

Icebreakers for different operating environments



Advanced icebreaker designs improve the efficiency of escort operations in the Baltic Sea and the Arctic

Aker Arctic's latest icebreaker designs combine advanced hull form with a novel propulsion system, two azimuth thrusters in the stern and a third one in the bow of the vessel, giving the vessels high maneuverability and excellent operational icebreaking capability in the most challenging ice conditions. Together with energy-saving technical solutions, this increases the overall efficiency and reduces environmental impact.

During the development of these new icebreaker designs, Aker Arctic carried out extensive model tests in both open water and ice. The icebreaking performance of the first vessel was verified in full-scale ice trials in March 2017.



Aker ARC 130

Aker ARC 130 Baltic Escort Icebreaker was developed for the Finnish Transport Agency in co-operation with ILS Oy.

The design combines the latest technical solutions with environmentally friendly dual-fuel power plant. The vessel is capable of running on both liquefied natural gas (LNG) and low-sulphur marine diesel oil.

Polaris, the most powerful icebreaker ever to fly the Finnish flag, was built by Arctech Helsinki Shipyard (Finland) and joined Arctia's icebreaker fleet in 2016.

Initial operational experience has been positive with more escorted ships and less towing required compared to older icebreakers operating in the same area.



Aker ARC 130 A

Aker ARC 130 A Icebreaking Support Vessel is a further development of the Finnish icebreaker.

The design has been adapted to Arctic conditions and better dynamic positioning capability.

The vessel is intended to operate at the Novy Port oil terminal in the shallow waters of the Gulf of Ob where the ice can be up to 2 metres thick.

In 2015, Gazprom Neft ordered two vessels from Vyborg Shipyard (Russia). The icebreakers, *Aleksandr Sannikov* and *Andrey Vilkitsky*, are scheduled for delivery in 2017.

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	Aker ARC 130	Aker ARC 130 A
Vessels built or under construction	<i>Polaris</i> (2016)	<i>Aleksandr Sannikov</i> (2017) <i>Andrey Vilkitsky</i> (2017)
Length, overall	110.5 m	121.7 m
Length, design waterline	97.4 m	107.9 m
Breadth, design waterline	24.0 m	25.0 m
Breadth, maximum	24.4 m	26.0 m
Draught, design waterline	8.0 m	8.0 m
Draught, maximum	9.0 m	8.2 m
Classification society	Lloyd's Register	Russian Maritime Register of Shipping
Ice class	PC 4 Icebreaker(+)	Icebreaker8 (IACS PC 2 equivalent)
Flag	Finland	Russian Federation
Power Plant	Four main generating sets and one harbour generator (21,000 kW + 1,168 kW)	Four main generating sets and one harbour generator (27,000 kW + 1,200 kW)
Fuel	LNG and LSMDO	LSMDO
Propulsion system	Azimuth propulsion units (2 x 6,500 kW + 6,000 kW)	Azimuth propulsion units (2 x 7,500 kW + 6,500 kW) Bow thruster (1,800 kW)
Icebreaking capability	3.5 knots in 1.8 m level ice 5 knots in 1.2 m ice + 20 cm snow 10 knots in 2 m brash ice channel	2 knots in 2 m ice + 30 cm snow 4 knots in 7 m brash ice with 50 cm consolidation
Open water speed	17 knots	16 knots
Dynamic positioning	Yes (no DP class)	Dp2
Ambient temperature envelope	-30...+30°C	-50...+30°C
Accommodation	24 persons	35 persons
Towing equipment	Winch, hydraulic pins and towing notch	Winch and towing notch
Oil recovery equipment	Built-in mechanical oil recovery system and tanks for recovered oil	Oil recovery equipment in containers and tanks for recovered oil
Other	1.5 t / 30 m deck crane Winching platform Stainless steel ice belt Roll reduction tank	25 t / 27 m deck crane Helicopter deck for Mi-8 Fire-fighting system with four monitors and water screen Roll reduction tank