

## Are SC80 and SC100 multi-layer pipes and should they have external stripes to identify their multi-layer construction?

SC80 and SC100 pipes are single layer solid wall pipes. They are therefore not multi-layer pipes and do not require external longitudinal stripes.

## Should I completely remove the coloured outer when preparing SC80 and SC100 pipes for electrofusion jointing?

No. The coloured PE outer is not a 'scrape to' guide and should not be completely removed. Removing too much pipe material may lead to joint failure.

## What equipment is recommended to prepare SC80 and SC100 pipe surface for electrofusion jointing?

For socket fittings, use a hand scrapper or an industry approved mechanical rotary tool as this removes a continuous and uniform ribbon of material. For saddle fittings, industry approved hand scraping tools should be used.

## What is the thickness of SC80 outer and SC100 outer and does it differ for each pipe diameter?

The coloured PE outer thickness ranges from 0.7 to 1.2 mm. It does not differ through the pipe diameter range.

## Why do ProFuse® pipes have external stripes?

Stripes identify the pipe as multi-layer. ProFuse® is manufactured from a PE100 core and an outer polypropylene skin.

## Does the ProFuse® skin add to the pipe's pressure rating?

The external polypropylene skin applied to the ProFuse® pipe does not add to the pipe's pressure rating. It is a sacrificial layer and identifies the pipe's application and structure and is specifically designed to protect the core pipe from potential damage during handling, transportation and installation.

## Should I remove the external skin when joining ProFuse® pipe using mechanical fittings?

Yes, the external polypropylene skin must be locally removed when joining ProFuse® using mechanical fittings, electrofusion fittings or the butt-fusion welding technique. Follow the pipe preparation overview within this brochure.

## What should I do if the ProFuse® pipe surface becomes contaminated after removing the peelable skin in preparation for electrofusion jointing?

If the ProFuse® pipe surface becomes contaminated after removing the peelable skin, prepare the pipe surface in the same way as a conventional PE pipe, using industry approved pipe surface preparation tools (rotary or hand scraping tools).

## Water specific

### Why do the pipe dimensions for ProFuse® and Puriton® only cover the black core of the pipes?

ProFuse® and Puriton® are classed as multi-layer pipes and are manufactured in accordance with the PE water pipe specification BS EN 12201. The specification only provides dimensions for the pressure bearing structure of PE pipes. For ProFuse® and Puriton® pipes, the black PE core is the only pressure bearing structure within the pipe construction. The dimensions for the outer layers are therefore not included within the water specification.

### How should I prepare the pipe surface for solid wall SC80 and SC100 pipes when using Redman™ mechanical fittings?

There is no requirement for any pipe surface preparation when joining SC80 or SC100 pipes. The pipe should be cut square and free from damage before making a joint.

## Gas specific

### What are the maximum pressure ratings for Radius Systems' gas pipes?

The maximum operating pressure for polyethylene pipes for gas application varies as it is dependent on the following:

- Pipe material
- Pipe diameter and wall thickness
- Operational temperature
- Applied safety factor or service design coefficient.

Values for the pipe safety factor or service design coefficient are quoted within the product manufacturing specifications, namely the Gas Industry Specification (GIS) PL2:2 & PL2:8 and the European gas specification BS EN 1555-2.

The reference specifications identify values for the pipe design stress with applicable operational temperature range and sub-zero temperature limitations to satisfy rapid crack considerations. In addition, where pipes are intended for use above the 20° C reference temperature, the pipe material design stress and calculated pressure rating must be de-rated to account for the material's reduction in tensile strength.

For guidance on the MOP of pipes for gas application manufactured in accordance with the above specifications please contact Radius Systems.

### Reference specifications

- *GIS/PL2 '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.
  - Part 8: Pipes for use at pressures up to 7.0 bar.
- *BS EN-1555 'Plastic piping systems for the supply of gaseous fuels'*
  - Part 2: Polyethylene (PE) pipes.