

**Permanent International Association of Navigation Congresses
PIANC**

**International Association of Ports and Harbors
IAPH**

**International Maritime Pilots Association
IMPA**

**International Association of Lighthouse Authorities
IALA**

APPROACH CHANNELS
A Guide for Design

Final Report of the Joint PIANC-IAPH
Working Group II-30 in cooperation
with IMPA and IALA

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Table 5.2 - Additional Widths for Straight Channel Sections

WIDTH W ₁	Vessel Speed	Outer Channel exposed to open water	Inner Channel protected water
(a) Vessel speed (knots) - fast > 12 - moderate > 8 - 12 - slow 5 - 8	0.1 B 0.0 0.0	0.1 B 0.0 0.0	0.1 B 0.0 0.0
(b) Prevailing cross wind (knots) - mild ≤ 15 (≤ Beaufort 4) - moderate > 15 - 33 (> Beaufort 4 - Beaufort 7) - severe > 33 - 48 (> Beaufort 7 - Beaufort 9)	all fast mod slow all fast mod slow	0.0 0.3 B 0.4 B 0.5 B 0.6 B 0.8 B 1.0 B	0.0 0.1 B 0.2 B 0.3 B 0.5 B 0.8 B 1.0 B
(c) Prevailing cross current (knots) - negligible < 0.2 - low 0.2 - 0.5 - moderate > 0.5 - 1.5 - strong > 1.5 - 2.0	all fast mod slow all fast mod slow	0.0 0.1 B 0.2 B 0.3 B 0.5 B 0.7 B 1.0 B 1.3 B	0.0 0.1 B 0.2 B 0.3 B 0.5 B 0.8 B 1.0 B 1.3 B
(d) Prevailing longitudinal current (knots) - low ≤ 1.5 - moderate > 1.5 - 3 - strong > 3	all fast mod slow all fast mod slow	0.0 0.0 0.1 B 0.2 B 0.4 B	0.0 0.1 B 0.2 B 0.4 B
(e) Significant wave height H _s and length λ (m) - H _s ≤ 1 and λ ≤ L - 3 > H _s > 1 and λ = L - H _s > 3 and λ > L	all fast mod slow all fast mod slow	0.0 ≈ 2.0 B ≈ 1.0 B ≈ 0.5 B ≈ 3.0 B ≈ 2.2 B ≈ 1.5 B	0.0 0.0 0.1 B 0.2 B 0.4 B
(f) Aids to Navigation - excellent with shore traffic control - good - moderate with infrequent poor visibility - moderate with frequent poor visibility		0.0 0.1 B 0.2 B ≥ 0.5 B	0.0 0.1 B 0.2 B ≥ 0.5 B
(g) Bottom surface - if depth ≥ 1.5T - if depth < 1.5T then - smooth and soft - smooth or sloping and hard - rough and hard		0.0 0.1 B 0.1 B 0.2 B	0.0 0.1 B 0.1 B 0.2 B
(h) Depth of waterway - ≥ 1.5T - 1.5T - 1.25T - < 1.25T		0.0 0.1 B 0.2 B	≥ 1.5T < 1.5T, 1.15T 0.2 B < 1.15T 0.4 B
(i) Cargo hazard level - low - medium - high		0.0 ~ 0.5 B ~ 1.0 B	0.0 ~ 0.4 B ~ 0.8 B

