Non-Grounded Ice Entry and Use Requirements

Purpose and scope

The purpose of this document is to provide requirements for traveling on non-grounded ice.

In scope	Out of scope
• Travel on non-grounded ice. • Non-grounded ice is not touching the bottom of a lake or river, it is floating on top of the water surface.	• Travel on ice roads.

Exemption for shallow water bodies

Travel on shallow water bodies where:

- combined ice and water depth is 36” inches or less, and
- the depth has been confirmed and meets requirements of Minimum Ice Thickness chart, and
- the total weight onto the ice is less than 2,000 pounds.

Is exempt from other requirements in this document.

Required training

COPA will provide awareness level training. Contact your safety representative concerning scheduling. If competency level training is required, contact N1023@conocophillips.com for additional information.

Temperature shifts greater than 20° F. in one day

Suspend travel or reduce load capacity if there is a temperature shift greater than 20° F. in one day.

WARNING: Severe ice cracking may occur during sudden temperature shifts and load bearing capacity may be reduced.

Worker authority

Every worker has authority to shut down any operation and have ice conditions reassessed if conditions change or he/she feels the task has become unsafe.

Immediate hazards

The following conditions are immediate hazards to personnel or equipment:

- If water is observed coming up on top of the ice and flooding the top of the ice, evacuate the area immediately
- Abandon / move away from equipment that starts to sag or crack ice.

Non-grounded ice evaluation

A non-grounded ice evaluation form must be completed daily by a competent person. If the conditions dictate, the ice must be re-bored (profiled). A copy of this assessment must be on location. Place Visual markers (stakes) where ice assessment profiles have been conducted.

Pre-entry evaluation process

Supervisor must evaluate options before entering non-grounded ice.

If	Then
Work can be postponed until ice is grounded.	**Postpone** work.
Work area can be accessed by different route.	**Work** with Environmental and secure approval for alternate route.
Travel on non-grounded ice is necessary.	**Ensure** 1. Non-Grounded Ice Evaluation form is completed before entry. 2. All work activities are communicated to the designated supervisor. 3. Designated supervisor completes daily monitoring.

Safe work practices on non-grounded ice

Workers must follow safe work practices on non-grounded ice.

Before entering	• **Review** emergency procedures. • **Ensure** daily evaluation is completed. • **Review** day's ice conditions and authorized activities.
Always	• **Keep** vehicle speed under 10 mph unless otherwise noted (snow machine travel). • **Operate** equipment approved on the Non-Grounded Ice Evaluation Form. • **Stay** on approved, marked paths and routes.
Never	• **Work** alone on non-grounded ice.
During SIMOPs	• **Conduct** pre-job meeting with all personnel. • Designated supervisor must evaluate current ice conditions, shar profile data, and evaluate job safety.

Emergency rescue	Emergency services must maintain an ice rescue plan.
Exclusion zones	Consider exclusion zones where grounded ice transitions to non-grounded ice.
Document retention	Ice Assessment Logs shall be retained by the company performing the work/assessment for a period of at least one year and may be requested for historical data on ice conditions

Non-Grounded Ice Evaluation form

Work description						Other important information				
Designated Supervisor *(Name)*	Date	Ice conditions *(Cracked, rotten, etc.)*	Borehole #	Temp *(°F)*	Freeboard *(in)*	Ice thickness *(in)*	Water / un-frozen bottom material depth *(ft)*	Approved equipment type	Equip. weight *(lbs)*	Distance to keep between equipment

This form must be completed daily by a Designated supervisor before non-grounded ice entry and use.
Keep a copy of this form on location.

Site Drawing	
Water Source Name and #	

Equipment weight and minimum ice thickness chart prerequisites

Prerequisites for all charts

The following prerequisites apply to all provided tables in this document.

- Charts do not apply where ice has flowing water underneath.
- The equipment must be moving less than 10 mph and not bouncing.
- Temperature must be <15°F.
- Round up ice thicknesses to the nearest half foot.
- Ice engineering is required for loads over 100,000 lbs.
- These charts are valid for single vehicle loads.
- Minimum load spacing is the ice thickness x 100 feet (example 20,000 lbs. load requires 2.5' of ice and minimum 250 feet between loads).
- If vehicle weight is unknown, obtain Gross Vehicle Weight Rating (GVWR) for using these tables. Contact Fleet Maintenance if unable to locate.

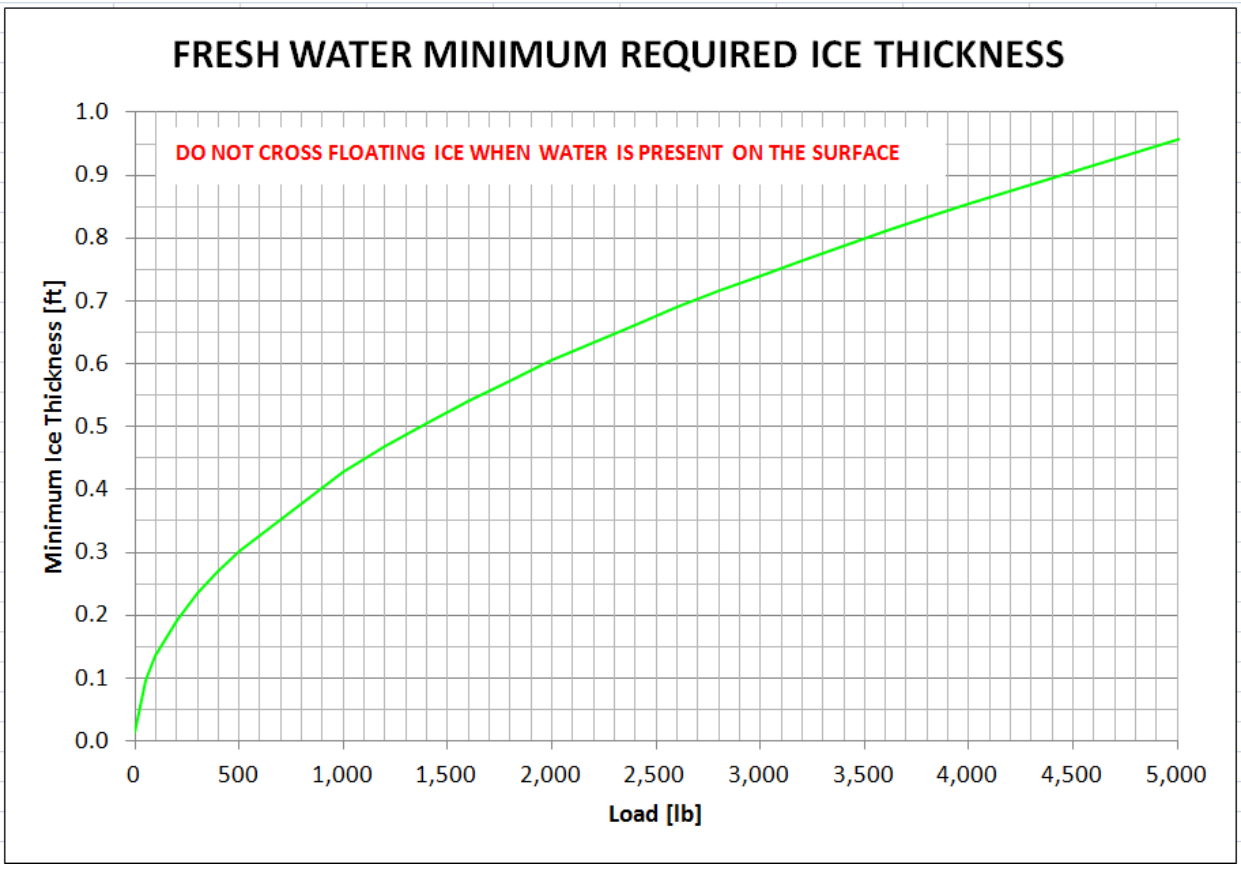
Fresh water minimum required ice thickness (0-5000 lbs.)

Notes

NOTES:

- Round up ice thicknesses to the nearest half foot.
- Ice engineering is require for loads over 100,000 lbs.
- This chart valid for a single vehicle loads.

Minimum load spacing is the ice thickness x 100 feet (example 2,000 lbs. load requires 1' of ice and minimum 100 feet between loads).



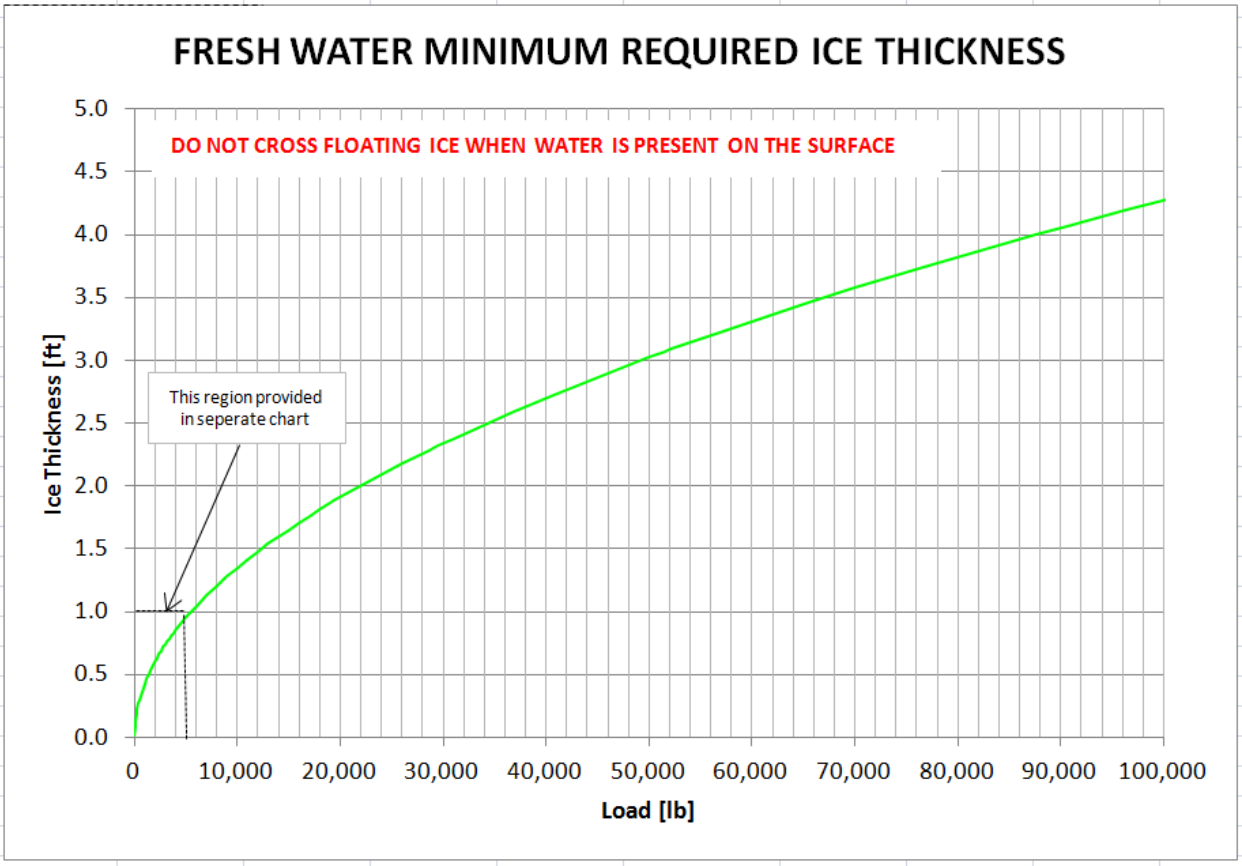
Fresh water minimum required ice thickness (5000 – 100,000 lbs.)

Notes

NOTES:

- Round up ice thicknesses to the nearest half foot.
- Ice engineering is required for loads over 100,000 lbs.
- This chart valid for a single vehicle loads.

Minimum load spacing is the ice thickness x 100 feet (example 20,000 lbs. load requires 2' of ice and minimum 200 feet between loads).



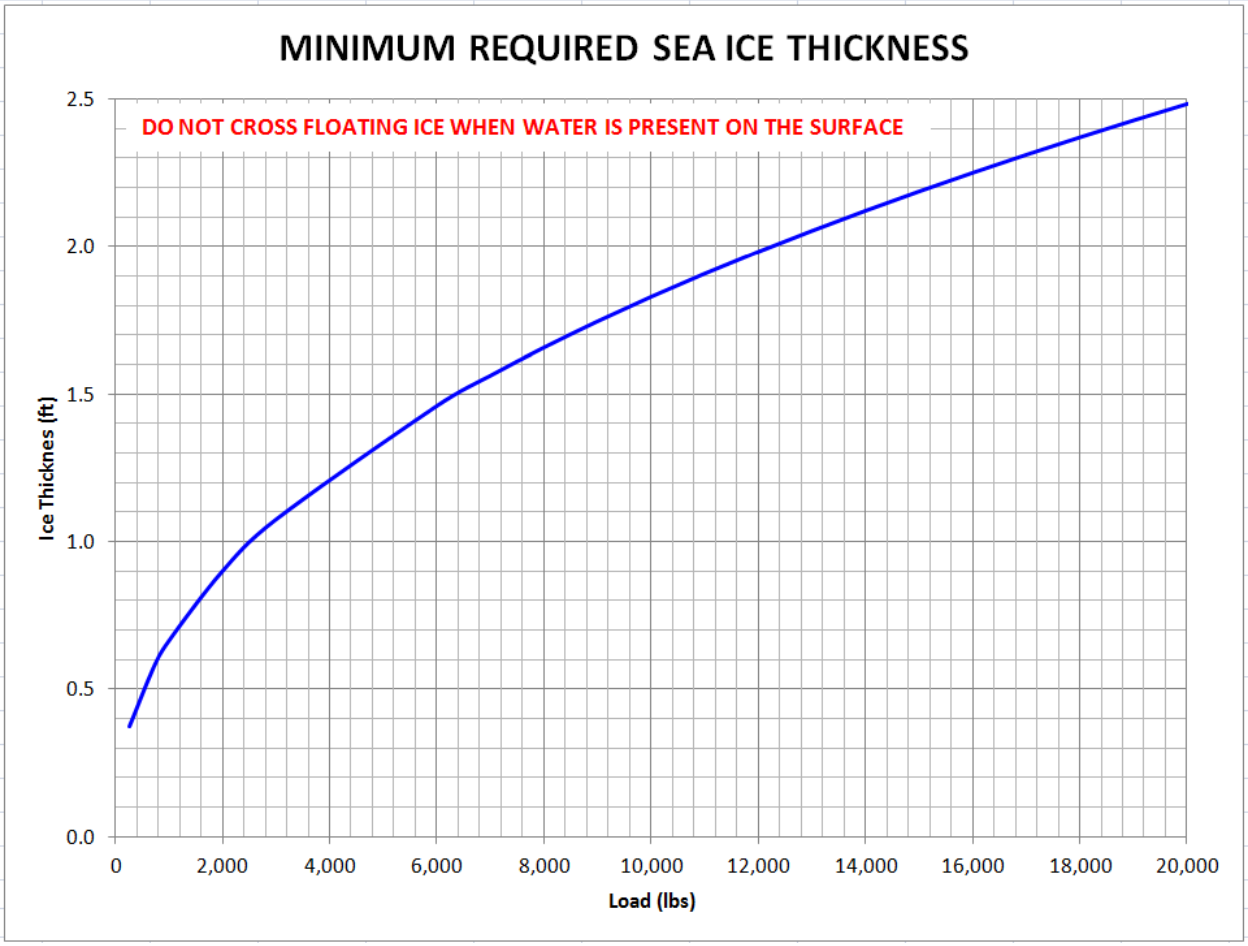
Minimum required sea ice thickness (0-20,000 lbs.)

Notes

NOTES:

- Round up ice thicknesses to the nearest half foot.
- Ice engineering is required for loads over 100,000 lbs.
- This chart valid for a single vehicle loads.

Minimum load spacing is the ice thickness x 100 feet (example 20,000 lbs. load requires 2.5' of ice and minimum 250 feet between loads).



Minimum required sea ice thickness (10,000 – 100,000 lbs.)

Notes

NOTES:

- Round up ice thicknesses to the nearest half foot.
- Ice engineering is required for loads over 100,000 lbs.
- This chart valid for a single vehicle loads.

Minimum load spacing is the ice thickness x 100 feet (example 50,000 lbs. load requires 4' of ice and minimum 400 feet between loads).