

EN 13476

EN 13476 is a European standard that outlines the requirements of PVC-U, PP and PE structured wall plastic piping systems for non-pressure underground drainage and sewerage.

The standard defines multi-layer pipework, and improves upon the more commonly known EN 1401 standard which outlines requirements for single-layer underground drainage pipework.

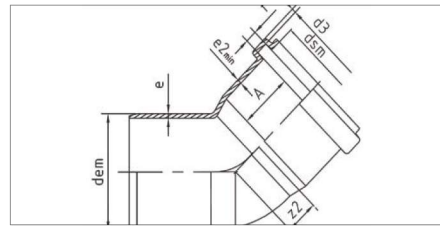
A drainage system can consist of interchangeable products as standards apply to individual products being used; an adoptable drainage system can contain both EN 13476 and EN 1401 products.

EN 13476 has three subsections that cover performance, different manufacturing methods and style of pipework:



EN 13476-2 pipework

EN 13476-1



EN 13476-1 specifies general requirements, performance & characteristics that apply to both EN 13476-2 & EN 13476-3 pipework.

EN 13476-2



EN 13476-2 specifies pipework with a smooth inner & outer wall, with an intermediary layer.

EN 13476-3



EN 13476-3 specifies pipework with a smooth inner wall & profiled outer wall.



EN 13476-2

ULTRA3 pipework is manufactured to EN 13476-2, with PVC inner and outer layers and an intermediary layer manufactured from at least 40% recycled PVC.

To ensure product quality ULTRA3 pipework conforms to BS EN 13476-2.

EN 1401

EN 1401 is a European standard that outlines the requirements of PVC-U solid wall piping systems for non-pressure underground drainage and sewerage.

ULTRA3 systems use EN 1401-1 fittings, permitted for use with EN 13476-2 pipework under EN 1401-1:2009 Scope Note 2 (pipe, fittings and components conforming to standards listed in Annex C can be used with EN 1401 fittings).



BS EN 1401-1

ULTRA3 fittings are manufactured to EN 1401-1.

To ensure product quality ULTRA3 fittings are certified (Kitemarked) to BS EN 1401-1.

SN Rating

The Nominal Stiffness (SN) is the crush resistance of a pipe. It is measured in kN/m² (kilo Newton force per square metre).

In a drainage system without internal pressure, the pipework is subjected to external loads such as backfilling and traffic (and upward forces such as groundwater). These loads can deform the pipe (produces cracks or lowers performance) with compressive stress on the internal structure and tensile stress on the external structure. A SN rating is the resistance of these forces.



SN8 Rated

ULTRA3 is rated as a SN8 system, providing compliance with water authority requirements for adoptable systems, with a crushing strength of 8 kN/m² SDR 34 (SN8).

EN 1401 fittings marked with SDR 41 (SN4) may be used with pipes up to SDR 34 (SN8), according to EN 1401-1:2009 Appendix B.3.



Pipe

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	225/250	300/315
Single Socket Solid Pipe x 3m	01864UP3S	01866UP3S	02868UP3S	028610UP3S	028612UP3S
Single Socket Solid Pipe x 6m	01864UP6S	01866UP6S	-	-	-
Single Socket Perforated Pipe x 6m	01064DP6SP	01066DP6SP	-	-	-



Equal Junctions

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	225/250	300/315
45° Triple Socket Junction	01024D33D	01026D33D	-	-	-
90° Triple Socket Junction	01024D30D	01026D30D	-	-	-
45° Double Socket Junction	01024D33	01026D33	02828D33	028210D33	028212D33
90° Double Socket Junction	01024D30	01026D30	-	-	-



Couplers

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	225/250	300/315
Single Socket Coupler	01024D69	01026D69	-	-	-
Double Socket Coupler	01024D20D	01026D20D	02828D20D	028210D20D	028212D20D
Double Socket Slip Coupler	01024D20DSC	01026D20DSC	02828D20DSC	028210D20DSC	028212D20DSC



Unequal Junctions

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	225/250	300/315
45° Triple Socket Junction (110mm)	-	010264D33D	-	-	-
90° Triple Socket Junction (110mm)	-	010264D30D	-	-	-
45° Double Socket Junction (110mm)	-	-	028284D33	-	-
45° Double Socket Junction (160mm)	-	-	028286D33	-	0282126D33
45° Double Socket Junction (200mm)	-	-	-	0282108D33	-
45° Single Socket Junction (110mm)	-	010264D33	-	-	-
45° Single Socket Junction (160mm)	-	-	-	0282106D33	-
45° Single Socket Junction (200mm)	-	-	-	-	0282128D33
90° Single Socket Junction	-	010264D30	-	-	-



Double Socket Bends

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	225/250	300/315
15° Double Socket Bend	01024D29D	01026D29D	-	-	-
30° Double Socket Bend	01024D27D	01026D27D	-	-	-
45° Double Socket Bend	01024D25D	01026D25D	-	-	-
90° Double Socket Bend	01024D23D	01026D23D	-	-	-
90° Double Socket Rest Bend	01024D21D	-	-	-	-
0-30° Double Socket Adjustable Bend	01024DV40D	-	-	-	-



Single Socket Bends

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	225/250	300/315
15° Single Socket Bend	01024D29	01026D29	02828D29	028210D29	028212D29
30° Single Socket Bend	01024D27	01026D27	02828D27	028210D27	028212D27
45° Single Socket Bend	01024D25	01026D25	02828D25	028210D25	028212D25
90° Single Socket Bend	01024D23	01026D23	02828D23	028210D23	028212D23
90° Single Socket Rest Bend	01024D21	-	-	-	-
0-30° Single Socket Adjustable Bend	01024DV40	-	-	-	-



Reducers & Adaptors

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	225/250	300/315
Universal Rainwater Adaptor	01024D76	-	-	-	-
Universal Waste Adaptor	01024DW200	-	-	-	-
110mm x 82mm Level Invert Reducer	010243DT	-	-	-	-
160mm x 110mm Level Invert Reducer	-	010264DT	-	-	-
200mm x 160mm Level Invert Reducer	-	-	028286DT	-	-
250mm x 200mm Level Invert Reducer	-	-	-	0282108DT	-
315mm x 250mm Level Invert Reducer	-	-	-	-	02821210DT



Access Fittings

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	235/250	300/315
Oval Alu Sealed Rodding Eye	01024DRE	01026DRE	-	-	-
Square Alu Sealed Rodding Eye	01024DRESS	-	-	-	-
Screwed Access Cap	01024D64	01026D64	-	-	-



Gullies & Traps

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	225/250	300/315
Round Plain Bottle Gully	01024DBG	-	-	-	-
Round Back Inlet Bottle Gully	01024DBGBI	-	-	-	-
Square Back Inlet Bottle Gully	01024DG89	-	-	-	-
45° Universal Gully Trap	01024DG90	-	-	-	-
Lowback P Trap	01024DG91	-	-	-	-
Square Hopper Head	01024DG92	-	-	-	-
Rectangular Hopper Head	01024DG93	-	-	-	-



Yard / Road Gullies

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	225/250	300/315
700mm Dykagully Base Ø 320mm	0603UGBASE110	-	-	-	-
Dykagully Hinged Grating (C250)	0603UGSTOP	-	-	-	-
600mm Midigully Ø 300mm	0601RG300600	-	-	-	-
750mm Roadgully Ø 450mm	-	0602RG750X450	-	-	-
900mm Roadgully Ø 450mm	-	0602RG900X450	-	-	-







PP Inspection Chambers (PPIC)

Description	Pipe Diameter (ID/OD) mm				
	100/110	150/160	185/200	225/250	300/315
110mm PPIC Chamber Base Ø 320mm 170mm deep; 3x 110mm inlets	01024DSMB3	See 160mm PPIC Chamber below	See AXEDO®	See AXEDO®	See AXEDO®
110mm Level Invert PPIC Chamber Base Ø 320mm 220mm deep; 5x 110mm inlets	01024DSMB5				
Ø 320mm Chamber Riser x 190mm With sealing ring	01024DSMR190				
Ø 320mm Chamber Riser x 400mm With sealing ring	01024DSMR400				
Ø 320mm PPIC A15 Circular Cover & Frame	01024DSMCDR				
Ø 320mm PPIC A15 Square Cover & Frame	01024DSMCDS				
110mm PPIC Chamber Base Ø 450mm 250mm deep	01024DLMB	-	See AXEDO®	See AXEDO®	See AXEDO®
160mm PPIC Chamber Base Ø 450mm 160mm main branch; 2 x 110mm 45° inlets; 2 x 160mm 90° inlets; 280mm deep	-	01026DLMB			
Ø 450mm Chamber Riser x 235mm With sealing ring	01024DLMR	01024DLMR			
Ø 450mm PPIC A15 Round Cover & Frame	01024DLMCR	01024DLMCR			
Ø 450mm PPIC A15 Square to Round Cover & Frame	01024DLMCS	01024DLMCS			

Ø 320mm PPIC max install depth: 0.6m
Ø 450mm PPIC max install depth: 1.2m

AXEDO® Chambers

				
	AXEDO® 200	AXEDO® 300	AXEDO® 450-2	AXEDO® 600
Diameter (mm)	200	300	450	600
SfA7 Compliance	Type 4	Type 4	Type 3	Type 3
SfS3 Compliance	✓	✓	✓	✓
Other Standards	EN 1852	EN 13598-2 Complies with BS EN 13598-2	Complies with BS EN 13598-2	EN 13598-2 Complies with BS EN 13598-2 & BS EN 752:2008
Cover Types	A15, B125	A15, B125	A15, B125, C250, D400	A15, B125, C250, D400
Max. Invert Depth (m)	2.0	2.0	6.0*	6.0*
Inlet Sizes (mm OD)	110, 160	110, 160	110, 160	160, 250, 315, 400
Base Configurations	Straight	45° Double Branch	Swept Cross (with 45° Double Branch)	Straight Swept Cross

Sewers for Adoption 7 (SfA7) & Sewers for Scotland 3 (SfS3) compliant * Adoptable Axedo 450-2 & Axedo 600 max. invert depth 3.0m

AXEDO® Shafts

Shaft	Height (m)	AXEDO® 200			AXEDO® 300			AXEDO® 450-2			AXEDO® 600		
		ID (mm)	OD (mm)	Code	ID (mm)	OD (mm)	Code	ID (mm)	OD (mm)	Code	ID (mm)	OD (mm)	Code
	1.0	185	200	02080030001	300	355	02080030001	-	-	-	-	-	-
	1.5	-	-	-	-	-	-	450	512	02080040001	600	678	02082090001
	2.0	185	200	02080030002	300	355	02080030002	-	-	-	-	-	-
	3.0	-	-	-	-	-	-	450	512	02080040002	600	678	02082090003
	6.0	-	-	-	-	-	-	450	512	0425450TPU	600	678	0425600TPU

AXEDO® 200 shaft certified to EN 1401-1/EN 13476-2
AXEDO® 300, AXEDO® 450 & AXEDO® 600 shafts comply with HAPAS BBA

AXEDO® Covers

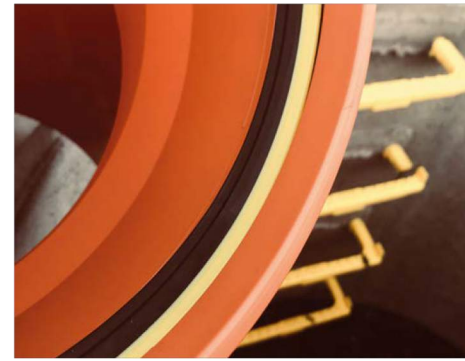
Cover Type	AXEDO® 200	AXEDO® 300	AXEDO® 450-2	AXEDO® 600
A15	01024DIFC1	01024DSMCDR	02084DLMCS*	0621E10C1
B125	0621KD31**	0621KD31**	0621KD31	0621KD3440
D400	-	-	0621KD8	0621KD100
Paviour	0622CLKS300SR	0622CLKS300SR	0622CLKS450SR	0622CLKS791SR

* Cover comes with restrictor ring
** Alternative available: 0621UDC700

Contact JDP for a complete range of covers & frames

INSTALLATION & MAINTENANCE

- An integral seal quickens installation, increases seal quality & reduces delays & air-test failure rates
- ULTRA3 provides a direct connection to PPIC and AXEDO chambers without the use of adaptors
- Inherent resistance to potential damage from cleaning & maintenance
- High pressure water jetting tested in accordance with WIS 4-35-01, with a maximum resistance of 3770 psi (260 bar), exceeding water authority requirements



Integral seal on ULTRA3 fitting

SUSTAINABILITY

- Pipework manufactured to EN 13476-2 with an intermediary layer of at least 40% recycled PVC, with virgin PVC inner & outer layers
- Makes 100/110mm & 150/160mm pipework 20-25% lighter than EN 1401 pipework
- Provides safer & easier handling on site and a reduced carbon footprint



Recycled core of ULTRA3 pipework

COMPLIANCE

- ULTRA3 SN8 pipework conforms to BS EN 13476-2:2007
- ULTRA3 fittings certified (Kitemarked) to BS EN 1401-1:2009
- 100/110mm & 150/160mm sewer pipe manufactured in 3m & 6m lengths for house/plot drainage
- 100/110mm, 150/160mm, 185/200mm, 225/250mm & 300/315mm sewer pipe manufactured in 3m lengths in accordance with water authority requirements



ULTRA3 fitting with compliance marks



PERSONAL SUPPORT

JDP offers expert product and application advice with a fast, friendly, efficient and first-class customer focused service.



RELIABLE DELIVERY

A nationwide branch network supplies all materials direct to site and on time with JDP's own fast, reliable vehicle fleet.



TECHNICAL ADVICE

JDP guides you through design and offer value engineering on your project, and quick turnaround on take-offs.



STOCK IN-DEPTH

Extensive product availability achieves project deadlines. Everything you need is available from your local JDP branch.

As one of the UK's leading experts in drainage and water management JDP provides design advice and support for underground drainage systems to effectively manage foul and surface water.

The most effective system is a completely integrated approach using a combination of products. JDP's Technical Support team offers take-off and drainage system design services, environmental and legislative support, and advice for housing developments, commercial and industrial buildings, and civil engineering projects to offer the best solution.

With modern products, state-of-the-art technology and nationwide branch network JDP aims to minimise costs with in-depth design and technical help for projects whether a new scheme or existing developments.