

# Technical Checklist - Plumbing and Heating Fittings - UK Sizes

July 2008

**NOTE:** This checklist refers exclusively to fittings and accessories from our range of push-fit products for Plumbing and Heating Systems. Other fittings, valves, tube and ancillary products have their own Technical Specification.

**Fittings and pipe should be kept clean and undamaged before use.**

**Sizes** 10mm to 28mm diameter.

**Pipes** Speedfit fittings can be used with:

- Copper pipe to BS EN 1057
- Speedfit Barrier Pipe to BS7291.

Speedfit fittings cannot be used on stainless steel pipe.

**Standards** Speedfit products are designed and manufactured under a fully integrated system assessed by B.S.I. to BS EN ISO9001. They are approved by the Water Regulations Advisory Scheme and BBA. Speedfit 'PEM', 'PSE' and 'SFM' Fittings and Speedfit Barrier Pipe are kitemarked to BS7291 Parts 1, 2 and 3, Class S (Licence No. KM39767).

## Applications

- Mains fed and indirect cold water systems
- Vented and unvented hot water systems
- Vented and sealed central heating systems

**DO NOT USE FOR Gas, fuel oil or compressed air applications.**

## Working temperatures and pressures

<i>Application</i>	<i>Usual working temperature, °C</i>	<i>Maximum working temperature, °C</i>	<i>Maximum working pressure, bar</i>
<b>Cold Water</b> (indirect and direct mains)	20	20	12
<b>Central Heating</b>	82	105, short term malfunction at 114	3
<b>Hot Water</b> (including unvented cylinders)	65	95	6

**Burst Pressure (fittings)** With copper or plastic pipe at 20°C: Speedfit fittings used with copper or Speedfit Barrier Pipe will withstand pressures well in excess of normal service conditions.

**Continuously operated re-circulating systems (secondary hot water circulation / ring main installations)**

A continuously operated re-circulating system is a water-replenished circulating system which is maintained at a constant high temperature to provide a constant source of hot water. Continuously operated re-circulating systems are used to distribute constant hot water to draw off points that may be distant from the source or hot water storage vessel. Continuously operated re-circulating systems are very different from conventional hot water supply and central heating systems found in domestic properties, for which our products have been tested to, under either BS7291 Class S or WRAS approval standards, and for this reason Speedfit products must not be used on any continuously operated re-circulating systems as they are not approved under the current version of these standards.

The exception would be those systems which have been designed for domestic situations with intermittent temperature of less than a maximum of 65°C. This is in accordance with BS7291.

**High temperatures** Can withstand 114°C intermittently for short periods. The Speedfit System should not be used on an uncontrolled heat source.

**Insulation** Should comply with BS6700 and BS5422, as for copper.

**Minimum bend radii (PEX)**

Pipe diameter	10mm	15mm	22mm	28mm
	100mm	175mm	225mm	300mm
<b>Min radius with clips</b>				
<b>Min radius with cold forming bend</b>	30mm	75mm	110mm	-

**Clip spacing (in mm)**

**For surface mounted pipes**

Pipe diameter	Clip Spacing	
	Horizontal Run	Vertical Run
10 - 15mm	300mm	500mm
22mm	500mm	800mm
28mm	800mm	1,000mm

Where pipe is concealed, clipping may only be required where necessary.

**Expansion (PEX pipe).** 1% on length between 20°C and 82°C.

**Flow rates.** Comparable with metal systems.

**Cleaners, inhibitors and descalents.** For advice on the replenishment of additives such as corrosion inhibitors, the following manufacturers should be contacted: Fernox Manufacturing Limited on 01799 550811 or Sentinel, BetzDearborn Limited on 0151 420 9595.

**Paint and Chemicals.** Use only water or oil based paint. Collet covers prevent paint ingress into fittings. **DO NOT ALLOW CONTACT WITH** oil based jointing compounds, cellulose based paints, paint thinners or strippers, solder flux, acid-based descalents or aggressive cleaning products.

**Solder Flux.** No fluxes of any type should come into contact with JG Speedfit pipe fittings. If fluxes are to be used in an environment where Speedfit is installed, then (1) extreme care should be taken to ensure that no such contact takes place, and (2) JG recommend installers only use fluxes tested and approved in writing in advance by JG. At the date of this publication, the only such approved flux is Fernox Flux.

**Chlorine.** Speedfit is not suitable for use in systems where the water containing high levels of chlorine. e.g. swimming pools, fountains etc.

**Exposure to sunlight.** Speedfit products, when used indoors, are not affected by sunlight. When used outdoors protect from ultra violet light by lagging or painting.

**Pipe clips.** Pipe clips should not be fitted any closer than 60mm from the end of the fitting. Pipe should be adequately supported by pipe clips to prevent undue stress (side load) on fittings.

**Pipe Inserts** Must be used on all installations when using plastic pipe and should be fully inserted.

**Metal Joists** When 'cabling' plastic pipe through metal joists ensure rubber grommets are in place to prevent damage to pipe. Use of collet covers or collet clips on fittings recommended.

**Connection To Boilers** A minimum 1000mm run of copper pipe must be installed between the boiler and the Speedfit system, as per BS5955: Part 8.

**Connection to copper pipe** 450mm is the minimum distance to make a solder connection on copper pipe inserted into a Speedfit fitting. Ensure that any residual flux solder does not come into contact with the fitting.

**Concrete And Masonry** Speedfit pipe and fittings can be laid in concrete and masonry providing they are installed in conduit pipe with access boxes for the fittings. This is to enable the pipe to expand and provide accessibility for both pipe and fittings. As stated in Water Regulation Scheme 2.7 and BS 8000 : Part 15, fittings and pipe should be removable for possible replacement. Insulation is also recommended to protect against heat loss and the effects of frost.

**Electrical Continuity** If Speedfit is used in an existing metal system which may have been used for earthing, electrical continuity should be reinstated.

**Valves And Taps** Plastic 15mm and 22mm valves and taps available from JG Speedfit Ltd are not suitable for central heating installations.

### 1/4 Turn Valves

These valves have been designed to allow temporary servicing of downstream equipment and must only be used in the fully open or fully closed position. **DO NOT USE THESE VALVES: In a partially open position to control flow; to provide a permanent termination; without tubing assembled or plugged (or threaded connections sealed) or as a tap or "faucet".**

**Collet covers** Collet covers provide added security against pipe disconnection, e.g. the fitting coming into contact with rigid surfaces and behind dry-lining walls. They are offered in white as standard and in red or blue to provide colour coding of pipe.

**Collet clips** Grey collet clips are used with standard fittings to prevent accidental pipe disconnection. Red or blue clips provide colour coding of pipe. Red and blue clips should not be used to prevent accidental release of pipe.

**System Testing.** To ensure the pipework and fittings have been installed correctly, whether it be on a new or extended system, it is essential that the system is checked and hydraulically wet tested. Testing should be at 2 bar for 10 minutes and 10 bar for 10 minutes. This testing, combined with other relevant checks, should reveal installation problems and is regarded as good plumbing practice. However, system testing should not be regarded as a substitute for correct installation.

**System Flushing.** As is usual practice for any plumbing installation, flushing of the system prior to the use of Speedfit is recommended to remove any contaminants/chemical residue from elsewhere in the system.

British Gas Service has accepted the John Guest Speedfit fittings as being suitable for open vented and sealed central heating systems and as eligible for acceptance onto its service contracts.

Products within this range are designed for use within UK plumbing and heating installations or in other countries where similar installation requirements apply. For information on products suitable for use in other countries please consult our Technical Advisory Service.

**Vermin.** Speedfit products will need special protection in vermin infested areas.

**Maximum Torque Figures (BSP & BSPT).** Plastic threads are not generally as strong as brass threads. Customers and end users should be aware of this when choosing products for their applications. Over tightening of plastic threads will cause undue stress and eventual cracking and leakage. The maximum torque figures for BSP and BSPT threads used on Speedfit plumbing products in mating threads conforming to relevant British or International thread standards.

Threads	Size	Maximum Torque
Plastic	1/2"	3.0 Nm
	3/4"	4.0 Nm
Brass	1/2"	4.0 Nm
	3/4"	5.0 Nm

It is recommended that all installations are checked prior to use to determine that a seal has been made.

**Side Loads.** Fittings should not be subject to excessive side loads and they should not be used as support brackets. Tubing and fittings should be adequately supported to prevent excessive side loading.