

Published February 2025

## LPG Hoses and Tubing for use with vapour offtake cylinders

### Application

Liquid Gas UK guidance sheets are technical documents prepared and issued under the authority of the Liquid Gas UK. The contents have the same status as the Code of Practice, so members of Liquid Gas UK are expected to conform to the information provided.

Whilst some of the documents are prepared in collaboration with the HSE, all the information is available to their inspectors, therefore use this to establish best practice and compliance.

### Scope

The purpose of this guidance is to ensure that the correct hose or tubing are used for the relevant applications. The guidance gives important information relating to the standard BS EN 16436-1: 2014 'Rubber and plastics hoses, tubing and assemblies for use with propane and butane and their mixture in the vapour phase. Part 1: Hoses and Tubing'.

### **Use of an incorrect type of tubing or hose for application, is deemed as unsafe practice**

### Introduction

BS3212 has been replaced by BS EN16436-1 which defines one class of tubing (class 1) and two classes of hose (class 2 and 3).

The following tables show the key features and differences between tubing and hose.

## Tubing

|                                 | <b>BS EN 16436 Class 1</b>  |
|---------------------------------|---|
| <b>Maximum working pressure</b> | 200mbar   |
| <b>Colour</b>                   | <ul style="list-style-type: none"> <li>• Orange with black marking</li> <li><b>Or</b></li> <li>• Black with Orange line and marking</li> <li><b>Or</b></li> <li>• White with Orange line and marking</li> </ul> |
| <b>Marking</b>                  | Manufacturer Name – EN 16436-1 class 1 – Xmm – 0.2 bar – Propane/Butane – EXP DATE  |
| <b>Intended use</b>             | Downstream of low pressure regulator device used indoors or contained in an appliance   |
| <b>Other information</b>        | <ul style="list-style-type: none"> <li>• Single-ply construction</li> <li>• Expiry date on tubing</li> <li>• Note: X on markings = Internal diameter (mm) – Normally 8mm for tubing</li> </ul>                  |

## Hose

|                                 | <b>BS EN 16436 Class 2</b>   | <b>BS EN 16436 Class 3</b>   |
|---------------------------------|--|--|
| <b>Maximum working pressure</b> | 10bar  | 30bar  |
| <b>Colour</b>                   | Orange with black marking or Black with orange line and marking  | Orange with black marking or Black with orange line and marking  |
| <b>Marking</b>                  | Manufacturer Name – EN 16436-1 - class 2 – Xmm – 10 bar – Propane/Butane – PROD DATE YYYY  | Manufacturer Name – EN 16436-1- class 3 – Xmm – 30 bar – Propane/Butane – PROD DATE YYYY   |
| <b>Intended use</b>             | Downstream of regulator device either low pressure or up to 10bar  | Upstream of regulator (operating at full cylinder pressure)  |
| <b>Other information</b>        | <ul style="list-style-type: none"> <li>• Two-ply construction</li> <li>• No expiry date on hose</li> <li>• Note: X on markings = Internal diameter (mm)</li> </ul> | <ul style="list-style-type: none"> <li>• Two-ply construction</li> <li>• No expiry date on hose</li> <li>• Note: X on markings = Internal diameter (mm)</li> </ul> |



## Hose assemblies and “pigtailes”

Hose and tubing assemblies are specified in BS EN 16436-2 Rubber and Plastics Hoses, Tubing and Assemblies for use with propane and butane and their mixture in the vapour phase.

## Regular Inspection

**IMPORTANT:** All tubing and hose must be regularly visually inspected for cuts, abrasion, discoloration, deterioration or damage. If any defects are found, then the hose or assembly should be immediately replaced.

**Class 1 tubing** - is marked with an expiry date 5 years from the date of manufacture so should be changed when either this interval is met, or defects are found, whichever comes first.

**Classes 2 and 3 hose** has no expiry date, any date on the hose refers to the manufacture date of the hose. Providing it has been correctly assembled and stored the subsequent **service life** is considered to be no more than 10 years. Therefore, a regular inspection and replacement scheme is required.

## Action by Dealers and Retailers

When supplying tubing or hose, dealers and retailers should ask:

- Whether the customer needs low pressure tubing or high pressure hose;
- What application does the customer need the tubing or hose for;
- Whether it is for use outdoors or inside, ensure the **appliance** they intend to use is suitable for that application;
- Whether the hose is to be used after a pressure regulating device or before. This determines the class of tubing or hose to be used;
- The age and type of associated pressure regulator. If the regulator is more than 10 years old (supplying residential premises) or premises defined to be under GSIUR, then it should be changed with a pressure regulator incorporating an Over Pressure Shut-Off Device;
- Whether the associated equipment has been serviced and adequately maintained
- Offer a copy of:
  - LGUK Guidance Sheet 05 LPG Hose and Tubing for use with Vapour Offtake Cylinders;
  - LGUK Guidance Sheet 028 Safe Use of Propane And Butane Cylinders & Cartridges;
  - LGUK Guidance Sheet 039 Regulators - Safe Use.

LGUK guidance sheets can be freely downloaded at:

<https://www.liquidgasuk.org/domestic/lguk-guidance-sheets>

## Liquid Gas UK

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