

| TITLE                  | Reference         | Last amendment (CL or IHC) | 1st Edition Reference |
|------------------------|-------------------|----------------------------|-----------------------|
| DATUMS AND BENCH MARKS | 3/1919 as amended | 19/2008                    | A2.5                  |

**Comment [VJ1]:** J.Varonen had this version as a reference in his message 14 April 2013

1 It is resolved that the datum of tide/water level predictions shall be the same as chart datum (datum for sounding reduction).

**Comment [R2]:**

2 It is resolved that chart datum and other tidal/water level datums used should be clearly stated on charts.

3 It is resolved that chart datums (datums for sounding reduction), the datums of tide/water level prediction and other tidal/water level datums shall always be connected with the general land survey datum, and, in addition, with a prominent and permanent fixed mark in the neighbourhood of the tide gauge, station, observatory etc.

4 It is resolved that ellipsoidal height determinations of the vertical reference marks used for tidal/water level observations should be made, in order to support the production of seamless data sets; i.e. to allow the translation between data sets with differing vertical datums. It is further resolved that such observations should relate to a geocentric reference system, preferably the International Terrestrial Reference System (ITRS) or one of its realizations e.g. the World Geodetic System 1984 (WGS84).

**Comment [AHO3]:** Added for consistency

Where the tidal range is appreciable (>30cm)

5 It is resolved that heights on shore, including elevations of lights, should be referred to a HW datum.

6 It is resolved that the Lowest Astronomical Tide (LAT), or as closely equivalent to this level as is practically acceptable to Hydrographic Offices, be adopted as chart datum. Alternatively the differences between LAT and national chart datums may be specified in nautical documents. If low water levels in a specific area frequently deviate from LAT, chart datum may be adapted accordingly.

7 It is resolved that Highest Astronomical Tide (HAT) be adopted as the datum for vertical clearances. Alternatively the differences between HAT and national datums for vertical clearances may be specified in nautical documents. If high water levels in a specific area frequently deviate from HAT, the datum for vertical clearances may be adapted accordingly.

*Note: LAT (HAT) is defined as the lowest (highest) tide level which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions. It is recommended that LAT and HAT be calculated either over a minimum period of 19 years using harmonic constants derived from a minimum of one year's observations or by other proven methods known to give reliable results. Tide levels should, if possible, reflect the estimated error values obtained during the determination of these levels.*

Where the tidal range is negligible (<30cm)

8 It is resolved that depths, heights on shore, including elevations of lights, and vertical clearances should be referred to Mean Sea Level (MSL) or other level as closely equivalent to this as is practically acceptable to Hydrographic Offices.

**Comment [R4]:**

**Comment [AHO5]:** Deleted last sentence because it is now Point 2.

*Note: The adopted level may be a well-defined geodetic datum as used for heights in land survey applications or an observed local Mean Water Level (MWL) based on long series of water level observations.*

9 In order to support other applications, it is recommended to adopt the mean of yearly lowest/highest water levels observed over a long time period.

**Comment [R6]:** Dear Jukka what other applications besides those on Paragraph 8? I'm in doubt if it would refer to in land waters

Inland Waters

10 It is resolved that heights on shore, including elevations of lights, should be referred to a HW datum.

*Note: An appropriate long term range of low/high water observations means at least 10 years of continuous observations and ideally 40 years.*

- 11 It is resolved that data shown on charts and publications should be referred to an appropriate low water datum. The selection of the datum to be used is a difficult issue which can only be determined locally and which will be largely dependent on seasonal hydrological conditions; however in order to allow the development of regional solutions, it is recommended that an appropriate long term range of low/high water definitions of the upper/lower 6-0 percentile or the mean of yearly lowest water levels observed over a long time period or other level as closely equivalent to these level as is practically acceptable to Hydrographic Offices, may be adopted as the chart datum.
- 12 It is further resolved that an appropriated high water datum be used for vertical clearances. In order to allow the development of regional solutions, it is recommended that an appropriate long term range of low/high water definitions of the lower/upper 94-100 percentile or the mean of yearly highest water levels observed over a long time period or other level as closely equivalent to this level as is practically accepted to Hydrographic Offices, may be adopted as the datum for vertical clearances.

**Comment [R7]:** It was missed if we accept "an appropriate low water"

**Comment [R8]:**

**Comment [R9]:**