$\frac{\textbf{Unvalidated References:}}{\textit{Inflammable Liquid Act 1953}}$

This reprint of this Statutory Instrument incorporates all amendments, if any, made before 25 November 2006 and in force at 1 January 2003.

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Legislative Counsel Dated 25 November 2006

INDEPENDENT STATE OF PAPUA NEW GUINEA.

Chapter 311.

 $In flam mable\ Liquid\ Regulation\ 1968$

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Inflammable Liquid Regulation 1968

MADE under the Inflammable Liquid Act 1953.

Dated 200 .

PART I. - PRELIMINARY.

1. INTERPRETATION.

In this Regulation, unless the contrary intention appears—

- "approved" means approved by the Chief Inspector;
- "bund" means an embankment of earth or a wall of brick, stone, concrete or other approved material—
 - (a) so constructed as to retain the prescribed proportion of the contents of a depot in the event of spillage or leakage; and
 - (b) unless otherwise approved, not less than 150 mm high;
- "certificate of registration" means a certificate of registration of premises under Section 12(1)(b) of the Act;
- "compound" means an excavation, hollow or enclosure—
 - (a) so constructed as to retain the prescribed proportion of the contents of a depot in the event of spillage or leakage; and
 - (b) unless otherwise approved, not less than 150 mm in depth;
- "exposed", in relation to cinematograph or photographic film or X-ray film, means photographically developed and fixed;
- "in bulk", in relation to the keeping or conveyance of inflammable liquid and liquid dangerous goods, means in a receptacle of a capacity exceeding 400 1;
- "methylated spirits" means ethyl alcohol, methylated by the addition of pyridine, with or without any other substance, and includes, ethyl alcohol denatured by the addition of inflammable liquid in a quantity not exceeding 5% of the resultant mixture;

- "nitro-cellulose product" includes a Type A, Type B or Type C nitro-cellulose product;
- "pump" means any pump used for the supply, delivery, propulsion or pumping of inflammable liquid or dangerous goods, and includes all apparatus, pipes and appliances used for or in connection with such a pump;
- "Type A nitro-cellulose product" means cinematograph film containing nitro-cellulose as a main constituent, and scrap film or stripped film derived or obtained from film containing nitro-cellulose, but does not include cinematograph film when it is specially prepared to reduce inflammability as approved by the Chief Inspector;
- "Type B nitro-cellulose product" means photographic or X-ray film that contains nitro-cellulose as a main constituent, but does not include photographic or X-ray film when it is specially prepared to reduce inflammability as approved by the Chief Inspector;
- "Type C nitro-cellulose product" means celluloid, or any other solid substance, material or compound, in sheet, rod or tube form, having nitro-cellulose as a base, but does not include celluloid, or any other solid substance, material or compound, having nitro-cellulose as a base when it is specially prepared to reduce inflammability as approved by the Chief Inspector;
- "underground tank" means a tank for the storage of inflammable liquid or dangerous goods that—
 - (a) has not less than 50% of its rated capacity buried below the surface of the ground; and
 - (b) is completely covered by an earth cover.

2. CLASSES OF DANGEROUS GOODS.

- (1) For the purposes of this Regulation, dangerous goods are, subject to Subsection (2), divided into five classes—
 - (a) Class 1.—
 - (i) acetone; and
 - (ii) amyl acetate; and
 - (iii) butyl acetate; and
 - (iv) carbon bisulphide; and
 - (v) ethyl acetate; and
 - (vi) any combination of substances of an inflammable character suitable for use as an industrial solvent and having a true flash point of less than 22°C; and
 - (vii) industrial lacquers and enamels containing organic solvents having a true flash point of less than 22°C; and

- (b) Class 2.—
 - (i) nitro-cellulose (also known as "pyroxylin" and "collodion cotton") moistened with—
 - (A) an alcohol; or
 - (B) butyl alcohol (also known as "butanol"); or
 - (C) acetyl alcohol (also known as "methanol"); or
 - (D) methylated spirits; or
 - (E) vegetable turpentine; and
 - (ii) any liquid containing methylated spirits, having a true flash point of less than 65°C; and
- (c) Class 3.—nitro-cellulose products; and
- (d) Class 4.—compressed or dissolved acetylene contained in a porous substance; and
- (e) Class 5.-liquefied petroleum gas.
- (2) The Minister may, by notice in the National Gazette, delete any item from, vary any item in or add any item to any class of dangerous goods.

3. DETERMINATION OF FLASH POINTS.

- (1) For the purposes of Section 3 of the Act, the true flash point shall be determined by the test set out in Schedule 2 using the apparatus described in that Schedule.
- (2) The Chief Inspector may charge the fees prescribed in Schedule 3 for tests and analyses.

PART II. - REGISTRATION CERTIFICATES AND LICENCES.

4. APPLICATIONS FOR LICENCES AND CERTIFICATES OF REGISTRATION.

- (1) An application for a licence or a renewal of a licence-
- (a) shall be in Form 1; and
- (b) shall be accompanied by the fee prescribed in Schedule 3.
- (2) An application for the registration or the renewal of registration of premises on which inflammable liquid may be kept—
 - (a) shall be in Form 1; and
 - (b) shall be accompanied by the fee prescribed in Schedule 3.
- (3) An application under Subsection (1) or (2) shall be accompanied by two copies of a plan of the premises showing—
 - (a) full particulars of the premises; and
 - (b) the location of buildings, depots, compounds, bunds, pumps and fire-fighting equipment; and
 - (c) such other information as the Chief Inspector requires.

5. CLASSES OF LICENCES.

Licences are classified as follows-

- (a) Division A.—for quantities in excess of the maximum authorized to be kept in registered premises but not exceeding 18,000 *1* of mineral oil, mineral spirit or dangerous goods of Classes 1 and 2; and
- (b) Division B.—for quantities exceeding 18,000 *l* of mineral oil or mineral spirit or both, or for the keeping of dangerous goods of Class 3 or 4.
- (c) Division C.—for the keeping of dangerous goods of Class 5.

6. FORM OF LICENCES AND CERTIFICATES OF REGISTRATION.

- (1) A licence–
- (a) shall be in Form 2; and
- (b) remains in force from the date of issue until 30 September after that date.
- (2) A certificate of registration—
- (a) shall be in Form 3; and
- (b) remains in force from the date of issue until 30 September after that date.

7. AMENDMENTS, ETC., TO LICENCES AND CERTIFICATES OF REGISTRATION.

- (1) An application for the transfer, alteration or amendment of a licence-
- (a) shall be in Form 4; and
- (b) shall be accompanied by-
 - (i) the licence proposed to be transferred or amended; and
 - (ii) the fee prescribed in Schedule 3.
- (2) An application for the alteration or amendment of a certificate of registration-
 - (a) shall be in Form 5; and
 - (b) shall be accompanied by-
 - (i) the certificate of registration proposed to be amended; and
 - (ii) the fee prescribed in Schedule 3.

8. PARTICULARS TO BE SET OUT IN LICENCES AND CERTIFICATES OF REGISTRATION.

- (1) A licence or certificate of registration applies in respect of the person or the premises or both, named in it.
 - (2) The licence or certificate of registration, as the case may be shall state—
 - (a) the situation and description of the store or premises; and
 - (b) the number and nature of the depots; and
 - (c) the nature and quantity of inflammable liquid or dangerous goods to be kept.
- (3) On any change taking place in the occupancy of a licensed store or of any registered premises, or on any variation from the particulars set out in the form of application on which the licence or certificate of registration was issued, the occupier shall—
 - (a) immediately apply in accordance with Section 7 for the transfer, alteration or amendment of the licence or certificate or for a fresh licence or certificate, as the case requires; and
 - (b) for that purpose shall surrender the existing licence or certificate.

9. PRODUCTION OF LICENCES AND CERTIFICATES OF REGISTRATION.

Licences and certificates of registration must be produced to an Inspector as and when required.

PART III. – LICENSED STORES AND REGISTERED PREMISES.

10. MAINTENANCE OF STORES AND PREMISES.

Licensed stores or registered premises must be maintained during the currency of the licence or the certificate of registration, as the case may be, in the same state as on the date of issue of the certificate of registration.

11. ALTERATIONS TO LICENSED PREMISES AND REGISTERED STORES.

(1) Alterations or additions of any kind must not be carried out to any licensed store or registered premises without the written approval of the Chief Inspector.

Penalty: A fine not exceeding K200.00.

Default penalty: A fine not exceeding K40.00.

- (2) An application for approval under Subsection (1)–
- (a) shall be in Form 6; and
- (b) shall be accompanied by two copies of a plan of the licensed store or registered premises, as the case may be, showing details of the nature and extent of the proposed alterations or additions.
- (3) On the completion of any alterations or additions an application must be made for an amended licence or certificate of registration, as the case may be, specifying the alterations or additions in respect of which the amendment is required.

PART IV. - INFLAMMABLE LIQUID, ETC.

Division 1.

Depots Generally.

12. CONSTRUCTION OF DEPOTS.

- (1) A depot must be constructed of brick, concrete, stone or iron or other non-inflammable material.
- (2) A depot, other than a tank depot, must have floors of concrete or other approved material.
- (3) A depot, other than a tank depot, must be surrounded by a bund or provided with a compound designed to prevent outflow, having—
 - (a) where the inflammable liquid is stored in closed vessels of metal or other approved materials and the capacity of any one vessel in the depot does not exceed 400 *l*–a capacity of–
 - (i) not less than the capacity of the largest vessel stored in the depot; or
- $$({\rm ii})$$ 25% of the total volume of inflammable liquid stored in the depot, whichever is the greater; or
 - (b) in other cases—a capacity 10% greater than the total volume of inflammable liquid stored in the depot.
- (4) A depot must be efficiently ventilated, and all ventilator openings must be protected by brass wire gauze or equivalent of at least 140 meshes, per cm2, unless in any particular case the Chief Inspector otherwise directs.
- (5) A depot must be provided with doors of an approved number and construction.
- (6) A depot, other than an underground tank depot, must have the words—"INFLAMMABLE LIQUID–KEEP FIRE AWAY," printed in letters not less than 50mm high, on or adjacent to, each door.

13. TANK DEPOTS.

- (1) In a tank depot, tanks must-
- (a) be constructed of iron, steel or other approved material; and
- (b) be of such strength and construction as to hold the contents safely; and
- (c) be set on firm foundations.
- (2) In a tank depot where more than one tank is installed, the filling and dip pipes of each tank must be clearly marked in an approved manner.

14. UNDERGROUND TANKS.

- (1) Unless otherwise prescribed, an underground tank must-
- (a) have its top-
 - (i) not less than 600 mm beneath the surface of the ground or, where it is placed under a building, not less than that distance beneath the lowest floor of the building; or
 - (ii) if it is covered with a reinforced concrete slab of not less than 150 mm thick—not less than 300 mm beneath the surface of the ground or, where it is placed under a building, not less than 300 mm beneath the lowest floor of the building; and
- (b) be below the level of any piping to which the tank may be connected; and
- (c) be reinforced at points that may come into contact with a dip-stick, unless other approved means are used to prevent injury to the tank by the dip-stick; and
- (d) be-
 - (i) surrounded by soft earth or sand well stamped into place; or
 - (ii) encased in concrete; and
- (e) have a filling pipe that—
 - (i) is closed by a screwed cap; and
 - (ii) terminates outside any building and not closer than 1.50 m from any means of egress from any building; and
- (iii) is set in an approved lockable metal box flush with the ground, unless the Chief Inspector, in any particular case, otherwise approves; and
 - (f) have an approved vent pipe terminating at not less than 3.70 m above the level of the source of supply; and
 - (g) either-
 - (i) have the opening at the bottom of the suction line or foot valve not less than 26 mm higher than the bottom of the fill and dip pipes; or
 - (ii) be so arranged that at all times a liquid seal is maintained; and
 - (h) have no openings in the walls of a filling line communicating with the gas or vapour in the tank.
- (2) The vent pipe may be combined with a filling pipe so equipped as to vent the tank at all times even during filling operations, but in that case filling or delivery operations shall not be made through the vent pipe.
- (3) A separate vent pipe connection must be fitted on the top of each storage tank, and the cross-sectional area of the vent pipe must—

- (a) be sufficient to ensure that the tank will not be subject to excessive pressure during filling should it be filled to overflowing; and
- (b) be not less than that of the filling pipe, unless the tank is filled by gravity in which case it may be half that of the filling pipe; and
- (c) be weatherproof and protected on the outer end by brass wire gauze or equivalent having not less than 140 meshes per cm2.
- (4) Discharges from a tank must not be made otherwise than through the suction or draw-off line.
- (5) Any perforations in the dip-pipe must be covered with brass wire gauze or equivalent having not less than 140 meshes per cm².

15. ABOVE-GROUND TANKS.

- (1) Above-ground tanks, other than tanks on vehicles, must-
- (a) be set on firm foundations; and
- (b) have any supporting structure of fire-resistant material; and
- (c) be electrically earthed; and
- (d) be located at least 3 m from any combustible material; and
- (e) be fitted with adequate vents to permit pressure or vacuum release—
 - (i) when filling or discharging operations are in progress; or
 - (ii) for any temperature changes due to climatic conditions; and
- (f) have any open vents or other openings liable to contain inflammable vapour fitted with—
 - (i) an approved flame arrester; or
 - (ii) a screen of brass wire gauze or equivalent of not less than 140 meshes per cm2; and
- (g) be provided with an approved safety valve.
- (2) An above-ground tank depot for the storage of inflammable liquid must be surrounded by a bund wall of earth, bricks, concrete or stone so constructed as to be liquid-tight and to withstand full hydraulic head, and the slope of the walls must be consistent with the angle of repose for the materials of construction.
- (3) Where the tank depot consists of a single above-ground tank for inflammable liquid, the capacity of the bunded area must be at least equal to the storage capacity of the tank.
- (4) In licensed premises where inflammable liquid is stored in excess of a total of $2,725,000\ l$, the tanks must—
 - (a) be located in accordance with this Regulation; and

- (b) be surrounded by a main bund wall providing a capacity not less than the sum of—
 - (i) the whole of the largest tank within the depot; and
 - (ii) 10% of the combined capacities of all other tanks within the depot,

but when the Chief Inspector considers such additional bunding to be necessary for safety of the public or of adjoining property, he may require the bund capacity to be the sum of—

- (iii) the whole of the largest tank; and
- (iv) 50% of the combined capacities of all other tanks in the depot.
- (5) In an above-ground tank depot where the total storage does not exceed 2,725,000 l-
 - (a) the spacing between tanks may be governed solely by constructional and operational conditions; and
 - (b) the group of tanks in such a tank depot shall then be regarded as one tank for the purposes of ascertaining the bund capacity, which must be not less than the full capacity of all tanks in the group; and
 - (c) a group of tanks that under Paragraph (b) is regarded as one tank, must subject to Subsection (6) and to Section 29, be separated from the boundaries of the premises by the distance given in Table I or Table II of Schedule 4 for the total capacity of all tanks in the group.
- (6) In a case to which Subsection (5)(c) applies, the distance from protected works required in Section 16 still applies.

16. SEPARATION DISTANCES FOR ADJOINING DEPOTS.

- (1) Subject to Subsection (2), a depot in a licensed store must be separated, according to the nature and quantity of inflammable liquid or dangerous goods stored in the depot, from all protected works by the distances specified in Schedule 4.
- (2) The distances specified in Schedule 4 shall be altered proportionately for intermediate quantities, and—
 - (a) the Chief Inspector may authorize a reduced distance where the full distance prescribed cannot be observed; and
 - (b) if two or more above-ground depots are not separated from each other—
 - (i) by the distance prescribed in Schedule 4; or
 - (ii) by the distance so prescribed for the largest depot,

the aggregate capacity of those depots shall be taken as the quantity to determine the prescribed distance that must separate the depots from other protected works; and

- (c) subject to Paragraph (e) where two or more underground tank depots, each having a capacity not exceeding 2,250 *l*, are separated from each other by a distance of not less than 600mm, with earth properly filled in between the tanks, the prescribed separation distance between those depots and other protected works does not apply; and
- (d) subject to Paragraph (e), if two or more underground tank depots, any one or more of which has or have a capacity of or exceeding 2,250 *l*, are separated from each other by a distance of not less than 600mm, with earth properly filled in between the tanks, they must be separated from other protected works by not less than 3m, and the capacity of the tank nearest to the protected works (or if they are equidistant from the protected works the capacity of the larger or the largest tank) shall be taken as the quantity to determine the distance which shall separate them from the protected works; and
- (e) Paragraphs (c) and (d) do not apply to partly buried or built-in tank depots; and
- (f) the prescribed distance for the separation of a depot from a wharf controlled by the licensee of the store on which the depot is situated may be measured from that part of the wharf where it is customary for ships to berth, moor or lie; and
- (g) where-
 - (i) the respective premises comprising two licensed stores held by different licensees adjoin and have a common boundary or boundaries on one or more sides; and
 - (ii) the distances prescribed by Schedule 4 cannot be observed,
 - the Chief Inspector may, with the written consent of both licensees, authorize a reduced distance, not less than 7.5m, between—
 - (iii) any depot or depots or protected works on one of the stores; and
 - (iv) any depot or depots or protected works on the other adjoining store; and
- (h) where a reduced distance is authorized under Paragraph (g) the distances separating any depot on either store from other protected works outside those stores shall be determined as otherwise provided in this Regulation in accordance with the aggregate capacity of the depots on both stores, as if both stores were held as one licensed store.

17. SEPARATION DISTANCES FOR TANKS WITHIN THE SAME PREMISES.

Tanks for storage of inflammable liquid or dangerous goods—

(a) within the same tank depot; or

(b) in separate tank depots on the same licensed premises, must be located in accordance with Schedule 5.

Division 2.

General.

18. ARTIFICIAL LIGHTING.

Artificial lights for the purposes of Sections 16(1)(c) and 18(1)(e) of the Act must, unless otherwise prescribed, be as prescribed by the relevant rules of the Standards Association of Australia, as in force from time to time, relating to electrical equipment in hazardous locations.

19. ELECTRICAL EQUIPMENT.

Subject to the Act, all electrical apparatus and equipment in licensed stores or registered premises must, unless otherwise prescribed, comply with the relevant rules of the Standards Association of Australia, as in force from time to time.

20. RECORD OF INFLAMMABLE LIQUID CONSIGNED OR DELIVERED.

(1) Subject to Subsection (2), the occupier of a licensed store or of registered premises must keep a proper record in Form 7 of the name of each person to whom any inflammable liquid is consigned or delivered, on or from the premises or store, as the case may be, and that information must be supplied to an Inspector as required by him.

Penalty: A fine not exceeding K20.00.

- (2) Subsection (1) does not require that a record be kept of—
- (a) the consignment or delivery of quantities of inflammable liquid not exceeding those that might be kept in the store or premises without requiring licensing or registration under the Act; or
- (b) the delivery to the fuel tank of a vehicle, of mineral spirit or dangerous goods of Class 1 intended for the propulsion of the vehicle.

21. USE OF MEASURING CHAMBER FOR STORAGE.

A person who—

- (a) uses, for the keeping of inflammable liquid, before or in anticipation of sale, the measuring chamber of an instrument used for the measurement of inflammable liquid; or
- (b) permits inflammable liquid to remain in such a chamber longer than is necessary for the measuring and discharge of the inflammable liquid,

is guilty of an offence.

Penalty: A fine not exceeding K100.00.

22. KEEPING OF MINERAL OIL, ETC., IN GLASS VESSELS.

- (1) Mineral oil withdrawn-
- (a) for immediate requirements; or
- (b) for bona fide medicinal or laboratory use,

must be kept in separate glass or earthenware vessels, each containing not more than 1 *l*.

- (2) Mineral spirit withdrawn-
- (a) for immediate requirements; or
- (b) for bona fide medicinal or laboratory use,

must be kept in separate glass or earthenware vessels, each containing not more than 250ml.

(3) When in use, vessels containing mineral oil or mineral spirit referred to in Subsection (1) or (2) must be so securely closed and stopped that neither liquid nor vapour can escape from them.

Penalty: A fine not exceeding K100.00.

(4) A person who keeps in a depot at any one time more than 72 *l* of mineral oil or mineral spirit withdrawn for immediate use is guilty of an offence.

Penalty: A fine not exceeding K20.00.

Default penalty: A fine not exceeding K20.00.

23. MARKING OF VESSELS CONTAINING MINERAL SPIRIT.

A glass of earthenware vessel containing mineral spirit must be clearly marked by means of a brand or securely attached label in large red letters on a light coloured ground with the words—

"DANGER HIGHLY INFLAMMABLE MINERAL SPIRIT"

(or the trade name under which the spirit is sold).

"DO NOT OPEN OR USE WITHIN 9 METRES OF A FIRE OR FLAME."

24. SPECIAL PERMIT FOR INFLAMMABLE LIQUID, ETC., FOR CERTAIN PURPOSES.

- (1) All inflammable liquid and dangerous goods placed in open vats or similar receptacles, for the purpose of blending, painting, degreasing, dry-cleaning or similar use on registered premises or licensed stores, shall be deemed to be for immediate use.
- (2) In a case to which Subsection (1) relates, the holder of the licence or certificate of registration, as the case may be, must obtain from the Chief Inspector a permit that the premises have been inspected, and passed as suitable for the

immediate use of inflammable liquid or dangerous goods for the purpose and under the conditions stated in the permit.

Penalty: A fine not exceeding K200.00.

25. STORAGE OF EMPTY DRUMS IN DEPOT, ETC.

- (1) Where stocks of drums having an individual capacity exceeding $22\ l$ that contain vapours or residues of inflammable liquid or dangerous goods are held in a licensed store or on registered premises, the drums must be stored—
 - (a) in a depot; or
 - (b) in the open air in a manner approved by the Chief Inspector.
 - (2) Where drums referred to in Subsection (1) are stored in open air-
 - (a) combustible matter must not be permitted to remain within 3 m of any drum; and
 - (b) the storage must not be within 6 m of any dwelling house.

Penalty: A fine not exceeding K50.00.

Default penalty: A fine not exceeding K10.00.

26. NOTICE OF DANGEROUS OCCURRENCES.

- (1) The occupier of a licensed store or of any registered premises who fails to give immediately to the Chief Inspector—
 - (a) written notice of any dangerous occurrence or accident, whether by explosion or fire or otherwise, occurring on or about, or in connection with, the store of registered premises; and
 - (b) particulars of any loss of life or personal injury occasioned by the occurrence or accident,

is guilty of an offence.

Penalty: A fine not exceeding K50.00.

(2) A depot damaged by an accident referred to in Subsection (1) must not be reconstructed, and no inflammable liquid placed in it, except with the permission of the Chief Inspector.

Penalty: A fine not exceeding K200.00.

(3) Any inflammable liquid placed in a depot in contravention of Subsection (2) shall be deemed to be kept in an unauthorized place.

27. USE OF CERTAIN ENGINES IN DEPOTS.

- (1) A compression ignition engine must not be used within a depot unless-
- (a) it is started manually or by means of compressed air; and

- (b) the exhaust system is kept cool; and
- (c) exhaust gases are discharged through water; and
- (d) any electric starting system has a readily accessible cut-out switch for the battery and the switch remains in the open position while the engine is in the depot; and
- (e) the engine is not started electrically while it is in the depot; and
- (f) the battery is protected by a cover of non-conductive material; and
- (g) appliances or equipment having any form of motive power not specified in this subsection are not used within the depot unless authorized by the Chief Inspector; and
- (h) any shelving, racks and like fittings in the depot are constructed—
 - (i) of metal; or
 - (ii) of hardwood not less than 25 mm in thickness,

and packages are so stacked that no package is liable to fall outside the bunded area whether in the event of fire or otherwise; and

- (i) any drains or pumps that are provided conform with the requirements of this Regulation; and
- (j) water is not allowed to accumulate within the bunded area of a drum depot.
- (2) A petrol driven engine must not be used within the bund area of the depot.

28. FENCING OF LICENSED STORE, ETC.

The Chief Inspector may require the licensee of a store or the owner of registered premises to fence the licensed store or registered premises, as the case may be, to prevent unauthorized entry.

29. DEPOTS ON STREET BOUNDARIES.

A depot, other than a depot within a building, may, with the approval of the Chief Inspector, be constructed on a boundary that adjoins a road, street or other open place, if a screen wall is erected on the boundary—

- (a) to the full height of the depot; and
- (b) in an approved manner, so as to protect the storage from any source of ignition outside the boundary.

Division 3.

Pumping of Inflammable Liquid.

30. INSTALLATION OF PUMPS.

(1) A person who uses a pump for the sale or delivery of mineral spirit that is not an approved type is guilty of an offence.

Penalty: A fine not exceeding K50.00.

Default penalty: A fine not exceeding K10.00.

- (2) Written application for approval under Subsection (1)-
- (a) shall be made to the Chief Inspector stating the type and relevant particulars of the pump; and
- (b) shall be accompanied by the fee prescribed in Schedule 3.
- (3) A person who installs or uses a pump inside a building or on a wharf without the Chief Inspector's approval of the location of the pump is guilty of an offence.

Penalty: A fine not exceeding K100.00.

Default penalty: A fine not exceeding K20.00.

- (4) Unless otherwise approved by the Chief Inspector, a person installing a pump must comply with the following conditions:—
 - (a) where the pump is installed on a wharf, or in any other place where the Chief Inspector so directs, a gate valve shall be placed in the delivery line adjacent to the pump;
 - (b) where a pump is a positive displacement pump, a bypass fitted with an approved relief valve shall be connected from the delivery to the suction side of the pump;
 - (c) where a pump is installed inside a building-
 - (i) unless otherwise approved it shall be installed within 1.5 m of a carriage entrance to the building and shall not be used except for the filling of vehicle fuel tanks or other containers when the tanks or containers are on the carriageway; and
 - (ii) the carriageway, together with the area immediately surrounding the pump, shall be so graded that any spillage flows out and clear of the building.

Penalty: A fine not exceeding K200.00.

Default penalty: A fine not exceeding K40.00.

(5) The Chief Inspector may authorize the continued use of a pump that was lawfully installed, before 1 September 1969 (being the date of commencement of the pre-Independence *Inflammable Liquid Regulations* 1968), at ground level inside a

building or on a wharf and that does not comply with the preceding provisions of this Section if, in his opinion—

- (a) the area surrounding the pump is adequately ventilated; and
- (b) there is no danger of any spillage flowing to a lower level inside the building.

31. INSTALLATION OF SELF-SERVICE TYPE PUMP.

Unless otherwise approved by the Chief Inspector a pump approved under Section 30(1) that is coin or token-operated and of the self-service type—

- (a) must not be installed inside a building or on a wharf; and
- (b) must not be installed less than 4.5 m from-
 - (i) the coin or token-operated mechanism; or
 - (ii) any building; or
 - (iii) the footpath alignment; or
- (c) a delivery hose must not be of a greater length than 3.5 m including the nozzle; and
- (d) a separator or sump for spillage capable of holding not less than 22 l of mineral spirit must be installed adjacent to the pump in such a manner that any spillage from the pump flows into the separator or sump; and
- (e) the filling area, pump and coin or token-operated mechanism must be adequately illuminated at all times except when the pump is locked or otherwise made unusable; and
- (f) the pump and coin or token-operated mechanism must be prominently marked with the words—

"DANGER-NO SMOKING.

SWITCH OFF ENGINE BEFORE OPENING FUEL TANK."

in white letters on a red ground; and

(g) the hose nozzle must be of a type that shuts off automatically when not under pressure against the tank-fill opening.

Penalty: A fine not exceeding K100.00.

32. MAINTENANCE OF PUMPS.

A pump used on or in a licensed store or registered premises must be maintained in an efficient condition and free from leakage.

Penalty: A fine not exceeding K50.00.

33. LOCKING OF PUMPS.

A pump must be kept effectively locked or otherwise protected against access by unauthorized persons.

34. ELECTRICAL INSTALLATIONS IN PUMPS.

Electric wiring in a pump installation must be as prescribed by the relevant rules of the Standards Association of Australia, as in force from time to time, relating to electrical equipment in hazardous locations.

35. SUPPLY OF INFLAMMABLE LIQUID TO VEHICLES.

When inflammable liquid is supplied from a pump to a vehicle-

- (a) the engine of the vehicle must be stopped; and
- (b) the cap to the fuel tank must not be removed until the engine is stopped; and
- (c) any lights, other than electric lights, in or on the vehicle must be extinguished; and
- (d) electrical switches must not be opened or closed while the tank is open; and
- (e) there must be no naked fire or flame within 3 m; and
- (f) no person shall light matches or smoke within 15 m.

Penalty: A fine not exceeding K200.00.

PART V. - DANGEROUS GOODS.

Division 1.

Dangerous Goods of Classes 1 and 2.

36. DANGEROUS GOODS OF CLASSES 1 AND 2 KEPT IN REGISTERED PREMISES.

Unless otherwise prescribed, dangerous goods of Classes 1 and 2 kept in registered premises must not exceed the following quantities—

- (a) 450 *l* of dangerous goods of Class 1, or 2,250 *l* of dangerous goods of Class 1 kept in an underground tank depot; or
- (b) 3,600 1 of dangerous goods of Class 2 if—
 - (i) no mineral spirit or dangerous goods of Class 1 are kept by any person within a distance of 15 m of the first-mentioned goods; or
 - (ii) either-
 - (A) the mineral spirit or dangerous goods of Class 1 and the dangerous goods of Class 2 are separated by a screen wall; or
 - (B) the mineral spirit or dangerous goods of Class 1, or the dangerous goods of Class 2, are kept in an underground tank depot; or
- (c) 1,300 l of dangerous goods of Class 2 if—
 - (i) mineral spirit or dangerous goods of Class 1 are kept by any person within a distance of 15 m; and
 - (ii) the mineral spirit or dangerous goods of Class 2 are not kept in an underground tank depot.

Penalty: A fine not exceeding K200.00.

37. APPLICATION OF CERTAIN PROVISIONS TO DANGEROUS GOODS OF CLASSES 1 AND 2.

Except as is otherwise specifically prescribed, Sections 15, 16 and 18 of the Act, and Sections 16 to 28 (except Section 20) of this Regulation, with the necessary modifications, apply to the keeping of dangerous goods of Classes 1 and 2 on registered premises or in licensed stores as if in those sections the words "inflammable liquid" included dangerous goods of Classes 1 and 2, and the words "mineral spirit" included dangerous goods of Class 1, and the words "mineral oil" included dangerous goods of Class 2.

Division 2.

Dangerous Goods of Class 3.

38. INTERPRETATION OF DIVISION 2.

In this Division, unless the contrary intention appears "substantial metal receptacle" means a metal receptacle—

- (a) approved by the Chief Inspector; and
- (b) containing not more than 90 kg net of dangerous goods of Class 3; and
- (c) of substantial construction, insulated and fitted with a tight-fitting hinged lid or cover of metal.

39. KEEPING OF DANGEROUS GOODS OF CLASS 3 IN DEPOT.

- (1) Subject to this Regulation, dangerous goods of Class 3 must be kept in a depot in a licensed store.
- (2) Subsection (1) does not apply to the keeping of dangerous goods of Class 3 in any of the following circumstances:—
 - (a) dangerous goods of Class 3 that are specially prepared, as approved by the Chief Inspector to reduce inflammability;
 - (b) the keeping of unexposed X-ray film packed in original packages or cartons, that are protected by an approved system of automatic sprinklers;
 - (c) the keeping of cinematograph film not exceeding 450 kg in the despatch room of a film exchange, if—
 - (i) all film is placed in a depot at the end of work on each day; and
 - (ii) the despatch room is protected by an approved system of automatic sprinklers;
 - (d) cinematograph film not exceeding 90 kg net in metal receptacles with tight-fitting covers that are not kept at a theatre or public hall; or
 - (e) photographic or X-ray film not exceeding 90 kg net that are packed in original packages or cartons;
 - (f) photographic or X-ray film not exceeding 180 kg net that are packed in original packages or cartons contained in substantial outer cases;
 - (g) exposed photographic or X-ray film not exceeding 90 kg net that are packed in heavy paper envelopes or in cardboard boxes not exceeding six films in an envelope or 25 films in a box;
 - (h) exposed photographic or X-ray film material or compound in sheet, rod or tube form, having nitro-cellulose as a base, not exceeding 90 kg net;
 - (i) celluloid, or scrap or stripped cinematograph, photographic or X-ray film, or other solid substance, material or compound in sheet, rod or

tube form, having nitro-cellulose as a base, not exceeding 450 kg net that is kept in separate substantial metal receptacles that are—

- (i) so placed that in the case of a fire the least possible danger will occur to any workroom, ventilating shaft, stairway, passage, exit or fire escape; or
- (ii) opened only during such time as is actually necessary for the receipt or issue of nitro-cellulose products.

40. KEEPING OF DANGEROUS GOODS OF CLASS 3.

A person keeping dangerous goods of Class 3 must comply with the following requirements:—

- (a) in the case of nitro-cellulose products of types A and B-
 - (i) the products shall be kept in substantial metal receptacles; and
 - (ii) the film in each receptacle shall not exceed 5,000 m; and
 - (iii) receptacles shall be opened only during such time as is actually necessary for the receipt or issue of nitro-cellulose products; and
 - (iv) except as otherwise prescribed, all film, except so much as is withdrawn for immediate use, shall be kept in a depot exclusively appropriated for the purpose;
- (b) nitro-cellulose products of Type C, except as otherwise prescribed, shall be kept in a depot in a licensed store;
- (c) dangerous goods of Class 3 may be stored with inflammable liquid only with the written approval of the Chief Inspector;
- (d) dangerous goods of Class 3 not exceeding 450 kg net, that are kept in separate substantial metal receptacles, may be kept with inflammable liquid in a depot in a licensed store, if the receptacles are opened only during such time as is actually necessary for the receipt or issue of nitro-cellulose products; and
- (e) nitro-cellulose moistened with an alcohol may be kept in a depot on a store with nitro-cellulose products Types A and B (dangerous goods Class 3) in quantities not exceeding 450 kg net, if the film is kept in substantial metal receptacles; and
- (f) nitro-cellulose moistened with an alcohol may be kept in a depot on a store with inflammable liquid or other dangerous goods of Classes 1 and 2 if the depot is constructed in accordance with the Act.

41. DEPOTS FOR KEEPING DANGEROUS GOODS GENERALLY.

Depots for the keeping of dangerous goods of Class 3 generally must be constructed of not less than 230 mm brickwork in cement mortar or 150 mm

reinforced concrete or equivalent, and must comply with the following requirements:-

- (a) all shelves, fittings and furniture shall be of metal or other approved fire-resistant material, and shall be so arranged as to afford free egress;
- (b) doors shall be of an approved number and construction only and shall be opened only during such time as is actually necessary for the receipt or issue of the dangerous goods;
- (c) artificial light other than electricity shall not be used;
- (d) all electrical devices must be—
 - (i) as prescribed by the relevant rules of the Standards Association of Australia, as in force from time to time, relating to electrical equipment in hazardous locations; or
 - (ii) as otherwise prescribed;
- (e) each depot shall vent separately to the outer air with a vent having a minimum effective sectional area of 950 cm2 per 450 kg, or part of 450 kg, of its capacity of nitro-cellulose products;
- (f) the vent and fittings shall be so arranged that the efficiency of the vent is preserved at all times;
- (g) the outlet of each vent shall be above the roof of the store and at least 7.5 m from doors, windows and other openings or fire escapes, unless a screen wall intervenes;
- (h) the floor shall be covered by an approved material incapable of creating a spark;
- (i) not more than 4,500 kg of any dangerous goods of Class 3 shall be kept in any depot at any one time;
- (j) "No Smoking" signs shall be posted in prominent positions; and
- (k) smoking shall be strictly prohibited within or in close proximity to a depot;
- (*l*) no person shall take into a depot any smoking materials or matches, or anything likely to ignite or decompose a nitro-cellulose product.

42. SPECIAL CONDITIONS RELATING TO DEPOTS FOR KEEPING NITRO-CELLULOSE PRODUCTS TYPES A AND B (DANGEROUS GOODS CLASS 3).

Depots for the keeping of dangerous goods of nitro-cellulose products Types A and B (dangerous goods Class 3)—

- (a) must not exceed 21 m3 capacity; and
- (b) must be effectively protected with an approved system of automatic sprinklers, connected to the water supply, with a ratio of one head to

each 1.725 m3 of total depot space with a minimum of six heads to each depot, and the sprinklers—

- (i) shall be so arranged as to give uniform distribution within any section formed by partitions, and
- (ii) may be separated by sheet metal baffles extending below the sprinkler deflections; and
- (c) must have a water supply installed and maintained as follows—
 - (i) where one depot only is situated in a building that is not protected by a sprinkler installation, there shall be a supply of not less than 90 l per minute for 20 minutes for each head in the depot; and
 - (ii) where two or more depots are situated in a building that is not protected by a sprinkler installation, there shall be a supply of not less than—
 - (A) 90 1 per head per minute for 20 minutes for each head in one depot; and
 - (B) the water required for six additional heads at the same rate; and
 - (iii) where one or more depots are situated in a building that is protected by a sprinkler installation, there shall be—
 - (A) 90 1 per head per minute for 20 minutes for each head in one depot; and
 - (B) the water required for six additional heads, which may be located in another depot or any other fire risk, at the same rate; and
- (d) all horizontal or vertical flues inside the building must be of 130 mm reinforced concrete or equivalent; and
- (e) any exterior metal flues—
 - (i) constructed of not less than 1.6 mm iron plate or equivalent; and
 - (ii) maintained in a satisfactory condition.

43. SPECIAL CONDITIONS RELATING TO DEPOTS FOR THE KEEPING OF NITRO-CELLULOSE PRODUCTS TYPE C (DANGEROUS GOODS CLASS 3).

Depots for the keeping of nitro-cellulose products Type C (dangerous goods Class 3)— $\,$

(a) must be effectively protected with an approved system of sprinklers connected to the water supply with a ratio of one head to each 1.5 m2 of floor area, with heads and lines not more than 2.5 m apart; and

(b) must have a water supply installed and maintained of not less than 90 *l* per head per minute for 20 minutes for each head.

44. PROCESSING OF DANGEROUS GOODS OF CLASS 3.

- (1) Dangerous goods of Class 3 in excess of 22 kg must not be manufactured, repaired, manipulated or used except in a workroom complying with Subsection (2).
- (2) Unless otherwise approved, a workroom referred to in Subsection (1) must comply with the following requirements:—
 - (a) it shall be constructed throughout of approved fire-resisting material;
 - (b) there shall be at least two doors situated independently and opening outwards;
 - (c) furniture and apparatus shall be so arranged as to afford unimpeded egress;
 - (d) electrical devices, including wiring and switches,-
 - (i) shall comply with the relevant rules of the Standards Association of Australia, as in force from time to time, relating to electrical equipment in hazardous locations; or
 - (ii) shall be as approved;
 - (e) electrical resistances, including the heating elements of electric heaters and radiators, shall be—
 - (i) so guarded or enclosed as to prevent ignition or decomposition of any nitro-cellulose product; and
 - (ii) so constructed that no external part of the enclosure or guard at any time exceeds a temperature of 100°C;
 - (f) the top of the enclosure or guard shall be sloped at an angle of not less than 45° from the horizontal;
 - (g) an approved system of automatic sprinklers shall be installed with a ratio of one head to each 6 m2 of floor area, with heads and lines not more than 2.5 m apart;
 - (h) the water supply shall not be less than 901 per head per minute for 20 minutes for each head in the workroom and in addition, where a depot or depots open directly into a workroom, the water required for the total number of heads in the largest such depot at the same rate;
 - (i) "No Smoking" signs shall be posted in prominent positions and no fire or light, gas or oil stove, smoking, smoking materials or matches or anything likely to ignite or decompose any nitro-cellulose product shall be allowed in the workroom;
 - (j) not more than 600 m of cinematograph film for each work person shall be exposed at any one time;

- (k) nitro-cellulose products in quantities in excess of that required for the immediate supply and work of the workroom shall not be brought into, or allowed to remain in, the room;
- (l) waste nitro-cellulose products-
 - (i) shall not be allowed to accumulate; and
 - (ii) shall be collected frequently during the day and placed in a strong metal receptacle fitted with a self closing lid and marked with the words "Highly Inflammable Waste".

Penalty: A fine not exceeding K200.00.

Division 3.

Dangerous Goods of Class 4.

45. DANGEROUS GOODS OF CLASS 4 TO BE KEPT IN LICENSED STORE, ETC.

- (1) Dangerous goods of Class 4 in any quantity exceeding 50 m3 kept in a licensed store must be kept under the following conditions:—
 - (a) acetylene shall be contained in a porous substance, with or without acetone or other approved solvent;
 - (b) the porous substance shall be similar in every respect to a sample deposited with the Chief Inspector;
 - (c) the porous substance shall fill as completely as possible the cylinder into which the acetylene is compressed;
 - (d) the porosity of the substance shall not exceed 80%;
 - (e) any acetone or other approved solvent used shall not be capable of chemical reaction with acetylene gas, the porous substance or the metal of the cylinder;
 - (f) the quantity of acetone or other approved solvent used shall be such that, when fully charged with acetylene, it does not completely fill the porosity of the porous substance at any temperature likely to be met with in ordinary practice or use;
 - (g) compression of acetylene shall be carried out only in such part of a store as has been approved in writing by the Chief Inspector (which approval may be withdrawn at any time by the Chief Inspector);
 - (h) a cylinder into which acetylene is compressed shall be constructed in accordance with—
 - (i) the relevant specification issued by the Standards Association of Australia, as in force from time to time; or
 - (ii) other prescribed specifications;

- (i) before the first charging of a cylinder with acetylene, and afterwards at successive intervals of not more than 12 months whilst the cylinder is in use, it shall be subjected to a complete examination by a competent person to ensure that it is in a safe and stable condition;
- (j) before a cylinder is charged with acetylene, the shell and valve assembly shall be visually examined to ensure, as far as practicable, that they are in good condition;
- (k) no person shall charge or recharge with acetylene any cylinder manufactured by any other person unless the first-mentioned person—
 - (i) is in possession of the full particulars and previous history of the cylinder; or
 - (ii) has otherwise assured himself that the cylinder complies with the requirements of this section;
- (l) each cylinder-
 - (i) shall have permanently and conspicuously marked on it the name of the manufacturer and the word "acetylene"; and
 - (ii) shall bear a label giving-
 - (A) the date when it was last charged; and
 - (B) the name of the person by whom it was charged; and
 - (C) the address of the last charging station; and
 - (D) the maximum pressure allowed in the cylinder;
- (*m*) each cylinder used for containing acetylene capable when empty of containing 0.028 m3 of water or more shall have stamped on it—
 - (i) the name or trade mark of the manufacturer; and
 - (ii) the serial number of the cylinder;
- (n) each cylinder containing a porous mass capable, wholly or in part, of destructive distillation shall be fitted with approved fusible plugs or shattering discs, unless otherwise directed by the Chief Inspector;
- (o) a record shall be kept for the life of each cylinder giving the following particulars:—
 - (i) the identification number:
 - (ii) the manufacturer of the cylinder;
 - (iii) the specification number;
 - (iv) the porous substance in the cylinder;
 - (v) the nature of the solvent;
 - (vi) the tare weight of the cylinder inclusive of-
 - (A) the porous substance; and

- (B) the solvent; and
- (C) the valve; and
- (D) the weight of gas soluble in the solvent at atmospheric pressure;
- (vii) the maximum pressure allowed in the cylinder;
- (p) all compressed acetylene kept on the store, except so much as is withdrawn for immediate use, must be kept in a depot.
- (2) A person who examines an acetylene cylinder must keep a record for a period of at least 12 months giving the following particulars:—
 - (a) the identification number;
 - (b) the owner of the cylinder;
 - (c) the porous substance in the cylinder;
 - (d) the condition of the porous substance;
 - (e) the result of the examination;
 - (f) the name of the person carrying out the examination;
 - (g) the date of the examination;
 - (h) any porous substance added;
 - (i) the variation of the tare weight;
 - (j) the condition of the cylinder,

and where a change in tare weight is effected shall forward a copy of the record to the owner of the cylinder.

- (3) A person who charges an acetylene cylinder must keep for a period of at least six months a record giving the following information:—
 - (a) the identification number;
 - (b) the current tare weight as stamped on the cylinder or on a metal disc attached to the cylinder;
 - (c) the date and amount of solvent added;
 - (d) the date and weight of gas in the cylinder when charged.
- (4) Records kept under this section must be open to the inspection of an Inspector, and every facility must be given to an Inspector to inspect the apparatus and methods by which cylinders are charged.

Penalty: A fine not exceeding K200.00.

46. CONSTRUCTION OF DEPOTS FOR KEEPING COMPRESSED ACETYLENE (DANGEROUS GOODS CLASS 4).

- (1) Unless otherwise directed by the Chief Inspector, a depot for the keeping of compressed acetylene (dangerous goods Class 4) must be constructed as follows:—
 - (a) the framework shall be of hardwood, or other approved material enclosed on two sides only and covered with iron, fibro-cement or other approved material;
 - (b) the floors shall be of hardwood or other approved material;
 - (c) the roof shall be of iron, fibro-cement or other approved noninflammable material so designed as to protect the open sides from the direct rays of the sun;
 - (d) efficient ventilation shall be provided in the roof;
 - (e) a warning notice shall be displayed in a conspicuous place bearing the words—

"DANGER: KEEP FIRE AWAY,"

in letters at least 50 mm high;

- (f) the store or the depot shall have a fence, with an efficient locked gate, door or other means necessary to prevent unlawful entry;
- (g) the fence may be used to assist to shade the stored cylinders, but must not be close enough to obstruct a free circulation of air.
- (2) Depots for the keeping of compressed acetylene shall be separated from the nearest part of all protected works by at least the distances specified in Schedule 6.
- (3) The distances specified in Schedule 6 may be altered proportionately for intermediate quantities, or the Chief Inspector may authorize a reduced distance in any case where the full distance prescribed by Schedule 6 cannot be observed, if—
 - (a) the nature and extent of screen walls or other conditions; and
 - (b) the distance that can be observed,

give a degree of protection equal to that of the full distance prescribed.

- (4) A person keeping compressed acetylene in a licensed store, and each person in or about the store, must comply with the following rules:—
 - (a) all compressed acetylene received at the store shall be at once taken to the depot and cylinders stood on ends;
 - (b) all compressed acetylene taken from the depot for delivery or otherwise, except so much as is for immediate use at the store, shall be at once removed from the store;
 - (c) no compressed acetylene shall be received or delivered from the store except between the hours of sunrise and sunset, unless an artificial light of the construction and character prescribed is used;

- (d) all due precautions (whether prescribed or not) shall be taken for the prevention of—
 - (i) accidents by fire or explosion or otherwise; and
 - (ii) access by unauthorized persons to the compressed acetylene on the store;
- (e) no person shall do any act that tends to cause fire or explosion.

Penalty: A fine not exceeding K100.00.

Division 4.

Dangerous Goods of Class 5.

47. STORAGE OF DANGEROUS GOODS OF CLASS 5.

(1) Subject to Section 14 of the Act, dangerous goods of Class 5 must be kept in a licensed store.

Penalty: A fine not exceeding K200.00

- (2) Dangerous goods of Class 5 must be stored in above-ground tanks, underground tanks or cylinders, designed, constructed and installed—
 - (a) in accordance with the provisions of the relevant Australian Standard Rules for the storage and handling of Liquefied Petroleum Gases known as the SAA L.P. Gas Code AS CB20-1965 as in force from time to time; or
 - (b) as otherwise prescribed.
 - (3) Dangerous goods of Class 5 must be conveyed and all containers filled-
 - (a) in accordance with the provisions of the relevant Australian Standard Rules specified in subsection (2); or
 - (b) as otherwise prescribed.
- (4) Dangerous goods of Class 5, whether stored in a licensed store, on registered premises or in accordance with Section 14 of the Act, must be stored and reticulated—
 - (a) in accordance with the relevant Australian Standard Rules specified in Subsection (2); and
 - (b) to the satisfaction of an Inspector,

and any repairs or alterations to the receptacles or the reticulation must be carried out—

- (c) in accordance with those Australian Standard Rules; and
- (d) to the satisfaction of an Inspector.

Penalty: A fine not exceeding K200.00.

PART VI. - FIRE-FIGHTING EQUIPMENT.

48. APPROVAL OF FIRE-FIGHTING EQUIPMENT.

Fire-fighting equipment (other than hand extinguishers) required under the Act or directed by the Chief Inspector to be installed in a licensed store or on registered premises must be approved before installation is commenced.

Penalty: A fine not exceeding K500.00.

49. REQUIREMENTS OF FIRE-FIGHTING EQUIPMENT.

- (1) Unless otherwise approved, the fire-fighting equipment referred to in Section 48 must comply with the following conditions:—
 - (a) in the case of fixed roof tanks, the rate of flow of foam shall be 0.29m3 or 285 *l* per minute for each 10m2 surface area of the largest fixed roof tank:
 - (b) in the case of floating roof tanks, a fixed or portable hose system shall be installed at the top of the tank or on a portable tower, and the rate of flow of foam shall not be less than 1,820 l per minute for tanks up to 13.5 m diameter and 3,640 l per minute for tanks in excess of 13.5 m diameter;
 - (c) tanks from 3 m in diameter up to 20 m in diameter shall have at least one foam discharge inlet;
 - (d) tanks over 20 m in diameter shall have at least two foam discharge inlets;
 - (e) foam inlets on fixed roof tanks shall-
 - (i) enter the tank through the second strake from the roof, with the interior pipe and discharge outlet not connected to the top strake or roof; or
 - (ii) subject to Subsection (2), enter the tank through the top strake;
 - (f) provision shall be made for an effective means of conveying foam to the surface of the liquid;
 - (g) where a fixed pipe system is installed, sufficient foam-producing material shall be kept to provide—
 - (i) a covering of 150 mm of foam on the liquid surface of the two largest tanks; and
 - (ii) a covering of 75 mm of foam on the liquid surface of the remaining tanks; and
 - (iii) a reserve of 45,500 *l* of foam where one hydrant is installed and 91,000 *l* of foam where two or more hydrants are installed;

- (h) foam hydrants shall be installed and located as directed by the Chief Inspector;
- (i) permanent rigid pipe lines shall be—
 - (i) provided from the control room or the control point or points to each tank; and
 - (ii) fitted with quick-acting valves;
- (j) foam must be delivered from the generator by pipes the diameters of which must be—
 - (i) 80mm to deliver 2,275 *l* per minute; and
 - (ii) 100mm to deliver 4,550 l per minute; and
 - (iii) 125mm to deliver 6,820-9,100 *l* per minute; and
 - (iv) 150mm to deliver 11,370-13,640 *l* per minute,

and the piping must be galvanised and laid above ground wherever possible;

- (k) the motive power for pumps and generators shall be petrol engines or diesel engines;
- (l) the pressure of foam at the generator shall be sufficient to ensure, at the point or points of entry to the tank situated furthest from the generator, the delivery rate of foam required by this section;
- (*m*) the motive power for pumps and generators shall be started and run at least once in each week;
- (n) strainers capable of removing from the water all solids of sufficient size to obstruct openings in the foam apparatus shall be provided;
- (o) where injector foam makers are located on the site of a tank, a strainer shall be fitted in the horizontal pipe adjacent to the bottom of each foam riser;
- (p) horizontal pipe-lines shall be adequately flushed with water at at least six monthly intervals and provision for doing so shall be provided in them;
- (q) the whole system shall be tested with foam at at least 12-monthly intervals;
- (r) records of tests shall be kept and be made available to an Inspector on request;
- (s) if required by or under the Act, or directed by the Chief Inspector, chemical extinguishers of the foam or other approved type, in such numbers as the Chief Inspector stipulates, shall be installed:
- (t) chemical extinguishers or other fire-fighting apparatus or equipment referred to in Paragraph (s) shall be regularly serviced and maintained in an efficient and satisfactory condition to permit their or its immediate use in case of emergency;

- (u) all sand, dry earth free from vegetable matter, powdered carbonate of soda, or any other approved material placed in bins, and all necessary pails, scoops, or other appliances, shall be kept on the licensed store or registered premises in such quantities and in such manner as is directed by an Inspector.
- (2) In the case of a foam inlet on a fixed roof tank to which Subsection (1)(e)(ii) applies, the riser must be fitted with an approved flexible joint and the interior pipe and discharge outlet must not be connected to the tank roof.

PART VII. – CONVEYANCE OF INFLAMMABLE LIQUID AND DANGEROUS GOODS.

50. VEHICLES.

- (1) The approval of the Chief Inspector must be obtained for the use of all vehicles used for conveying inflammable liquid or dangerous goods of Class 1 or 2.
- (2) The Chief Inspector may require that drawings and specifications of tanks for the conveyance of inflammable liquid or dangerous goods of Class 1 or 2 be submitted with the application for approval.
- (3) The design and construction of a vehicle used for conveying inflammable liquid or dangerous goods of Class 1 or 2 must-
 - (a) be constructed in accordance with accepted practice for the product to be transported; and
 - (b) conform to sound engineering design.
- (4) The weight of the tank, fittings and contents must not exceed the designed load capacity of the vehicle.
- (5) The vehicle must be constructed of fire-resisting materials and be maintained in good condition.
- (6) Except where specifically approved by the Chief Inspector for use in any particular area specified by him a tank wagon that conveys inflammable liquid and on which a tank or tanks is or are permanently mounted must not have a total liquid capacity exceeding $36,000\ l$.

Penalty: A fine not exceeding K500.00.

51. FIXING OF TANKS TO VEHICLES.

- (1) A tank for the conveyance of inflammable liquid or dangerous goods that is being conveyed on a road vehicle must be so substantially secured to the vehicle as not to be liable to be broken or to become defective or insecure during the conveyance.
- (2) All packages containing inflammable liquid or dangerous goods that are being conveyed on a road vehicle must be secured on the vehicle in such a manner that the packages—
 - (a) will not become damaged or defective during conveyance; and
 - (b) are not liable to fall from the vehicle at any time.

52. PRECAUTIONS FOR ESCAPING LIQUID.

All due precautions, whether prescribed or not, must be taken to prevent any inflammable liquid or dangerous goods escaping from a vehicle otherwise than in the manner of normal unloading or by normal discharge into approved tanks or containers.

53. USE OF TRAILERS.

A vehicle must not have more than one trailer of any kind attached to it while inflammable liquid or dangerous goods, whether in packages or in tanks, are being conveyed in the vehicle or the trailer.

54. DISTINGUISHING MARKING.

- (1) While engaged in the conveyance of any inflammable liquid or dangerous goods, a tank vehicle must have displayed on it a colour-marking to indicate the extinguishing medium to be applied in the event of fire.
 - (2) The marking referred to in Subsection (1)-
 - (a) must be of the appropriate colour specified in Subsection (3); and
 - (b) must consist of a metal plate 300 mm square in size displayed-
 - (i) in the case of a tank wagon—on the front; and
 - (ii) in the case of a tank trailer—on the rear.
 - (3) Where the extinguishing medium to be applied in the event of fire-
 - (a) is water—the marking referred to in Subsection (1) must be a red colour; and
 - (b) is foam, water vapour, inert gas or dry powder—the marking must be a blue colour.
- (4) If the inflammable liquid or dangerous goods conveyed by the tank vehicle is capable of producing toxic gases or vapours in a fire, there must also be similarly displayed on the tank vehicle a plate having a black cross on a red background.
- (5) Where a tank vehicle is used only for conveyance of any inflammable liquid or dangerous goods in respect of which the extinguishing medium remains the same, the appropriate colour-marking required by this section may be permanently painted on that tank vehicle.

55. SMOKING.

A person must not smoke or use any matches or other open flame on or about a vehicle while it is conveying inflammable liquid or oil.

56. LEAVING TANK VEHICLES UNATTENDED.

A tank vehicle for the conveyance of inflammable liquid or dangerous goods must not be left unattended—

- (a) on a public street or roadway; or
- (b) in any place to which the public has lawful access, except—

- (c) during such time as is necessary for the loading or delivery of the liquid or dangerous goods conveyed; or
- (d) for some other satisfactory reason.

57. CARRIAGE OF INFLAMMABLE LIQUID AND DANGEROUS SUBSTANCES IN PASSENGER VEHICLES.

- (1) Subject to Subsection (2) except as with the written approval of the Chief Inspector, a vehicle that is carrying or plying for the carriage of passengers for hire or reward must not carry any quantity of inflammable liquid or dangerous goods of Class 1 in excess of $18 \ l$.
- (2) Subsection (1) does not apply to inflammable liquid carried in fuel tanks or in other approved containers for supply to the engine of the vehicle during the course of the journey.

58. CARRIAGE OF EXPLOSIVES, ETC., WITH INFLAMMABLE LIQUID.

Except with approval given in special circumstances by an Inspector, a vehicle that is carrying any inflammable liquid in a total quantity exceeding $225 \ l$ must not at the same time carry as freight any explosive or any compressed gases in cylinders.

59. FIRE EXTINGUISHERS.

A vehicle that conveys inflammable liquid in packages of individual capacity exceeding 4.5 l and in a total quantity exceeding 900 l must carry a fire extinguisher on the vehicle as prescribed in this Regulation for the total quantity conveyed.

60. TANK TRAILERS ON PUBLIC ROADS.

- (1) A tank trailer must not be attached to a tank wagon on public roads unless-
 - (a) the trailer has not less than four wheels, or four dual wheels, and two axles; and
 - (b) not more than one trailer is attached to the wagon; and
 - (c) the trailer is attached to the towing vehicle by two independent and efficient fastenings of approved type; and
 - (d) the tank trailer has effective brakes on all four wheels or dual wheels, as the case may be; and
 - (e) if the trailer conveys inflammable liquid of Class 1-its tank capacity does not exceed 9,000 *1*; and
 - (f) the combined capacity of the wagon and the trailer conveying inflammable liquid or dangerous goods of Class 1 does not exceed 27,250 1 unless otherwise approved under Subsection (3); and
 - (g) a wagon and the trailer—

- (i) are coupled together under competent supervision; and
- (ii) are not separated for any reason other than accident or breakdown during the course of the journey, without special approval being given by the Chief Inspector for a particular conveyance and for some special reason; and
- (h) the trailer is not used for general deliveries of inflammable liquid or dangerous goods of Class 1 within the boundaries of a town, except such deliveries as the Chief Inspector approves for direct conveyance from one licensed premises to other licensed premises; and
- (i) the trailer is fitted with fire extinguishers of the same number and type prescribed for a tank wagon.
- (2) A person must not attach to a vehicle a trailer (other than a tank trailer) containing any inflammable liquid in quantity exceeding 900 *l* in packages, if—
 - (a) unless otherwise approved under Subsection (3)—the quantity of inflammable liquid carried on the trailer exceeds 4 500 *l*; or
 - (b) the trailer—
 - (i) has less than four wheels or four dual wheels; and
 - (ii) is not attached to the towing vehicle by two independent and efficient fastenings of approved type; or
 - (c) the trailer is not equipped with-
 - (i) a fire extinguisher of the dry powder type having a capacity not less than 4.5 kg; or
 - (ii) other approved fire extinguishers; or
 - (d) the trailer does not have effective brakes on all wheels or dual wheels.
- (3) A vehicle and attached trailer must not exceed the limits of capacity specified in Subsections (1) and (2) without special approval being given by the Chief Inspector for conveyance on such routes or in such areas, as he specifies.
- (4) To such extent as they are applicable, the provisions of this Part that apply to tank wagons apply also to tank trailers.

61. CONVEYANCE OF INFLAMMABLE LIQUID, ETC., IN TANK NOT INTEGRAL PART OF VEHICLE.

Tanks that-

- (a) are used for the conveyance by road of inflammable liquid or oils in bulk; and
- (b) do not form an integral part of a vehicle,

must comply with the following requirements:-

- (c) the vehicle and tank shall comply with the provisions of this Regulation relating to the conveyance and transport of inflammable liquids in tanks, so far as they are applicable to such conveyance in that way;
- (d) the vehicle shall be provided with fire extinguishers as prescribed for tank wagons;
- (e) tanks shall not be carried on a trailer other than a semi-trailer without the approval of the Chief Inspector;
- (f) tanks shall be constructed—
 - (i) in accordance with good engineering design and practice; and
 - (ii) of approved material;
- (g) the total quantity of inflammable liquid or dangerous goods shall not exceed 18,000 *l* in all tanks on any one vehicle;
- (h) the tanks shall be securely mounted on and attached to the vehicle so as not to be liable to become defective or insecure during conveyance.

62. DIFFERENT LIQUIDS IN DIFFERENT COMPARTMENTS.

Where different liquid products are conveyed on a tank vehicle in separate compartments of the same tank, the delivery valves connected to those compartments must be identified in a manner to indicate the nature of the contents of each compartment.

63. MARKING OF TANKS.

- (1) Subject to Subsection (3), a tank vehicle engaged in the conveyance of any mineral spirit or dangerous goods of Class 1 must be marked on each side with the words "HIGHLY INFLAMMABLE" in well-defined and conspicuous letters not less than 100 mm high.
- (2) Subject to Subsection (3), a tank vehicle engaged in the conveyance of any mineral oil or dangerous goods of Class 2 must be marked on each side with the words "INFLAMMABLE" in well-defined and conspicuous letters not less than 100 mm high.
- (3) A tank vehicle used exclusively for conveyance of inflammable liquid or dangerous goods of any class or of different classes on the same vehicle may be identified by conspicuous colouring to the satisfaction of the Chief Inspector.
- (4) The colouring referred to in Subsection (3) may be in the form of such trade marking or names as are commonly associated with inflammable liquid or dangerous goods, and where such colouring is used on a tank vehicle it is not necessary to comply with Subsections (1) and (2).

64. SPECIAL CONDITIONS RELATING TO TANK WAGONS.

Unless otherwise approved a tank wagon used for the conveyance in bulk of inflammable liquid must comply with the following conditions:—

- (a) discharge from each tank shall be controlled by an internal shut-off valve in addition to a valve and cap at each discharge point;
- (b) discharge points, whether at the rear or at the side of the vehicle, shall be so placed that they are not liable to become damaged—
 - (i) in the normal course of conveyance; or
 - (ii) in the event of an accident to the vehicle;
- (c) either-
 - (i) an effective weatherproof vent, covered by a screen of approved metallic gauze or equivalent of at least 140 meshes per cm2 shall—
 - (A) be fitted to each tank; and
 - (B) be so designed as to prevent escape of liquid should the vehicle overturn; or
 - (ii) the tank may be fitted with an approved pressure and vacuum relief vent that will prevent escape of liquid while permitting relief of pressure and vacuum within the tank;
- (d) the electrical system shall have the wiring so fixed and protected as to reduce the risk of damage, and a cut-off switch shall—
 - (i) be provided and installed in the cab to isolate the battery of the vehicle; and
 - (ii) be kept in the open position when the vehicle is garaged;
- (e) the battery shall—
 - (i) be located in an easily accessible position; and
 - (ii) be enclosed in a box having an electrically insulated cover;
- (f) engine exhausts shall be carried to the front of the vehicle or otherwise fitted in an approved position;
- (g) ullage space of not less than 3% of the tank capacity shall be left when filling inflammable liquid or dangerous goods of Class 1 or 2 into any tank or into any compartment of a tank;
- (h) any open hatch on a tank shall be securely closed and locked after filling;
- (i) the dip pipe of a tank shall be vented into the ullage space by means of metallic gauze, or equivalent vents, having not less than 140 meshes per cm2;

- (j) the tank shall be fitted with strong metal fittings at each side of the top of the tank and projecting at least 25 mm vertically above any hatch, valve, pipe or other fittings so as to protect the fittings from damage if the tank should roll over sideways;
- (k) the metal fittings referred to in Paragraph (j), shall, whenever practicable, be in the form of inverted U coamings of not less than 200mm steel.

65. POWER-DRIVEN PUMPING UNITS, ETC.

- (1) Power-driven pumping units or metering units must not be fitted to a vehicle used for the conveyance in bulk of inflammable liquid except, subject to Subsection (2), with the approval of the Chief Inspector either generally or in a particular case, and then only if the pumping unit is of an approved type.
- (2) Pumping units approved under Subsection (1) must not be operated unless-
 - (a) all tank openings are closed, except the vent and the connection to the pump or meter; and
 - (b) any spillage has been disposed of,

but this subsection does not apply to any such unit that is a part of the engine of the vehicle.

66. DELIVERY TO UNDERGROUND TANK.

Before inflammable liquid is delivered from a tank on a vehicle into an underground tank, the person in charge must—

- (a) ascertain and be quite sure that the underground tank will receive the quantity that it is proposed to deliver; and
- (b) ensure that any connection to the fill pipe of the underground tank is securely closed gas-tight.

67. DISCHARGE TO BE IN OPEN.

- (1) Subject to Subsection (2), inflammable liquid or dangerous goods of Class 1 must not be discharged from a tank on a vehicle unless the vehicle is—
 - (a) out in the open air; or
 - (b) under a roof cover that has not more than two sides enclosed and is fully open on the remaining sides.
 - (2) Subsection (1) does not apply where—
 - (a) special circumstances apply; and
 - (b) special precautions to the satisfaction of the Chief Inspector are taken.

68. INSTRUCTION OF DRIVERS.

Where a vehicle is used for the conveyance of any inflammable liquid or dangerous goods, the employer must ensure that the driver and other persons employed on the vehicle—

- (a) have received adequate instruction in all safety measures to be observed and complied with in relation to the driving and operation of the vehicle and its equipment; and
- (b) are advised of the responsibilities imposed on them under this Part.

69. REPAIR OF TANKERS, ETC.

A person must not take, or permit or cause to be taken, any tank used for conveyance of any inflammable liquid or dangerous goods in bulk into any repair shop or workshop (other than one situated on premises owned by the owner of the tank) for carrying out any repairs, alterations or modifications to the tank or to the vehicle, unless one of the following precautions is taken:—

- (a) if the tank is to remain on the premises overnight, it is-
 - (i) emptied; and
 - (ii) made free of inflammable vapours; and
 - (iii) tested with an approved detecting apparatus for inflammable vapours,

and work must not be commenced on the tank until the tests indicate that it is safe to do so:

- (b) if the tank is not required to remain on the premises overnight, it is-
 - (i) made free of inflammable vapours; and
 - (ii) is tested in accordance with Paragraph (a),

or-

- (iii) emptied; and
- (iv) then filled with water to float off any residual inflammable liquid; and
- (v) while still full of water, sealed off at all openings, other than the vents, by screw caps, blank flanges or other approved means.

70. CONVEYANCE OF EXPOSED CINEMATOGRAPH FILM.

- (1) Exposed cinematograph film the net weight of which exceeds $4.5~\mathrm{kg}$ must not be conveyed—
 - (a) by a road vehicle, unless the whole of the film is—
 - (i) completely enclosed in substantial and suitable insulated metal receptacles as defined in Section 38; or

- (ii) conveyed in an approved vehicle that has a complete enclosed carrying space; or
- (b) by ship, unless–
 - (i) the film is placed in individual metal containers that are packed in outer wooden cases; or
 - (ii) the film is completely enclosed in a substantial and suitably insulated metal receptacle or receptacles of—
 - (A) a type defined in Section 38; or
 - (B) approved by the Chief Inspector.

Penalty: A fine not exceeding K200.00.

- (2) Notwithstanding Subsection (1), the conveyance of exposed cinematograph film between theatres during performances (known as "switching") is lawful, where—
 - (a) the film is placed in metal containers; and
 - (b) the containers are carried in a bag made of canvas or other suitable material.
- (3) Exposed cinematograph film the net weight of which does not exceed 4.5 kg must not be conveyed in a road vehicle or by rail or ship unless the film—
 - (a) is conveyed in accordance with the respective requirements of this section; or
 - (b) is enclosed in a metal container and the container is adequately wrapped.

Penalty: A fine not exceeding K50.00.

(4) Exposed cinematograph film of any weight must not be conveyed in close proximity to any storage battery, or electrical equipment of a similar nature.

Penalty: A fine not exceeding K100.00.

PART VIII. - PIPE-LINES.

71. INTERPRETATION OF PART VIII.

In this Part, "pipe-lines" means pipe-lines used for the transmission or pumping of inflammable liquid or dangerous goods.

72. CONSTRUCTION OF LINE PIPES.

Line pipes shall be constructed in accordance with-

- (a) the American Petroleum Institute Specification for Line Pipe (A.P.I. Standard 5-L), as in force from time to time; or
- (b) some other prescribed specification.

73. WELDING, ETC., OF JOINTS.

Joints in pipe-lines must be welded whenever practicable, and otherwise be made with flanged ends or other approved means.

74. CONSTRUCTION OF PIPE-LINE CONTROL POINTS.

Cast steel, rising spindle gate valves, fitted with right-hand threads, must be used at pipe-line control points.

75. MARKING OF PIPE-LINES AND CONTROL VALVES.

Pipe-lines and control valves must be marked as required by the Chief Inspector.

76. TESTING OF VALVES BEFORE PUMPING.

Valves and other appliances used during pumping operations must be tested on each occasion before pumping commences to ensure certainty of safe operation.

77. TESTING OF PIPE-LINES.

- (1) Every pipe-line must be pressure-tested—
- (a) at regular intervals; or
- (b) immediately before each operation of pumping inflammable liquid through the pipe-line.
- (2) Pressure tests must be made at a pressure of 25% in excess of the normal operating pressure, the full test pressure being maintained for the period of the test with a minimum period of 30 minutes.
- (3) After any test made in accordance with this section, any defect disclosed must be repaired before the pipe-line is again used.

Penalty: A fine not exceeding K200.00.

78. PIPE-LINES TO BE REGULARLY PATROLLED WHEN IN USE.

During tests preceding the commencement of pumping operations, and during pumping operations, pipe-lines must be regularly patrolled throughout their full length so that leakages may be detected.

Penalty: A fine not exceeding K50.00.

79. LAYING OF PIPE-LINES.

- (1) Pipe-lines not situated on wharves must be laid above ground wherever possible.
 - (2) Above ground pipe-lines-
 - (a) must be properly supported to a height of not less than 150 mm above ground; and
 - (b) must be securely fixed; and
 - (c) must not—
 - (i) rest directly on wood; or
 - (ii) be exposed unduly to mechanical injury.

Penalty: A fine not exceeding K100.00.

80. UNDERGROUND PIPES.

- (1) Before a pipe-line is laid-
- (a) data regarding the corrosive tendencies or other characteristics of the soil in which it is to be laid must be submitted to the Chief Inspector by the owner; and
- (b) it must be suitably protected on the outside in such manner as the Chief Inspector requires.
- (2) Underground pipe-lines must be examined by the owner or the operator at intervals not exceeding 450 m, at least once in every five years.
- (3) The results of an examination under Subsection (2) must be recorded and the record made available for perusal by an Inspector when required by him.

Penalty: A fine not exceeding K100.00.

81. PIPE-LINES UNDER STREETS, ETC.

Pipe-lines laid under roads or streets, or that may be subjected to possible heavy loads, must be installed in accordance with—

(a) the plans and specifications of the recommended practice on forms of agreement and specifications for pipe-line crossings under railroad tracks issued by the American Petroleum Institute (A.P.I. Code No. 26), as in force from time to time; or

(b) such other specification or proposal in regard to sleeving or culverting as is prescribed.

Penalty: A fine not exceeding K200.00.

82. PIPE-LINES UNDER SURFACES SUBJECT TO HEAVY TRAFFIC.

Pipe-lines laid in the ground where the surface is subject to loading or vehicular traffic must have at least 600 mm of cover of an approved material over the top of the pipe (without taking account of any flanges), and—

- (a) proper access pits, with covers, must be provided for all valves; and
- (b) all joints must be readily accessible.

Penalty: A fine not exceeding K100.00.

83. PIPE-LINES FOR TRANSMISSION OF GOODS WITH FLASH POINT LESS THAN 65° C.

(1) Pipe-lines used for the transmission of inflammable liquid or dangerous goods having a flash point less than 65° C must be bonded and earthed throughout their entire length to the satisfaction of the Chief Inspector.

Penalty: A fine not exceeding K200.00.

- (2) The resistance to earth must not exceed 10 ohms.
- (3) Pipe-lines must be tested for resistance to earth at intervals of not more than 12 months.
 - (4) Pipe-lines must be kept free from leakage and be gas-tight.
- (5) On the completion of pumping operations, and before the hoses are disconnected, the pipe-lines must be—
 - (a) cleared of inflammable liquid or dangerous goods by flushing with water; and
 - (b) kept full of water.

Penalty: A fine not exceeding K200.00.

(6) In approved circumstances, other than in cases where a pipe-line is used for the pumping or transmission of inflammable liquid or dangerous goods between ships and storage tanks, the Chief Inspector may waive the requirement of Subsection (5).

84. PIPE-LINES FOR TRANSMISSION OF LIQUID WITH FLASH POINT NOT LESS THAN 65° C.

(1) Pipe-lines used for the transmission of liquid derived from petroleum, shale or coal and having a flash point not less than 65° C must be kept in good condition and free from leakage, and all due precautions taken to prevent the escape of any such liquid.

(2) On completion of pumping operations, the pipe-lines must be cleared of the liquid as far as practicable.

85. PUMPING RATE AT COMMENCEMENT OF PUMPING.

- (1) At the commencement of pumping through pipe-lines of inflammable liquid or dangerous goods, and after each change of grade at which water clearance is employed, the velocity in the pipe-line must be restricted to a maximum of 1 m per second for a period—
 - (a) of 20 minutes; or
 - (b) sufficient to clear the line twice,

whichever is the longer.

- (2) The pumping rate specified in Subsection (1) must also be observed when filling empty tanks until—
 - (a) in the case of fixed roof tanks—the fill-pipe is covered; or
 - (b) in the case of floating roof tanks—the roof is afloat.
- (3) Where the pipe-line varies in bore, the rate specified in Subsection (1) is the rate that applies to the part having the smallest bore.

86. FLEXIBLE HOSES.

A flexible hose used in connection with the pumping of inflammable liquid, dangerous goods or liquid derived from petroleum, shale or coal (with the exception of mineral spirit or dangerous goods of Class 1 contained in the fuel tank of a vehicle and intended for the propulsion of that vehicle) must—

- (a) be of approved quality; and
- (b) have a safe working pressure of at least 690 kPa; and
- (c) be properly and adequately supported to prevent chafing and kinking during operations; and
- (d) be identified with—
 - (i) the number of the hose; and
 - (ii) the safe working pressure; and
 - (iii) the name of the owner or operator, or other approved method of identification; and
- (e) if used in connection with pumping to or from a ship, be fitted with 44/.315 copper wire mechanically connected to the metallic fitting at each end of the hose or be connected by other approved means so that complete electrical connection is ensured between the pipe-line and the vessel being discharged or loaded; and

(f) be tested by an Inspector at intervals of not more than six months, or as required by the Chief Inspector, to ensure its continued compliance with this section.

Penalty: A fine not exceeding K50.00.

87. ELECTRICAL EQUIPMENT USED IN CONNECTION WITH PUMPING.

Electrical equipment used in connection with the pumping of inflammable liquid, dangerous goods or a liquid derived from petroleum, shale or coal, must—

- (a) conform to—
 - (i) the Wiring Rules of the Standards Association of Australia, as in force from time to time; or
 - (ii)¹ the provisions of the regulations under the Electricity Industry Act (Ch.78); and
- $(b)^2$ must be tested at intervals of not more than six months to ensure their continued compliance with those Rules or regulations.

88. CATHODIC PROTECTION.

Cathodic protection for a pipe-line laid under water may be required by the Chief Inspector.

89. PIPE-LINES SUPPORTED BY WHARVES.

Where a pipe-line is supported by a wharf, it must be secured in an adequate manner, proper provision including thrust blocks at bends being made for expansion, movement and anchorage.

90. ACCESS OPENING FOR PIPE-LINES BELOW WHARVES.

Access opening with covers must be provided to all valves and outlets where a pipe-line is placed below the deck of a wharf.

91. VALVES IN PIPE-LINES ON WHARVES.

- (1) A pipe-line on a wharf must be fitted with a stop valve at the outer or seaward end, and an approved non-return valve must be placed immediately behind the connection between the flexible hose and the end of the shore pipe-line.
- (2) If so required by the Chief Inspector, an approved non-return valve must be placed in the pipe-line at the shore end of the wharf.

Section 87 Amended by S.R. 2006, No. 68.

² Section 87 Amended by S.R. 2006, No. 68.

92. SEAWARD END OF PIPE-LINES ON WHARVES.

The seaward end of a pipe-line on a wharf must be made liquid tight by fitting with—

- (a) blank flanges properly secured and fastened by at least four bolts; or
- (b) screwed caps; or
- (c) other similar fittings to the satisfaction of the Chief Inspector.

93. PIPE-LINES FOR PUMPING TO OR FROM A VESSEL OF GOODS HAVING FLASH POINT NOT LESS THAN 65 ° C.

- (1) A pipe-line used in connection with the pumping, to or from a vessel, of liquid derived from petroleum, shale or coal, having a flash point not less than 65° C, must be provided with approved drip trays or drums under the seaward end of the pipe.
 - (2) Clearing of drip trays or drums must be effected-
 - (a) at least after the termination of each pumping operation; and
 - (b) as often as required by the Chief Inspector.

PART IX. - MISCELLANEOUS.

94. RESPONSIBILITY FOR COMPLIANCE WITH REGULATION.

- (1) Unless otherwise expressly prescribed it is the duty of—
- (a) every person keeping inflammable liquid or dangerous goods in a licensed store or in registered premises; or
- (b) every person—
 - (i) in or about any such premises or store; or
 - (ii) conveying, handling, loading or unloading inflammable liquid or dangerous goods; or
 - (iii) assisting in any such operation; and
- (c) the employer of any person engaged in any such operation, to comply with, and to ensure compliance with, the requirements of this Regulation.
- (2) A person who contravenes, or permits any contravention of, any provision of this Regulation is guilty of an offence, and where no other penalty is provided is liable to a penalty of a fine not exceeding K100.00.

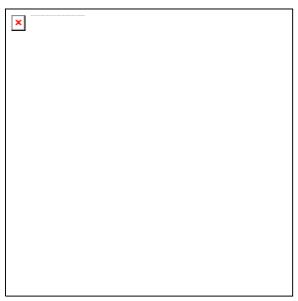
SCHEDULE 1

PAPUA NEW GUINEA.

Inflammable Liquid Act 1953.

Form 1 – Application for Licence/Certificate of Registration to keep inflammable Liquid and/or Dangerous Goods in Store/Registered Premises.

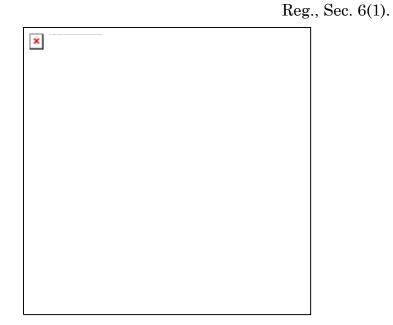
Reg., Sec. 4(1), (2). Form 1.



PAPUA NEW GUINEA.

Inflammable Liquid Act 1953.

Form 2 – Licence to keep a Store where inflammable Liquid and/or Dangerous Goods may be kept.



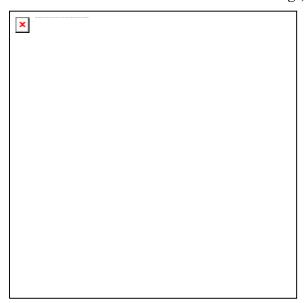
PAPUA NEW GUINEA.

Inflammable Liquid Act 1953.

Form 3 – Certificate of Registration of Premises where Inflammable Liquid and/or Dangerous Goods may be kept.

Reg., Sec. 6(2). Form 3.

Form 2.

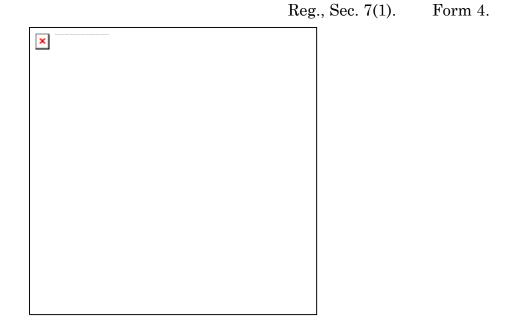


Form 5.

PAPUA NEW GUINEA.

Inflammable Liquid Act 1953.

Form 4 – Application for Transfer, Alteration or Amendment of a Licence.



PAPUA NEW GUINEA.

Inflammable Liquid Act 1953.

Form 5 - Application for Alteration or Amendment of a Certificate of Registration.

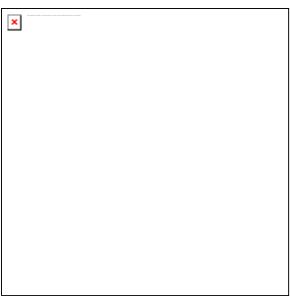
Reg., Sec. 7(2).

PAPUA NEW GUINEA.

Inflammable Liquid Act 1953.

Form 6 – Application for Approval to make Alterations or Additions to a Licensed Store/Registered Premises.

Reg., Sec. 11(2). Form 6.

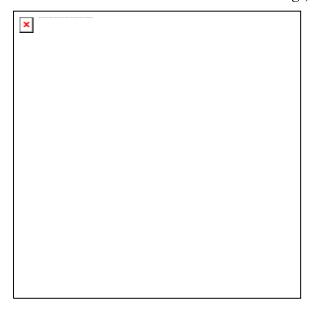


PAPUA NEW GUINEA.

Inflammable Liquid Act 1953.

Form 7 - Record of Inflammable Liquid and/or Dangerous Goods supplied.

Reg., Sec. 20(1). Form 7.



SCHEDULE 2 - TEST AND TEST APPARATUS.

Act, Sec. 3.Reg., Sec. 3.

Note In this Schedule, "oil" means any liquid to be tested for the purpose of ascertaining its character as inflammable liquid or dangerous goods.

PART I - NATURE OF THE TEST APPARATUS.

- 1. The apparatus consists of the following parts—
 - (a) an oil cup; and
 - (b) a cover with slide, test-lamp for oil or test-flame arrangement for use with gas, and clockwork arrangement for opening and closing the holes in the cover and for dipping the test-flame; and
 - (c) a water bath or heating vessel; and
 - (d) a tripod (with jacket), and spirit lamp or gas arrangement for heating the water bath; and
 - (e) a round bulb thermometer for testing the temperature of the oil, with scale ranging from 12.8° C to 71.1° C; and
 - (f) a long bulb thermometer for testing the temperature of the water, with scale ranging from 32.2° C to 104.4° C; and
 - (g) a mercurial or aneroid barometer.
- **2.** The oil cup is a cylindrical flat-bottomed vessel, 50.8 mm in diameter, 55.88 mm in internal height made of gunmetal or brass (1.4 mm), and tinned or silvered inside.
- 3. The oil cup is provided with a projecting rim, 12.7 mm wide, 9.5 mm from the top and 47.6 mm from the bottom of the cup, on which it rests when inserted in the water bath. A gauge is fixed on the inside of the cup to regulate the height to which it is to be filled with the sample under examination. The distance of the point from the bottom of the cup is 38.1 mm. The cup is provided with a close-fitting overlapping cover, made of brass (0.8 mm), which carries the thermometer, the test-lamp or test-flame arrangement, and the adjuncts to them.
- 4. The test lamp (which has a spout, the mouth of which is 1.588 mm in diameter) or the test-flame arrangement is suspended on two supports by means of trunnions, which allow it to be easily inclined to a particular angle and restored to its original position.
- **5.** The socket in the cover, which is to hold a round bulb thermometer for indicating the temperature of the oil during the testing operation, is so adjusted that the bulb of the latter is always inserted to a distance of 38.1 mm below the centre of the lid.
- **6.** The cover is provided with three holes—one in the centre (129 mm2) and two smaller ones (each 38.7 mm2) close to the sides. These are closed and opened by means of a pivoted slide.
- 7. When the slide is moved so as to uncover the holes, the suspended lamp or testflame arrangement is caught by a projection fixed on the slide, and tilted in such a

way as to bring the end of the spout or test-flame just below the surface of the lid. As the slide moves back so as to cover the holes the lamp returns to its original position.

- **8.** On the cover, in front of and in line with the nozzle of the lamp, is fixed a white bead, the diameter of which represents the size of the test-flame to be used.
- The water bath or heating vessel consists of two flat-bottomed copper cylinders (0.630 mm),-an inner one of 76.2 mm in diameter and 63.5 mm in height, and an outer one of 139.7 mm in diameter and 146.05 mm in height, the cylinders are soldered to a circular copper plate (1 mm) perforated in the centre, which forms the top of the bath, in such manner as to enclose the space between the cylinders, but leaving access to the inner cylinder. The top of the bath projects both outwards and inwards about 9.5 mm-that is, its diameter is about 19.05 mm greater than the body of the bath, while the diameter of the circular opening in the centre is about the same amount less than that of the inner copper cylinder. To the inner projection of the top is fastened, by six small screws, a flat ring of ebonite, the screws being sunk below the surface of the ebonite to avoid metallic contact between the bath and the oil cup. The exact distance between the sides and bottom of the bath and the oil cup is 12.7 mm. The bath is therefore so constructed that when the oil cup is placed in position an air space or air chamber intervenes between the two; consequently, in applying the test tools flashing below 46.11° C the heat is transmitted gradually to the oil from the hot water, through the air space. The water bath is fitted with a socket, set at a right-angle, for receiving a long bulb thermometer to indicate the temperature of the water. It is also provided with a funnel, an overflow pipe, and two handles. The water bath rests on a tripod stand, which is fitted with a copper cylinder or jacket (0.630 mm), 165.1 mm in diameter, so that the bath is surrounded by an enclosed air space, which retains and regulates the heat. One of the legs of the stand serves as a support for a spirit lamp, which is attached to it by a small swing bracket. The distance of the wick-holder from the bottom of the bath is 25.4 mm.
- 10. The clockwork arrangement by which, during the operation of testing, the slide is withdrawn, and the test flame dipped into the cup and raised again as the slide is replaced, is provided with a ratchet key for setting it in action for each test, and with a trigger for starting it each time that the test-flame is applied. From the beginning to the end of the movement of the slide the time taken is to be exactly two seconds.

Note When gas is available it may be conveniently used instead of the oil lamp, and for this purpose a test-flame arrangement for use with gas may be substituted.

PART II – DIRECTIONS FOR PREPARING AND USING THE TEST APPARATUS.

Division 1.

Preparing the Water Bath.

- 11. The water bath is filled by pouring water into the funnel until it begins to flow out at the overflow pipe.
- **12.** The temperature of the water at the commencement of each test, as indicated by the long bulb thermometer, is to be as follows:—
 - (a) 54.4° C when a flash point at or about 22.8° C is to be observed; and

- (b) 71.1° C when a flash point at or about 37.8° C is to be observed; and
- (c) 82.2° C when a flash point at or about 65.6° C is to be observed.
- 13. The required temperature is attained in the first instance by mixing hot and cold water, either in the bath or in a vessel from which the bath is filled, until the thermometer that is provided for testing the temperature of the water gives the proper indication, or by heating the water in the bath by means of a spirit lamp or gas arrangement until the required temperature is indicated.

Division 2.

Preparing the Test-Lamp.

- 14. The test-lamp is fitted with a piece of cylindrical wick of such thickness that it fills the wick holder, but may be readily moved to and fro for the purpose of adjusting the size of the flame.
- 15. In the body of the lamp is placed, a small tuft of cotton wool moistened with petroleum on the wick that is coiled within the body of the lamp, any oil not absorbed by the wool being removed.
- **16.** When the lamp has been lighted, the wick is adjusted by means of a pair of forceps or a pin until the flame is of the size of the bead fixed on the cover of he oil cap.
- 17. Should a particular test occupy so long a time that the flame begins to get smaller through the supply of oil in the lamp becoming exhausted, three or four drops of petroleum are allowed to fall on the tuft of wool in the lamp from a dropping-bottle or pipette provided for the purpose. This can be safely done without interrupting the test.
- 18. When using gas for testing, the jet is to be lighted and then adjusted by means of the tap controlled by means of a screw pinch cock or fine tap until the flame is the size of the bead fixed on the cover of the oil cup.

PART III - FILLING THE OIL CUP.

- 19. Before the oil cup is filled the lid is to be made ready by being placed on the cup, i.e., the round bulb thermometer is to be inserted into the socket, so that the projecting rim of the collar with which it is fitted touches the edge of the socket, and the test lamp is to be placed in position.
- **20.** The oil cup is to be cooled when necessary to a temperature not exceeding—
 - (a) 15.6° C, when a flash point at or about 22.8° C is being observed; or
 - (b) 29.4° C, when a flash point at or about 37.8° C is being observed; or
 - (c) 57.2° C, when a flash point at or about 65.6° C is being observed,

by placing it bottom-downwards in water at a suitable temperature.

21. The oil cup is now to be rapidly wiped dry and placed on a level surface in a good light, and the oil to be tested is poured in without splashing until its surface is level with the point of the gauge that is fitted in the cup.

22. The lid is then put on the cup at once and pressed down so that its edge rests on the rim of the cup.

PART IV - APPLICATION OF THE TEST.

- **23.** The water bath, with the thermometer in position, is placed in some locality where it is not exposed to currents of air, and where the light is sufficiently subdued to admit of the size of the entire test-flame being compared with that of the bead on the cover.
- **24.** The cup is carefully lifted, without shaking it, and placed in the bath, the test lamp is lighted, and the clockwork wound up by turning the key.
- **25.** The thermometer in the oil cup is now watched, and the clockwork is set in motion by pressing the trigger when the temperature has reached—
 - (a) 17.2° C, when a flash point at or about 22.8° C is being observed; and
 - (b) 32.2° C, when a flash point at or about 37.8° C is being observed; and
 - (c) 60° C, when a flash point at or about 65.6° C is being observed.
- **26.** If no flash takes place, the clockwork is at once re-wound and the trigger pressed at the next higher degree, and so on at every degree rise of temperature until the flash occurs.
- **27.** When a flash point at or about 46.1° C is being observed, the air chamber is to be filled to a depth of 38.1 mm with cold water before the oil cup containing the oil to be tested is placed in position.
- **28.** The temperature at which a flash occurs, if not within 4.44° C of the temperature at which the testing was commenced, is the observed flash point of the oil, and by correction of the observed flash point for atmospheric pressure as described in Part V of this Schedule the true flash point is obtained.
- 29. If, however, the flash takes place at any temperature within 4.44° C of the temperature at which the testing was commenced, the test is to be rejected, and the whole operation of testing is to be repeated with a fresh portion of the sample—the testing however, to begin at a temperature 5.55°C lower than the temperature at which the flash was previously obtained. If necessary, this procedure shall be repeated with fresh portions of oil until a flash has been obtained at a temperature not within 4.44° C of the temperature at which the testing was commenced.
- **30.** The temperature at which the last-mentioned flash occurs is the observed flash point of the oil, and by correction of the observed flash point for atmospheric pressure as described in Part V of this Schedule the true flash point is obtained.
- **31.** In repeating a test, a fresh sample of oil must always be used, the tested sample being thrown away, and the cup must be wiped dry from any adhering oil and cooled, as described above in this Schedule before receiving the fresh sample.
- **32.** If no flash has occurred when a temperature has been reached that is not within 4.44° C of the temperature at which the testing was commenced, and that, after correction for atmospheric pressure, is not less than 22.8° C, and the tests are

not required to be continued, the oil shall be deemed to have a true flash point of not less than 22.8° C.

- **33.** If no flash has occurred when a temperature has been reached that is not within 4.44° C of the temperature at which the testing was commenced, and that, after correction for atmospheric pressure, is not less than 37.8° C, and the tests are not required to be continued, the oil shall be deemed to have a true flash point of not less than 37.8° C.
- **34.** In the same manner, if no flash has occurred when a temperature has been reached that is not within 4.44° C of the temperature at which the testing was commenced, and that, after correction for atmospheric pressure, is not less than 65.6° C, and the tests are not required to be continued, the oil shall be deemed to have a true flash point of not less than 65.6° C.

PART V - CORRECTION FOR ATMOSPHERIC PRESSURE.

- **35.** As the flash point of an oil is influenced by changes in atmospheric pressure to an average of 0.026 degrees for every millibar of the barometer, a correction of the observed flash point is necessary whenever the barometer does not stand at 1,017 mb. This correction is to be made in the following manner:—
 - (a) if the barometer stands at less than 1,017 mb (the normal barometric reading), add to the observed flash point 0.026 times the difference (measured in millibars) between the actual and normal barometer; and
 - (b) if the barometer stands above 1,017 mb, deduct from the observed flash point 0.026 times the difference between the actual and normal barometer; and
 - (c) the nearest whole number to the result of this correction is to be taken as the corrected flash point, and if the result is exactly midway between the two whole numbers the higher whole number is to be taken.
- **36.** The readings of the barometer are to be corrected readings, in accordance with the corrections applicable to the instrument in use.
- **37.** The instrument must be compared periodically with the standard barometer at the office of the Chief Inspector, and regulated by it.

PART VI – APPLICATION OF THE TEST TO VISCOUS FLUIDS OR PREPARATIONS.

- **38.** If the flash test has to be applied to substances of a viscous or semi-solid nature that cannot be poured (such as solutions of india-rubber in mineral naptha), the mode of proceeding is as follows:—
 - (a) 28.4 g or two tablespoonfuls of the substance to be tested is placed in the cup, and the cover is put on; and
 - (b) the air chamber in the water bath is filled with water to a depth of 38.1 mm and the temperature of the water bath is raised to 32.2°C; and

- (c) the cup is then put into the bath, and the temperature of the water bath maintained at 32.2°C throughout the test; and
- (d) after the lapse of 15 minutes the test flame is to be applied; and
- (e) if no flash occurs the heating is continued for another 15 minutes, and the test-flame again applied, and so on until a flash takes place, or the temperature in the cup has reached 32.2°C and so on.
- **39.** The temperature at which a flash occurs is the observed flash point of the substance, and, subject to correction for atmospheric pressure as described in Part V of this Schedule is the true flash point.

SCHEDULE 3 - FEES.

³Reg., Secs. 3(2), 4(1), (2), 7.

K

- 1. Fees for tests and analysis-
 - (a) Determination of flash point—
 - (i) for each sample or article 100.00 tested
 - (b) Testing, certificate and sampling of apparatus—

(i) if found correct K300.00

(ii) if found incorrect 500.00

2. Registration of premises other than bulk 50.00 depot

3. Registration of stores or premises as a bulk depot-

> (a) initial registration 10,000.00

> renewal of registration (b) 5,000.00

3A. Conveyance of inflammable liquid and dangerous goods licence.

issue of licence K 100.00

renewal of licence K100.00

4. Store Licences-

Licences other than Division C initial renewal of (a) licences application application (i) where liquid 100.00 50.00 total storage does not exceed 22,750 litres 300.00 (ii) where total liquid 150.00

storage exceeds 22,750 litres but does not exceed 45,500 litres

Schedule 3 amended by No. 22 of 1975, s1; replaced by Inflammable Liquid (Amendment) Regulation 1987 (No. 9 of 1987), s1; replaced by Inflammable Liquid (Amendment) Regulation 1998 (No. 31 of 1998), s1; Amended by S.R. 2002, No. 21; Amended by S.R. 2002, No. 21.

	K	K
(iii) where total liquid storage exceeds 45,500 litres but does not exceed 227,500 litres	500.00	250.00
(iv) where total liquid storage exceeds 227,500 litres but does not exceed 2,725,000 litres	700.00	350.00
(v) where total liquid storage exceeds 2,725,000 litres but does not exceed 4,500,000 litres	1,000.00	500.00
(vi) where total liquid storage exceeds 4,500,000	3,000.00	1,500.00
(b) Division C licence	500.00	250.00
5. Registration or Approval of a store or premises as a depot in relation to keeping of light liquefied petroleum gas	10,000.00	5,000.00
6. Transfer, alteration or amendment of licence	500.00	
7. Alteration or amendment of certificate of registration	K50.00	
8. Pump Licence	K200.00	
9. Approval of permission of the Chief Inspector to fit onto a vehicle a power-driven pumping unit or metering unit	500.00	500.00
10. Approval of permission of the Chief Inspector for conveyance of inflammable liquid or dangerous goods of class 1 or 2	initial approval 3,000.00	renewal of approval 1,500.00
	3,300.00	1,500.00

SCHEDULE 4 - SEPARATION DISTANCES FOR ADJOINING DEPOTS.

Reg., Sec. 16.

TABLE I.—Where Mineral Spirit and/or Dangerous Goods of Class 1 (with or without Mineral Oiland/or Dangerous Goods of Class 2) are kept or to be kept—

In an underground tank depot, in quantity exceeding 2,250 litres but not exceeding-	ground tank	ground tank depot, or other depot not separated from protected works by a screen wall, in quantity	Distance not less than-
litres	litres	litres	metres
9,000	4,500	1,125	3.1
10,800	5,400	1,350	3.4
12,600	6,300	1,575	3.7
14,400	7,200	1,800	4
16,200	8,100	2,025	4.3
18,000	9,000	2,250	4.6
32,400	16,200	4,050	4.9
47,200	23,600	5,900	5.2
61,200	30,600	7,650	5.5
75,600	37,800	9,450	5.8
90,000	45,000	11,250	6.1
99,000	49,500	12,375	6.4
108,000	54,000	13,500	6.7
117,000	58,500	14,625	7
126,000	63,000	15,750	7.3
135,000	67,500	16,875	7.6
144,000	72,000	18,000	7.9
180,000	90,000	25,500	9
360,000	180,000	45,000	12

In an underground tank depot, in quantity exceeding 2,250 litres but not exceeding-	ground tank depot, or other depot separated from protected	ground tank depot, or other depot not separated from protected works by a screen wall, in quantity	
litres	litres	litres	metres
450,000 and over	360,000	90,000	15
	720,000	180,000	23
	1,440,000 and over	450,000	30
		630,000	35
		1,260,000	40
		1,800,000 and over	45

TABLE II.—Where Mineral Oil and/or Dangerous Goods of Class 2 only are kept or to be kept.

In an underground tank depot, in quantity exceeding 3,600 litres but not exceeding—	In an above- ground tank depot, or other depot separated from protected	depot, or other depot not separated from protected works by a screen wall, in quantity	Distance not less than-
litres	litres	litres	metres.
18,000	9,000	4,500	3
36,000	18,000	9,000	4.6
65,600	32,800	16,400	4.9
94,500	47,200	23,600	5.2

In an underground tank depot, in quantity exceeding 3,600 litres but not exceeding—		ground tank depot, or other depot not separated from protected works by a screen wall, in quantity	
litres	litres	litres	metres.
180,000	90,000	45,000	6
360,000	180,000	90,000	9
720,000	360,000	180,000	12
1,440,000 and over	720,000	360,000	15
	1,440,000 and over	720,000	23
		1,440,000 and over	30

SCHEDULE 5 – SEPARATION DISTANCES FOR TANKS WITHIN THE SAME PREMISES.

Reg., Sec. 17.

TABLE 1.—Premises for which the Total Licensed Storage of Inflammable Liquid or Dangerous Goods does not exceed 2,725,000 litres or if greater is contained in buried tanks or elevated tanks.

Type of	Minimum Separat	ion Distances.	
tank.			
	Between tanks in the same depot.	Between tanks and drum depots.	Between tanks and outer boundary of premises.
Buried	To be governed solely by constructional and operational conditions.	1.8 metres	1.8 metres
Groundlevel		6 metres	As provided in Section 29.
Elevated		6 metres	As provided in Tables I and II of Schedule 4 but not less than 6 metres for any tank.

TABLE II.—Premises for which the Total Licensed Storage of Inflammable Liquid or Dangerous Goods exceeds 2,750,000 litres contained in above-ground tanks, other than elevated tanks.

Type of tank.	Minimum Separation Distances.		
	Between tanks in the same depot.	Between tanks and drum depots.	Between tanks and outer boundary of premises.
Above-ground	Diameter of smaller tank or 15 m, whichever is the less.	Diameter of tank or 15 m, whichever is the less.	that the Chief

SCHEDULE 6 – SEPARATION OF DISTANCES FOR DEPOTS FOR COMPRESSED ACETYLENE.

Reg., Sec. 46(2).

	neg., Dec. 40(2).
For the keeping of acetylene in quantities exceeding 50 m3 but not exceeding-	Distance to be maintained-
cubic metres	metres
570	3
1,125	6
2,250 and over	15

Inflammable Liquid Regulation 1968