AS 3664—1989

Australian Standard®

Road/rail tankers—Transfer connectors for flammable and combustible liquids

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The following interests are represented on Committee ME/50:

Australian Chemical Industry Council
Australian Institute of Petroleum
Australian Road Transport Federation
Chemical Importers and Exporters Council of Australia
Commercial Vehicle Industry Association of Australia
Confederation of Australian Industry
Department of Defence
Department of Industrial Relations and Employment, N.S.W.
Department of Labour, S.A.
Department of Labour, Vic.
Department of Mines, Tas.
Department of Mines, W.A.
Department of Transport and Communications
Metal Trades Industry Association of Australia
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PREFACE

This Standard was prepared by the Standards Australia Committee on Road/Rail Tankers—Fluid Transfer Components at the request of a special conference of interested Government and industry bodies convened by Standards Australia in May 1983.

That conference had concluded that variations in types and sizes of transfer couplings then in use could lead to difficulties in normal operations and potential hazards in emergencies, so that standards were necessary to facilitate rationalization.

The committee has decided to deal first with couplings for use with flammable and combustible liquids so as to achieve coverage of petroleum hydrocarbon cargo, which constitutes the bulk of the carriage of dangerous goods. Two types of connector are provided. That for the cargo transfer system is identical with that specified in the Australian Institute of Petroleum AIP CP6—1986, *Code of practice for vehicle bottom loading and vapour recovery*. The other, for the vapour recovery system, is copied from the USA Military Specification MIL-C-27487E, *Coupling halves, Quick-disconnect, Cam-locking type.* In the conversion from the original Standards, which were dimensioned in inches, a minor degree of rounding was applied, mainly to keep tolerances within the bounds of practical measurement, but interchangeability has not been affected.

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Australian Standard

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SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard specifies requirements and interface dimensions, together with certain other critical dimensions, for connectors for cargo transfer and vapour recovery systems for flammable and combustible liquids, of a type defined in AS 1940.

NOTE: The connectors are intended for use with road tankers dealt with in AS 2809.2, or rail tankers according to the ANZR *Manual of standards and recommended practices—Design and construction of rail tank wagons*.

1.2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

AS
1874 Aluminium ingots and aluminium alloy ingots and castings
1940 SAA Flammable and Combustible Liquids Code
2536 Surface texture
2809 Road tank vehicles for dangerous goods
2809.2 Part 2: Tankers for flammable liquids

USA Federal Specification
QQ-A-601 Aluminium alloy sand castings

1.3 DEFINITIONS. For the purposes of this Standard, the definitions below apply.

1.3.1 Authority—the Authority having statutory (legal) control over a particular aspect of a tanker.

1.3.2 Cargo—the liquid to be transported in the tank.

1.3.3 Dry-break connector—a connector designed to ensure that the quantity of liquid released during engagement and disengagement is effectively insignificant.

1.3.4 Tank—a container that is used for transporting the cargo, and is mounted permanently or temporarily on a vehicle, and is not a liquid container having a capacity of 250 L or less or an intermediate bulk container (IBC), or the fuel tank for the vehicle. The term 'tank' embraces the container and all parts which affect its structural integrity.

1.3.5 Tanker—a truck, a trailer, or semitrailer, a unit in a road train, or a specialized rail tank vehicle, incorporating a tank, or having a tank or tanks mounted thereon, either permanently or temporarily.

1.3.6 Transfer connector—a quick-acting device designed to permit the connection of a hose to a tanker for the purpose of cargo transfer for the purpose of cargo transfer and vapour recovery. Components of the coupling are as follows:

(a) *Adaptor*—the male part of the connector, fixed to the tanker or the static installation.
(b) *Coupler*—the female part of the connector, attached to the hose.
(c) *Gasket*—the sealing element between the adaptor and the coupler.

1.3.7 Vapour recovery connector—a connector between the delivery tanker/tank and the receiving tanker/tank, connecting the vapour chambers of both tankers/tanks and preventing the entry of vapours into the atmosphere during the transfer of the product.

1.4 MATERIALS.

1.4.1 Suitability. Components shall be made of materials that are suitable for the conditions of use, and in particular shall be compatible with materials used in adjacent components, and with the liquid or vapour being transferred.

NOTE: The selection of materials that are suitable for use with a particular cargo may require prior consultation.

1.4.2 Adaptor and coupler. Where the adaptor and coupler are of aluminium, the material shall comply with one of the following specifications:

(a) AS 1874 alloy AS 601(T6).
(b) AS 1874 alloy AP 601(T6).
(c) USA Federal Specification QQ-A-601 alloy 356(T6).
(d) USA Federal Specification QQ-A-601 alloy 712.0(T5)
(e) USA Federal Specification QQ-A-601 alloy 713.0(T5).

NOTE: This Clause should not be taken to mean that only aluminium may be used for these components. It is the most usual material, but others may be used for reasons of compatibility or durability.

1.5 DESIGNATION. The connector shall be designated by the number of this Standard, followed by a dash and either the number '2' designating a vapour recovery connector, or the number '3' designating a cargo transfer connector.

1.6 SEALING. The seals of a connector shall prevent the escape of liquid or vapour as relevant, both when connected and when disconnected.

1.7 MARKING. The adaptor and the coupler shall each be marked as follows:

(a) Name or identification mark of the manufacturer.
(b) Designation (see Clause 1.5).

The minimum height of the letters and numbers shall be 6 mm. The marking may be embossed or engraved.

NOTE: Manufacturers making a statement of compliance with this Australian Standard on a product, or on packaging or promotional material related to that product, are advised to ensure that such compliance is capable of being verified.

Independent certification is available from Standards Australia under the StandardsMark Product Certification Scheme. The StandardsMark, shown below, is a (registered) certification trade mark owned by Standards Australia and granted under licence to manufacturers whose products comply with the requirements of suitable Australian Standards and who operate sound quality assurance programs to ensure consistent product quality.

Further information on product certification and the suitability of this Standard for certification is available from Standards Australia's Quality Assurance Services, 1 The Crescent, Homebush, N.S.W., 2140.