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Ice Engineering

U.S. Army Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire

USACRREL River Ice Guide

FRAZIL ICE

Frazil slush

Frazil pans

Anchor ice

SHEET ICE

Border ice

Sheet ice cover

Candled ice

JAMS

Freezeup jam

Breakup jam

Shear walls (after jam)

Number 15 January 1997

GLOSSARY

Anchor ice:
Submerged ice attached or anchored to the river bed, regardless of the nature of its formation.

Border ice:
Ice formed along and fastened to the shore. Border ice does not extend across the entire width of the river. Also called shore ice.

Breakup jam:
Accumulation of broken ice pieces that restrict the flow of water; may contain frazil ice or remnants of freezeup jam.

Candled ice:
Decayed sheet ice that assumes the appearance of thin vertical crystals shaped like candles.

Frazil ice:
Fine, small, needle-like structures or thin, flat, circular plates of ice suspended in water. In rivers and lakes it is formed in supercooled, turbulent water.

Freezeup jam:
Accumulation of frazil that restricts the flow of water; may contain some broken border-ice pieces.

Pancake ice:
Circular, flat pieces composed of frazil and slush ice with a raised rim; the shape and rim are due to repeated collisions.

Shear walls:
Ice left along shoreline when a freezeup or breakup jam fails and moves downstream.

Sheet ice:
A smooth, continuous ice cover formed by freezing in the case of lake ice, or by the arrest and juxtaposition of ice floes in a single layer in the case of river ice.

Slope change:
A change in the slope of the river. Typical examples occur where two rivers meet, and at the upstream end of a dam or reservoir pool.

Slush ice:
A floating agglomeration of loosely packed frazil ice that remains separate or only slightly frozen together.

Copies available at:
http://www.crrel.usace.army.mil/crrel-divisions/ice-eng/ice_guide/iceguide.htm

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