

**CPC****COOPERATIVE PATENT CLASSIFICATION****E02B****HYDRAULIC ENGINEERING** (ship-lifting [E02C](#); dredging [E02F](#))**WARNING**

[C12.08]

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

<a href="#">E02B 15/06</a>	covered by	<a href="#">E02B 15/08</a>
<a href="#">E02B 15/08</a>	covered by	<b><a href="#">E02B15/04B</a></b>
<a href="#">E02B 15/10</a>	covered by	<b><a href="#">E02B15/04C</a></b> to <b><a href="#">E02B15/04G</a></b>

**E02B 1/00**

**Equipment or apparatus for, or methods of, general hydraulic engineering, {e.g. protection of constructions against ice-strains (protection of offshore constructions against ice-loads [E02B 17/0021](#); ice-structures as artificial islands [E02B 17/028](#))}**

**E02B 1/003**

- . {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 [E02B 3/023](#); for ice breakers [B63B 35/08](#); aerating or circulating water in fish-tanks [A01K 63/042](#); purification of waste water with addition of air [C02F](#); distributing gases in liquids in general [B01F 3/04](#))}

**E02B 1/006**

- . {Arresting, diverting or chasing away fish in water-courses or water intake ducts, seas or lakes, e.g. fish barrages, deterrent devices ([E02B 8/085](#) takes precedence); Devices for cleaning fish barriers}

**E02B 1/02**

- . Hydraulic models {towing tanks or basins for model vessels [B63B 9/02](#)}

**E02B 3/00**

**Engineering works in connection with control or use of streams, rivers, coasts, or other marine sites (barrages or weirs [E02B 7/00](#)); Sealing or joints for engineering works in general**

**E02B 3/02**

- . Stream regulation, e.g. breaking up subaqueous rock, cleaning the beds of waterways, directing the water flow ({harvesting water plants [A01D 44/00](#); underwater loosening of soil or rocks for foundation construction [E02D 17/16](#)}; dredging or scraping devices [E02F 5/28](#))

**E02B 3/023**

- .. {Removing sediments (in barrages or reservoirs [E02B 8/02](#))}

**E02B 3/026**

E02B 3/064	....	{Floating landing-stages (construction of pontoons <a href="#">B63B 35/34</a> ; landing bridges <a href="#">E01D 15/14</a> )}
E02B 3/066	...	{Quays (bulkheads <a href="#">E02D 5/00</a> ; caissons <a href="#">E02D 23/00</a> ; retaining walls <a href="#">E02D 29/00</a> )}
E02B 3/068	...	{Landing stages for vessels (floating landing-stages <a href="#">E02B 3/064</a> ; landing bridges <a href="#">E01D 15/14</a> )}
E02B 3/08	...	Structures of loose stones with or without piles (piles <a href="#">E02D 5/00</a> )
E02B 3/10	..	Dams; Dykes; Sluice ways or other structures for dykes, dams, or the like (making embankments or dams in general <a href="#">E02D 17/18</a> )
E02B 3/102	...	{ Permanently installed raisable dykes}
E02B 3/104	....	{ with self-activating means}
E02B 3/106	...	{ Temporary dykes}
E02B 3/108	....	{ with a filling, e.g. filled by water or sand}
E02B 3/12	..	Revetment of banks, dams, water-courses, or the like, {e.g. the sea-floor}(of slopes in general <a href="#">E02D 17/20</a> )
E02B 3/121	...	{Devices for applying linings on banks or the water bottom (for lining canals <a href="#">E02B 5/02</a> )}
E02B 3/122	...	{Flexible prefabricated covering elements, e.g. mats, strips}
E02B 3/123	....	{mainly consisting of stone, concrete or similar stony material}
E02B 3/124	....	{mainly consisting of metal}
E02B 3/125	....	{mainly consisting of vegetable material, e.g. wood, reeds}
E02B 3/126	....	{mainly consisting of bituminous material or synthetic resins}
E02B 3/127	....	{bags filled at the side}
E02B 3/128	...	{Coherent linings made on the spot, e.g. cast in situ, extruded on the spot (for canal linings <a href="#">E02B 5/02</a> )}
E02B 3/129	...	{Polyhedrons, tetrapods or similar bodies, whether or not threaded on strings}
E02B 3/14	...	Preformed blocks {or slabs for forming essentially continuous surfaces}; Arrangements thereof {(preassembled to constitute flexible mats <a href="#">E02B 3/122</a> ; pavements <a href="#">E01C 5/00</a> )}
E02B 3/16	.	Sealings or joints ({ <a href="#">E02B 3/12</a> takes precedence; sealings for specific structural foundation elements, see the relevant groups for those elements; sealings for barrage or lock gates <a href="#">E02B 7/54</a> ; joints for foundation structures <a href="#">E02D 29/16</a> ; sealing joints not restricted to hydraulic engineering work <a href="#">E04B 1/68</a> )}
E02B 3/18	.	Reclamation of land from water {or marshes}(drainage of soil <a href="#">E02B 11/00</a> )
E02B 3/20	.	Equipment for shipping on coasts, in harbours or on other fixed marine structures, e.g. bollards (tying-up, anchoring <a href="#">B63B 21/00</a> , e.g. bollards for shipping <a href="#">B63B 21/06</a> ; buoys <a href="#">B63B 22/00</a> ; { equipment specially adapted for use in locks or dry docks <a href="#">E02C 1/10</a> )}
E02B 3/24	..	Mooring posts
E02B 3/26	..	Fenders ({fenders for protecting offshore constructions <a href="#">E02B 17/003</a> }; fenders integral with waterborne vessels or specially adapted therefor <a href="#">B63B 59/02</a> )
E02B 3/28	..	Fender piles
<b>E02B 5/00</b>		<b>Artificial water canals, { e.g. irrigation canals}(for water-power plants <a href="#">E02B 9/02</a>; irrigation of soil <a href="#">E02B 13/00</a>)</b>

- E02B 5/005 . {Canals entirely situated above ground level, e.g. on piers (canal bridges [E01D 18/00](#))}
- E02B 5/02 . Making or lining canals{(linings in general [E02B 13/02](#); digging canals [E02F](#))}
- E02B 5/04 . Navigable canals
- E02B 5/06 .. Operating equipment in connection with canals (ship-lifting devices [E02C](#))
- E02B 5/08 . Details, e.g. gates, screens

**NOTE**

This subdivision is limited to closures, devices for arresting waterborne materials and divisors

- E02B 5/082 .. { Closures(for irrigation conduits [E02B 13/02](#))}
- E02B 5/085 .. {Arresting devices for waterborne materials, e.g. gratings (fish barrages [E02B 1/006](#); removing sediments [E02B 3/023](#); arresting oil or similar pollutants [E02B15/04B](#); for waste water purification [E02F](#); in sewers [E03F 5/14](#))}
- E02B 5/087 .. {Divisors}

**E02B 7/00 Barrages or weirs; Layout, construction, methods of, or devices for, making same**  
(for protecting banks, coasts, or harbours [E02B 3/04](#); sealings or joints [E02B 3/16](#); handling building or like materials for hydraulic engineering [E02D 15/00](#); foundations in general [E02D 27/00](#))

- E02B 7/005 . {Deformable barrages or barrages consisting of permanently deformable elements, e.g. inflatable, with flexible walls (closures [E02B 7/54](#); floating oil barrages [E02B 15/08](#))}
- E02B 7/02 . Fixed barrages
- E02B 7/04 .. Dams across vallies
- E02B 7/06 ... Earth-fill dams; Rock-fill dams
- E02B 7/08 ... Wall dams
- E02B 7/10 .... Gravity dams, i.e. those in which the weight of the structure prevents overturning
- E02B 7/12 .... Arch dams
- E02B 7/14 .... Buttress dams
- E02B 7/16 . Fixed weirs; Superstructures or flash-boards therefor
- E02B 7/18 .. Siphon weirs {(syphons in hydraulic engineering in general [E02D 29/08](#))}
- E02B 7/20 . Movable barrages; Lock {or dry-dock} gates
- E02B 7/205 .. {Barrages controlled by the variations of the water level; automatically functioning barrages (level regulators [G05D 9/00](#); the documents are filed in this subdivision and the relevant subdivision [E02B 7/26](#) to [E02B 7/50](#))}
- E02B 7/22 .. Stop log dams; Emergency gates
- E02B 7/24 .. Needle weirs
- E02B 7/26 .. Vertical-lift gates
- E02B 7/28 ... with sliding gates
- E02B 7/30 ... with guide wheels or rollers for the gates
- E02B 7/32 ... Cylindrical or tubular gates

- E02B 7/34 . . . Flash- boards for vertical-lift gates
- E02B 7/36 . . . Elevating mechanisms for vertical-lift gates
- E02B 7/38 . . Rolling gates { or gates moving horizontally in their own plane, e.g. by sliding}
- E02B 7/40 . . Swinging or turning gates
- E02B 7/42 . . . Gates of segmental or sector-like shape with horizontal axis
- E02B 7/44 . . . Hinged-leaf gates
- E02B 7/46 . . . Gates turning round a horizontal axis arranged midway of the flap
- E02B 7/48 . . . Roof or double shutter gates
- E02B 7/50 . . Floating gates
- E02B 7/52 . . Equipment preventing vibration of gates
- E02B 7/54 . . Sealings for gates
  
- E02B 8/00** **Details of barrages or weirs (cleaning or keeping clear the surface of open water [E02B 15/00](#)); {Energy dissipating devices carried by lock or dry-dock gates}**
- E02B 8/02 . Sediment base gates; Sand sluices; Structures for retaining arresting waterborne material
- E02B 8/023 . . {Arresting devices for waterborne materials ([E02B 1/003](#) takes precedence; in artificial watercourses [E02B 5/085](#); arresting oil or the like **E02B15/04B**; sieving devices for waste water purification [C02F](#); in sewers [E03F 5/14](#))}
- E02B 8/026 . . . {Cleaning devices (for fish barrages [E02B 1/006](#))}
- E02B 8/04 . Valves, slides, or the like; Submerged sluice gates
- E02B 8/045 . . {automatically movable}
- E02B 8/06 . Spillways; Devices for dissipation of energy, e.g. for reducing eddies {also for lock or dry-dock gates}
- E02B 8/08 . Fish passes {or other means providing for migration of fish}; Passages for rafts or boats
- E02B 8/085 . . {Devices allowing fish migration, e.g. fish traps (arresting or diverting fish exclusively [E02B 1/006](#))}
  
- E02B 9/00** **Water-power plants; Layout, construction or equipment, methods of, or apparatus for, making same**
- E02B 9/02 . Water-ways
- E02B 9/022 . . {Closures}
- E02B 9/025 . . . {automatically movable}
- E02B 9/027 . . . {Sliding closures ([E02B 9/025](#) takes precedence)}
- E02B 9/04 . . Free-flow canals or flumes; Intakes (gratings or screens therefor [E02B 5/08](#))
- E02B 9/06 . . 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](#))
- E02B 9/08 . Tide or wave power plants (water-pressure machines, tide or wave motors [F03B](#))
  
- E02B 11/00** **Drainage of soil, e.g. for agricultural purposes {(draining sports grounds [E01C 13/083](#); for consolidating foundation soil, e.g. sand drain piles [E02D 3/10](#))}**
- E02B 11/005 . {Drainage conduits}

- E02B 11/02 . Drainage device- laying apparatus, e.g. drainage ploughs

**NOTE**

Group [E02B 11/02](#) is incomplete, see also [E02F 3/00](#) and [E02F 5/00](#), dredgers and soil-shifting machines

- E02B 13/00** **Irrigation ditches, i.e. gravity flow, open channel water distribution systems** ({ retaining waterborne material in irrigation canals [E02B 5/085](#)}; other distribution systems for watering or spraying gardens, fields, sports grounds, or the like, [A01G 25/00](#); { built-in irrigation means for sports grounds [E01C 13/083](#)})

- E02B 13/02 . Closures for irrigation conduits

- E02B 15/00** **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 [B63B 35/32](#); in swimming or splash baths or pools [E04H 4/16](#))

- E02B 2015/005 . {Tent-like structures for dealing with pollutant emissions below the water surface }
- E02B 15/02 . from ice {otherwise than according to [E02B 1/003](#)} (construction of ships [B63B](#); {ice-breakers or amphibious vehicles [B63B 35/08](#); protecting hydraulic engineering structures against ice-load [E02B 1/00](#)})
- E02B 15/04 . Devices for cleaning or keeping clear the surface of open water from oil or like floating materials by separating or removing these materials ({stopping water-borne material in artificial water canals [E02B 5/085](#); stopping water-borne material at barrages or weirs [E02B 8/023](#)}; other treatment of water, waste water or sewage [C02F](#); materials for treating liquid pollutants; e.g. oil, gasoline, fat, [C09K 3/32](#); {separation of oil in sewage conduits [E03F 5/16](#)})
- E02B 15/041 . . {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 ([E02B 15/042](#) takes precedence)}
- E02B 15/042 . . {Devices for removing the oil by combustion with or without means for picking up the oil}
- E02B 15/043 . . {Devices or methods for removing oil by means of freezing}
- E02B 15/045 . . { Separating means for recovering oil floating on a surface of open water; [E02B 15/048](#) takes precedence ([separation in general B01D](#))}
- E02B 15/046 . . { Collection of oil using vessels, i.e. boats, barges}
- E02B 15/047 . . . { provided with an oil collecting boom arranged on at least one side of the hull}
- E02B 15/048 . . { Oil collectors moved over the water skimming the water surface}
- E02B 15/06 . . Barriers therefor ([E02B 15/08](#) takes precedence){ construed for applying processing agents or for collecting pollutants, e.g. absorbent}
- E02B 15/08 . . Devices for reducing the polluted area { with or } without { additional devices for } removing the material
- E02B 15/0807 . . . { with stabilising elements}
- E02B 15/0814 . . . { with underwater curtains}
- E02B 15/0821 . . . { adapted for protection against fire or extreme heat}
- E02B 15/0828 . . . { fixed to the side of a boat for containing small leaks in the hull}
- E02B 15/0835 . . . { fixed to permanent structure, e.g. harbour wall or river bank}

E02B 15/0842	...	{ adapted to be towed for operation}
E02B 15/085	...	{ Details of connectors}
E02B 15/0857	...	{ Buoyancy material}
E02B 15/0864	....	{ Air ( <a href="#">E02B 15/0878</a> takes precedence)}
E02B 15/0871	.....	{ self-inflating barriers}
E02B 15/0878	....	{ Air and water}
E02B 15/0885	....	{ Foam}
E02B 15/0892	.....	{ using expanded polystyrene foam}
E02B 15/10	..	Devices for removing the material from the surface {( <a href="#">E02B 15/041</a> , <a href="#">E02B 15/042</a> , <a href="#">E02B 15/06</a> take precedence)}
E02B 15/101	...	{ Means floating loosely on the water absorbing the oil (absorbing materials <a href="#">C02F</a> )}
E02B 15/102	...	{ Discs}
E02B 15/103	...	{ Rotary drums}
E02B 15/104	...	{ Conveyors; Paddle wheels; Endless belts ( <a href="#">E02B 15/101</a> takes precedence)}
E02B 15/105	...	{ Archimedian screws}
E02B 15/106	...	{ Overflow skimmers with suction heads; suction heads}
E02B 15/107	...	{ Whirling means forming a vortex in the water; cyclones}
E02B 15/108	...	{ Ejection means}

**E02B 17/00**      **Artificial islands mounted on piles or like supports, e.g. platforms on raisable legs { or offshore constructions}; construction methods therefor** ({ construction methods for floating platforms [B63B 9/065](#); anchoring floating platforms [B63B 21/00](#); floating platforms, e.g. anchored, [B63B 35/44](#); { underwater reservoirs [B65D 88/78](#)})

E02B 17/0004	.	{Nodal points}
E02B 17/0008	.	{Methods for grouting offshore structures; apparatus therefor (cementing boreholes <a href="#">E21B 33/13</a> )}
E02B 17/0013	.	{Tube closures for releasable sealing hollow tubes}
E02B 17/0017	.	{Means for protecting offshore constructions}
E02B 17/0021	..	{against ice-loads}
E02B 17/0026	..	{against corrosion}
E02B 17/003	..	{Fenders}
E02B 17/0034	.	{Maintenance, repair or inspection of offshore constructions}
E02B 2017/0039	.	{Methods for placing the offshore structure }
E02B 2017/0043	..	{Placing the offshore structure on a pre-installed foundation structure }
E02B 2017/0047	..	{using a barge }
E02B 2017/0052	.	{Removal or dismantling of offshore structures from their offshore location }
E02B 2017/0056	.	{Platforms with supporting legs }
E02B 2017/006	..	{with lattice style supporting legs }
E02B 2017/0065	..	{Monopile structures }
E02B 2017/0069	..	{Gravity structures }
E02B 2017/0073	..	{Details of sea bottom engaging footing }

E02B 2017/0078	...	{Suction piles, suction cans }
E02B 2017/0082	...	{Spudcans, skirts or extended feet }
E02B 2017/0086	...	{Large footings connecting several legs or serving as a reservoir for the storage of oil or gas }
E02B 2017/0091	.	{Offshore structures for wind turbines }
E02B 2017/0095	.	{Connections of subsea risers, piping or wiring with the offshore structure }
E02B 17/02	.	placed by lowering the supporting construction to the bottom, e.g. with subsequent fixing thereto
E02B 17/021	..	{with relative movement between supporting construction and platform}
E02B 17/022	...	{adapted to travel on the bottom (walking gears moving dredgers forward step-by-step <a href="#">E02F 9/04</a> )}
E02B 17/024	...	{shock absorbing means for the supporting construction}
E02B 17/025	..	{Reinforced concrete structures ( <a href="#">E02B 17/021</a> takes precedence)}
E02B 17/027	..	{steel structures ( <a href="#">E02B 17/021</a> takes precedence)}
E02B 17/028	..	{Ice-structures}
E02B 17/04	.	Equipment specially adapted for raising, lowering, or immobilising the working platform relative to the supporting construction ( <a href="#">platform lifts in general B66F 7/00</a> )
E02B 17/06	..	for immobilising, e.g. using wedges or clamping rings {(as elements of the raising or lowering means <a href="#">E02B 17/08</a> )}
E02B 17/08	..	for raising or lowering
E02B 17/0809	...	{the equipment being hydraulically actuated ( <a href="#">outriggers for cranes B66C 23/80</a> )}
E02B 17/0818	...	{ with racks actuated by pinions ( <a href="#">lifting jacks B66F 3/02</a> to <a href="#">B66F 3/06</a> )}
E02B 17/0827	...	{with screws and nuts mechanism ( <a href="#">climbing jacks with following nut E02B 17/0881</a> ; <a href="#">lifting jacks B66C 3/08</a> )}
E02B 17/0836	...	{with climbing jacks ( <a href="#">climbing cranes B66C 23/32</a> ; <a href="#">hydraulic lifting jacks B66F 3/24</a> and subgroups)}
E02B 17/0845	....	{with inflatable clamping rings}
E02B 17/0854	....	{with clamping wedges, eccentric clamping devices and so on ( <a href="#">catch devices for elevators B66B 5/20</a> , <a href="#">B66B 5/24</a> , <a href="#">B66B 5/26</a> )}
E02B 17/0863	....	{with rack and pawl mechanism}
E02B 17/0872	....	{with locking pins engaging holes or cam surfaces}
E02B 17/0881	....	{with following nuts}
E02B 17/089	....	{with subtentation blocks, feet and so on}
<b>E02B 2201/00</b>		<b>Devices, constructional details or methods of hydraulic engineering not otherwise provided for</b>
E02B 2201/02	.	Devices and methods for creating a buffer zone in the water to separate e.g. salt and sweet water
E02B 2201/04	.	using old tires for hydraulic engineering
E02B 2201/50	.	Devices for sequentially discharging constant liquid quantities, e.g. into different irrigation channels