

ECLA**EUROPEAN CLASSIFICATION****E02B****HYDRAULIC ENGINEERING (ship-lifting E02C; dredging E02F)**

[N: **WARNING** [C12.08]

The following IPC groups are not used in the internal ECLA classification scheme.
Subject matter covered by these groups is classified in the following ECLA groups:

E02B15/06	covered by	E02B15/04B2
E02B15/08	covered by	E02B15/04B
E02B15/10	covered by	E02B15/04C to E02B15/04G

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E02B1/00

Equipment or apparatus for, or methods of, general hydraulic engineering, [N: e.g. protection of constructions against ice-strains (protection of offshore constructions against ice-loads [E02B17/00D1](#); ice-structures as artificial islands [E02B17/02E](#))]

E02B1/00B

- [N: Mechanically induced gas or liquid streams in seas, lakes or water-courses for forming weirs or breakwaters; making or keeping water surfaces free from ice, aerating or circulating water, e.g. screens of air-bubbles against sludge formation or salt water entry, pump-assisted water circulation (moving sediments [E02B3/02B](#); for ice breakers [B63B35/08](#); aerating or circulating water in fish-tanks [A01K63/04A](#); purification of waste water with addition of air [C02F](#); distributing gases in liquids in general [B01F3/04](#))]

E02B1/00C

- [N: Arresting, diverting or chasing away fish in water-courses or water intake ducts, seas or lakes, e.g. fish barrages, deterrent devices ([E02B8/08B](#) takes precedence); Devices for cleaning fish barriers] [C9610]

E02B1/02

- Hydraulic models [N: towing tanks or basins for model vessels [B63B9/02](#)]

E02B3/00

Engineering works in connection with control or use of streams, rivers, coasts, or other marine sites (barrages or weirs [E02B7/00](#)); Sealing or joints for engineering works in general

E02B3/02

- Stream regulation, e.g. breaking up subaqueous rock, cleaning the beds of waterways, directing the water flow ([N: harvesting water plants [A01D44/00](#); underwater loosening of soil or rocks for foundation construction [E02D17/16](#); dredging or scraping devices [E02F5/28](#)] [C9810]

E02B3/02B

- [N: Removing sediments (in barrages or reservoirs [E02B8/02](#))]

E02B3/02C

- [N: Removing solid rocks]

E02B3/04

- Structures or apparatus for, or methods of, protecting banks, coasts, or harbours (sealings or joints [E02B3/16](#); [N: [E02B1/00B](#) takes precedence])

E02B3/04B

- [N: Artificial seaweed]

E02B3/04C

- [N: Artificial reefs] [N1203]

E02B3/06

- Moles; Piers; Quay walls; Groynes; Breakwaters [N: Wave dissipating walls; Quay equipment]

E02B3/06B

- [N: Constructions floating in operational condition, e.g. breakwaters or wave

- dissipating walls (floating oil barriers [E02B15/04B](#); floating stream regulating devices [E02B3/02](#))
- E02B3/06B2 [N: Floating landing-stages (construction of pontoons [B63B35/34](#); landing bridges [E01D15/14](#))]
- E02B3/06C [N: Quays (bulkheads [E02D5/00](#); caissons [E02D23/00](#); retaining walls [E02D29/00](#))]
- E02B3/06D [N: Landing stages for vessels (floating landing-stages [E02B3/06B2](#); landing bridges [E01D15/14](#))]
- E02B3/08 . . . Structures of loose stones with or without piles (piles [E02D5/00](#))
- E02B3/10 . . Dams; Dykes; Sluice ways or other structures for dykes, dams, or the like (making embankments or dams in general [E02D17/18](#))
- E02B3/10A [N: Permanently installed raisable dykes] [N1107]
- E02B3/10A2 [N: with self-activating means] [N1107]
- E02B3/10B [N: Temporary dykes] [N1107]
- E02B3/10B2 [N: with a filling, e.g. filled by water or sand] [N1107]
- E02B3/12 . . Revetment of banks, dams, water-courses, or the like, [N: e.g. the sea-floor] (of slopes in general [E02D17/20](#))
- E02B3/12B [N: Devices for applying linings on banks or the water bottom (for lining canals [E02B5/02](#))]
- E02B3/12C [N: Flexible prefabricated covering elements, e.g. mats, strips]
- E02B3/12C2 [N: mainly consisting of stone, concrete or similar stony material]
- E02B3/12C3 [N: mainly consisting of metal]
- E02B3/12C4 [N: mainly consisting of vegetable material, e.g. wood, reeds]
- E02B3/12C5 [N: mainly consisting of bituminous material or synthetic resins]
- E02B3/12C6 [N: bags filled at the side]
- E02B3/12D [N: Coherent linings made on the spot, e.g. cast in situ, extruded on the spot (for canal linings [E02B5/02](#))]
- E02B3/12E [N: Polyhedrons, tetrapods or similar bodies, whether or not threaded on strings]
- E02B3/14 Preformed blocks [N: or slabs for forming essentially continuous surfaces]; Arrangements thereof [N: (preassembled to constitute flexible mats [E02B3/12C](#); pavements [E01C5/00](#))]
- E02B3/16 . Sealings or joints ([N: [E02B3/12](#) takes precedence; sealings for specific structural foundation elements, see the relevant groups for those elements; sealings for barrage or lock gates [E02B7/54](#); joints for foundation structures [E02D29/16](#); sealing joints not restricted to hydraulic engineering work [E04B1/68](#)])
- E02B3/18 . Reclamation of land from water [N: or marshes] (drainage of soil [E02B11/00](#))
- E02B3/20 . Equipment for shipping on coasts, in harbours or on other fixed marine structures, e.g. bollards (tying-up, anchoring [B63B21/00](#), e.g. bollards for shipping [B63B21/06](#); buoys [B63B22/00](#); [N: equipment specially adapted for use in locks or dry docks [E02C1/10](#)])
- E02B3/24 . . Mooring posts [N9601]
- E02B3/26 . . Fenders ([N: fenders for protecting offshore constructions [E02B17/00D3](#); fenders integral with waterborne vessels or specially adapted therefor [B63B59/02](#)] [N9601])
- E02B3/28 . . Fender piles [N9601]
- E02B5/00** **Artificial water canals, [N: e.g. irrigation canals] (for water-power plants [E02B9/02](#); irrigation of soil [E02B13/00](#))**

- E02B5/00B . [N: Canals entirely situated above ground level, e.g. on piers (canal bridges [E01D18/00](#))]
- E02B5/02 . Making or lining canals[N: (linings in general[E02B13/02](#); digging canals[E02F](#))][\[C9810\]](#)
- E02B5/04 . Navigable canals
- E02B5/06 . . Operating equipment in connection with canals (ship-lifting devices [E02C](#))
- E02B5/08 . Details, e.g. gates, screens
- [N: **Note**
This subdivision is limited to closures, devices for arresting waterborne materials and divisors
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- E02B5/08B . . [N: Closures(for irrigation conduits[E02B13/02](#))]
- E02B5/08C . . [N: Arresting devices for waterborne materials, e.g. gratings (fish barrages [E02B1/00C](#); removing sediments [E02B3/02B](#); arresting oil or similar pollutants [E02B15/04B](#); for waste water purification [E02F](#); in sewers [E03F5/14](#))] [\[C9610\]](#)
- E02B5/08E . . [N: Divisors]
- E02B7/00** **Barrages or weirs; Layout, construction, methods of, or devices for, making same**
(for protecting banks, coasts, or harbours [E02B3/04](#); sealings or joints [E02B3/16](#); handling building or like materials for hydraulic engineering [E02D15/00](#); foundations in general [E02D27/00](#))
- E02B7/00B . [N: Deformable barrages or barrages consisting of permanently deformable elements, e.g. inflatable, with flexible walls (closures [E02B7/54](#); floating oil barrages [E02B15/04B](#))]
- E02B7/02 . Fixed barrages
- E02B7/04 . . Dams across vallies
- E02B7/06 . . . Earth-fill dams; Rock-fill dams
- E02B7/08 . . . Wall dams
- E02B7/10 Gravity dams, i.e. those in which the weight of the structure prevents overturning
- E02B7/12 Arch dams
- E02B7/14 Buttress dams
- E02B7/16 . Fixed weirs; Superstructures or flash-boards therefor
- E02B7/18 . . Siphon weirs [N: (syphons in hydraulic engineering in general [E02D29/08](#))]
- E02B7/20 . Movable barrages; Lock [N: or dry-dock] gates
- E02B7/20B . . [N: Barrages controlled by the variations of the water level; automatically functioning barrages (level regulators [G05D9/00](#); the documents are filed in this subdivision and the relevant subdivision [E02B7/26](#) to [E02B7/50](#))]
- E02B7/22 . . Stop log dams; Emergency gates
- E02B7/24 . . Needle weirs
- E02B7/26 . . Vertical-lift gates
- E02B7/28 . . . with sliding gates

- E02B7/30 . . . with guide wheels or rollers for the gates
- E02B7/32 . . . Cylindrical or tubular gates
- E02B7/34 . . . Flash- boards for vertical-lift gates
- E02B7/36 . . . Elevating mechanisms for vertical-lift gates
- E02B7/38 . . Rolling gates [N: or gates moving horizontally in their own plane, e.g. by sliding] [C1202]
- E02B7/40 . . Swinging or turning gates
- E02B7/42 . . . Gates of segmental or sector-like shape with horizontal axis
- E02B7/44 . . . Hinged-leaf gates
- E02B7/46 . . . Gates turning round a horizontal axis arranged midway of the flap
- E02B7/48 . . . Roof or double shutter gates
- E02B7/50 . . Floating gates
- E02B7/52 . . Equipment preventing vibration of gates
- E02B7/54 . . Sealings for gates

- E02B8/00** **Details of barrages or weirs (cleaning or keeping clear the surface of open water E02B15/00); [N: Energy dissipating devices carried by lock or dry-dock gates]**

- E02B8/02 . Sediment base gates; Sand sluices; Structures for retaining arresting waterborne material
- E02B8/02B . . [N: Arresting devices for waterborne materials (E02B1/00B takes precedence; in artificial watercourses E02B5/08C; arresting oil or the like E02B15/04B; sieving devices for waste water purification C02F; in sewers E03F5/14)]
- E02B8/02B2 . . . [N: Cleaning devices (for fish barrages E02B1/00C)]

- E02B8/04 . Valves, slides, or the like; Submerged sluice gates
- E02B8/04B . . [N: automatically movable] [C9610]

- E02B8/06 . Spillways; Devices for dissipation of energy, e.g. for reducing eddies [N: also for lock or dry-dock gates]

- E02B8/08 . Fish passes [N: or other means providing for migration of fish]; Passages for rafts or boats
- E02B8/08B . . [N: Devices allowing fish migration, e.g. fish traps (arresting or diverting fish exclusively E02B1/00C)]

- E02B9/00** **Water-power plants; Layout, construction or equipment, methods of, or apparatus for, making same**

- E02B9/02 . Water-ways
- E02B9/02B . . [N: Closures]
- E02B9/02B2 . . . [N: automatically movable]
- E02B9/02B3 . . . [N: Sliding closures (E02B9/02B2 takes precedence)]
- E02B9/04 . . Free-flow canals or flumes; Intakes (gratings or screens therefor E02B5/08)
- E02B9/06 . . Pressure galleries or pressure conduits; Galleries specially adapted to house pressure conduits; Means specially adapted for use therewith, e.g. housings, valves, gates (driving inclined galleries E21D 9/02; valves in general F16K;

conduits in general F16L) [M1107]

- E02B9/08 . Tide or wave power plants (water-pressure machines, tide or wave motors [F03B](#))

- E02B11/00** **Drainage of soil, e.g. for agricultural purposes** [N: (draining sports grounds [E01C13/08B](#); for consolidating foundation soil, e.g. sand drain piles [E02D3/10](#))] [C9810]

- E02B11/00B . [N: Drainage conduits]

- E02B11/02 . Drainage device- laying apparatus, e.g. drainage ploughs

 [N: **Note**
 Group [E02B11/02](#) is incomplete, see also [E02F3/00](#) and [E02F5/00](#), dredgers and soil-shifting machines
]

- E02B13/00** **Irrigation ditches, i.e. gravity flow, open channel water distribution systems** ([N: retaining waterborne material in irrigation canals [E02B5/08C](#)]; other distribution systems for watering or spraying gardens, fields, sports grounds, or the like, [A01G25/00](#); [N: built-in irrigation means for sports grounds [E01C13/08B](#)]) [C9810]

- E02B13/02 . Closures for irrigation conduits

- E02B15/00** **Cleaning or keeping clear the surface of open water; Apparatus therefor** (construction of ships or other waterborne vessels [B63B](#), e.g. vessels specially adapted for collecting pollution from open water [B63B35/32](#); in swimming or splash baths or pools [E04H4/16](#))

- E02B15/02 . from ice [N: otherwise than according to [E02B1/00B](#)] (construction of ships [B63B](#); [N: ice-breakers or amphibious vehicles [B63B35/08](#); protecting hydraulic engineering structures against ice-load [E02B1/00](#)])

- E02B15/04 . Devices for cleaning or keeping clear the surface of open water from oil or like floating materials by separating or removing these materials ([N: stopping water-borne material in artificial water canals [E02B5/08C](#); stopping water-borne material at barrages or weirs [E02B8/02B](#)]; other treatment of water, waste water or sewage [C02F](#); materials for treating liquid pollutants; e.g. oil, gasoline, fat, [C09K3/32](#); [N: separation of oil in sewage conduits [E03F5/16](#)]) [C9810]

- E02B15/04D . . [N: Devices for distributing materials, e.g. absorbed or magnetic particles over a surface of open water to remove the oil, with or without means for picking up the treated oil ([E02B15/04E](#) takes precedence)]

- E02B15/04E . . [N: Devices for removing the oil by combustion with or without means for picking up the oil]

- E02B15/04G . . [N: Devices or methods for removing oil by means of freezing]

- E02B15/04H . . [N: Separating means for recovering oil floating on a surface of open water; [E02B15/04M](#) takes precedence (separation in general [B01D](#))] [N1203]

- E02B15/04L . . [N: Collection of oil using vessels, i.e. boats, barges] [N1203]

- E02B15/04L2 . . . [N: provided with an oil collecting boom arranged on at least one side of the hull] [N1203]

- E02B15/04M . . [N: Oil collectors moved over the water skimming the water surface] [N1203]

- E02B15/06 . . Barriers therefor ([E02B15/08](#) takes precedence) [N: construed for applying

- processing agents or for collecting pollutants, e.g. absorbent] [N1203]
- E02B15/08 . . Devices for reducing the polluted area [N: with or] without [N: additional devices for] removing the material [N1203]
- E02B15/08B . . . [N: with stabilising elements] [N1203]
- E02B15/08C . . . [N: with underwater curtains] [N1203]
- E02B15/08D . . . [N: adapted for protection against fire or extreme heat] [N1203]
- E02B15/08E . . . [N: fixed to the side of a boat for containing small leaks in the hull] [N1203]
- E02B15/08F . . . [N: fixed to permanent structure, e.g. harbour wall or river bank] [N1203]
- E02B15/08G . . . [N: adapted to be towed for operation] [N1203]
- E02B15/08H . . . [N: Details of connectors] [N1203]
- E02B15/08J . . . [N: Buoyancy material] [N1203]
- E02B15/08J2 [N: Air ([E02B15/08J4](#) takes precedence)] [N1203]
- E02B15/08J2B [N: self-inflating barriers] [N1203]
- E02B15/08J4 [N: Air and water] [N1203]
- E02B15/08J6 [N: Foam] [N1203]
- E02B15/08J6B [N: using expanded polystyrene foam] [N1203]
- E02B15/10 . . Devices for removing the material from the surface [N: ([E02B15/04D](#), [E02B15/04E](#), [E02B15/06](#) take precedence)] [N1203]
- E02B15/10B . . . [N: Means floating loosely on the water absorbing the oil (absorbing materials C02F)] [N1203]
- E02B15/10C . . . [N: Discs] [N1203]
- E02B15/10D . . . [N: Rotary drums] [N1203]
- E02B15/10E . . . [N: Conveyors; Paddle wheels; Endless belts ([E02B15/10B](#) takes precedence)] [N1203]
- E02B15/10F . . . [N: Archimedian screws] [N1203]
- E02B15/10G . . . [N: Overflow skimmers with suction heads; suction heads] [N1203]
- E02B15/10H . . . [N: Whirling means forming a vortex in the water; cyclones] [N1203]
- E02B15/10J . . . [N: Ejection means] [N1203]

- E02B17/00** **Artificial islands mounted on piles or like supports, e.g. platforms on raisable legs** [N: or offshore constructions]; **construction methods therefor** ([N: construction methods for floating platforms [B63B9/06C](#)]; **anchoring floating platforms** [B63B21/00](#); **floating platforms, e.g. anchored**, [B63B35/44](#); [N: underwater reservoirs [B65D88/78](#)]) [C9908]
- E02B17/00A . [N: Nodal points]
- E02B17/00B . [N: Methods for grouting offshore structures; apparatus therefor ([cementing boreholes E21B33/13](#))]
- E02B17/00C . [N: Tube closures for releasable sealing hollow tubes]
- E02B17/00D . [N: Means for protecting offshore constructions]
- E02B17/00D1 . . [N: against ice-loads]
- E02B17/00D2 . . [N: against corrosion]
- E02B17/00D3 . . [N: Fenders]
- E02B17/00E . [N: Maintenance, repair or inspection of offshore constructions]

- E02B17/02 . placed by lowering the supporting construction to the bottom, e.g. with subsequent fixing thereto
- E02B17/02B . . [N: with relative movement between supporting construction and platform]
- E02B17/02B2 . . . [N: adapted to travel on the bottom (walking gears moving dredgers forward step-by-step [E02F9/04](#))]
- E02B17/02B4 . . . [N: shock absorbing means for the supporting construction]
- E02B17/02C . . [N: Reinforced concrete structures ([E02B17/02B](#) takes precedence)]
- E02B17/02D . . [N: steel structures ([E02B17/02B](#) takes precedence)]
- E02B17/02E . . [N: Ice-structures]

- E02B17/04 . Equipment specially adapted for raising, lowering, or immobilising the working platform relative to the supporting construction ([platform lifts in general B66F7/00](#))
- E02B17/06 . . for immobilising, e.g. using wedges or clamping rings [N: (as elements of the raising or lowering means [E02B17/08](#))]
- E02B17/08 . . for raising or lowering
- E02B17/08A . . . [N: the equipment being hydraulically actuated (outriggers for cranes [B66C23/80](#))]
- E02B17/08B . . . [N: with racks actuated by pinions (lifting jacks [B66F3/02](#) to [B66F3/06](#))]
- E02B17/08C . . . [N: with screws and nuts mechanism (climbing jacks with following nut [E02B17/08D10](#); lifting jacks [B66C3/08](#))]
- E02B17/08D . . . [N: with climbing jacks (climbing cranes [B66C23/32](#); hydraulic lifting jacks [B66F3/24](#) and subgroups)]
- E02B17/08D2 [N: with inflatable clamping rings]
- E02B17/08D4 [N: with clamping wedges, eccentric clamping devices and so on (catch devices for elevators [B66B5/20](#), [B66B5/24](#), [B66B5/26](#))]
- E02B17/08D6 [N: with rack and pawl mechanism]
- E02B17/08D8 [N: with locking pins engaging holes or cam surfaces]
- E02B17/08D10 [N: with following nuts]
- E02B17/08D12 [N: with subtentation blocks, feet and so on]