

CPC**COOPERATIVE PATENT CLASSIFICATION****E01F****ADDITIONAL WORK, SUCH AS EQUIPPING ROADS OR THE CONSTRUCTION OF PLATFORMS, HELICOPTER LANDING STAGES, SIGNS, SNOW FENCES, OR THE LIKE****WARNING**

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

[E01F 15/10](#) covered by [E01F 15/02](#)

Guidance heading: Arrangement or construction of additional equipment for roads or railways, Landing stages for helicopters

E01F 1/00

Construction of { station or like } platforms or refuge islands { or like islands in traffic areas, e.g. intersection or filling-station islands } (general arrangement { of filling stations [B60S 5/02](#), } of railway platforms { [B61B 1/02](#), of traffic-channelling island at intersections [E01C 1/02](#) }) { ; Kerbs specially adapted for islands in traffic areas (specially adapted for guiding, marking or signalling [E01F 9/0533](#), for illumination [E01F 9/0536](#); lane separators diverting traffic past safety zones [E01F 9/087](#)) }

E01F 1/005

- . {Portable or movable traffic-area platforms or islands, e.g. portable loading islands, retractable platforms for traffic-directing officer }

E01F 3/00

Landing stages for helicopters, e.g. located above buildings (layout of airfields [B64F](#) ; buildings or like structures for special purposes [E04H](#))

E01F 5/00

Draining the sub-base { i.e. subgrade or ground-work, e.g. embankment } of roads or { of the } ballastway of railways { or draining-off road surface or ballastway drainage } by trenches, culverts, or conduits { or other specially adapted means } ({ drainage of the ballastway of railways [E01B 11/00](#); surface drainage of roads [E01C 11/224](#); drainage of soil [E02B 11/00](#); } underground drainage [E02D](#) ; conduits for sewerage [E03F](#))

E01F 5/005

- . {Culverts (underground siphons [E02D 29/08](#); tunnels or galleries [E21D](#) ; pipes in general [F16L](#)) ; Head-structures for culverts, or for drainage-conduit outlets in slopes }

E01F 7/00

Devices affording protection against snow, sand drifts, side-wind effects, snowslides, avalanches or falling rocks (permanently installed heating or blowing devices for roads [E01C 11/26](#)) ; Anti-dazzle arrangements { ; Sight-screens for roads, e.g. to mask accident site ([E01F 8/00](#) takes precedence) }

E01F 7/02

- . Snow fences or similar devices, e.g. devices affording protection against sand drifts or side-wind effects (fences in general [E04H 17/00](#))

E01F 7/025

- .. {Devices specially adapted for protecting against wind, e.g. screens, deflectors or attenuators at tunnel or lock entrances (for protecting plants [A01G 13/00](#); portable windscreens, e.g. for beach use [E04H 15/003](#); noise absorption; airfield deflectors for jet gases [B64F 1/26](#)) }

- E01F 7/04 . Devices affording protection against snowslides, avalanches or falling rocks, e.g. avalanche preventing structures, galleries ([securing of slopes E02D 17/20](#); [roof snow-traps E04D 13/10](#))
- E01F 7/045 . . {Devices specially adapted for protecting against falling rocks, e.g. galleries, nets, rock traps ([crash-barriers with nets E01F 15/06](#); [safety arrangements for blasting F42D 5/00](#)) }
- E01F 7/06 . Anti-dazzle arrangements ([E01F 8/00 takes precedence](#)) {[Securing anti-dazzle means to crash-barriers](#) ([securing signs or supports therefor to crash-barriers E01F 9/03](#)) }
- E01F 8/00** **Arrangements for absorbing or reflecting air-transmitted noise from road or railway traffic** ([ground installations for reducing aircraft noise B64F 1/26](#); [general building constructions for absorbing or reflecting noise, noise absorption or reflection for buildings E04B 1/74](#))
- E01F 8/0005 . {used in a wall type arrangement }
- E01F 8/0011 . . {Plank-like elements }
- E01F 8/0017 . . {Plate-like elements ([E01F 8/0035 takes precedence](#)) }
- E01F 8/0023 . . {Details, e.g. foundations (solar cells specially adapted to be used in motorway sound barriers [H01L 31/0426](#)) }
- E01F 8/0029 . . {with porous surfaces, e.g. concrete with porous fillers }
- E01F 8/0035 . . {with undulated surfaces ([E01F 8/0029](#), [E01F 8/0052 take precedence](#)) }
- E01F 8/0041 . . {Free-standing grates }
- E01F 8/0047 . . {with open cavities, e.g. for covering sunken roads }
- E01F 8/0052 . . . {Grate-style, e.g. as wall facing }
- E01F 8/0058 {with damping material, e.g. rockwool, sand }
- E01F 8/0064 . . . {Perforated plate or mesh, e.g. as wall facing }
- E01F 8/007 {with damping material }
- E01F 8/0076 . . . {Cellular, e.g. as wall facing }
- E01F 8/0082 {with damping material }
- E01F 8/0088 . . {Suspended, e.g. ropes or mesh }
- E01F 8/0094 . {constructions for generation of phase shifting }
- E01F 8/02 . specially adapted for sustaining vegetation or for accommodating plants ([receptacles for cultivation of plants A01G 9/02](#); [securing slopes or inclines E02D 17/20](#); [retaining or protecting walls E02D 29/02](#)) ; {[Embankment-type or crib-type noise barriers](#); [Retaining walls specially adapted to absorb or reflect noise \(building elements for planting walls E04C 1/395\)](#) }
- E01F 8/021 . . {with integral support structure }
- E01F 8/022 . . . {Crib-type ([E01F 8/023 takes precedence](#)) }
- E01F 8/023 . . . {made of stacked or staggered elements, e.g. hollow }
- E01F 8/024 . . . {Beam-type, e.g. square-set }
- E01F 8/025 . . . {Gabion-type }
- E01F 8/026 . . . {Live wall, e.g. interlaced twines }
- E01F 8/027 . . {with external support, e.g. wall facing }
- E01F 8/028 . . . {Through-type, e.g. between adjacent kerbs }

Guidance heading: Arrangements for facilitating the use of roads

- E01F 9/00** **Arrangement of road signs or traffic signals** (signals, signalling systems [G08](#) ; signs, attachment thereof to supports [G09F](#)) ; **Arrangements for enforcing caution, e.g. speed bumps**
- E01F 9/002 . {Use of light guides, e.g. fibre optic devices (in lighting devices or systems [F21S 5/00](#); indicating arrangements with optic fibres [G09F 9/305](#)) }
- E01F 9/005 . {Marking means constituting or comprising active or passive components adapted to interact with vehicle-borne or remote receivers or transmitters for purposes other than light reflection, light guiding or photoluminescence, e.g. forming radar reflectors, incorporating radio transmitters ([E01F 11/00](#) takes precedence; control of position or course of vehicles [G05D 1/02](#)) }
- E01F 9/007 . {Marking means with components adapted to auto-react to adverse atmospheric conditions, e.g. to signal icy road, to self-illuminate in fog; Marking or traffic control means with specific heating or drying arrangements }
- E01F 9/011 . Upright bodies, e.g. marker posts or bollards; Supports for road signs, { e.g. posts, frames, gantries } ({ [E01F 9/045](#), [E01F 9/0533](#), [E01F 13/02](#) take precedence; } posts or poles in general [E04H 12/00](#); means for attaching signs to a supporting structure in general [G09F 7/18](#))
- E01F 9/0111 . . {Traffic guidance, warning or control posts, bollards, e.g. delineator posts, milestones (barrier bollards [E01F 13/00](#); buffer bollards [E01F 15/003](#); boundary markers in general [G01C 15/04](#)) }
- E01F 9/0112 . . . {Special features of delineator posts, e.g. with parts cantilevered toward the roadway or fixed vertically on a tilted surface ([E01F 9/03](#), [E01F 9/053](#), [E01F 9/08](#) take precedence) }
- E01F 9/0113 . . {Gantries or semi-gantries; Foundation means specially adapted therefor }
- E01F 9/0114 . . {Holders for traffic poles ([E01F 9/0112](#), [E01F 9/0113](#), [E01F 9/0118](#), [E01F 9/013](#) take precedence) }
- E01F 9/0115 . . . {Glued to surface, e.g. road }
- E01F 9/0116 . . . {Removably fixed, e.g. by screws or bolts }
- E01F 9/0117 . . . {Subsoil fixings, e.g. foundations for holders or posts }
- E01F 9/0118 . . {designed or adapted to rotatably, swingably or adjustably carry the sign or signal ([E01F 9/019](#) takes precedence; means for adjustably, rotatably or swingably attaching signs to a supporting structure in general [G09F 7/20](#), [G09F 7/22](#)) }
- E01F 9/012 . . Free-standing, e.g. traffic cones, foldable or inflatable devices; {Portable supports (for barriers [E01F 13/02](#)) ; Portable traffic signs or signals (specially adapted for fitting to raised kerbs [E01F 9/0533](#), to portable barriers [E01F 13/02](#), to crash barriers [E01F 9/03](#); normal vehicle equipment portable emergency signal devices to be placed on way [B60Q 7/00](#); portable traffic signalling devices, i.e. hand signals [G08B 5/006](#)) }
- E01F 9/0122 . . . { in the form of a three-dimensional body, other than of the relatively thin panel type, or designed to assume such form, e.g. cones, devices expandable or erectable to form a geometric body; Inflatable structures }
- E01F 9/0124 . . . {Portable base members (post holders to be placed on the ground in general [E04H 12/2238](#)) }
- E01F 9/0126 . . . {mounted on vehicles, e.g. for rapid change of station, as signal fitting of service vehicle (vehicle aspects [B60P](#) , [B62D](#)) ; Warning vehicles designed to move

- along with traveling road-maintenance, e.g. remotely controlled (mobile impact cushioning arrangements [E01F 15/14](#)) }
- E01F 9/0128 ... {specially adapted for indicating freshly applied road surface markings, e.g. for straddling wet paint lines }
- E01F 9/013 .. intended to be readily removable, e.g. for insertion into road-stud sockets ([E01F 9/012](#) takes precedence) ; {Base members specially adapted therefor ([E01F 9/018](#), [E01F 13/026](#) take precedence) }
- E01F 9/014 .. Storing, transporting, placing or retrieving portable devices, {e.g. road cones emplacing vehicles (vehicle aspects [B60P](#) , [B62D](#) ; applying permanent markers, e.g. buttons [E01C 23/18](#)) }
- E01F 9/015 .. with reflectors, e.g. with means for keeping clean, {e.g. for delineator posts; Substituting reflecting means by unsoiled ones }
- E01F 9/016 .. illuminated, {e.g. with provisions for wiring-up, lights for illuminated signs } (for obstructing or restricting traffic [E01F 13/00](#); {lighting, e.g. for sheets [F21](#) ; illuminated signs in general [G09F 13/00](#) })
- E01F 9/0165 ... {Illuminated or wired-up posts, bollards, pillars or like upstanding bodies or structures for traffic guidance, warning or control ([E01F 9/065](#) takes precedence) }
- E01F 9/017 .. self-righting after deflection or displacement { ([E01F 9/012](#), [E01F 9/045](#), [E01F 9/076](#) take precedence) }
- E01F 9/0175 ... {Traffic guidance, warning or control posts, bollards, pillars or like upstanding bodies or structures }
- E01F 9/018 .. specially adapted for breaking, disengaging, collapsing or permanent deformation upon deflection or displacement, e.g. upon vehicle impact; {replaceable couplings ([E01F 9/0118](#), [E01F 9/012](#), [E01F 9/014](#), [E01F 9/016](#), [E01F 9/017](#) take precedence) }
- E01F 9/0182 ... {by shearing or tearing, e.g. having weakened zones }
- E01F 9/0184 ... {by connection of the "slide-shoe" type }
- E01F 9/0186 ... {by connection of the "male-female" type, e.g. spring-loaded ([E01F 9/0182](#), [E01F 9/0188](#) take precedence) }
- E01F 9/0188 ... {Friction coupled }
- E01F 9/019 .. Extensible, collapsible or pivotable, {e.g. telescopic } ([E01F 9/017](#), [E01F 9/018](#) take precedence) ; {Retractable or otherwise movable to an underground position ([E01F 9/093](#), [E01F 13/046](#), [E01F 13/085](#) take precedence; retractable traffic islands [E01F 1/005](#)) }
- E01F 9/03 .. Arrangements for fastening signs or signals to safety barriers or the like { (securing anti-dazzle means [E01F 7/06](#)) }
- E01F 9/04 . Road surface markings; Kerbs or road edgings, specially adapted for informing road users, e.g. illuminated (for redirecting vehicles [E01F 15/00](#))
- E01F 9/041 .. {Selection of materials for road surface marking, e.g. wheel-grip improving additives, reflecting particles (specially adapted for kerbs [E01F 9/053](#), for playing grounds [A63C 19/06](#); reflecting or signal paints [C09D 5/004](#)) ; Methods of forming, installing or applying markings in, on or to paving ([E01F 9/047](#), [E01F 9/053](#), [E01F 9/06](#) take precedence; devices therefor [E01C](#)) }
- E01F 9/042 ... {Preformed markings, e.g. materials for sheets or signs, methods of bonding same to road surface (traffice line tapes [E01F 9/083](#)) }
- E01F 9/044 ... {Reflecting elements specially adapted for incorporation in or application to road surface marking materials, sheets or tapes (reflectors for individual road surface markers [E01F 9/06](#)) }
- E01F 9/045 .. {Upright or projecting signs or signals permanently installed directly on or in the roadway and designed to be depressed by rolling or other loads and then to return

- to normal position, e.g. collapsible or rockable stop signs, flexible vehicle-striking members for audible warning ([E01F 9/07](#), [E01F 13/10](#) take precedence) }
- [E01F 9/047](#) . . specially adapted for audible or vibrational signalling, e.g. rumble strips {across a lane }, or for enforcing reduced speed, e.g. speed bumps { ([E01F 9/045](#), [E01F 9/053](#), [E01F 13/10](#) take precedence) }
- [E01F 9/053](#) . . Kerbs or road edgings, specially adapted for informing road users, e.g. illuminated
- [E01F 9/0533](#) . . . {Raised kerbs, e.g. reflective facings, traffic-actuated cleaning means for kerb reflectors; Signs or display means specially for association therewith, e.g. for indicating street names ([E01F 9/0536](#) takes precedence) }
- [E01F 9/0536](#) . . . {Illuminated kerbs; Kerbs with illuminated signs or displays (illuminated traffic lines [E01F 9/085](#)) }
- [E01F 9/06](#) . . Traffic studs; Marking blocks {like individual road surface markers, e.g. buttons, flaps ([E01F 9/083](#) takes precedence) ; Methods of forming or installing same in or on the road surface (devices therefor [E01C](#)) ; Protecting same during road maintenance work; Reflectors specially for individual road surface markers; Illuminated low-built traffic guiding, warning or controlling bodies, e.g. of mushroom or dome type }
- [E01F 9/065](#) . . . {illuminated; Illuminated low-built road traffic guiding, warning or controlling bodies, e.g. of mushroom or dome type (illuminated bollards [E01F 9/0165](#)) }
- [E01F 9/07](#) . . . having deflectable or displaceable parts, with or without return to original position, e.g. flexible flaps
- [E01F 9/073](#) {designed to descend or deform under load essentially vertically downwards into the road or a housing, with or without concurrent rotational movement, while biased to raised position }
- [E01F 9/076](#) {Self-righting, upright flexible or rockable markers, e.g. resilient flaps bending over (depressible road surface signs or flexible vehicle-striking members for audible warning [E01F 9/045](#)) }
- [E01F 9/08](#) . . Traffic lines, {e.g. edge lines (flush kerbs or edge strips specially adapted for traffic guidance [E01F 9/053](#)) ; Methods of forming, installing or applying same in, on or to the road (devices therefor [E01C 23/16](#)) ; Traffic lane separators }
- [E01F 9/081](#) . . . {formed in situ, e.g. painted on or cast into the road, made by sculpturing the surface ([E01F 9/085](#), [E01F 9/087](#) take precedence; materials therefor [E01F 9/041](#)) }
- [E01F 9/083](#) . . . {consisting of preformed elements, e.g. tapes, block-type elements specially designed or arranged to make up a traffic line ([E01F 9/085](#), [E01F 9/087](#), [E01F 9/093](#) take precedence; studs, blocks or like markers per se [E01F 9/06](#)) }
- [E01F 9/085](#) . . . {Illuminated traffic lines ([E01F 9/093](#) takes precedence) }
- [E01F 9/087](#) . . . Lane delineators for physically separating traffic lanes and discouraging but not preventing crossing {e.g. low barriers for channelling traffic ([E01F 9/093](#) takes precedence; insurmountable lane-separating barriers [E01F 15/006](#), [E01F 15/02](#)) }
- [E01F 9/093](#) . . . movable for repeated use at different locations {e.g. shiftable lines, line location transferable by selective illumination, retractable lane delineating posts ([E01F 15/006](#) takes precedence; retractable posts [E01F 9/019](#)) }
- [E01F 11/00](#) {Road engineering aspects of } **Embedding pads or other sensitive devices in paving or other road surfaces** {e.g. traffic detectors, vehicle-operated pressure-sensitive actuators, devices for monitoring atmospheric or road conditions } (pressure-sensitive elements [G01L](#) ; traffic control systems [G08G](#))
- [E01F 13/00](#) **Arrangements for obstructing or restricting traffic, e.g. gates, barricades** (for railway crossings [B61L](#)) ; {Preventing passage of vehicles of selected category or dimensions ([E01F 13/12](#), [E01F 13/126](#) take precedence) }

- E01F 13/02
 - free-standing; {portable, e.g. for guarding open manholes ([E01F 9/012](#) takes precedence) ; Portable signs or signals specially adapted for fitting to portable barriers }
- E01F 13/022
 - .. {Pedestrian barriers; Barriers for channelling or controlling crowds ([E01F 13/024](#), [E01F 13/028](#) take precedence; corrals [E04H 17/18](#)) }
- E01F 13/024
 - .. {Removable barriers with permanently installed base members, e.g. to provide occasional passage ([E01F 13/028](#), [E01F 15/12](#) take precedence) }
- E01F 13/026
 - ... {Detachable barrier bollards or parking posts (portable signs co-operating with permanent base [E01F 9/013](#)) }
- E01F 13/028
 - .. {Flexible barrier members, e.g. cords; Means for rendering same conspicuous; Adapted supports, e.g. with storage reel }
- E01F 13/04
 - movable to allow or prevent passage { ([E01F 13/12](#), [E01F 15/12](#) take precedence; removing part of barrier for occasional passage [E01F 13/024](#); gates for allowing passage through fences [E06B 11/02](#)) }
- E01F 13/042
 - .. {for controlling access to an individual parking space ([E01F 13/026](#), [E01F 13/046](#), [E01F 13/065](#), [E01F 13/085](#) take precedence) }
- E01F 13/044
 - .. {the barrier being formed by obstructing members situated on, flush with, or below the traffic surface, e.g. with inflatable members on the surface ([E01F 13/08](#), [E01F 13/10](#) take precedence; retractable speed humps [E01F 9/047](#)) }
- E01F 13/046
 - ... {the obstructing members moving up in a translatory motion, e.g. telescopic barrier posts (for lane control [E01F 9/093](#)) }
- E01F 13/048
 - .. {with obstructing members moving in a translatory motion, e.g. vertical lift barriers, sliding gates ([E01F 13/04C2](#), [E01F 13/105](#) take precedence) }
- E01F 13/06
 - .. by swinging into open position about a {vertical or } horizontal axis parallel to the road direction, i.e. swinging gates
- E01F 13/065
 - ... {specially adapted for individual parking spaces }
- E01F 13/08
 - .. by swinging into closed position about a transverse axis situated in the road surface, e.g. tiltable sections of the road surface, tiltable parking posts
- E01F 13/085
 - ... {specially adapted for individual parking spaces }
- E01F 13/10
 - Vehicle barriers specially adapted for allowing passage in one direction only
- E01F 13/105
 - .. {depressible by right-way traffic, e.g. pivotally; actuated by wrong-way traffic (type-disabling elements [E01F 13/123](#)) }
- E01F 13/12
 - for forcibly arresting or disabling vehicles, e.g. spiked mats
- E01F 13/123
 - .. {depressible or retractable below the traffic surface, e.g. one-way spike barriers, power-controlled prong barriers }
- E01F 13/126
 - .. {Pitfall barriers, causing the vehicle to face a step-like obstruction }
- E01F 15/00**

Safety arrangements for slowing, redirecting or stopping errant vehicles, e.g. guard posts or bollards; Arrangements for reducing damage to roadside structures due to vehicular impact (arrangements for fastening signs or signals to safety barriers or the like [E01F 9/03](#); for forcibly arresting vehicles [E01F 13/00](#); {guard barriers on road-bridges [E01D 19/103](#); fences in general [E04H 17/00](#) })
- E01F 15/003
 - {Individual devices arranged in spaced relationship, e.g. buffer bollards (spaced wall-type modules [E01F 15/08](#)) }
- E01F 15/006
 - {Lane control by movable lane separating barriers, e.g. shiftable barriers, retractable kerbs ([E01F 15/12](#) takes precedence; by crossable lane separators [E01F 9/093](#)) ;

Apparatus or barriers specially adapted therefor, e.g. wheeled barriers (wall-type modules [E01F 15/08](#)) }

- E01F 15/02 . Continuous barriers extending along roads or between traffic lanes (crossable-lane separators {[E01F 9/087](#) })
- E01F 15/025 .. {Combinations of at least two of the barrier member types covered by [E01F 15/04](#) to [E01F 15/08](#), e.g. rolled steel section or plastic strip backed up by cable, safety kerb topped by rail barrier }
- E01F 15/04 .. essentially made of longitudinal beams or rigid strips {supported above ground at spaced points ([E01F 15/10](#), [E01F 15/12](#) take precedence) }
- E01F 15/0407 ... {Metal rails ([E01F 15/0446](#) and [E01F 15/0453](#) take precedence) }
- E01F 15/0415 {with pivoting members }
- E01F 15/0423 {Details of rails ([E01F 15/0415](#) takes precedence) }
- E01F 15/043 {with multiple superimposed members; Rails provided with skirts }
- E01F 15/0438 {Spacers between rails and posts, e.g. energy-absorbing means ([E01F 15/0415](#) takes precedence) }
- E01F 15/0446 ... {Concrete rails ([E01F 15/0476](#) takes precedence; safety kerbs or walls [E01F 15/08](#)) }
- E01F 15/0453 ... {Rails of materials other than metal or concrete, e.g. wood, plastics; Rails of different materials, e.g. rubber-faced metal profiles, concrete-filled steel tubes ([E01F 15/0476](#) takes precedence; reinforced concrete rails [E01F 15/0446](#)) }
- E01F 15/0461 ... {Supports, e.g. posts (roadside posts in general [E01F 9/011](#)) }
- E01F 15/0469 {Covers, e.g. of ground surface around the foot }
- E01F 15/0476 ... {Foundations }
- E01F 15/0484 ... {Installing; Repairing; Adjusting }
- E01F 15/0492 ... {Provisions for guiding in combination with rails, e.g. tire-gutters }
- E01F 15/06 .. essentially made of cables, nettings or the like ([E01F 15/10](#), [E01F 15/12](#) take precedence; protection against falling rocks [E01F 7/04](#); arresting gear for aircraft [B64F 1/02](#))
- E01F 15/065 ... {the barrier members being made of essentially non-metallic materials, e.g. naturel or synthetic fibres or webbing }
- E01F 15/08 .. essentially made of walls or wall-like elements ([E01F 15/10](#), [E01F 15/12](#) take precedence) ; {Cable-linked blocks }
- E01F 15/081 ... { characterised by the use of a specific material }
- E01F 15/083 { using concrete }
- E01F 15/085 { using metal }
- E01F 15/086 { using plastic, rubber or synthetic materials }
- E01F 15/088 ... { Details of element connection }
- E01F 15/10 .. portable, e.g. for temporary use {not used }
- E01F 15/12 .. and having means for providing occasional passage, e.g. for emergency vehicles
- E01F 15/14 . specially adapted for local protection, e.g. for bridge piers, for traffic islands
- E01F 15/141 .. { for column or post protection }
- E01F 15/143 .. { Protecting devices located at the ends of barriers ([E01F 15/145](#) takes precedence) }
- E01F 15/145 .. { Means for vehicle stopping using impact energy absorbers }

E01F 15/146	...	{ fixed arrangements }
E01F 15/148	...	{ mobile arrangements }