



Marley Extrusions Ltd

Certificate No 88/1977 DETAIL SHEET 7 Third issue*

MARLEY RIBBED PVC-U UNDERGROUND DRAINAGE FITTINGS

Product



• THIS DETAIL SHEET RELATES TO MARLEY RIBBED PVC-U 160 mm AND 110 mm DIAMETER UNDERGROUND DRAINAGE FITTINGS.

• The fittings are for use with pipes complying with BS EN 1401-1 : 1998.

• This Detail Sheet does not cover the use of the fittings for untreated trade (non-domestic) effluents.

This Detail Sheet must be read in conjunction with the Front Sheets and Detail Sheet 1, which give Conditions of Certification and the product's position regarding the Building Regulations, respectively.

Technical Specification

1 Description

1.1 Marley Ribbed PVC-U Underground Drainage Fittings are solid wall externally ribreinforced, with a smooth bore and are available in socket/spigot or all-socketed format. The fittings are for use with all classes of pipe to BS EN 1401-1 : 1998 but are specifically designed to meet the SN4 class in line with UK practice. They also meet the requirements of prEN 13476-1 : 2000. Standard ring seals are supplied with the fittings.

1.2 The fittings are golden brown in colour and injection moulded in PVC-U. Ring seals are type

WC elastomeric ring seals to BS EN 681-1 : 1996. The range of fittings covered by this Detail Sheet is shown in Table 1.

1.3 Quality control tests are carried out continuously during manufacture and include visual and dimensional checks and stress relief testing.

1.4 Each fitting is marked with the manufacturer's name, product code and the BBA identification mark.

2 Delivery and site handling

The fittings are supplied in boxes, plastic bags or shrink-wrapped form. When long-term storage is envisaged the fittings must be protected from direct sunlight and away from any heat source.

Table 1 Ribbed fittings

Size

(mm)

160

Coupling (double socket)



Code Dimension (mm) В А UME 15C 170 83

Slip coupling (double socket)



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bize mm)	Code	Dimension A (mm)
60	UME 16C	170

Bends (double socket)



Size	Code	Angle	Dimension A
(mm)			(mm)
110	UB 455R	45	75
110	UB 4300R	30	57
110	UB 4155R	15	50
160	UMB 19C	871⁄2	200
160	UMB 14C	45	115
160	UMB 13C	30	105
160	UMB 11C	15	95

Bends (socket/spigot)



	Size	Code	Angle	Dimension (mm)	
	(mm)			A	В
	110	UB 45R	45	75	85
\mathbf{v}	110	UB 430R	30	57	78
/	110	UB 415R	15	50	69

Equal branch (double socket)

~	Size	Code
$\langle A \rangle$	(mm)	
$\mathbb{X} \to \mathbb{Y}$	110	UY 400
$(\land \land)$	110	UY 466
	160	UMY 13
	160	UMY 11

400R 871/2 245 466R 45 280 200 200 713C 871⁄2 376 180 11C 45 400 280 280

Angle

Dimension (mm)

B С

Α

Unequal branch (double socket)



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Size	Code	Angle	Dime	ension	(mm)
(mm)			А	В	С
160 x 110	UMY 10C	87	316	232	236
160 x 110	UMY 120	87	313	170	—

Equal branch (socket/spigot)



Code	Angle	Dimension (mm)		
		А	В	С
UY 401R	871/2	250	135	_
UY 46R	45	300	200	200
	Code UY 401R UY 46R	Code Angle UY 401R 87½ UY 46R 45	Code Angle Dime UY 401R 87½ 250 UY 46R 45 300	Code Angle Dimension A B UY 401R 87½ 250 135 UY 46R 45 300 200

Design <u>Data</u>

3 General

Marley Ribbed PVC-U Underground Drainage Fittings have been assessed for use with pipes complying with BS EN 1401-1 : 1998 in underground drains, public and private sewers, for the conveyance, by combined or separate systems, of surface water and domestic sewage as is permitted to be discharged into public sewers by the Water Industry Act 1991, Sewerage (Scotland) Act 1968 and the Water and Sewerage Services (Northern Ireland) Order 1973.

4 Strength



The fittings have adequate strength to resist loads associated with installation and with subsequent use in the situations defined in this Detail Sheet.

5 Performance of joints



5.1 The performance of joints will not be , adversely affected by thermal expansion or contraction when correctly made.

5.2 Joints with the pipe remain watertight under conditions of pipeline movement in excess of those expected to occur in normal good drainage practice.

6 Flow characteristics



7 Resistance to chemicals

7.1 The fittings are suitable for use where pipes and fittings to SN4 or SN8 of BS EN 1401-1 : 1998 are normally used. They have adequate resistance to the type and quantity of chemicals likely to be found in domestic sewage.

7.2 Details of the chemical resistance of PVC-U are given in CP 312-1 : 1973.

8 Resistance to elevated temperature

The fittings have adequate resistance to temperatures likely to be found in domestic sewage.

9 Practicability of installation

The fittings are installed easily under normal site conditions. The joints are push-fit and are achieved easily by hand.

10 Rodding

Drains incorporating the fittings can be easily rodded using conventional flexible drain roads. Toothed root cutters, as used with some mechanical cleaning systems, could damage the fittings and should not be used.

11 Durability

In the opinion of the BBA, no significant deterioration of the product will take place and the fittings will have a life equivalent to that of fittings to SN4 of BS EN 1401-1 : 1998.

Installation

12 General

Drain and sewer systems utilising the fittings should be installed in accordance with the recommendations of BS EN 1610 : 1998, BS 5955-6 : 1980 and the recommendations given in Detail Sheet 3 of this Certificate.

13 Procedure

13.1 The pipe end and the inside of the socket must be clean and free from grit, dust or dirt.

13.2 When jointing with PVC-U pipe to BS EN 1401-1 : 1998, lubricant should be applied evenly to the chamfered pipe end and to the seal of the fitting. The pipe end is then inserted into the socket and pushed fully home.

13.3 A lubricant is supplied by the manufacturer for use with the fittings.

13.4 The fittings must have adequate protection against damage from site traffic.

Technical Investigations

The following is a summary of the technical investigations carried out on Marley Ribbed PVC-U Underground Drainage Fittings.

14 Tests

Tests were carried out to determine:

effect of combined temperature and external load to prEN 13476-1 : 2000

watertightness of joints under conditions of pipe deformation and hydrostatic pressure to BS EN 1401-1 : 1998

watertightness of joints under conditions of angular deflection and hydrostatic pressure to BS EN 1401-1 : 1998

Vicat softening temperature to BS EN 1401-1 : 1998

stress relief

dimensional accuracy

short-term stiffness

impact resistance tensile strength.

15 Other investigations

15.1 An examination was made of data relating to:

resistance to chemicals flow characteristics resistance to high pressure water jetting.

15.2 The manufacturing process was examined, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

BS 5955 Plastics pipework (thermoplastics materials) BS 5955-6 : 1980 Code of practice for the installation of unplasticized PVC pipework for gravity drains and sewers

BS EN 681 Elastomeric seals. Material requirements for pipe joint seals used in water and drainage applications BS EN 681-1 : 1996 Vulcanized rubber

BS EN 1401 Plastics piping systems for nonpressure underground drainage and sewerage — Unplasticized poly (vinyl chloride) (PVC-U) BS EN 1401-1 : 1998 Specifications for pipes, fittings and the system BS EN 1610 : 1998 Construction and testing of drains and sewers

CP 312 Code of practice for plastics pipework (thermoplastics material) CP 312-1 : 1973 General principles and choice of material

prEN 13476 Thermoplastics piping systems for non-pressure underground drainage and sewerage — structured wall pipe systems for PVC-U, PP and PE prEN 13476-1 : 2000(May) Specification for

pipes, fittings and the system



On behalf of the British Board of Agrément

PG HELS 7 etc Chief Executive

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