castings. That means that Alteams has a wide capacity range, from single prototype units to mass production and from 100 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. Because Alteams has its R&D operations and a lot of experience in producing innovations in aluminium casting and added-value processes, Alteams is an excellent partner and ideal choice for you at every stage of your product development and manufacturing.

Alteams works together with customers to solve their casting design, aluminium alloy, heat transfer, shielding, and sealing challenges.



**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.

Alteams Quality Management System is certified according to automotive standard IATF 16949 requirements in Alteams factories in Poland,

Finland, and India. Alteams factory in China will be certified according to IATF 16949 standard during 2021.

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 the factories. The focus on sustainability is an essential part of our operations.

Summary

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- Value chain for the customers ..... 4
- Alloys ..... 6
- Casting methods ..... 7



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

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

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

S = Sand Casting, K = Permanent Die Casting (Gravity Casting, Low Pressure Casting), D = High Pressure Die Casting  
\* old national standard

Alloy types	Casting method	European	International	Finnish	Swedish	German	German	English	American	Italian	French	Japanese
		EN 1706	ISO 3522	SFS*	SS*	DIN*	VDS	BS*	AA ASTM	UNI*	NF*	JIS

### Aluminium Alloys

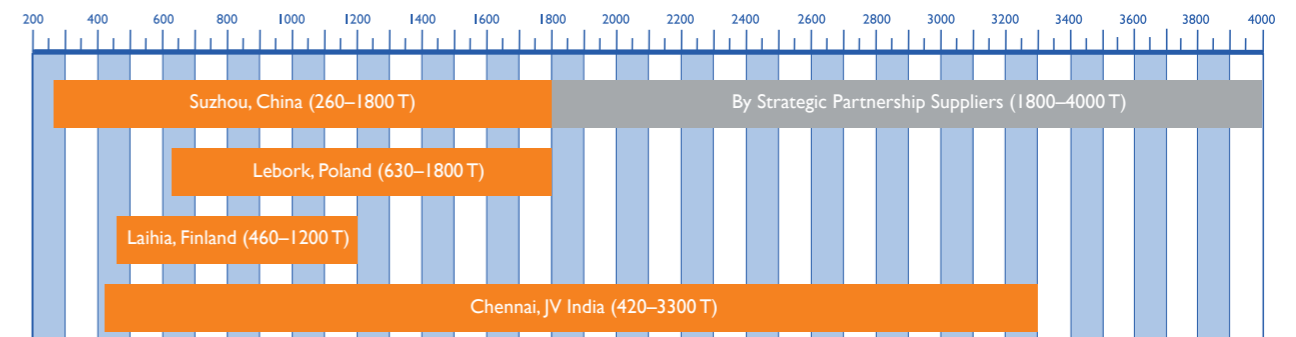
AlSi3	D	-	-	-	-	-	-	-	-	-	-	-
AlSi12	S / K	EN AC-44100	AlSi12	SFS 2566	SS 14 4261	3.2581	230A	LM 6	B413.0	4514	A-S13	AC3A
AlSi12	D	EN AC-44300	AlSi12(Fe)	SFS 2566	SS 14 4263	3.2582	230	LM 20	A413.0	5079	A-S12	ADC1
AlSi10Mg	S / K	EN AC-43100	AlSi10Mg	SFS 2567	SS 14 4253	3.2381	239A	LM 9	-	3049	A-S10G	AC4A
AlSi10Mg	D	EN AC-43400	AlSi10(Fe)	SFS 2567	-	3.2382	239	-	A361.0	5074	A-S9	ADC3
AlSi7Mg	S / K	EN AC-42100	AlSi7Mg0,3	SFS 2574	SS 14 4245	3.2371	-	LM 25	A356.0	3599	A-S7G	AC4CH
AlSi7Mg	D	-	-	-	-	-	-	-	-	-	-	-
AlSi9Cu3	S	EN AC-46200	AlSi8Cu3	SFS 2568	SS 14 4251	3.2163.01	2264	LM 24	A380.0	-	-	AC4B
AlSi9Cu3	D	EN AC-46000	AlSi9Cu3(Fe)	SFS 2568	SS 14 4250	3.2163.05	226	LM 24	A380.0	5075	A-S9U3A	ADC10
AlSi11Cu2	D	EN AC-46100	AlSi11Cu2(Fe)	-	-	-	-	LM 2	A383.0	5076	A-S9U3	ADC12
AlSi7Cu2	S	EN AC-46600	AlSi7Cu2	-	-	-	-	LM 27	-	-	-	-
AlSi6Cu4Ni	S	EN AC-45000	AlSi6Cu4	SFS 2570	-	3.2151	225	LM 21	-	7369	A-S5U2	AC2B



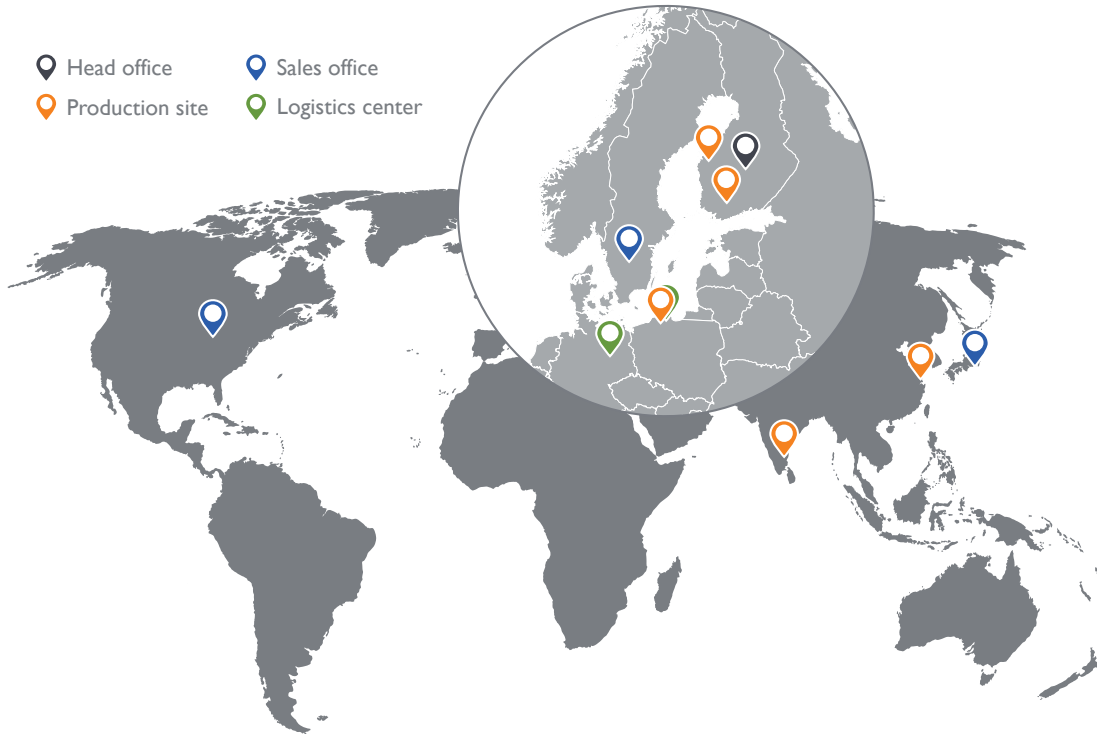
## Comparison of Alteams casting methods

	Sand casting	Shell mould casting	Gravity casting	Low pressure die casting	High pressure die casting
Weight of the casting, kg	0.1 - 800	0.1 - 15	0.01 - 50	1 - 70	0.01 - 30
Annual volume, pcs	1 - 5 000	50 - 10 000	100 - 50 000	100 - 10 000	5 000 - 1 000 000
Pattern / mould cost	Relatively low	Relatively low/moderate	Moderate	Moderate	Relatively high
Cost of changes	Low	Relatively low/moderate	Moderate	Moderate	Relatively high
Flexibility of design	Very high	High	High	Relatively high	Relatively high
Minimum wall thickness, mm	4 - 6	2 - 4	3 - 4	3 - 4	0.8 - 1.5
Dimension accuracy	Fairly good	Good	Good	Good	Very good
Possible surface roughness, Ra	≥6.3 (12.3)	≥6.3	≥3.2 (2.5)	≥3.2	≥1.6 (0.8)
Casting alloys	AlSi10Mg AlSi7Mg AlSi9Cu2 AlSi7Cu2	AlSi10Mg AlSi7Mg AlMg3	AlSi12 AlSi10Mg AlSi7Mg	AlSi10Mg AlSi12	AlSi9Cu3Fe AlSi12 AlSi10Mg AlSi11Cu2(Fe)
Delivery time for samples, weeks	3 - 6	2 - 4	5 - 12	8 - 15	8 - 20
Special features	Heat-treatable Friction stir-weldable	With sand cores Heat-treatable Friction stir-weldable	With sand cores Heat-treatable Friction stir-weldable	With sand cores Heat-treatable Friction stir-weldable	Heat-treatable Friction stir-weldable
Alteams factory	Loppi (Finland)	Loppi (Finland)	Laihia (Finland) Loppi (Finland)	Laihia (Finland) Loppi (Finland)	Laihia (Finland) Lebork (Poland) Suzhou (China) Chennai (India)

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



-  Head office
-  Sales office
-  Production site
-  Logistics center



#### HEAD OFFICE

P.O. Box 91 (Yritystie 1)  
FI-40351 Jyväskylä, Finland  
Tel. +358 (0)201 339 500  
[info@alteams.com](mailto:info@alteams.com)  
[www.alteams.com](http://www.alteams.com)

#### FINLAND

Alteams Finland Oy, Laihia  
Länsitie 61  
66400 Laihia, Finland  
Tel. +358 (0)201 339 500

Alteams Finland Oy, Loppi  
Valutie 2  
12700 Loppi, Finland  
Tel. +358 (0)201 339 500

#### CHINA

Alteams (Suzhou) Co. Ltd.  
No.388, Chao Hong Road  
215129 Suzhou New District, China  
Tel. +86 512 6665 8400

#### POLAND

Alteams Poland Sp. z o.o.  
ul. Abrahama 10  
84-300 Lebork, Poland  
Tel. +48 59 714 0650

#### INDIA

Ashley Alteams India Ltd.  
No.8, SIPCOT Industrial park  
Chellaperumpulimedu Village  
Sozhavaram Post,  
Akkur (Via) Vembakkam Taluk  
Tamilnadu - 631 701, India  
Tel. +91 4182 221 500  
[reachus@ashleyalteams.com](mailto:reachus@ashleyalteams.com)

#### SWEDEN

Alteams Stilexo AB  
Gjuterigatan 9  
55318 Jönköping, Sweden  
Tel. +46 (0)703 550 576

#### JAPAN

Alteams Japan K.K.  
8F Yokohama Onoecho Building  
4-57 Onoecho, Naka-ku  
Yokohama city, Kanagawa Pref.  
231-0015 Japan  
Tel: (+81) 045 285 1624  
[www.alteams.co.jp](http://www.alteams.co.jp)

#### US

Sales and Support Office  
13534 S Route 30  
Plainfield, IL 60544, US  
[ussales@alteams.com](mailto:ussales@alteams.com)