FrigoSys
Master Cold Engineering

PRODUCT CATALOG · 2026

ICE MACHINES

Flake Ice Machines

FRESH WATER · SEAWATER · ON-BOARD

YAPRAK BUZ MAKİNELERİ · 0.5 – 60 TON / GÜN

0.5 – 60
TONS OF ICE / 24 H

−5...−10 °C
DRY, SUB-COOLED ICE

1.5 – 2.5
MM FLAKE THICKNESS

41
MODELS · 5 SERIES



01 · YAPRAK BUZ

Flake Ice — the Working Ice

Flake ice is thin, dry, sub-cooled ice produced continuously on the inner wall of a refrigerated drum. It is the ice of choice wherever products must be cooled quickly and gently — on fishing boats, in processing plants, supermarkets, bakeries and concrete batching plants.

Advantages of flake ice

Sub-cooled & dry
Formed directly at −5 to −8 °C (seawater −10 °C). Dry flakes do not stick together and stay free-flowing in storage.

Fast, even cooling
Large contact area per kg: flakes wrap the product completely and take its heat away faster than cube or block ice.

Gentle on the product
Thin flakes with no sharp edges protect fish, meat and produce surfaces during storage and transport.

No crushing needed
Ice leaves the drum ready to use — no crusher, no extra energy, no ice dust.

Hygienic
Water-side parts in stainless steel; the closed drum keeps ice clean from water to bin.

Low energy per ton
Ice forms on a stationary, flooded freezing surface — no harvest heat, no defrost cycle, continuous output.



Why Frigo System

- Complete range from 0.5 to 60 t/day in five series
- Air, water or evaporative condensing; seawater versions for vessels and coastal plants
- Fully automatic PLC control — unattended 24 h operation, automatic stop when the bin is full
- One supplier for the whole cold chain: ice machine, ice storage room, cold rooms and installation
- Engineering support: capacity selection for your climate, water and power supply

Flake ice compared

Ice type	Size	Temperature	Contact area	Cooling speed	Crushing needed	Typical use
Flake ice	1.5 – 2.5 mm	−5 … −10 °C	••••	••••	No	Fish, meat, bakery, concrete
Tube ice	Ø 22 – 41 mm	≈ 0 °C	••	••	For contact cooling	Drinks, retail packed ice
Plate ice	10 – 20 mm	≈ 0 °C	••	••	Often	Fishery, packed ice
Block ice	5 – 50 kg	≈ 0 °C	•	•	Yes	Transport over long distances

02 · UYGULAMA ALANLARI

Where Flake Ice Works

From a 500 kg/day fish counter to a 60 t/day concrete cooling plant — one technology, sized to the job.



Fishery & seafood
Icing the catch, fish auctions, processing



Fishing vessels
Seawater on-board machines



Supermarkets
Fish & seafood counters



Meat & poultry
Mincing, mixing, sausage production



Bakery
Dough temperature control



Fruit & vegetables
Pre-cooling, display, transport



Food processing
Blanching and process cooling



Concrete cooling
Mass concrete, dams, hot climates



Chemical & dye
Reaction temperature control



Pharmaceuticals
Process and laboratory cooling



Mining
Deep-mine air cooling

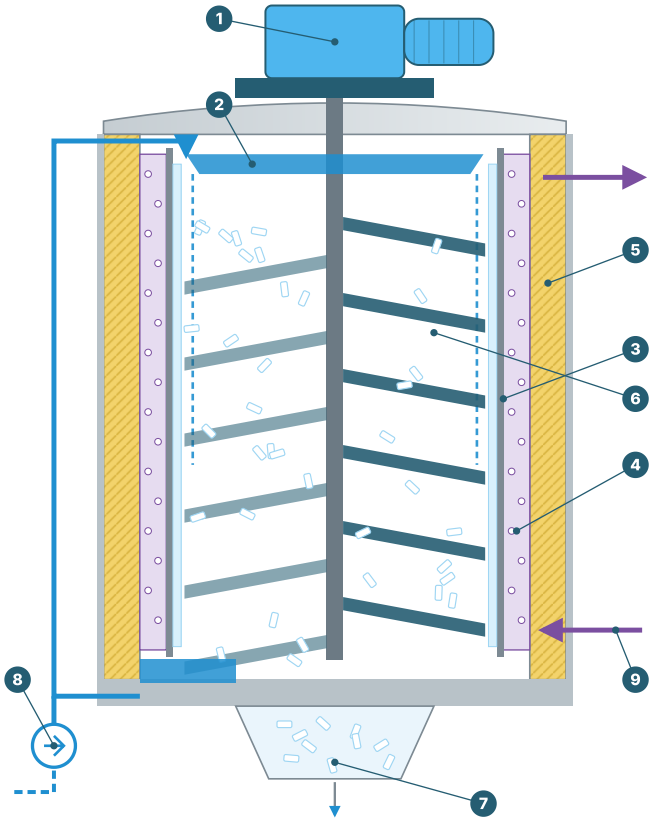
Your application?

Tell us the product, daily quantity and site conditions — we select the machine and the storage for you.

03 · TEKNOLOJİ

How the Evaporator Works

Water is spread over the inside of a cold, stationary stainless cylinder. It freezes into a thin layer in seconds, and a slowly rotating blade cuts it off as dry flakes that fall straight out of the bottom.



1. Gear motor drive — turns the ice blade at low speed
2. Water distributor — spreads water evenly over the freezing wall
3. Stationary freezing cylinder in stainless steel
4. Flooded refrigerant jacket — high heat transfer, even ice
5. High-density PU insulation
6. Rotating internal ice blade — cuts the ice into dry flakes
7. Flake ice outlet — straight into the storage room or bin
8. Water tray and circulation pump — unfrozen water returns to the top
9. Refrigerant inlet (liquid) and suction outlet (vapour)

Stationary drum, internal scraping

The freezing cylinder does not rotate, so there is no rotating refrigerant seal to leak. Only the blade and distributor turn.

No water dripping

The tray and seal design keep water out of the ice outlet — the ice in the store stays dry.

Protected drive

Motor protection on the gear motor, pump and compressor; phase, pressure and level safeties.

Fully automatic PLC

One-button start; stops when the bin is full and restarts when ice is needed. Fault messages on the panel.

Adjustable ice

Flake thickness 1.5 – 2.2 mm as standard; thicker or thinner ice on request.

Built to PED rules

Pressure parts designed and manufactured to pressure-equipment standards, pressure-tested in the factory.

04 · TATLI SU SERİSİ

Fresh Water Flake Ice Machines

Compact, self-contained machines from 0.5 to 60 t/day for city or well water. Small models (FIM-05A … FIM-25A) are a single skid with the evaporator on top; larger models put the evaporator and the condensing unit on one frame, ready to place on the ice store.



Flake ice evaporator
FIM evaporator with PLC panel — also supplied alone or as split version



Complete machine
Evaporator, compressor unit and control on one frame

A Air-cooled 0.5 – 10 t	**W** Water-cooled 4 – 30 t	**E** Evaporative-cooled 15 – 60 t

Standard equipment

- Stainless steel flake ice evaporator with gear motor, water pump and float tank
- Semi-hermetic or scroll compressor (by size), oil separator, receiver, filter drier, sight glass
- Air-cooled, water-cooled or evaporative condenser
- PLC control panel: automatic start/stop, ice-full stop, alarm display
- Safety: HP/LP switches, phase protection, motor protection, water-level guard
- Factory-tested, charged and ready to connect — water, drain and power

Options

- Split version: evaporator on the ice store, compressor unit in the machine room
- Evaporator only, for connection to your central plant (HFC, R717, CO_2)
- Refrigerant: R404A/R507 standard; low-GWP R449A / R448A, R407F or R717 on request
- Other power supplies: 220–460 V, 3 ph, 50/60 Hz
- Stainless steel frame, containerised plant, ice storage room and screw conveyor

05 · TEKNİK VERİLER

Air-Cooled Series — FIM-A

ICE TEMPERATURE	FLAKE THICKNESS	CONDENSING	STANDARD
−5 … −8 °C	1.5 – 2.2 mm	40 / 43 °C	33 °C / 20 °C

Model	Production t/24h	Rated at amb./water °C	At 33/20 °C t/24h	Ice kg/h	Refrig. cap. kW ≈	Installed power kW	Ice outlet mm	L × W × H mm	Net weight kg
FIM-05A	0.5	30 / 16	0.46	21	2.7	2.9	Ø 375	1 200×735×684	210
FIM-075A	0.75	30 / 16	0.68	31	4.1	3.2	Ø 375	1 200×735×684	230
FIM-10A	1	30 / 16	0.91	42	5.4	4.7	Ø 375	1 200×735×825	250
FIM-12A	1.2	30 / 16	1.09	50	6.5	5.6	Ø 375	1 200×735×825	260
FIM-16A	1.6	30 / 16	1.46	67	8.7	6.6	Ø 510	1 490×1 180×935	370
FIM-20A	2	30 / 16	1.82	83	10.8	7.4	Ø 510	1 490×1 180×1 009	450
FIM-25A	2.5	30 / 16	2.28	104	13.5	9.1	Ø 510	1 490×1 180×1 069	480
FIM-30A	3	33 / 20	3.00	125	16.9	11.8	554×554	1 890×1 560×1 186	800
FIM-40A	4	33 / 20	4.00	167	22.5	19.2	554×554	2 165×1 650×1 180	1 100
FIM-50A	5	33 / 20	5.00	208	28.2	21.6	870×870	2 700×1 675×1 605	1 600
FIM-60A	6	33 / 20	6.00	250	33.8	27.5	870×870	2 700×1 675×1 605	1 800
FIM-80A	8	33 / 20	8.00	333	45.1	34.9	1034×1034	3 135×1 840×1 746	2 100
FIM-100A	10	33 / 20	10.00	417	56.3	42.1	1034×1034	3 683×1 950×2 006	2 700

Notes

- Production at the rated condition in the table; Frigo System also lists the 0.5 – 2.5 t models at the common 33 °C / 20 °C condition so every model can be compared directly.
- Refrigeration capacity is calculated by Frigo System for system design (≈ −22 °C evaporating), for reference.
- Installed power = total electrical connection of the machine; use it for cable and breaker sizing.
- Capacities refer to R404A/R507. With low-GWP R449A / R448A the output is a few percent lower — confirmed in the offer.
- Air-cooled condenser indoors: ambient max. 35 °C. Power supply 380–415 V / 3 ph / 50 Hz.

06 · TEKNİK VERİLER

Water-Cooled & Evaporative Series

FIM-W · Water-cooled

ambient 30 °C · water supply 20 °C · condensing 40 °C · cooling water 15 – 32 °C

Model	Production t/24h	Ice kg/h	Refrig. cap. kW ≈	Installed power kW	Ice outlet mm	L × W × H mm	Net weight kg
FIM-40W	4	167	22.5	15.1	554×554	2 100×1 100×1 550	1 100
FIM-50W	5	208	28.2	21.7	870×870	2 700×1 100×1 602	1 300
FIM-60W	6	250	33.8	25.4	870×870	2 685×1 100×1 602	1 400
FIM-80W	8	333	45.1	33.5	1034×1034	3 135×1 160×1 746	1 900
FIM-100W	10	417	56.3	40.2	1034×1034	3 566×1 600×2 006	2 700
FIM-150W	15	625	84.5	57.5	1322×1322	3 942×1 850×2 281	4 200
FIM-200W	20	833	112.7	97.5	1450×1450	4 255×1 950×2 954	5 000
FIM-250W	25	1,042	140.8	100.1	1854×1854	5 116×2 050×3 137	7 000
FIM-300W	30	1,250	169.0	122.6	1854×1854	5 150×2 050×3 277	7 500

FIM-E · Evaporative-cooled

ambient 33 °C · water supply 20 °C · condensing 40 °C

Model	Production t/24h	Ice kg/h	Refrig. cap. kW ≈	Installed power kW	Ice outlet mm	L × W × H mm	Net weight kg
FIM-150E	15	625	84.5	58.5	1322×1322	4 100×1 850×2 200	4 200
FIM-200E	20	833	112.7	96.5	1450×1450	4 255×1 950×2 944	5 000
FIM-250E	25	1,042	140.8	96.6	1854×1854	5 116×2 050×3 137	6 600
FIM-300E	30	1,250	169.0	159.8	2129×2129	5 150×2 050×3 277	7 000
FIM-400E	40	1,667	225.3	190.5	2116×2116	6 325×2 280×3 453	10 000
FIM-500E	50	2,083	281.7	192.5	2125×2125	① 3 300×2 000×2 280 ② 3 433×2 275×3 373	5 000 + 6 500
FIM-600E	60	2,500	338.0	305.0	2125×2125	① 3 300×2 000×2 280 ② 3 433×2 275×3 373	5 000 + 6 500

Notes

- FIM-500E and FIM-600E are delivered as two modules: ① compressor unit, ② evaporator module.
- Cooling water quality must meet industrial recirculating cooling-water standards; a cooling tower is not included.
- From 15 t/day the plant can also be built with R717 (ammonia) — ask Frigo System for a project design.

07 · DENİZ SUYU SERİSİ

Seawater Flake Ice Machines

Two seawater series: FIM-M for fishing and fish-carrier vessels (on-board) and FIM-S for coastal plants, harbours and fish auctions (on-shore). The machine draws seawater to make ice and to cool its condenser, so it works wherever fresh water is scarce.



Seawater evaporator
With marine control panel — for split installation on board



Complete seawater machine
Water-cooled with seawater, on a corrosion-protected frame

Seawater series features

- Uses seawater for both ice making and condenser cooling — no fresh water on board
- Colder, drier ice: about −10 °C, up to 2.5 mm thick
- Freezing surface in stainless steel and corrosion-resistant alloy; design life up to 18 years
- Special internal scraping and blade design keep ice production steady at up to 35° roll
- Compact frame for engine rooms and deck installation; one-key automatic control
- Brine concentration min. 2.9 % (natural seawater)

M On-board (marine) 0.75 – 6 t

S On-shore (land) 8 – 25 t

Ice on board pays back

Fish iced within minutes of the catch keeps its quality for days longer and reaches a better price — and the vessel no longer depends on shore ice.

How much ice?

Rule of thumb for chilled fish storage: **ice : fish ≈ 1 : 1** in tropical waters, **1 : 2** in cool waters. A vessel landing 3 t of fish a day in warm seas needs about 3 t of ice a day → FIM-M30W.

08 · TEKNİK VERİLER

Seawater Series — FIM-M & FIM-S

ICE TEMPERATURE	FLAKE THICKNESS	RATED AT	CONDENSING
≈ −10 °C	1.5 – 2.5 mm	33 °C / 20 °C	38 °C

FIM-M · On-board, seawater-cooled

Model	Production t/24h	Ice kg/h	Refrig. cap. kW ≈	Installed power kW	Ice outlet mm	L × W × H mm	Net weight kg
FIM-M075W	0.75	31	4.2	3.6	400×400	1 400×950×1 081	700
FIM-M10W	1	42	5.7	4.9	400×400	1 400×950×1 081	800
FIM-M16W	1.6	67	9.1	7.0	550×550	1 500×1 200×1 293	900
FIM-M20W	2	83	11.3	9.8	550×550	1 500×1 200×1 368	1 000
FIM-M30W	3	125	17.0	14.2	550×550	1 500×1 200×1 436	1 300
FIM-M50W	5	208	28.3	23.4	800×800	1 900×1 520×1 841	1 800
FIM-M60W	6	250	33.9	30.9	800×800	2 750×1 350×2 101	2 200

FIM-S · On-shore, seawater-cooled

Model	Production t/24h	Ice kg/h	Refrig. cap. kW ≈	Installed power kW	Ice outlet mm	L × W × H mm	Net weight kg
FIM-S80W	8	333	45.3	32.3	1030×1030	3 569×1 600×1 746	2 600
FIM-S100W	10	417	56.6	46.5	1030×1030	3 569×1 600×2 226	3 300
FIM-S150W	15	625	84.8	91.7	1322×1322	4 100×1 850×2 515	5 500
FIM-S200W	20	833	113.1	92.0	1450×1450	4 255×1 950×3 084	5 500
FIM-S250W	25	1,042	141.4	114.9	1854×1854	5 113×2 050×3 277	8 000

Notes

- Water supply pressure 1.5 bar; seawater temperature 0 – 35 °C; power 380–415 V / 3 ph / 50 Hz.
- Refrigeration capacity calculated by Frigo System at ≈ −27 °C evaporating, for reference.
- Refrigerant R404A/R507 standard; R449A / R448A or R407F on request. Seawater evaporator also supplied alone.

09 · SEÇİM KILAVUZU

Selecting the Right Machine

Ice output depends on the site: hotter air and warmer water mean less ice. Multiply the production at 33 °C / 20 °C by the factor for your conditions — or let Frigo System do the selection for you.

Capacity factor — air-cooled models

Ambient °C ↓ · Water °C →	10	15	20	25	30
25	1.20	1.20	1.14	1.09	1.04
30	1.17	1.11	1.05	1.01	0.96
33	1.11	1.05	**1.00**	0.95	0.91
35	1.07	1.01	0.96	0.92	0.88
38	1.01	0.96	0.91	0.87	0.83
40	0.97	0.92	0.87	0.83	0.80
43	0.91	0.86	0.82	0.78	0.75

Reference 1.00 = 33 °C ambient, 20 °C water. For water-cooled models read the water column at 30 °C; for evaporative models use the wet-bulb temperature + 8 K as ambient. Indicative values.

Worked example

A fish processing plant in West Africa needs **3.5 t** of ice per day. Site: **38 °C** ambient, **25 °C** water.

Factor from the table: **0.87** → required at 33/20: 3.5 ÷ 0.87 = **4.03 t**

FIM-40A: 4 × 0.87 = 3.47 t — too small
FIM-50A: 5 × 0.87 = **4.34 t** ✓

Model code

FIM-M30W-SP

FIM	Frigo System flake ice machine
M / S	Seawater: M = on-board, S = on-shore (no letter = fresh water)
30	Capacity code = t/24h × 10 (05 = 0.5 t, 075 = 0.75 t, 600 = 60 t)
A / W / E	Condenser: A air-cooled, W water-cooled, E evaporative
-SP	Option suffix: split version (evaporator and compressor unit apart)

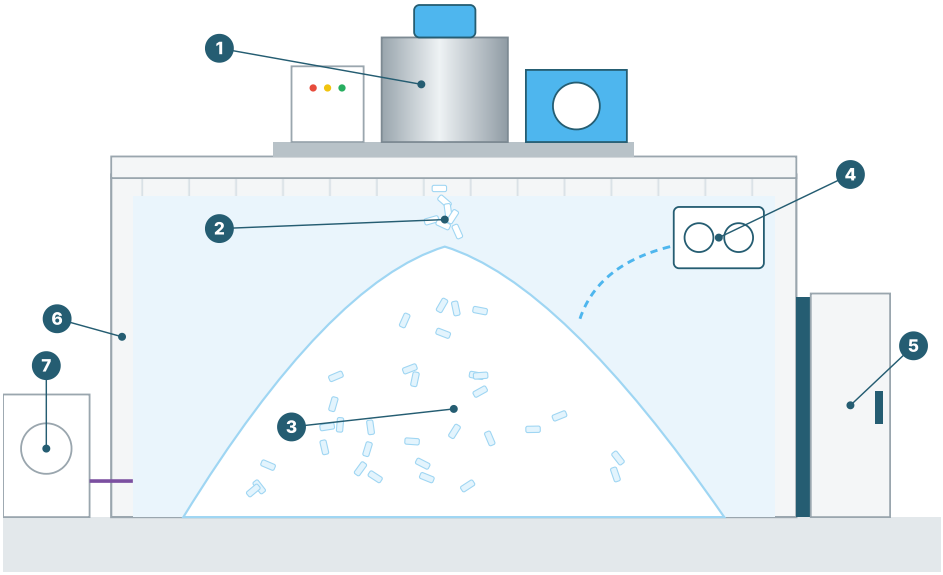
For a quick offer, tell us

- Ice needed per day and per peak hour
- Application and product
- Site: max. ambient and water temperature
- Fresh water or seawater; on-board or on-shore
- Preferred condenser: air, water or evaporative
- Power supply: voltage and frequency
- Ice storage: days of stock, room size available
- Delivery country and port
- Installation by Frigo System: yes / no

10 · KOMPLE ÇÖZÜM

Ice Machine + Ice Store

Flake ice keeps best in a cold store at −5 to −8 °C, where it stays dry and loose. Frigo System builds the store with its own panels and doors, places the machine on the roof and delivers the whole plant ready to run.



1. Flake ice machine on the roof of the store
2. Ice falls straight in through the roof opening
3. Ice pile, kept at −5 … −8 °C
4. Unit cooler of the store
5. Frigo System cold room door
6. Frigo System sandwich panels, 100 mm PU
7. Condensing unit of the store

Sizing the ice store — 1 day of production

Ice per day	Store volume needed	Example Frigo room (inside)	Room volume
1 t	3.2 m³	1.6 × 1.2 × 2.2 m	4.2 m³
2 t	6.3 m³	2.4 × 1.6 × 2.4 m	9.2 m³
3 t	9.5 m³	2.4 × 2.4 × 2.4 m	13.8 m³
5 t	15.9 m³	3.6 × 2.4 × 2.6 m	22.5 m³
10 t	31.7 m³	4.8 × 3.6 × 2.8 m	48.4 m³
20 t	63.5 m³	6.0 × 4.8 × 3.0 m	86.4 m³

Bulk density of flake ice ≈ 0.42 t/m³, 75 % usable volume. Examples on 1.2 m panel modules; final sizing by Frigo System engineering.

Frigo System scope

- Machine selection for your climate, water and power
- Ice store: panels, door, refrigeration unit, lighting
- Roof frame and ice opening, screw conveyor if needed
- Installation, commissioning and operator training
- Spare parts and after-sales service

11 · GENEL ÖZELLİKLER

General Specifications

Specification	Fresh water · FIM-A / W / E	Seawater · FIM-M / S
Ice type	Flake ice, dry and sub-cooled	Flake ice, dry and sub-cooled
Ice temperature	−5 … −8 °C	≈ −10 °C
Flake thickness	1.5 – 2.2 mm (custom on request)	1.5 – 2.5 mm
Capacity range	0.5 – 60 t / 24 h	0.75 – 25 t / 24 h
Make-up water	Drinking-quality fresh water, 5 – 35 °C, ≥ 1.5 bar	Seawater (≥ 2.9 % salt), 0 – 35 °C, ≥ 1.5 bar
Water consumption	≈ equal to ice production (≈ 42 L/h per t/24h)	≈ equal to ice production + condenser water
Condensing	Air (A), water (W) or evaporative (E)	Seawater-cooled (W)
Refrigerant	R404A/R507 · option R449A / R448A (low GWP), R407F, R717, CO_2 (evaporator)	R404A/R507 · option R449A / R448A, R407F
Evaporator	Stationary stainless drum, internal rotating blade	Stainless + corrosion-resistant alloy, marine blade
Control	PLC, fully automatic, ice-full stop, alarms	PLC, fully automatic, one-key operation
Power supply	380–415 V / 3 ph / 50 Hz · option 220–460 V, 60 Hz	380–415 V / 3 ph / 50 Hz · ship supplies on request
Ambient limits	5 – 40 °C (air-cooled condenser indoors max. 35 °C)	5 – 40 °C; up to 35° roll on board
Cooling water	W models: 15 – 32 °C, industrial cooling-water quality	Seawater direct
Operation	Continuous 24 h, unattended	Continuous 24 h, unattended

Good to know

Technical data are nominal values at the stated conditions and may change with product development. Final capacities, power and dimensions are confirmed in the Frigo System offer and order confirmation.

FrigoSys
Master Cold Engineering

Contact Us

For ice machine selection, quotations or technical support, get in touch with our engineering team.

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Engineered for cold.
Built to last.