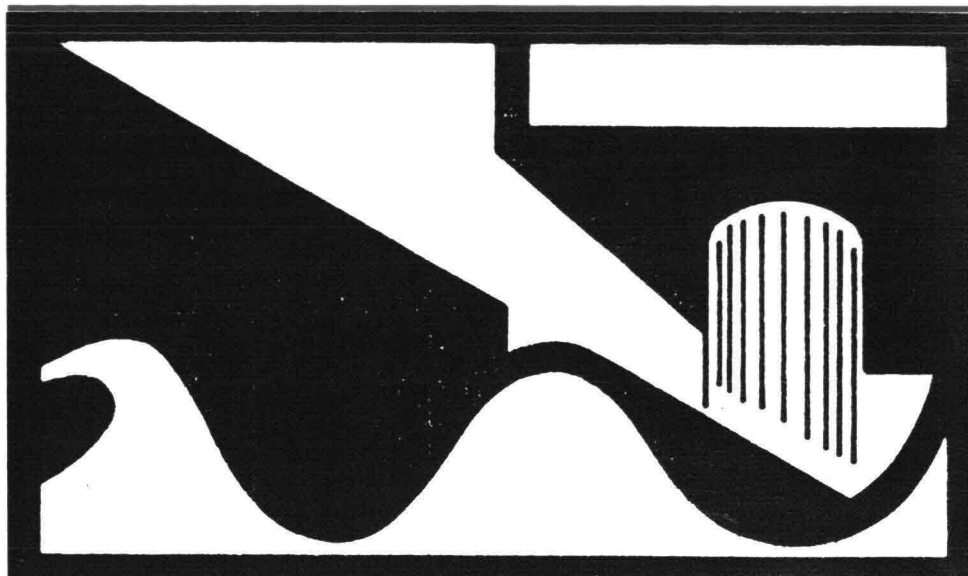


January 1986

Edited by W.W. Massie, P.E.



COASTAL ENGINEERING

Glossary
and
Conversion Factors

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Work is of significant value
only after it is communicated.

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Introduction to glossary.

The following glossary of technical coastal engineering terms consist of four separate tables making it possible to translate the terms presented between the four languages of the tables: English, Dutch, French and German.

Each table is arranged in alphabetical order in the language of its first column. Additionally, definitions (in English only) of some of the more specific terms have been added to the English language table.

The assistance of Mr. W. Tilmans, student assistant and Miss J. Landman, secretary, both members of the Coastal Engineering Group has been invaluable in compiling the translations for Dutch, French and German.

It might be well to note additionally here, that a glossary is also included in volume III of the *Shore Protection Manual*. This latter listing includes more words and more complete English definitions than are included in this book; translations into Dutch, French and German are not included, however.

Table I English words with Definitions and Translations

<u>English</u>	<u>Definition</u>	<u>Dutch</u>	<u>German</u>	<u>French</u>
Abstract	1. Short summary with reference listing 2. Difficult to visualize physically	1. Uitreksel, voorlopig rapport 2. Abstract	1. Auszug	1. Extrait, abrégé, résumé 2. Abstrait
Access		Toegang	Zutritt, Zugang	Accès
Accretion (= silting up)	Accumulation, build-up of material; opposite of erosion	Aanwas, aanslibbing	Anländung, Anschwemmung, Anhäufung, Verschlickung	Atterrissement, lais, dépôt, alluvion, envasement
Amplify (to)		versterken	Verstärken	amplifier, survolter, répéter, élever, renforcer
Arc		Deel v.e. kegelsnede i.h.b. cirkelboog	Bogen, Kreisbogen	Arc, courbe
Armor unit	An element of the primary (upper) cover layer of a rubble mound breakwater			
Articulated platform	Floating structure hinged to an anchor on the sea bottom			
Artificial island		Kunstmatig eiland	Künstliche Insel	Îlot artificiel
Bank (= flat)	Shoal area, often isolated at sea	Bank	Plat, bank	Banc
Bar	Long narrow shoal area	Bank (evenwijdig aan de kust), drempel	Barre, Sandbank	Barre
Barnacles (= fouling)	Marine shellfish which grow on fixed, hard objects	Eendemossel, aangroeiing (schip)	Bodenanwuchs	Filandres
Barrier	A coastal formation resulting from the deposition of material on the edge of a shoal			
Bathymetry	Physical configuration of sea bed (see Hydrography)	Diepteligging	Tiefenmessung, Tiefseemessung, Tiefseelotung	Bathymétrie
Beach		strand	Strand	Plage
Beach face (= Fore-shore)	That portion of a beach exposed to wave uprush	"nat" strand	"nass" Strand	Plage d'estran
Beach protection		Strandverdediging	Strandschutz	Protection des plage
Beam	1. Maximum width of ship 2. Direction perpendicular to longitudinal centerline of ship			
Bedload	Material moving along the bottom			
Bedload transport	The quantity of material moved along the bottom with at least intermediate contact Contrast: suspended load transport	Bodentransport	Geschiebeführung	Chariage de fond
Bore	A travelling hydraulic jump, sometimes caused by tides in shallow estuaries	Vloedbranding	Flutbrandung	Marée deferlante, mascaret
Bottom protection		Bodembescherming	Bodenschutz	Protection du fond

<u>English</u>	<u>Definition</u>	<u>Dutch</u>	<u>German</u>	<u>French</u>
Boundary condition		Randvoorwaarde	Randbedingung	Condition des limites
Boundary layer		Grenslaag	Grenzschicht	Couche limite
Bow	Forward point of a ship	Boeg, voorsteven	Bug	Proue
Break (waves)	Loss of stability of wave form, resulting in transformation of energy to noise, turbulence, etc.			
Breaker zone		Brandingszone	Brandungszone	Zône de brisants, zône de ressac
Breakwater		Golfbreker	Wellenbrecher	Brise-lame
Bridge (ship)		Brug	Brücke	Pont
Bulk carrier		Bulk carrier	Massengutschiff	Cargo de transport en vrac
Buoy		Boei	Boje, Barretonne	Bouée
Buoyancy		Opdrijvend vermogen	Auftrieb, Hubkraft, Schwebefähigkeit	Flottabilité
Bypass		Omloopleiding	Umgehungsleitung	Canal d'évacuation
Cape (= Headland)	A large scale outcropping of land in the sea	Punt, landhoofd, kop	Vorgebirge, Kap	Pointe, cap
Cavitation	Spontaneous boiling of water, caused by locally low pressures	Cavitatie	Kavitation, Hohlraumbildung	Cavitation
Celerity	Speed of propagation	Voortplantingssnelheid	Fortpflanzungsgeschwindigkeit	Vitesse de propagation
Channel		Geul	Rinne	Chenal
Chute	A steeply sloping slide, gutter or trough	Steile afvoergoot	Abschüssige Rinne	Radier incliné
Clay	Soil particles having a grain size of less than 2 μm	Klei	Ton	Argile
Cliff		Klif	Steilküste	Falaise
Coast		Kust	Küste	Côte
Coastal protection		Kustverdediging	Küstenschutz	Protection des côtes
Cofferdam		Kofferdam	Kastenfangedamm	Bâtardeau
Container ship		Container schip	Behälterschiff	Cargo porte-container
Continental shelf	That portion of the oceans less than 200 m deep	Continentale plat	Festlandssockel, Schelf	Plateau continental
Cooling water		Koelwater	Kühlwasser	Eau de refroidissement
Coriolis acceleration		Coriolis versnelling	Coriolis Beschleunigung	Accélération de Coriolis
Current	1. Present 2. Flow velocity	1. Gangbaar 2. Stroming, stroomsnelheid	1. Kurant, gangbar 2. Strömung, Strom	1. Courant 2. Courant
Current meter		Stroomsnelheidsmeter	Strommesser	Courantomètre

<u>English</u>	<u>Definition</u>	<u>Dutch</u>	<u>German</u>	<u>French</u>
Dam		Dalafsluiting	Talsperre	Barrage
Dead weight tonnage	The carrying capacity of a ship, including fuel and provisions (1 ton = 1016 kg)	Laadvermogen v.e. schip (netto lading incl. brandstofvoorraad en proviand)	Ladevermögen, Schergutladerähigkeit (effektive Ladung, einschliesslich Bunkervorräte, Ballast und Proviant)	Port et lourd
Delta	Sediment deposit at a river mouth	Delta	Delta	Delta
Density current		Dichtheidsstroming	Dichtestrom	Courant de densité
Diffraction		Diffractie	Diffraction	Diffraction
Diffusion		Diffusie	Diffusion	Diffusion
Dike		Dijk	Deiche	Digue
Dipper Dredge		Lepelbaggerwerktuig (drijvend)	Löffelbagger	Drague à cuillère
Draft (= draught)	Depth of water, necessary to float a ship in still water	Diepgang	Tiefgang	Tirant d'eau
Drag (of submerged bodies)		Weerstand (van overstromde lichamen)	Widerstand (von umströmte Körper)	Résistance à l'écoulement
Dredge		Baggerwerktuig	Nassbagger	Drague, Dragueur, Excavateur
Drydock		droogdok	Trockendock	Cale sèche
Ebb	Tidal current flowing toward the sea or the dropping phase of the tide level	Eb	Ebbe	Jusant
Eddy	Turbulence	Neer	Walze, Wirbel	Remole
Eddy viscosity	A fictitious viscosity from turbulent energy dissipation	Wervelviskositeit	Wirbelviskosität	Viscosité de foucault
Erosion	Removal of material contrast with accretion	Erosie, uitschuring	Erosion	Érosion
Fall velocity	The speed at which soil particles settle in still water	Valsnelheid	Fallgeschwindigkeit	Vitesse de chute
Fascine mattress	A bottom scour protection fabricated from willow saplings	Zinkstuk van rijshout	Faschinenpakwerk	Matelas de fascinages
Fender	A device to reduce impact forces between a ship and fixed structures	Fender, wrijfhout, schutplank	Fender, Prellpfahl	Pare-chocs
Fetch	The distance over which the wind blows when generating waves	Strijk lengte	Windweg	Fetch
Filter		Filter	Filter	Filtre
Flood current	Current, directed up the river, caused by the tide	Vloedstroom	Flutstrom	Courant de flot
Flow pattern		Stroombeeld	Strömungsbild	Champs de courants

<u>English</u>	<u>Definition</u>	<u>Dutch</u>	<u>German</u>	<u>French</u>
Foreshore (= beach-face)	That portion of a beach, which is intermittently covered by water	"nat" strand	"nass" Strand	Plage d'estran
Fouling (= barnacles)	Covering of marine growth	Aangroeiing, aanzetting (op schepen)	Bodenanwuchs	Filandres
Fracture		Breuk, breukvlak	Bruch	Cassure
Geostrophic	Caused by earth's rotation			
Grain size distribution		Korrelgrootteverdeling	Körngrößenverteilung	Distribution granulométrique
Groin (= groyne)	A shore protection structure, usually built perpendicular to a coast to retard littoral transport	Strandhoofd (zee), krib (rivier)	Strandbühne	Épis
Gravel	Pebbles			
Gust	Short interval of higher than average wind speed	Windstoot	Windstoss	Coup de vent
haul (to)	to pull or tow	slepen, trekken, halen, hijsen	schleppen	traîner, remorquer
headland (= cape)	A major coastal outcropping in the ocean	Punt, landhoofd, kop	Vorgebirge, Kap	Pointe, cap
Heave	Vertical motion of a floating body	dompen	Heben	Hisser
High water (H.W.)	The instant at which the tide level is highest	Hoogwater (H.W.)	Hoch Wasser (H.W.)	Haute Mer (H.M.)
Hydrography	Study of configuration of sea bed (see bathymetry)			
Impact		Botsing, stoot, slag, schok	Stoss	Heurt, choc
Impeller (pump)	The rotation part of a centrifugal pump	Waaier, schoepenrad	Pumpenflügelrad	Aube, palette
Inertia		Traagheid	Trägheit	Inertie
Interface	Surface of separation between two materials having different properties	Grensvlak	Grenzschicht, Übergangsfläche, Grenzfläche	Interface
Internal wave	A wave propagating along an interface between ocean layers	Interne golf	Interne Welle	Onde Interne
Island		Eiland	Insel	Ile
Jet		Straal	Strahl	Jet
Jetty	A breakwater, groin or crib	Aanlegsteiger	Hafendamm	Jetée
Ladder	That portion of a dredge structure which supports the soil cutting device	Ladder (waarlangs de emmers worden gehaald)	Baggerleiter	Échelle de drague
Lagoon	A shallow area separated from the sea by a barrier	Lagune	Lagune	Lagune
Laminar flow		Laminaire stroming	Laminarströmung	Écoulement laminaire

<u>English</u>	<u>Definition</u>	<u>Dutch</u>	<u>German</u>	<u>French</u>
Latitude		Breedte (geografisch, astronomisch)	Breite (geografisch), Breitengrad	Latitude
Lethal	Deadly	Dodelijk	Tödlich, letal	Mortel
Littoral	Taking place primarily within the breaker zone	Langs de kust	Der Küste entlang	Côtier, littoral
Low Water (L.W.)	The instant at which the tide level is lowest	Laagwater (L.W.)	Niederigwasser (N.W.)	Basse Mer (B.M.)
Mariner		Zeeman, matroos	Matrose	Marin, matelot
Meandering		Meanderen	Mäandern	Méandrer
Megaripple	Large ripple on sea bottom, caused by ocean current sediment transport	Megaribbel	Megarippel	Ride géante
Mole	Breakwater	Havenhoofd	Mole	Môle
Momentum		Impuls	Impuls, Antrieb	Impulsion
Monolith	A single massive unit	Monoliet	Monolith	Monolithe
Mud	Loosely packed saturated clay or silt	Modder	Schlamm	Boue
Navigation		Navigatie, route-bepaling	Navigation, Schiff-fahrtskunde	Navigation
Neap tide	Lowest amplitude tides occurring near the times of 1/4 or 3/4 moon	Doodtij	Nipptide	Morte eau
Nutrient		Voedingsstof	Nährflüssigkeit, Nährstoff	Nutritif
Oblique	Approaching at an angle	schuin, scheef, hellend	Überhangend, geneigt	oblique, incliné
Oceanography	Study of the oceans	Oceanografie	Ozeanografie	Océanographie
Oil tanker		Olietanker	Öl Tanker	Pétrolier
Peat		Veen, turf	Torf	Tourbe
Pebbles	Gravel; grains larger than 2 mm.	Kiezel	Kiesel	Galets
Peninsula	A spit or pointed head-land or cape	Schiereiland, Landtong	Halbinsel	Presqu'île
Physical Oceanography	Study of oceanographic physics			
pitch (to)	Rotational motion of a ship about a beam axis	stampen	stampfen	tanguer (tangage)
Pollution		Verontreiniging	Verunreinigung	Pollution
Polynomial		Veelterm	Polynom, vielgliedrige Grösse	Polynôme
Port	1. (Left) 2. Harbor	1. Bakboord 2. Haven	1. Backbord 2. Hafen	1. Bâbord 2. Port
Potential flow	Flow of an ideal fluid described by specific mathematical equations	Potentiaalstroming	Potentialströmung	Écoulement à potentiel

<u>English</u>	<u>Definition</u>	<u>Dutch</u>	<u>German</u>	<u>French</u>
propel (to)		Voorstuwen, voortdrijven, voortbewegen	Antreiben	Propulser
Random	Unpredictable	willekeurig, onvoorspelbaar	beliebig	quelconque
Reflection		Terugkaatsing	Reflektion	Réflexion
Refraction		Refractie	Refraktion	Réfraction
retain (to)		keren, behouden	stauen (von wasser), behalten	retenir
Retention time	The period during which given water remains in a harbor basin	Verblijftijd	Retentionszeit, Verweilzeit, Rückhaltezeit	Période de Séjour, de rétention
Rigging		Takelage, tuig, vleet	Takelage, Takelung, Betakelung	Grément
Rip current	A local current returning littoral current flow to the sea	Muistroom	Rückstrom	"Rip courant"
Ripple	A wave-like irregularity on the sea bottom	Ribbel	Rippel	Ride
River bend		Riverbocht	Flusskurve	Courbe d'un fleuve
River mouth		Riviermonding	Flussmündung	Embouchure d'un fleuve
Rock		Rots	Felsen	Rocher
roll (to)	The rotation motion of a floating about its longitudinal axis	rollen, slingeren	rollen, schlingern	rouler (roulis)
Roughness		Ruwheid	Rauhigkeit	Rugosité
Rubble mound break-water		Stortstenen golfbreker		Brise-lame et enrochements
Rule of thumb		Vuistregel	Faustregel	Règle
Salinity	Salt content, usually expressed in grams of salt per kilogram of water (parts per thousand)	Zoutgehalte	Salzgehalt	Salinité
Salt intrusion		Binnendringen van zout	Eindringen von Salz	Pénétration d'eau salée
Salt water wedge (tongue)		Zouttong	Salzwasserzunge	Coin salé
Sand	Soil particles having a grain size ranging between about 2000 µm and 50 µm	Zand	Sand	Sable
Sand transport		Zandtransport	Förderung von Sand	Transport de sable
Scour	Local erosion near some fixed object	Ontgronding	Ausspülung, Auswaschung	Affouillement
Seawall		Strandmuur	Deckwerk	Brise-mer
Sedimentation		Sedimentatie, afzetting	Ablagerung	Sédimentation
Sediment transport		Sediment transport	Geschiebeführung	Débit solide

<u>English</u>	<u>Definition</u>	<u>Dutch</u>	<u>German</u>	<u>French</u>
Seiche	A standing wave within a confined basin	Seiche	Seiche	Seiche
Semi-diurnal	Occurring twice per lunar day	Dubbeldaags		
Semi-submersible	Capable of being partially submerged in order to increase stability and decrease response to waves			
settle (to)		bezinken, zich afzetten	sich (ab)setzen, sich niederschlagen	se déposer, se précipiter
Set-up	Increase of average water level caused by a. wave action b. wind shear stresses c. barometric pressure changes	Opwaaiing	Aufwehung	"set-up"
Sewage		Rioolwater	Abwasser	Eaux vannes
Sheet piling		Damwand	Spundwand	Rideau de palplanches
Shelf	Area of the sea adjacent to the coast less than 200 m deep			
Shoal	An area of relatively shallower water	Verondieping, ondiepte	Veruntiefung, Untiefe	Déprofondissement
Sidereal day	The time required for the earth to turn 360° on its axis			
Silt	Soil having a grain size ranging between about 50 µm and 2 µm	Slib	Schlick	Vase, silt
Slack water	The instant at which the (tidal) current is zero	Dood (stil) water, kentering	Stauwasser, Totwasser, Stillwasser	Étale
Slug	1. A mass of material 2. The unit of mass in the English System of units			
Sluice		Sluis, Uitwaterings-sluis	Schleuse	Écluse
Spit	A point of land formed from deposited material transported by a littoral current	Spit, Strandhaak	Spitze	Flèche
Spring tide	Highest amplitude tides, usually occurring near the times of full and new moon	Springtij	Springflut	Vive eau
Spud	A vertical, retractible pile, used to moor certain types of dredges	Ankerpaal, Stapper		Pieu d'ancrage
Squat	Increase in ship draft caused by its forward motion	Squat, Vertrimming	Fahrtrimm	Dejaugeage
Standing wave		Staaende golf, Stationnaire golf	Stehende Welle, Stationäre Welle	Clapotis, Onde Stationnaire
Starboard	Right hand side	Stuurboord	Steuerbord	Tribord
Stern	The after (back) end of a ship	Achtersteven	Heck	Poupe
Storm surge		Stormvloed	Sturmflut	Onde de tempête, Coupe de mer

<u>English</u>	<u>Definition</u>	<u>Dutch</u>	<u>German</u>	<u>French</u>
Submergence		Onderdempeling	Eintauchung	Immersion
Surf		Branding (van een golf)	Brandung	Déferlement
Surge	1. Longitudinal oscillatory motion of a ship 2. Increase in water level caused, for example, by a storm	1. Schrikken 2. Opstuwing	2. Wanderwelle (mit steiler Front)	2. Infumexence
Suspended load	Material in suspension	Zwevend materiaal	Schwebestoff	Sédiments en suspension
Sway	Beamwise movement of a ship	Verzetten (dwarsverplaatsing v.e. schip)	Schwingen	
Swell		Deining	Dünnung	Houle
Tanker		Tanker	Tanker	Pétrolier
Tidal current		Getijstroom	Gezeitenstrom	Courant de marée
Tidal prism	The volume of an estuary between the high and low tide levels	Getijvolume, vloedvolume	Tidewassermenge	Volume de flot
Tidal wave	1. Long wave of tide 2. (incorrect) name for Tsunami	1. Getijgolf	1. Gezeitwelle	1. Onde de marée
Tide		Getij	Tide, Gezeit	Marée
Tide(tidal) range	Elevation difference between high and low water	Getijverschil	Tidehub	Marnage
Tide table		Getijtafel	Gezeitentafel	Annuaire des marées
Trade winds		Passaat (wind)	Passatwinden	Vents alizes
Trench		Gewl, sleuf (van kabels)	Kabelgraben	Tranchée
Tsunami	A long ocean wave caused (for example) by an earthquake	Tsunami	Tsunami	Tsunami
Tugboat		Sleepboot	Schleppschiff	Remorqueur
Turbidity		Troebeling	Trübung	Turbidité
Turbulence		Turbulentie	Turbulenz	Turbulence
Viscosity		Viscositeit	Viskosität	Viscosité
Vortex		Wervel	Wirbel	Vortex, Tourbillon
Warping	Moving of boat by towing from fixed object using a line on a winch			
Water line		Waterlijn	Wasserlinie	Laisse d'eau
Wave attack		Golfaanval	Wellenangriff	Attaque de la houle
Wave climate		Golfklimaat	Wellenklima	Climat d'ondes
Wave crest		Golfkam	Wellenkamm	Crête d'une lame

<u>English</u>	<u>Definition</u>	<u>Dutch</u>	<u>German</u>	<u>French</u>
Wave damping		Golfdamping	Wellendämpfung	Amortissement de la houle, Amortissement des vagues
Wave field		Golfveld	Wellenfeld	Champs d'ondes
Wave force		Golfkracht	Wellenkraft	Force de la houle, Force des vagues
Wave overtopping		Golfoverslag	Wellenüberschlag	Franchissement de la houle, Franchissement des vagues
Wave penetration		Golfdoordringing	Wellendurchdringung	Pénétration de la houle
Wave prediction		Golfvoorspelling	Wellenvoraussage	Prédiction de la houle
Wave theory		Golftheorie	Wellentheorie	Théorie des ondes
Wedge		Wig	Keil	Coin
Winch		Windas, haspel, lier	Winde	Treuil
Wave run-up		Golfploop	Wellenauflauf	Montée de la houle, Cote d'affleurement des vagues
Wave uprush	See wave run-up			
Yaw	Rotation of a ship about its vertical axis	Gieren	Gieren	Embardeur

Table 2 Dutch words with Translations

<u>Dutch</u>	<u>English</u>	<u>German</u>	<u>French</u>
Aangroeing, aanzetting (op schepen)	Fouling (= barnacles)	Bodenanwuchs	Filandres
Aanlegsteiger	Jetty	Hafendamm	Jetée
Aanwas, aanslibbing	Accretion (= silting up)	Anländung, Anschwemmung, Anhägerung, Verschlickung	Atterrissement, lais, dépôt, alluvion, envasement
Abstract	Abstract		Abstrait
Achterstevan	Stern	Heck	Poupe
Ankerpaal, stapper	Spud		Pieu d'ancrage
Baggerwerktuig	Dredge	Nassbagger	Drague, dragueur, excavateur
Bakboord	Port	Backbord	Bâbord
Bank	Bank (= flat)	Plat, Bank	Banc
Bank (evenwijdig aan de kust), drempel	Bar	Barre, Sandbank	Barre
bezinken, zich afzetten	settle (to)	sich (ab)setzen, sich niederschlagen	se déposer, se précipiter
binnendringen van zout	Salt intrusion	Eindringen von Salz	Pénétration d'eau salée
Bodembescherming	Bottom protection	Bodenschutz	Protection du fond
Bodemtransport	Bedload transport	Geschiebeführung	Charriage de fond
Boeg, voorstevan	Bow	Bug	Proue
Boei	Buoy	Boje, Barretonne	Bouée
Botsing, stoot, slag, schok	Impact	Stoss	Heurt, choc
Branding (van een golf)	Surf	Brandung	Déferlement
Brandingszone	Breaker zone	Brandungszone	Zône de brisants, zône de ressac
Breedte (geografisch, astronomisch)	Latitude	Breite (geografisch), Breitengrad	Latitude
Breuk, breukvlak	Fracture	Bruch	Cassure
Brug	Bridge (ship)	Brücke	Pont
Bulk carrier	Bulk carrier	Massengutschiff	Cargo de transport en vrac
Cavitatie	Cavitation	Kavitation, Hohlraumbildung	Cavitation
Container schip	Container ship	Behälterschiff	Cargo porte-container
Continental plat	Continental shelf	Festlandsockel, Schelf	Plateau continental
Coriolis versnelling	Coriolis acceleration	Coriolis Beschleunigung	Accélération de coriolis
Dalafsluiting	Dam	Talsperre	Barrage

<u>Dutch</u>	<u>English</u>	<u>German</u>	<u>French</u>
Damwand	Sheet piling	Spundwand	Rideau de palplanches
Deel van een kegelsnede i.h.b. cirkelboog	Arc	Bogen, Kreisbogen	Arc, courbe
Deining	Swell	Dünung	Houle
Delta	Delta	Delta	Delta
Dichtheidsstroming	Density current	Dichtestrom	Courant de densité
Diepgang	Draft (= draught)	Tiefgang	Tirant d'eau
Diepteligging	Bathymetry	Tiefenmessung, Tiefsee- messung, Tiefseelotung	Bathymétrie
DiffRACTIE	Diffraction	Diffraktion	Diffraction
Diffusie	Diffusion	Diffusion	Diffusion
Dijk	Dike	Deiche	Digue
Dodelijk	Lethal	Tödlich, letal	Mortel
Dampen	Heave	Heben	Hisser
Doodtij	Neap tide	Nipptide	Morte eau
Dood (stil) water	Slack water	Stauwasser, Totwasser, Stillwasser	Étale
Droogdok	Drydock	Trockendock	Cale sèche
Dubbeldaags	Semi-diurnal		
Eb	Ebb	Ebbe	Jusant
Eendemossel, aangroeiing (schip)	Barnacles (= fouling)	Bodenanwuchs	Filandres
Eiland	Island	Insel	Ile
Erosie, uitschuring	Erosion	Erosion	Erosion
Fender, wrijfhout, schut- plank	Fender	Fender, Prellpfahl	Pare-chocs
Filter	Filter	Filter	Filtre
Gangbaar	Current	Kurant, Gangbar	Courant
Getij	Tide	Tide, Gezeit	Marée
Getijgolf	Tidal wave	Gezeitwelle	Onde de marée
Getijstroom	Tidal current	Gezeitenstrom	Courant de marée
Getijtafel	Tide table	Gezeitentafel	Annuaire des marées
Getijverschil	Tide (tidal) range	Tidehub	Marnage
Getijvolume, vloedvolume	Tidal prism	Tidewassermenge	Volume de flot
Geul	Channel	Rinne	Chenal

<u>Dutch</u>	<u>English</u>	<u>German</u>	<u>French</u>
Geul, sleuf (van kabels)	Trench	Kabelgraben	Tranchée
Gieren	Yaw	Gieren	Embardeur
Golfaanval	Wave attack	Wellenangriff	Attaque de la houle
Golfbreker	Breakwater	Wellenbrecher	Brise-lame
Golfdemping	Wave damping	Wellendämpfung	Amortissement de la houle, Amortissement des vagues
Golfdoordringing	Wave penetration	Wellendurchdringung	Pénétration de la houle
Golfkam	Wave crest	Wellenkamm	Crête d'une lame
Golflimaat	Wave climate	Wellenklima	Climat d'ondes
Golfkraft	Wave force	Wellenkraft	Force de la houle, Force des vagues
Golfoploop	Wave run-up	Wellenauflauf	Montée de la houle, cote d'affleurement des vagues
Golfoverslag	Wave overtopping	Wellenüberschlag	Franchissement de la houle, Franchissement des vagues
Golftheorie	Wave theory	Wellentheorie	Théorie des ondes
Golfveld	Wave field	Wellenfeld	Champs d'ondes
Golfvoorspelling	Wave prediction	Wellenvoraussage	Prédiction de la houle
Grenslaag	Boundary layer	Grenzschicht	Couche limite
Grensvlak	Interface	Grenzschicht, Übergangs- fläche, Grenzfläche	Interface
Haven	Port	Hafen	Port
Havenhoofd	Mole	Mole	Môle
Hoogwater (H.W.)	High Water (H.W.)	Hoch Wasser (H.W.)	Haute Mer (H.M.)
Impuls	Momentum	Impuls, Antrieb	Impulsion
Interne Golf	Internal wave	Interne Welle	Onde Interne
Kentering	Slack water	Stillwasser	Étalge
Keren, behouden	Retain (to)	Stauen (von Wasser), behalten	retenir
Kiezel	Pebbles	Kiesel	Galets
Klei	Clay	Ton	Argile
Klif	Cliff	Steilküste	Falaise
Koelwater	Cooling water	Kühlwasser	Eau de refroidissement
Kofferdam	Cofferdam	Kastenfangedamm	Bâtardeau
Korrelgrootteverdeling	Grain size distribution	Korngrößenverteilung	Distribution granulométrique
Kunstmatig eiland	Artificial island	Künstliche Insel	Îlot artificiel
Kust	Coast	Küste	Côte

<u>Dutch</u>	<u>English</u>	<u>German</u>	<u>French</u>
Kustverdediging	Coastal protection	Küstenschutz	Protection des côtes
Laadvermogen v.e. schip (netto lading, incl. brand- stofvoorraad en proviand)	Dead weight tonnage	Ladevermögen, Schwergut- Laderähigkeit (effektive Ladung, einschliesslich Bunkervorräte, Ballast und Proviant)	Port et lourd
Laag water (L.W.)	Low water (L.W.)	Niederigwasser (N.W.)	Basse mer (B.M.)
Ladder (waarlangs de emmers worden gehaald)	Ladder	Baggerleiter	Echelle de drague
Lagune	Lagoon	Lagune	Lagune
Laminaire stroming	Laminar flow	Laminarströmung	Ecoulement laminaire
Langs de kust	Littoral	Der Küste entlang	Côtier, littoral
Lepelbaggerwerktuig (drij- vend)	Dipper Dredge	Löffelbagger	Draque à cuillère
Meanderen	Meandering	Mäandern	Méandrer
Megaribbel	Megaripple	Megarippel	Ride géante
Modder	Mud	Schlamm	Boue
Monoliet	Monolith	Monolith	Monolithe
Muistroom	Rip current	Rückstrom	"Rip courant"
"Nat" strand	Beach face (= fore shore)	"Nass" Strand	Plage d'estran
Navigatie, routebepaling	Navigation	Navigation, Schiffahrts- kunde	Navigation
Neer	Eddy	Walze, Wirbel	Remole
Oceanografie	Oceanography	Ozeanografie	Océanographie
Olietanker	Oil tanker	Öl Tanker	Pétrolier
Omloopleiding	Bypass	Umgehungsleitung	Canal d'évacuation
Onderdompeling	Submergence	Eintauchung	Immersion
Ontgronding	Scour	Ausspülung, Auswaschung	Affouillement
Opdrijvend vermogen	Buoyancy	Auftrieb, Hubkraft, Schweb- fähigkeit	Flottabilité
Opstuwing (van water)	Surge	Wanderwelle	Infumexence
Opwaaiing	Set-up	Aufwehung	"Set-up"
Passaat (wind)	Trade winds	Passatwinden	Vents alizes
Potentiaalstroming	Potential flow	Potentialströmung	Ecoulement à potentiel
Punt, landhoofd, kop	Cape (= headland)	Vorgebirge, Kap	Pointe, Cap
Randvoorwaarde	Boundary condition	Randbedingung	Condition des limites
Refractie	Refraction	Refraktion	Réfraction
Ribbel	Ripple	Rippel	Ride

<u>Dutch</u>	<u>English</u>	<u>German</u>	<u>French</u>
Rioolwater	Sewage	Abwasser	Eaux vannes
Rivierbocht	River bend	Flusskurve	Courbe d'un fleuve
Riviermonding	River mouth	Flussmündung	Embouchure d' un fleuve
Rollen, slingeren	Roll (to)	Rollen, Schlingern	Rouler (roulis)
Rots	Rock	Felsen	Rocher
Ruwheid	Roughness	Rauhigkeit	Rugosité
Schiereiland, landtong	Peninsula	Halbinsel	Presqu'île
Schrikken	Surge		
Schuin, scheef, hellend	Oblique	Überhangend, geneigt	Oblique, incliné
Sediment transport	Sediment transport	Geschiebeführung	Débit solide
Sedimentatie, afzetting	Sedimentation	Ablagerung	Sédimentation
Seiche	Seiche	Seiche	Seiche
Sleepboot	Tugboat	Schleppschiff	Remorqueur
Slepen, trekken, halen, hijsen	Haul (to)	Schleppen	Traîner, remorquer
Slib	Silt	Schlick	Vase, silt
Sluis, uitwateringssluis	Sluice	Schleuse	Ecluse
Spit, strandhaak	Spit	Spitze	Flèche
Springtij	Spring tide	Springflut	Vive eau
Squat, vertrimming	Squat	Fahrtrimm	Dejaugeage
Staaude golf, stationaire golf	Standing wave	Stehende Welle, stationäre Welle	Clapotis, onde stationnaire
Stampen	Pitch (to)	Stampfen	Tanguer (tangage)
Steile afvoergoot	Chute	Abschüssige Rinne	Radier incliné
Stormvloed	Storm surge	Sturmflut	Onde de tempête, Coupe de mer
Stortstenen golfbreker	Rubble mound breakwater		Brise-lame et enrochements
Straal	Jet	Strahl	Jet
Strand	Beach	Strand	Plage
Strandhoofd (zee), krib (rivier)	Groin (= groyne)	Strandbühne	Epis
Strandmuur	Seawall	Deckwerk	Brise-mer
Strandverdediging	Beach protection	Strandschutz	Protection des plages
Strijk lengte	Fetch	Windweg	Fetch
Stroming, stroomsnelheid	Current	Strömung, Strom	Courant

<u>Dutch</u>	<u>English</u>	<u>German</u>	<u>French</u>
Stroombeeld	Flow pattern	Strömungsbild	Champs de courants
Stroomsnelheidsmeter	Current meter	Strommesser	Courantomètre
Stuurboord	Starboard	Steuerbord	Tribord
Takelage, tuig, vleet	Rigging	Takelage, Takelung, Betakelung	Grément
Tanker	Tanker	Tanker	Pétrolier
Terugkaatsing	Reflection	Reflektion	Réflexion
Toegang	Access	Zutritt, Zugang	Accès
Traagheid	Inertia	Trägheit	Inertie
Troebling	Turbidity	Trübung	Turbidité
Tsunami	Tsunami	Tsunami	Tsunami
Turbulentie	Turbulence	Turbulenz	Turbulence
Uitreksel, voorlopig rapport	Abstract	Auszug	Extrait, abrégé, résumé
Valsnelheid	Fall velocity	Fallgeschwindigkeit	Vitesse de chute
Veelterm	Polynomial	Polynom, vielgliedrige Grösse	Polynôme
Veen, turf	Peat	Torf	Tourbe
Verblijftijd	Retention time	Retentionszeit, Verweilzeit, Rückhaltezeit	Période de Séjour de rétention
Verondieping, ondiepte	Shoal	Veruntiefung, Untiefe	Déprofondissement
Verontreiniging	Pollution	Verunreinigung	Pollution
Versterken	Amplify (to)	Verstärken	Amplifier, survolter, répéter, élever, renforcer
Verzetten (dwarsverplaatsing v.e. schip)	Sway	Schwingen	
Viscositeit	Viscosity	Viskosität	Viscosité
Vloedbranding	Bore	Flutbrandung	Marée deferlante, mascaret
Vloedstroom	Flood current	Flutstrom	Courant de flot
Voedingsstof	Nutrient	Nährflüssigkeit, Nährstoff	Nutritif
Voortplantingssnelheid	Celerity	Fortpflanzungsgeschwindigkeit	Vitesse de propagation
Voortstuwten, voortdrijven, voortbewegen	Propel (to)	Antreiben	Propulser
Vuistregel	Rule of thumb	Faustregel	Règle
Waaier, schoepenrad	Impeller (pump)	Pumpenflügelrad	Aube, palette
Waterlijn	Water line	Wasserlinie	Laisse d'eau

<u>Dutch</u>	<u>English</u>	<u>German</u>	<u>French</u>
Weerstand (van omstroomde lichamen)	Drag (of submerged bodies)	Widerstand (von umströmte Körper)	Résistance à l'écoulement
Wervel	Vortex	Wirbel	Vortex, tourbillon
Wervelviskositeit	Eddy viscosity	Wirbelviskosität	Viscosité du Foucault
Wig	Wedge	Keil	Coin
Willekeurig, onvoorspelbaar	Random	Beliebig	Quelconque
Windas, haspel, lier	Winch	Winde	Treuil
Windstoot	Gust	Windstoss	Coup de vent
Zand	Sand	Sand	Sable
Zandtransport	Sand Transport	Förderung von Sand	Transport de sable
Zeeman, matroos	Mariner	Matrose	Marin, Matelot
Zinkstuk van rijshout	Fascine mattress	Faschinenpakwerk	Matelas de fascinages
Zoutgehalte	Salinity	Salzgehalt	Salinité
Zouttong	Salt water wedge (tongue)	Salzwasser-zunge	Coin salé
Zwevend materiaal	Suspended load	Schwebestoff	Sédiments en suspension

Table 3 French words with Translations

<u>French</u>	<u>English</u>	<u>Dutch</u>	<u>German</u>
Accélération de coriolis	Coriolis Acceleration	Coriolis versnelling	Coriolis-Beschleunigung
Accès	Access	Toegang	Zutritt, Zugang
Affouillement	Scour	Ontgronding	Ausspülung, Auswaschung
Amortissement de la houle Amortissement des vagues	Wave damping	Golfdemping	Wellendämpfung
Amplifier, survolter, répéter, élever, renforcer	Amplify (to)	Versterken	Verstärken
Annuaire des marées	Tide table	Getijtafel	Gezeitentafel
Arc, courbe	Arc	Deel v.e. kegelsnede i.h.b. cirkelboog	Bogen, Kreisbogen
Argile	Clay	Klei	Ton
Attaque de la houle	Wave attack	Golfaanval	Wellenangriff
Atterrissement, lais, dépôt, alluvion, envasement	Accretion (= silting up)	Aanwas, aanslibbing	Anlandung, Anschwemmung, Anhägerung, Verschlickung
Aube, palette	Impeller (pump)	Waaier, Schoepenrad	Pumpenflügelrad
Bâbord	Port	Bakbord	Backbord
Banc	Bank (= flat)	Bank	Plat, Bank
Barrage	Dam	Dalafsluiting	Talsperre
Barre	Bar	Bank (evenwijdig aan de kust), drempel	Barre, Sandbank
Basse Mer (B.M.)	Low Water (L.W.)	Laag water (L.W.)	Niederigwasser (N.W.)
Bâtardeau	Cofferdam	Kofferdam	Kastenfangedamm
Bathymétrie	Bathymetry	Diepteligging	Tiefenmessung, Tiefseemessung, Tiefseelotung
Boue	Mud	Modder	Schlamm
Bouée	Buoy	Boei	Boje, Barretonne
Brise-lame	Breakwater	Golfbreker	Wellenbrecher
Brise-lame et enrochements	Rubble mound Breakwater	Stortsteen Golfbreker	
Brise-mer	Seawall	Strandmuur	Deckwerk
Cale sèche	Drydock	Droogdok	Trockendock
Canal d'évacuation	Bypass	Omloopleiding	Umgehungsleitung
Cargo de transport en vrac	Bulk carrier	Bulk carrier	Massengutschiff
Cargo porte-container	Container ship	Container schip	Behälterschiff
Cassure	Fracture	Breuk, Breukvlak	Bruch
Cavitation	Cavitation	Cavitatie	Kavitation, Hohlraumbildung

<u>French</u>	<u>English</u>	<u>Dutch</u>	<u>German</u>
Champs de courants	Flow pattern	Stroombeeld	Strömungsbild
Champs d'ondes	Wave field	Golfveld	Wellenfeld
Chenal	Channel	Geul	Rinne
Clapotis, Onde stationnaire	Standing wave	Staaude golf, stationnaire golf	Stehende Welle, Stationäre Welle
Climat d'ondes	Wave climate	Golfklimaat	Wellenklima
Coin	Wedge	Wig	Keil
Coin salé	Salt water wedge (tongue)	Zouttong	Salzwasser-zunge
Condition des limites	Boundary condition	Randvoorwaarde	Randbedingung
Côte	Coast	Kust	Küste
Côtier, littoral	Littoral	Langs de kust	Der Küste entlang
Couche limite	Boundary layer, interface	Grenslaag, Grensvlak	Grenzschicht, Übergangsfläche, Grenzfläche
Coup de vent	Gust	Windstoot	Windstoss
Courant	Current	Gangbaar	Kurant, Gangbar
Courant	Current	Stroming, Stroomsnelheid	Strömung, Strom
Courant de densité	Density current	Dichtheidsstroming	Dichtestrom
Courant de flot	Flood current	Vloedstroom	Flutstrom
Courant de marée	Tidal current	Getijstroom	Gezeitenstrom
Courantomètre	Current meter	Stroomsnelheidsmeter	Strommesser
Courbe d'un fleuve	River bend	Rivierbocht	Flusskurve
Crête d'une lame	Wave crest	Golfkam	Wellenkamm
Débit solide, charriage de fond	Sediment transport, Bedload transport	Sediment-, Bodemtransport	Geschiefbeführung
Déferlement	Surf	Branding (v.e. golf)	Brandung
Dejaugeage	Squat	Squat, Vertrimming	Fahrtrimm
Delta	Delta	Delta	Delta
Déposer (se), Précipiter (se)	Settle (to)	Bezinken, zich afzetten	(Ab)setzen (sich), Niederschlagen (sich)
Déprofondissement	Shoal	Verondieping, Ondiepte	Veruntiefung, Untiefe
Diffraction	Diffraction	DiffRACTIE	DiffRAKTION
Diffusion	Diffusion	Diffusie	Diffusion
Digue	Dike	Dijk	Deiche
Distribution granulométrique	Grain size distribution	Korrelgrootteverdeling	Korngrößenverteilung
Drague, Dragueur, Excavateur	Dredge	Baggerwerktuig	Nassbagger

<u>French</u>	<u>English</u>	<u>Dutch</u>	<u>German</u>
Draque à cuillène Eau de refroidissement	Dipper Dredge Cooling water	Lepelbaggerwerktuig Koelwater	Löffelbagger Kühlwasser
Eaux vannes	Sewage	Rioolwater	Abwasser
Echelle de drague	Ladder	Ladder (waarlangs de emmers worden gehaald)	Baggerleiter
Ecluse	Sluice	Sluis, uitwateringssluis	Schleuse
Ecoulement à potentiel	Potential Flow	Potentiaalstroming	Potentialströmung
Ecoulement laminaire Embarder Embouchure d'un fleuve	Laminar flow Yaw River mouth	Laminaire stroming Gieren Riviermonding	Laminarströmung Gieren Flussmündung
Entrée	Access	Toegang	Zutritt, Zugang
Epis	Groin (= groyne)	Strandhoofd (zee), krib (rivier)	Strandbühne
Erosion Étale Extrait, abrégé, résumé	Erosion Slackwater Abstract	Erosie, uitschuring Dood (stil) water, Kentering Uittreksel, voorlopig rapport	Erosion Stauwasser, Totwasser, Stillwasser Auszug
Falaise	Cliff	Klif	Steilküste
Fetch	Fetch	Strijk lengte	Windweg
Filandres	Fouling (= Barnacles)	Aangroeiing, aanzetting (op schepen)	Bodenanwuchs
Filtre	Filter	Filter	Filter
Flèche	Spit	Spit, Strandhaak	Spitze
Flottabilité	Buoyancy	Opdrijvend vermogen	Auftrieb, Hubkraft, Schwebefähigkeit
Force de la Houle, Force des Vagues	Wave Force	Golfkracht	Wellenkraft
Franchissement de la Houle, Franchissement des Vagues	Wave overtopping	Golfoverslag	Wellenüberschlag
Galets	Pebbles	Kiezel	Kiesel
Grément	Rigging	Tagelage, Tuig, Vleet	Takelage, Takelung, Betakelung
Haute Mer (H.M.)	High Water (H.W.)	Hoogwater (H.W.)	Hoch Wasser (H.W.)
Heurt, Choc	Impact	Botsing, Stoot, Slag, Schok	Stoss
Hisser Houle	Heave Swell	Dampen Deining	Heben Dünung
Ile	Island	Eiland	Insel
Ilot Artificiel	Artificial Island	Kunstmatig Eiland	Künstliche Insel
Immersion	Submergence	Onderdompeling	Eintauchung
Impulsion	Momentum	Impuls	Impuls, Antrieb
Inertie Infumexence	Inertia Surge	Traagheid Opstuwing	Trägheit Wanderwelle

<u>French</u>	<u>English</u>	<u>Dutch</u>	<u>German</u>
Interface	Interface	Grensvlak	Grenzschrift
Jet	Jet	Straal	Strahl
Jetée	Jetty	Aanlegsteiger	Hafendamm
Jusant	Ebb	Eb	Ebbe
Lagune	Lagoon	Lagune	Lagune
Laisse d'eau	Water line	Waterlijn	Wasserlinie
Latitude	Latitude	Breedte (Geografisch, astronomisch)	Breite (Geografisch), Breitengrad
Marée	Tide	Getij	Tide, Gezeit
Marée deferlante, Mascaret	Bore	Vloedbranding	Flutbrandung
Marin, Matelot	Mariner	Zeeman, Matroos	Matrose
Marnage	Tide (tidal) range	Getijverschil	Tidehub
Matelas de fascinages	Fascine Mattress	Zinkstuk van rijshout	Faschinenpakwerk
Méandrer	Meandering	Meanderen	Mäandern
Môle	Mole	Havenhoofd	Mole
Monolithe	Monolith	Monoliet	Monolith
Montée de la houle, Cote d'affleurement des vagues	Wave run-up	Golfoploop	Wellenauflauf
Morte eau	Neap tide	Doodtij	Niptide
Mortel	Deadly	Dodelijk	Tödlich, letal
Navigation	Navigation	Navigatie, Routebepaling	Navigation, Schifffahrtskunde
Oblique, Incliné	Oblique	Schuin, scheef, hellend	Überhangend, Geneigt
Océanographie	Oceanography	Oceanografie	Ozeanografie
Onde de marée	Tidal Wave	Getijgolf	Gezeitwelle
Onde de tempête, Coupe de mer	Storm surge	Stormvloed	Sturmflut
Onde interne	Internal wave	Interne golf	Interne Welle
Pare-chocs	Fender	Fender, Wrijfhout, Schutzplank	Fender, Prellpfahl
Oblique, Incliné	Oblique	Schuin, scheef, hellend	Überhangend, Geneigt
Pénétration d'eau salée	Salt intrusion	Binnendringen van zout	Eindringen von Salz
Période de Séjour de retention	Retention Time	Verblijftijd	Retentionzeit
Pénétration de la houle	Wave penetration	Golfoordringing	Wellendurchdringung
Pétrolier	Oil tanker	Olietanker	Ol Tanker
Pétrolier	Tanker	Tanker	Tanker
Pieu d'ancrage	Spud	Ankerpaal	
Plage	Beach	Strand	Strand
Plage d'estran	Beach face, Fore-shore	"Nat" strand	"Nass" Strand
Plateau continental	Continental shelf	Continental plat	Festlandssockel, Schelf
Pointe, Cap	Cape, Headland	Punt, Landhoofd, Kop	Vorgebirge, Kap
Pollution	Pollution	Verontreiniging	Verunreinigung

<u>French</u>	<u>English</u>	<u>Dutch</u>	<u>German</u>
Polynôme	Polynomial	Veelterm	Polynom, vielgliedrige Grösse
Pont	Bridge(ship)	Brug	Brücke
Port	Port	Haven	Hafen
Port et lourd	Dead Weight Tonnage	Laadvermogen	Laadvermögen
Poupe	Stern	Achtersteven	Heck
Prédiction de la houle	Wave prediction	Golfvoorspelling	Wellenvoraussage
Presqu'île	Peninsula	Schiereiland, Landtong	Halbinsel
Propulser	Propel (to)	Voortstuwen, Voortdrijven Voortbewegen	Antreiben
Protection des côtes	Coastal Protection	Kustverdediging	Küstenschutz
Protection des plages	Beach Protection	Strandverdediging	Strandschutz
Protection du fond	Bottom Protection	Bodembescherming	Bodenschutz
Proue	Bow	Boeg, Voorsteven	Bug
Quelconque	Random	Willekeurig, Onvoorspelbaar	Beliebig
Radier incliné	Chute	Steile afvoergoot	Abschüssige Rinne
Réflexion	Reflection	Terugkaatsing	Reflektion
Réfraction	Refraction	Refractie	Refraktion
Règle	Rule of thumb	Vuistregel	Faustregel
Remole	Eddy	Neer	Walze, Wirbel
Remorqueur	Tugboat	Sleepboot	Schleppschiff
Résistance à l'écoulement	Drag (of submerged bodies)	Weerstand (van omstroomde lichamen)	Widerstand (von umströmte Körper)
retenir	Retain (to)	Keren, behouden	Stauen (von Wasser), behalten
Ride	Ripple	Ribbel	Rippel
Rideau de palplanches	Sheet Piling	Damwand	Spundwand
Ride géante	Megaripple	Megaribbel	Megarippel
"Rip Courant"	Rip Current	Muistroom	Rückstrom
Rocher	Rock	Rots	Felsen
Rouler(Roulis)	Roll (to)	Rollen, Slingeren	Rollen, Schlingern
Rugosité	Roughness	Ruwheid	Rauhigkeit
Tanguer (Tangage)	Pitch (to)	Stampen	Stampfen
Théorie des ondes	Wave theory	Golftheorie	Wellentheorie
Sable	Sand	Zand	Sand
Salinité	Salinity	Zoutgehalte	Salzgehalt
Sédimentation	Sedimentation	Sedimentatie, afzetting	Ablagerung

<u>French</u>	<u>English</u>	<u>Dutch</u>	<u>German</u>
Sédiments en suspension	Suspended load	Zwevend materiaal	Schwebestoff
Seiche	Seiche	Seiche	Seiche
"Set-up"	Set-up	Opwaaing	Aufwehung
Soutener	Retain (to)	Keren, behouden	Stauen (von Wasser), behalten
Tirant d'eau	Draft (= Draught)	Diepgang	Tiefgang
Tourbe	Peat	Veen, Turf	Torf
Traineur, Remorquer	Haul (to)	Slepen, Trekken, Halen, Hijsen	Schleppen
Tranchée	Trench	Geul, Sleuf (van kabels)	Kabelgraben
Transport de Sable	Sand Transport	Zandtransport	Förderung von Sand
Treuil	Winch	Windas, Haspel, Lier	Winde
Tribord	Starboard	Stuurboord	Steuerbord
Tsunami	Tsunami	Tsunami	Tsunami
Turbidité	Turbidity	Troebeling	Trübung
Turbulence	Turbulence	Turbulentie	Turbulenz
Vase, Silt	Silt	Slib	Schlick
Vents alizés	Trade Winds	Passaat wind	Passatwind
Viscosité	Viscosity	Viscositeit	Viskosität
Viscosité de Foucault	Eddy Viscosity	Wervelviscositeit	Wirbelviskosität
Vitesse de Chute	Fall Velocity	Valsnelheid	Fallgeschwindigkeit
Vitesse de Propagation	Celerity	Voortplantingsnelheid	Fortpflanzungsgeschwindigkeit
Vive Eau	Spring Tide	Springtij	Springflut
Volume de Flot	Tidal Prism	Getijvolume, Vloedvolume	Tidewassermenge
Vortex, Tourbillon	Vortex	Wervel	Wirbel
Zône de Brisants	Breaker Zone	Brandingszone	Brandungszone

Table 4 German words with Translations

<u>German</u>	<u>English</u>	<u>Dutch</u>	<u>French</u>
Ablagerung	Sedimentation	Sedimentatie, afzetting	Sédimentation
Abschüssige Rinne	Chute	Steile afvoergoot	Radier incliné
Sich (ab)setzen, sich nieder-schlagen	Settle (to)	Bezinken, zich afzetten	Se déposer, se précipiter
Abwasser	Sewage	Rioolwater	Eaux vannes
Anlandung, Anschwemmung, Anhägerung, Verschlickung	Accretion (= silting up)	Aanwas, aanslibbing	Atterrissement, lais, dépôt, alluvion, envasement
Antreiben	Propel (to)	Voortstuwen, voortdrijven, voortbewegen	Propulser
Auftrieb, Hubkraft, Schwebefähigkeit	Buoyancy	Opdrijvend vermogen	Flottabilité
Aufwehung	Set-up	Opwaaing	"set-up"
Ausspülung, Auswaschung	Scour	Ontgronding	Affouillement
Auszug	Abstract	Uittreksel, voorlopig rapport	Extrait, abrégé, résumé
Backbord	Port	Bakboord	Bâbord
Baggerleiter	Ladder	Ladder (waarlangs de emmers worden gehaald)	Echelle de drague
Barre, sandbank	Bar	Bank (evenwijdig aan de kust)	Barre
Behälterschiff	Container ship	Container schip	Cargo porte-container
Beliebig	Random	Willekeurig, onvoorspelbaar	Quelconque
Bodenanwuchs	Fouling (= barnacles)	Aangroeing, aanzetting (op schepen)	Filandres
Bodenschutz	Bottom protection	Bodembescherming	Protection du fond
Bogen, Kreisbogen	Arc	Deel v.e. kegelsnede i.h.b. cirkelboog	Arc, courbe
Boje, barretonne	Buoy	Boei	Bouée
Brandung	Surf	Branding (v.e. golf)	Déferlement
Brandungszone	Breaker zone	Brandingszone	Zône de brisants, zône de ressac
Breite (geografisch), Breitengrad	Latitude	Breedte (geografisch, astronomisch)	Latitude
Bruch	Fracture	Breuk, breukvlak	Cassure
Brücke	Bridge (ship)	Brug	Pont
Bug	Bow	Boeg, voorsteven	Proue
Coriolis-Beschleunigung	Coriolis acceleration	Coriolis versnelling	Accélération de Coriolis

<u>German</u>	<u>English</u>	<u>Dutch</u>	<u>French</u>
Deckwerk	Seawall	Strandmuur	Brise-mer
Deiche	Dike	Dijk	Digue
Delta	Delta	Delta	Delta
Dichtestrom	Density current	Dichtheidsstroming	Courant de densité
Diffraction	Diffraction	DiffRACTIE	Diffraction
Diffusion	Diffusion	Diffusie	Diffusion
Dünung	Swell	Deining	Houle
Ebbe	Ebb	Eb	Jusant
Eindringen von Salz	Salt intrusion	Binnendringen van zout	Pénétration d'eau salée
Eintauchung	Submergence	Onderdompeling	Immersion
Erosion	Erosion	Erosie, uitschuring	Erosion
Fahrtrimm	Squat	Squat, vertrimming	Dejaugeage
Fallgeschwindigkeit	Fall velocity	Valsnelheid	Vitesse de chute
Faschinenpakwerk	Fascine mattress	Zinkstuk van rijshout	Matelas de fascinages
Faustregel	Rule of thumb	Vuistregel	Règle
Felsen	Rock	Rots	Rocher
Fender, Prellpfahl	Fender	Fender, wrijfhout, schutplank	Pare-chocs
Festlandsockel, Schelf	Continental shelf	Continentale plat	Plateau continental
Filter	Filter	Filter	Filtre
Flusskurve	River bend	Rivierbocht	Courbe d'un fleuve
Flussmündung	River mouth	Riviermonding	Embouchure d'un fleuve
Flutbrandung	Bore	Vloedbranding	Marée deferlante, mascaret
Flutstrom	Flood current	Vloedstroom	Courant de flot
Förderung von Sand	Sand transport	Zandtransport	Transport de sable
Fortpflanzungsgeschwindigkeit	Celerity	Voortplantingssnelheid	Vitesse de propagation
Geschiebeführung	Sediment transport, bed-load transport	Sediment-, bodemtransport	Débit solide, charriage de fond
Gezeitenstrom	Tidal current	Getijstroom	Courant de marée
Gezeitentafel	Tide table	Getijtafel	Annuaire des marées
Gezeitwelle	Tidal wave	Getijgolf	Onde de marée
Gieren	Yaw	Gieren	Embarder
Grenzschicht, Übergangsfläche, Grenzfläche	Boundary layer, interface	Grenslaag, grensvlak	Couche limite Interface

<u>German</u>	<u>English</u>	<u>Dutch</u>	<u>French</u>
Hafen	Port	Haven	Port
Hafendamm	Jetty	Aanlegsteiger	Jetée
Halbinsel	Peninsula	Schiereiland, landtong	Presqu'île
Heben	Heave	Dopen	Hisser
Heck	Stern	Achtersteven	Poupe
Hoch Wasser (H.W.)	High Water (H.W.)	Hoogwater (H.W.)	Haute Mer (H.M.)
Impuls, Antrieb	Momentum	Impuls	Impulsion
Insel	Island	Eiland	Ile
Interne Welle	Internal Wave	Interne Golf	Onde interne
Kabelgraben	Trench	Geul, sieuf (van kabels)	Tranchée
Kastenfangedamm	Cofferdam	Kofferdam	Bâtardeau
Kavitation, Hohlraumbildung	Cavitation	Cavitation	Cavitation
Keil	Wedge	Wig	Coin
Kiesel	Pebbles	Kiezel	Galets
Korngrößenverteilung	Grain size distribution	Korrelgrootteverdeling	Distribution Granulométrique
Kühlwasser	Cooling water	Koelwater	Eau de refroidissement
Künstliche Insel	Artificial Island	Kunstmatig eiland	Ilot artificiel
Küste	Coast	Kust	Côte
Der Küste entlang	Littoral	Langs de kust	Côtier, littoral
Küstenschutz	Coastal protection	Kustverdediging	Protection des côtes
Kurant, gangbar	Current	Gangbaar	Courant
Ladevermögen, Schwergut-laderähigkeit (effektive Ladung, einschliesslich Bunkervorräte, Ballast und Proviant)	Dead weight tonnage	Laadvermogen v.e. schip (netto lading incl. brandstofvoorraad en proviand)	Port et lourd
Lagune	Lagoon	Lagune	Lagune
Laminarströmung	Laminar flow	Laminaire stroming	Ecoulement laminaire
Löffelbagger	Dipper Dredge	Lepelbaggerwerktuig	Draque à cuillère
Mäandern	Meandering	Meanderen	Méandrer
Massengutschiff	Bulk carrier	Bulk carrier	Cargo de transport en vrac
Matrose	Mariner	Zeeman, matroos	Marin, matelot
Megarippel	Megaripple	Megaribbel	Ride géante
Mole	Mole	Havenhoofd	Môle
Monolith	Monolith	Monoliet	Monolithe
Nährflüssigkeit, Nährstoff	Nutrients	Voedingsstoffen	

<u>German</u>	<u>English</u>	<u>Dutch</u>	<u>French</u>
Nassbagger	Dredge	Baggerwerktuig	Drague, dragueur, excavateur
"Nass" Strand	Beach face, Fore-shore	"Nat" strand	Plage d'estran
Navigation, Schifffahrtskunde	Navigation	Navigatie, routebepaling	Navigation
Niederigwasser (N.W.)	Low water (L.W.)	Laag water (L.W.)	Basse mer (B.M.)
Niptide	Neap tide	Doodtij	Morte eau
Ol Tanker	Oil tanker	Olietanker	Pétrolier
Ozeanografie	Oceanography	Oceanografie	Océanographie
Plat, Bank	Bank (= flat)	Bank	Banc
Polynom, vielgliedrige Grösse	Polynomial	Veelterm	Polynôme
Potentialströmung	Potential flow	Potentiaal stroming	Écoulement à potentiel
Pumpenflügelrad	Impeller (pump)	Waaier, schoepenrad	Aube, palette
Randbedingung	Boundary condition	Randvoorwaarde	Condition des limites
Rauhigkeit	Roughness	Ruwheid	Rugosité
Reflektion	Reflection	Terugkaatsing	Réflexion
Refraktion	Refraction	Refractie	Réfraction Periode de séjour, de rétention
Retentionszeit, Verweilzeit, Rückhaltezeit	Retention time	Verblijftijd	
Rinne	Channel	Geul	Chenal
Rippel	Ripple	Ribbel	Ride
Rollen, schlingern	Roll (to)	Rollen, slingeren	Rouler (roulis)
Rückstrom	Rip current	Muistroom	"Rip courant"
Salzgehalt	Salinity	Zoutgehalte	Salinité
Salzwasser-zunge	Salt water wedge (tongue)	Zouttong	Coin salé
Sand	Sand	Zand	Sable
Schlamm	Mud	Modder	Boue
Schleppen	Haul (to)	Slepen, trekken, halen, hijsen	Traîner, remorquer
Schleppschiff	Tugboat	Sleepboot	Remorqueur
Schleuse	Sluice	Sluis, uitwateringssluis	Ecluse
Schlick	Silt	Slib	Vase, silt
Schwebestoff	Suspended load	Zwevend materiaal	Sédiments en suspension
Schwingen	Sway	Verzetten (dwarsverplaatsing v.e. schip)	

<u>German</u>	<u>English</u>	<u>Dutch</u>	<u>French</u>
Seiche	Seiche	Seiche	Seiche
Spitze	Spit	Spit, strandhaak	Flèche
Springflut	Spring tide	Springtij	Vive eau
Spundwand	Sheet piling	Damwand	Rideau de palplanches
Stampfen	Pitch (to)	Stampen	Tanguer (tangage)
Stauen (von wasser), behalten	Retain (to)	Keren, behouden	retenir
Stauwasser, Totwasser, Stilwasser	Slack water	Dood (stil) water, Kentering	étale
Stehende Welle, stationäre Welle	Standing wave	Staande golf, stationnaire golf	Clapotis, onde stationnaire
Steilküste	Cliff	Klif	Falaise
Steuerbord	Starboard	Stuurboord	Tribord
Stoss	Impact	Botsing, stoot, slag, schok	Heurt, choc
Strahl	Jet	Straal	Jet
Strand	Beach	Strand	Plage
Strandbühne	Groin (= groyne)	Strandhoofd (zee), krib (rivier)	Epis
Strandschutz	Beach protection	Strandverdediging	Protection des plages
Strommesser	Current meter	Stroomsnelheidsmeter	Courantomètre
Strömung, Strom	Current	Stroming, stroomsnelheid	Courant
Strömungsbild	Flow pattern	Stroombeeld	Champs de courants
Sturmflut	Storm surge	Stormvloed	Onde de tempête, coupe de mer
Takelage, Takelung, Betakelung	Rigging	Takelage, tuig, vleet	Grément
Talsperre	Dam	Dalafsluiting	Barrage
Tanker	Tanker	Tanker	Pétrolier
Tide, Gezeit	Tide	Getij	Marée
Tidehub	Tide (tidal) range	Getijverschil	Marnage
Tidewassermenge	Tidal prism	Getijvolume, vloedvolume	Volume de flot
Tiefenmessung, Tiefsee- messung, Tiefseelotung	Bathymetry	Diepteligging	Bathymétrie
Tiefgang	Draft (= draught)	Diepgang	Tirant d'eau
Tödlich, letal	Lethal	Dodelijk	Mortel
Ton	Clay	Klei	Argile

<u>German</u>	<u>English</u>	<u>Dutch</u>	<u>French</u>
Torf	Peat	Veen, turf	Tourbe
Trägheit	Inertia	Traagheid	Inertie
Trockendock	Drydock	Droogdok	Cale sèche
Trübung	Turbidity	Troebeling	Turbidité
Tsunami	Tsunami	Tsunami	Tsunami
Turbulenz	Turbulence	Turbulentie	Turbulence
Überhangend, geneigt	Oblique	Schuin, scheef, hellend	Oblique, incliné
Umgehungsleitung	Bypass	Omloopleiding	Canal d'évacuation
Verstärken	Amplify (to)	Versterken	Amplifier, survolter, répéter, élever, renforcer
Verunreinigung	Pollution	Verontreiniging	Pollution
Veruntiefung, Untiefe	Shoal	Verondieping, ondiepte	Déprofondissement
Viskosität	Viscosity	Viscositeit	Viscosité
Vorgebirge, Kap	Cape, headland	Punt, landhoofd, kop	Pointe, cap
Walze, Wirbel	Eddy	Neer	Remole
Wanderwelle (mit steiler Front)	Surge	Opstuwing	Infumexence
Wasserlinie	Water line	Waterlijn	Laisse d'eau
Wellenangriff	Wave attack	Golfaanval	Attaque de la houle
Wellenauflauf	Wave run-up	Golfoploop	Montée de la houle, cote d'affleurement des vagues
Wellenbrecher	Breakwater	Golfbreker	Brise-lame
Wellendämpfung	Wave damping	Golfdamping	Amortissement de la houle Amortissement des vagues
Wellendurchdringung	Wave penetration	Golfdoordringing	Pénétration de la houle
Wellenfeld	Wave field	Golfveld	Champs d'ondes
Wellenkamm	Wave crest	Golfkam	Crête d'une lame
Wellenklima	Wave climate	Golfklimaat	Climat d'ondes
Wellenkraft	Wave force	Golfkracht	Force de la houle, force des vagues
Wellentheorie	Wave theory	Golftheorie	Théorie des ondes
Wellenüberschlag	Wave overtopping	Golfoverslag	Franchissement de la houle, franchissement des vagues
Wellenvoraussage	Wave prediction	Golfvoorspelling	Prédiction de la houle
Widerstand (von umströmte Körper)	Drag (of submerged bodies)	Weerstand (van omstroomde lichamen)	Résistance à l'écoulement
Winde	Winch	Windas, haspel, lier	Treuil

<u>German</u>	<u>English</u>	<u>Dutch</u>	<u>French</u>
Windstoss	Gust	Windstoot	Coup de vent
Windweg	Fetch	Strijklengte	Fetch
Wirbel	Vortex	Wervel	Vortex, tourbillon
Wirbelviskosität	Eddy viscosity	Turbulentieviskositeit	Viscosité de foucault
Zutritt, Zugang	Access	Toegang	Accès

Introduction to conversion factor tables.

Each of the following tables provides conversion factors for units of the quantity listed in the table heading. (A short table of important coastal engineering constants precedes the main body of tables).

To express a quantity in desired units listed across the top of each table, multiply the units listed down the left hand side of the table by the factor found at the intersection of the column and row of the two sets of units. For example, to obtain feet in the length table, multiply meters by 3.2808. Usually, the conversion factors are expressed as a decimal. Integer values - without decimal point - or ratios of integer values are used when an exact definition is involved. For example, feet can be obtained from inches by multiplying by 1/12.

Both standard and non-standard metric as well as English and United States units are included in these tables. Hopefully, the conversion factors involving non-standard units will be used primarily to convert from the less acceptable to standard units. Occasionally, less common conversion factors are not given; the space in the tables is then blank.

A primary source of data for the compilation of these tables was *Handbook of Chemistry and Physics*: 43rd edition: Chemical Rubber Publishing Company, Cleveland, Ohio, U.S.A.: 1961: pp. 3204-3227.

Table 5 Miscellaneous Constants.

e	2.71828183	
g	9.81288 m/sec ²	*
	32.19449 ft/sec ²	*
π	3.1415926536	
2π	6.28319	
g/2π	1.5618 m/sec ²	*
	5.1239 ft/sec ²	*

* Computed based upon a value of g for Amsterdam (42°N, mean sea level).

Table 6 Mass Units

to obtain → multiply ↓ by ↘	kilogram	pound mass	ton (long)	ton (metric)	ton (short)	slug
kilogram	1	2.2046	9.842×10^{-4}	1/1000	1.1023×10^{-3}	0.06848
pound mass	0.4536	1	1/2240	4.536×10^{-4}	1/2000	0.03106
ton (long)	1016.1	2240	1	1.0161	$\frac{28}{25}$	69.577
ton (metric)	1000	2204.6	0.9842	1	1.1023	68.478
ton (short)	907.2	2000	$\frac{25}{28}$	0.90719	1	62.122
slug	14.603	32.194	0.01437	0.01460	0.01610	1

Table 7 Length Units

	to obtain											
multiply	↔		fathom	foot	inch	kilometer	meter	millimeter	nautical mile	Statute mile (U.S.)	yard	
by	↔											
fathom	1	6	72	1.8288×10^{-3}	1.82880	1.8288×10^3	1.8288×10^{-4}	304.8	9.8748×10^{-4}	1/880	2	
foot	1/6	1	12	3.0480×10^{-4}	0.30480		3.0480×10^{-4}	304.8	1.6458×10^{-4}	1/5280	1/3	
inch	1/72	1/12	1		2.5400×10^{-2}	25.400		25.400		1/63360	1/36	
kilometer	546.80	3280.8		1	10^3	10^6		10^6	0.5340	0.62137	1093.6	
meter	0.54680	3.2808	39.37	10^{-3}	1	10^3		10^3	5.3996×10^{-4}	6.2137×10^{-4}	$\frac{3937}{3600}$	
millimeter	5.4680×10^{-4}	3.2808×10^{-3}	0.03937	10^{-6}	10^{-3}	1		1				
nautical mile	1012.7	6076.103		1.852	1852				1	1.1516	2.0254×10^3	
Statute mile (U.S.)	880	5280	63360	1.60935	1609.35				0.86836	1	1760	
yard	1/2	3	36	9.1440×10^{-4}	$\frac{3600}{3937}$				4.9374×10^{-4}	1/1760	1	

Table 8 Time Units

to obtain → multiply ↓ by ↘	day	hour	minute	second	sidereal day	year
day	1	24	1440	86400	1.00274	2.738×10^{-3}
hour	1/24	1	60	3600	0.04178	1/8766
minute	1/1440	1/60	1	60	6.9634×10^{-4}	1.9013×10^{-6}
second	1/86400	1/3600	1/60	1		3.1688×10^{-8}
sidereal day	0.99727	23.934	1436.07		1	2.730×10^{-3}
year	365.25	8766	5.2596×10^5	3.1558×10^7	366.25	1

Table 9 Area Units

to obtain multiply	acre	are	centimeter ²	foot ²	hectare	inch ²	kilometer ²	meter ²	mile ²	millimeter ²
↓	1	40.469		43600	0.40469		4.0469x10 ⁻³	4046.9	1/640	
→	0.02471	1	10 ⁶	1076.4	10 ⁻²		10 ⁻⁴	100	3.8610x10 ⁻⁵	
↘		10 ⁻⁶	1	1.0764x10 ⁻³		0.15500	10 ⁻¹⁰	10 ⁻⁴		100
	1/43600	9.2903x10 ⁻⁴	929.03	1	9.2903x10 ⁻⁶	144		9.2903x10 ⁻²		9.2903x10 ⁴
	2.47104	100		1.0764x10 ⁵	1		100	10 ⁴	3.8610x10 ⁻³	
			6.4516	1/144		1		6.4516x10 ⁻⁴		645.16
	247.104	10 ⁴	10 ¹⁰		10 ⁻²		1	10 ⁶	0.38610	
	2.47104x10 ⁻⁴	10 ⁻²	10 ⁴	10.7639	10 ⁻⁴	1550.0	10 ⁻⁶	1	0.38610x10 ⁻⁶	10 ⁶
	640	25900			259.00		2.5900	2.5900x10 ⁶	1	
			10 ⁻²	1.07639x10 ⁻⁵		1.550x10 ⁻³		10 ⁻⁶		1

Table 10 Volume Units

	barrel	centimeter ³	foot ³	gallon (imp)	gallon (U.S.)	inch ³	titer	meter ³	ton*
to obtain →									
multiply ↓									
by ↙									
barrel (oil)	1		5.6146	34.97	42		158.99	0.15899	0.05615
centimeter ³		1	3.5314×10 ⁻⁵	2.1997×10 ⁻⁴	2.6417×10 ⁻⁴	0.06102	10 ⁻³	10 ⁻⁶	
foot ³	0.1781	2.8317×10 ⁴	1	6.229	7.481	1728	28.317	0.0283	1/100
gallon (imp)	0.02859	4546.1	0.1605	1	1.2009	277.3	4.5460	4.546×10 ⁻³	1.6054×10 ⁻³
gallon (U.S.)	1/42	3785.4	0.13368	0.83268	1	231.00	3.785	3.785×10 ⁻³	1.3368×10 ⁻³
inch ³		16.387	1/1728	3.606×10 ⁻³	4.329×10 ⁻³	1	0.01639	1.6387×10 ⁻⁵	
titer	6.2898×10 ⁻³	10 ³	0.03531	0.21997	0.2642	61.024	1	10 ⁻³	3.5315×10 ⁻⁴
meter ³	6.2898	10 ⁶	35.314	219.97	264.2	6.1023×10 ⁴	1000	1	0.35315
ton*	17.811		100	622.9	748.06		2831.7	2.8317	1

* Used, here, to measure ship cargo volume.

Table 11 Velocity Units

to obtain → multiply ↓ by ↘	centimeters per second	feet per minute	feet per second	kilometers per hour	knots (Nautical miles per hour)	meters per minute	meters per second	statute (U.S.) miles per hour
centimeters per second	1	1.9685	0.032808	3.60×10^{-4}	1.9438×10^{-2}	0.6000	1/100	1.726×10^{-3}
feet per minute	0.5080	1	1/60	1.8288×10^{-2}	9.868×10^{-3}	0.03048	5.080×10^{-3}	8.569×10^{-3}
feet per second	30.480	60	1	1.0973	0.59210	18.288	0.3048	0.68187
kilometers per hour	2777.78	54.68	0.91134	1	0.53961	16.6667	0.27778	0.62137
knots*	51.44	101.33	1.6889	1.85319	1	30.8667	0.5144	1.1516
meters per minute	1.6667	3.2808	0.05468	0.06000	0.03240	1	60	0.03728
meters per second	100	196.85	3.2808	3.6000	1.9438	1/60	1	2.2369
statute (U.S.) miles per hour	579.4	116.70	1.46656	1.60935	0.86836	26.822	0.44704	1

* Nautical miles per hour.

Table 12 Volume Flow Rate Units

to obtain → multiply ↓ by →	feet ³ per second	liters per second	meters ³ per day	meters ³ per tide *	meters ³ per second	meters ³ per year	yards ³ per year
feet ³ per second	1	28.318	2447	1266	0.02832	8.936x10 ⁵	1.169x10 ⁶
liters per second	0.03531	1	86.40	44.70	1/1000	3.156x10 ⁴	4.128x10 ⁴
meters ³ per day	4.087x10 ⁻⁴	0.01157	1	0.5174	1/86400	365.26	477.7
meters ³ per tide *	7.900x10 ⁻⁴	0.02237	1.933	1	1/44700	706.0	923.4
meters ³ per second	35.31	1000	86400	44700	1	3.156x10 ⁷	4.128x10 ⁷
meters ³ per year	1.119x10 ⁻⁶	3.169x10 ⁻⁵	2.738x10 ⁻³	1.416x10 ⁻³	3.169x10 ⁻⁸	1	1.308
yd ³ per year	8.556x10 ⁻⁷	2.423x10 ⁻⁵	2.093x10 ⁻³	1.083x10 ⁻³	2.423x10 ⁻⁸	0.7646	1

*Based upon a semidiurnal tide period of 12h 25 m.

Table 13 Force or Weight Units

to obtain multiply ↓ by ↘	dyne	kilogram force	newton	pound force	ton force (long)	ton force (metric)	ton force (short)
dyne	1	1.0191×10^{-5}	10^{-5}	2.2466×10^{-6}			
kilogram force	9.8129×10^5	1	9.81288	2.2046	9.8420×10^{-4}	1/1000	1.1023×10^{-3}
newton	10^5	0.10191	1	0.22466	1.0029×10^{-4}	1.0191×10^{-4}	1.1233×10^{-4}
pound force	4.4511×10^5	0.4536	4.4511	1	1/2240	0.4536×10^{-3}	1/2000
ton force (long)		1016.1	9970.5	2240	1	1.0161	$\frac{2240}{2000}$
ton force (metric)		1000	9812.88	2.2046×10^3	0.98419	1	1.1023
ton force (short)		907.2	8902.2	2000	$\frac{2000}{2240}$	0.90719	1

Table 14 Pressure Units

	atmosphere	bar	dyne per centimeter ²	feet of water*	kilogram force per cm ²	meters of water*	millimeters of mercury*	newton per meter ² (Pascal)	pounds per inch ²
atmosphere	1	1.0133	1.01325x10 ⁶	33.877	1.0332	10.326	759.52	1.0133x10 ⁵	14.696
bar	0.9869	1	10 ⁶	33.434	1.01971	10.191	749.55	10 ⁵	14.504
dyne per cm ²	9.8692x10 ⁻⁷	10 ⁻⁶	1				7.4955x10 ⁻⁴	1/10	1.4504x10 ⁻⁵
feet of* water	0.0295	0.0299		1	0.0305	0.3048	22.419	2991.0	0.43381
kilogram force per cm ²	0.96787	0.98067		32.788	1	9.9936	735.06	98067	14.223
meters of* water	0.0968	0.09812		3.2808	0.1006	1	73.55	9812.6	1.4233
millimeters* of mercury	1.3166x10 ⁻³	1.3340x10 ⁻³	1334.0	0.04460	1.3604x10 ⁻³	0.01360	1	133.41	0.01935
newton per meter ² (pascal)	9.8692x10 ⁻⁶	10 ⁻⁵	10	3.3434x10 ⁻⁴	1.0197x10 ⁻⁵	1.0191x10 ⁻⁴	7.496x10 ⁻³	1	1.4503x10 ⁻⁴
pounds force per inch ²	0.06805	0.06895	68946	2.3051	0.070307	0.70261	51.682	6895.1	1

* Based upon g = 9.81288 m/s².

Table 15 Density or Concentration Units

to obtain → multiply ↓ by ↘	grams per cm ³	kilograms per m ³	milligrams per liter	pound mass per foot ³	slugs per foot ³
grams per cm ³	1	10 ³	10 ⁶	62.43	1.939
kilograms per m ³	10 ⁻³	1	10 ³	0.06243	1.939x10 ⁻³
milligrams per liter	10 ⁻⁶	10 ⁻³	1	6.243x10 ⁻⁵	1.939x10 ⁻⁶
pounds mass per foot ³	0.016018	16.018	16018	1	0.03106
slugs per foot ³	0.5157	515.7	5.157x10 ⁵	32.194	1

