

Gas Industry Standard

GIS/E49:2019

Specification for

Polyethylene pipe coil trailers



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Foreword

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Compliance with this engineering document does not confer immunity from prosecution for breach of statutory or other legal obligations.

Mandatory and non-mandatory requirements

For the purposes of a GIS the following auxiliary verbs have the meanings indicated:

- can** indicates a physical possibility;
- may** indicates an option that is not mandatory;
- shall** indicates a GIS requirement;
- should** indicates best practice and is the preferred option. If an alternative method is used then a suitable and sufficient risk assessment needs to be completed to show that the alternative method delivers the same, or better, level of protection.

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Brief history

First published as T/SP/E49	February 2004
Editorial update to comply with GRM	August 2004
Edited by BSI in accordance with BS 0-3:1997	August 2006
Updated to further comply with Working at Height Regulations and other agreed safety improvements	January 2008
Reviewed on behalf of the Gas Distribution Networks' Technical Standard Forum by BSI	November 2014
Updated to include updated vehicle legislation and varying customer towing attachment requirements	August 2019

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1 Scope

This Gas Industry Standard (GIS) specifies requirements for polyethylene pipe coil trailers. It covers polyethylene pipe coil trailers capable of safely storing, transporting and dispensing pipe in the ranges from 63 mm to 180 mm diameter.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Gas Industry Standards

GIS/PL2-2, *Specification for polyethylene pipes and fittings for natural gas and suitable manufactured gas — Part 2: Pipes for use at pressures up to 5.5 bar.*

GIS/PL2-8, *Specification for polyethylene pipes and fittings for natural gas and suitable manufactured gas — Part 8: Pipes for use at pressures up to 7 bar.*

3 Terms and definitions

For the purposes of this GIS the following definitions apply.

3.1

jockey wheel

single wheel assembly used to support the front end of the trailer chassis when the trailer is unhitched from the tow vehicle

NOTE The jockey wheel can be locked at the desired height with the locking handle to facilitate manoeuvring the trailer into position for storage or use, or for coupling it to the tow vehicle by keeping the towing eye and tow hitch at the same height.

3.2

screw jack

arrangement used to lower and raise support legs that support the trailer rear assembly when removed from the tow vehicle

3.3

tow hitch

arrangement for coupling the trailer to the tow vehicle, fitted to the rear of the tow vehicle and jaw-shaped to accept the **towing eye**

NOTE Before towing, the **towing eye** is attached to the **tow hitch** and secured with the **tow pin**.

3.4

tow pin

securing pin for the **tow hitch** and **towing eye**

3.5

towing attachment

means of connecting the trailer to the **tow hitch** comprising the **towing eye**, handbrake, **jockey wheel** and lighting connections

3.6

towing eye

arrangement for coupling trailer to tow vehicle, being the part of the trailer that fits into the **tow hitch** and consists of a circular cast eye type coupling

NOTE Also referred to as the tow eye.

4 General requirements

4.1 All materials and components shall be corrosion resistant and preferably galvanised steel construction (see also Section 6.8).

4.2 The trailer shall be constructed in a way that is robust enough to survive its normal working environment and site conditions such as inclement weather, excavations and public roads.

4.3 Materials and components shall be easy to clean, in terms of both a smooth finish to the material and a design without features that could harbour mud or dirt, with no sharp or protruding edges that could cause injury or damage.

4.4 Safety, operating and maintenance instructions, a parts manual and certification for the first 12 months of use shall be provided with the trailer. A drawing and parts list shall be available to the purchaser on request.

4.5 Where the maximum loaded trailer height exceeds 3.66 m, a maximum height notice shall be displayed prominently on the trailer.

4.6. A drawing shall be provided showing where all warning and safety notices are to be attached and further details are given on markings in Section 10.

4.7 All trailers shall be supplied with ratchet strap assemblies and pipe end restraining clamps permanently fixed to frame so that they cannot be easily removed by operatives/ others. These shall need special tooling to change items if damaged. There shall be an assembly of this sort fitted on both sides of the trailer to allow coil alignment when transporting or dispensing. Method of safely stowing assemblies shall be provided when they are not used for coil.

5 Design

5.1 The trailer shall be designed to ensure that the pipe coil is securely held in the trailer assembly during transportation and dispensing. The stability of the trailer needs to be considered when transporting/ dispensing coils and risk-assessed especially on the larger sizes/ lengths and this may need to be double axle on larger trailers like 180mm.

5.2 The trailer shall be designed so that all operations such as cutting bands, putting pipe behind rollers, attaching/ removing straps and pipe end restraining clamps can be done from ground level.

5.3 The trailer shall be designed so that opening or closing of rear door/ gate or removing/ reinstalling drum rollers or operating bolts/ fixings can be done from ground level.

5.4 The design shall allow the securing strapping, used to keep the pipe coil together, to be easily removed before preparing for dispensing.

5.5 The trailer shall be capable of accommodating pipe supplied in accordance with GIS/PL2-2 and GIS/PL2-8. It shall be fitted with a cage to restrain the coil when loaded and a means of securing the outer end of the coil provided in the design for safety during transport and storage.

5.6 The trailer shall permit the transporting and dispensing of both full and part coils. A means of restraining a part coil of any length shall be incorporated.

5.7 The trailing and leading ends of the pipe coil shall be restrained during transport and before and after dispensing.

NOTE This can be achieved by using a webbing strap and pipe clamp (e.g. guide roller clamp/security gate). This clamp and strap/ ratchet assembly shall be permanently attached to the coil trailer to ensure it is used by operatives using the trailer whether transporting or dispensing coil.

5.8 All operations associated with loading and dispensing shall be achievable from ground level on the trailer.

5.9 A means of controlling the speed at which the pipe coil is dispensed shall be provided via a brake or pipe gripping mechanism, e.g. a guide roller clamp.

NOTE This is ultimately achieved by the pushing machine or winch.

5.10 The design shall ensure that the lifting of the pipe coil for trailer loading and unloading can be done safely in compliance with LOLER & 52 week testing.

5.11 On drum types, a central spindle shall be provided to prevent the pipe coil being pulled through the trailer and to ensure that the pipe does not kink..

5.12 All locking pins shall locate into a pre-determined hole location with R-type or Lynch type pin locking devices.

5.13 The trailer shall be stable when fully loaded with the largest diameter coil for which it is designed.

5.14 There shall be a minimum of two screw jacks or support legs, one either side of the trailer positioned at the rear of trailer to stabilise it during dispensing. They shall have a clamping screw/ securing clamp to safely lock jacks/ legs in the raised or lowered position, as necessary

5.15 The height of the centre of gravity of the loaded trailer shall not exceed 1.5 times the length of the centre line of the wheel axle chassis layout.

6 Trailer chassis and running gear

6.1 The trailer shall be fitted with heavy-duty independent suspension axles(s). It shall be capable of travelling up to 15,000 towed miles per year and at the maximum legal speed for a van and trailer or lorry and trailer.

6.2 The towing attachment type shall be specified by the purchaser and shall have an optimum operation height of between 43cm and 51cm above ground level, as measured from the centre of the tow hitch.

6.3 The towing attachment shall be suitable for use with a security device. Details of the type of security device offered by the manufacturer shall be provided.

6.4 The trailer shall have a braking system operated by hydraulically damped coupling with a hand parking brake mounted in the towing attachment. The braking system shall incorporate overrun and auto-reverse.

NOTE Attention is drawn to EEC Directive 71/320/EEC [1], The Road Vehicles (Construction and Use) Regulations 1986 [2] and The Road Vehicle Lighting Regulations 1989 [3].

6.5 The trailer shall have Breakaway cables that shall terminate in a snap-hook arrangement. Cables of a high visibility colour shall be used, or tape or a cover of a high visibility colour shall be placed over or around the cables. The cables shall be housed in cable tidies to prevent a trip hazard.

NOTE Attention is drawn to EEC Directive 71/320/EEC [1], The Road Vehicles (Construction and Use) Regulations 1986 [2] and The Road Vehicle Lighting Regulations 1989 [3].

6.6 The trailer shall be fitted with a heavy-duty fully retractable jockey wheel, which shall be supplied with means to hold the wheel securely in place whilst being towed. The jockey wheel shall be mounted in a way that prevents grounding on road surface, speed bumps or uneven or steep ground.

6.7 The rear underframe of the trailer chassis shall be fitted with stabiliser legs to prevent the rear of the trailer striking the ground if overbalanced when manoeuvring manually.

6.8 The trailer chassis shall be manufactured from folded galvanised steel or an alternative material with similar strength, durability and weight.

NOTE Attention is drawn to The Road Vehicles (Construction and Use) Regulations 1986 [2].

6.9 The axle(s) shall be fitted with pneumatic radial ply tyres housed under full width galvanised wings. The supplier shall provide evidence that these tyres are suitable for the design of trailer used. This evidence shall include all tyre test specifications and certificates that show they comply with vehicle legislation.

6.10 Lighting

6.10.1 The trailer shall be supplied with rear lighting. The type of electrical connection to the tow vehicle shall be specified by the purchaser. The last metre of cable terminating at the plug shall be covered in high visibility coloured material and housed in cable tidies to prevent a trip hazard.

NOTE Attention is drawn to The Road Vehicle Lighting Regulations 1989 [2].

6.10.2 Provision shall be made to attach a removable number plate to the rear of the trailer. This shall be illuminated and either suitably off-set or central to the rear light clusters.

6.11 Weight

Tow hitch down-thrust when the trailer is being transported shall be not less than 25 kg and not more than 40 kg.

7 Pipe coil transporting, loading and dispensing

7.1 A means of controlling the pipe coil's trailing end as it is removed from the trailer shall be provided. It shall prevent an uncontrolled release of the trailing end from the trailer.

7.2 Suppliers and manufacturers shall provide training and instruction to a level agreed with the purchaser on the safe loading of pipe coils onto dispensing trailers.

8 After sales service

8.1 A detailed list of recommended specialist tools required to carry out regular maintenance shall be provided, indicating the net price of the tools required.

8.2 Product training shall be provided at locations nominated by the purchaser. Details of the training and daily costs per trainee shall be provided.

8.3 A complete set of repair times for the model offered and all others in the range shall be available.

9 Safety

9.1 The trailer shall incorporate safety devices that protect the operator from all moving parts.

9.2 Full risk assessments shall be provided to the gas transporter covering the safe operation of the trailer when towing.

10 Marking

10.1 Trailers conforming to GIS/E49 shall be permanently marked with the following information:

- a) the number and date of this standard, i.e. GIS/E49:2019 ¹⁾;
- b) the name or trademark of the manufacturer or their appointed agent;
- c) the manufacturer's contact details;
- d) where authorized, the product conformity mark of a third party certification body, e.g. BSI Kitemark.

NOTE Attention is drawn to the advantages of using third party certification of conformance to a standard.

- e) the overall trailer length and width;

¹⁾ Marking GIS/E49:2019 on or in relation to a product represents a manufacturer's declaration of conformity, i.e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is therefore solely the responsibility of the person making the claim. Such a declaration is not to be confused with third party certification of conformity, which may also be desirable.

- f) unladen and laden trailer height;
- g) maximum outside pipe coil diameter;
- h) minimum inside pipe coil diameter;
- i) unladen and laden (gross) trailer weigh

10.2 The required tyre pressures shall be indicated on the mudguard to assist drivers when checking.

10.3 Individual axle weights and total gross weight of the trailer shall be clearly marked, in kg, in the vicinity of the towing attachment.

10.4 The operator's recommended daily safety checks shall be indicated on self-adhesive vinyl labels along with other safety markings. The labels shall include as a minimum:-

- (a) Trailer height warning (loaded and unloaded)
- (b) Pipe coil capacity/ range by pipe diameter, SDR and length
- (c) Stand clear of gate when opening
- (d) Warning: cut bands one at time as pipe is dispensed
- (e) Warning: ensure ratchet straps/ assemblies and pipe end restraining clamps in place
- (f) Drawing provided to show where labels are to be positioned
- (g) Instruction label giving brief advice on safe loading/ unloading and dispensing of coils
- (h) Stand clear when loading/ unloading

NOTE Attention is drawn to The Road Vehicles (Construction and Use) Regulations 1986 [2], The Road Vehicle Lighting Regulations 1989 [3] and The New Roads and Street Works Act 1991 [4].

10.5 The livery and graphics shall be agreed with the purchaser.

NOTE Attention is drawn to The New Roads and Street Works Act 1991 [4] and The Road Vehicles (Construction and Use) Regulations 1986 [3].

Bibliography

- [1] DIRECTIVE 71/320/EEC. Braking devices of certain categories of motor vehicles and their trailers. Luxembourg: Office for Official Publications of the European Communities. Latest revision 27/-1/1998.
- [2] GREAT BRITAIN. The Road Vehicles (Construction and Use) Regulations 1986. London: The Stationery Office.
- [3] GREAT BRITAIN. The Road Vehicle Lighting Regulations 1989. London: The Stationery Office.
- [4] GREAT BRITAIN. The New Roads and Street Works Act 1991. London: The Stationery Office.