

## **Description and Terminology of Ice Codes Upper Mississippi & Illinois Waterways**

Ice codes are eight-character strings that summarize the predominant ice conditions at and upriver of a lock facility. They are updated daily and included in Information on Navigation Conditions. The code is comprised of five fields (or elements), described briefly below with additional detail given on the following page.

Element 1 – The first two characters are numerical and denote the percentage of the water surface between banks that is ice covered. This is typically measured visually from a vantage point on the dam structure.

Element 2 – The third character is a letter code denoting the type (location and/or movement) of ice present. Since many types of ice may be present, the predominant type (based on visual inspection) will be indicated. Some types of ice are of more interest than others (such as an ice jam), and would be reported regardless of majority constituent.

Element 3 – The fourth and fifth characters are numerical and denote the average thickness of the ice. Ice thickness can vary greatly across the river, so an average value is given with emphasis placed on the channel. This estimate can be based on visual estimation and direct measurement.

Element 4 – The sixth character is a letter code denoting the structure (condition) of the ice. The reported code indicates the predominant ice structure observed.

Element 5 – The last two characters are numerical and denote the upstream extent of the ice in miles above the lock. This is typically based on visual observation and networking with industry and other users upstream.

The next page provides a more detailed description of these elements and their use to indicate ice conditions.

## Ice Codes Legend (MVR)

Sample Code:        05    A    02    C    03  
                          └─┘  └─┘  └─┘  └─┘  └─┘  
Element:             1     2     3     4     5

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### Element 1 – Ice Cover

- Percent Cover in Tenths (bank to bank)
  - 00 → None
  - 05 → 50% covered
  - 10 → 100% covered

### Element 2 – Ice Type

- Predominant ice type letter coded as follows:
  - R – Running – Moving with current
  - A – Stationary – Not in motion because of no current
  - P – Stopped – Not in motion despite current
  - J – Jammed – Stationary accumulated ice restricting or blocking the channel
  - F – Formed Locally – Not brought in by current
  - S – Shore – Formed and attached along the shore
  - N – Anchor – Anchored to the river bottom
  - C – Cake – Surface ice having broken at some point upstream
  - H – Shell – Suspended above water surface due to a lowered water surface

### Element 3 – Thickness

- Estimated average thickness in inches
  - 02 → 2 inches

### Element 4 – Ice Structure

- Predominant ice structure letter coded as follows:
  - B – Breaking – Ice that shows signs of weakening or cracking
  - H – Honeycombed – Contains numerous small air bubbles or voids
  - T – Rotten – Ice in an advanced state of deterioration
  - L – Layered – Ice comprised of separate sheets shoved under by the current
  - C – Clear – Ice with little or no air bubbles so that it is relatively transparent
  - G – Hanging – Agglomeration of slush ice on bottom of sheet ice
  - F – Frazil – Suspended ice composed of small crystals (Needle ice)
  - S – Slush – An accumulation of ice crystals which remain separate or only slightly frozen together
  - E – Sheet – Smooth, thin layer of ice on a quiet water surface

### Element 5 – Upstream Extent

- Estimated upstream extent in miles
  - 03 → 3 miles

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Using the sample code above, 05A02C03 indicates 50% cover of clear stationary ice 2 inches thick extending 3 miles upstream of the lock.