

CONDRON TWINWALL PIPE ROAD DRAINAGE SYSTEM

Striving for Quality since 1969





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JOIN THE CONDRON FAMILY




Condron Concrete Works is a 100% Irish owned private company founded in 1969 by John Condron. It is located just outside Tullamore, Co Offaly, Ireland. The company manufactures Twinwall plastic pipes, concrete pipes, manholes and gully traps as well as concrete roof tiles and accessories.

Twinwall plastic pipes are available in 94/110mm, 100mm, 150mm, 225mm, 300mm, 375mm integrated sockets and 450mm diameter straight, and can be supplied with associated fittings.

Twinwall plastic pipes are compliant with BS & EN 13476-3: 2018+A1: 2020, and are affiliated with Irish Agrément Board Certification, British Board of Agrément Certification and Water Research Centre Ltd.

During production, there is continuous quality control on all critical parts of the production process to ensure wall thickness, internal diameter, weight, external diameter and that socket diameters are all within dimensional tolerances.

In our purpose-built lab, continuous assessment is carried out for melt flow index, ring stiffness, ring flexibility, impact resistance, internal pressure tests and jointing tests to the latest International and European Standards. Sealing rings are certified to EN 681 and designed to exceed 0.5 bar while under deflection and shear.

| CERTIFICATION | SIZES |
|---|--------------------------------------|
|  | 150mm, 225mm, 300mm and 375mm |
|  | 150mm, 225mm, 300mm, 375mm and 450mm |
|  | 450mm |

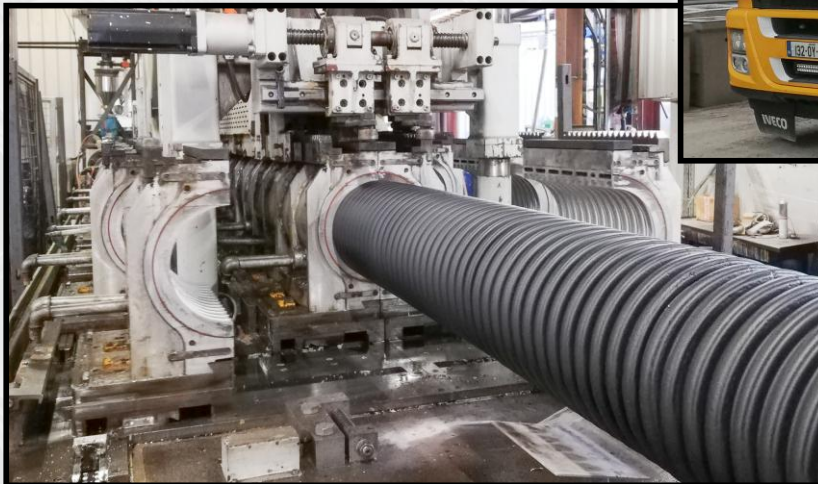
| Quality Control |
|---------------------------------------|
| Test |
| Appearance (visual inspection) |
| Dimensional accuracy |
| Perforation dimensions and appearance |
| Impact resistance |
| Short term stiffness |



ADVANTAGES OF CONDRON TWINWALL PIPES



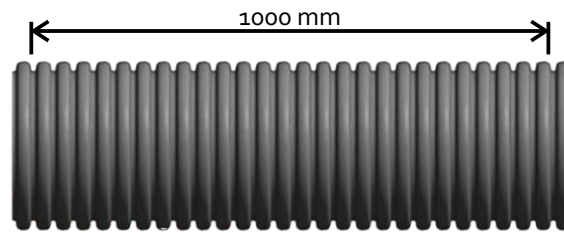
- ✓ Low weight 6m pipes with/without socket for safer and faster installation
 - ✓ High chemical resistance
 - ✓ High impact resistance which may permit faster backfilling (depending on ground conditions)
 - ✓ Smooth interior, resulting with less blockages and greater flow rates
 - ✓ Smooth interior also permits easier cable installation
 - ✓ Slight curves can be fabricated to adapt to on site requirements
 - ✓ Joints are guaranteed to a 5m head of water
 - ✓ Made with PE
 - ✓ High durability pipeline
 - ✓ Ring stiffness in excess of 6kn/m^2 (exception: 450mm available in both 4kn/m^2 and 6kn/m^2)
 - ✓ Resistance to water jetting
 - ✓ Can be laid to a depth of up to 10m (depending on ground conditions)
- *Contact CCW for guidance on minimum and maximum burial depths.*



TWINWALL ROAD DRAINAGE SYSTEM DETAILS

Standard Twinwall Pipes

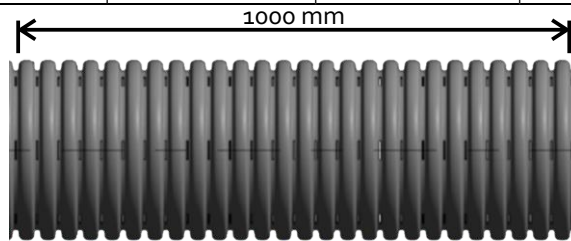
| ID Ø mm | OD Ø mm | Length (m) | Weight kg/m (Approx.) | Ring stiffness (SN) | Socketed /Straight |
|---------|---------|------------|-----------------------|---------------------|--------------------|
| 94 | 110 | 6 | 0.6 | 6 | Straight |
| 100 | 116 | 6 | 0.70 | 6 | Straight |
| 150 | 175 | 6 | 1.20 | 6 | Socketed |
| 225 | 260 | 6 | 2.38 | 6 | Socketed |
| 300 | 345 | 6 | 4.10 | 6 | Socketed |
| 375 | 435 | 6 | 6.80 | 6 | Socketed |
| 450 | 500 | 6 | 8.20 | 4 & 6 | Straight |



Standard Pipe

Perforated Twinwall Pipes

| ID Ø mm | OD Ø mm | Length (m) | Weight kg/m (Approx.) | Ring stiffness (SN) | Socketed /Straight |
|---------|---------|------------|-----------------------|---------------------|--------------------|
| 94 | 110 | 6 | 0.6 | 6 | Straight |
| 100 | 116 | 6 | 0.70 | 6 | Straight |
| 150 | 175 | 6 | 1.20 | 6 | Socketed |
| 225 | 260 | 6 | 2.38 | 6 | Socketed |
| 300 | 345 | 6 | 4.10 | 6 | Socketed |
| 375 | 435 | 6 | 6.80 | 6 | Socketed |
| 450 | 500 | 6 | 8.20 | 4 & 6 | Straight |



Perforated Pipe

Perforation Details

| Internal pipe Ø (nominal)(mm) | No. of slots per dwell | No. of dwells per metre | Slot length (mm) | Slot width (mm) | Permeable area min.(mm ² /m-1) |
|-------------------------------|------------------------|-------------------------|------------------|-----------------|---|
| 94 | 6 | | 10-15 | 1.2-1.5 | 5256 |
| 100 | 6 | 74 | 10-15 | 1.2-1.5 | 5256 |
| 150 | 6 | 39 | 15-32 | ≥ 2.0 | 7020 |
| 225 | 6 | 29 | 10-30 | 3.0-3.5 | 5220 |
| 300 | 6 | 25 | 15-31 | 3.0-3.5 | 6750 |
| 375 | 6 | 20 | 20-42 | 2.7-3.5 | 6480 |
| 450 | 4 | 18 | 35-50 | 3.0-3.5 | 7560 |

Semi-perforation Details

| Internal pipe Ø (nominal)(mm) | No. of slots per dwell | No. of dwells per metre | Slot length (mm) | Slot width (mm) | Permeable area min.(mm ² /m-1) |
|-------------------------------|------------------------|-------------------------|------------------|-----------------|---|
| 100 | 3 | 74 | 10-15 | 1.2-1.5 | 2628 |
| 150 | 3 | 39 | 15-32 | 1.0-1.5 | 1755 |
| 225 | 3 | 29 | 10-30 | 3.0-3.5 | 2610 |
| 300 | 3 | 25 | 15-31 | 3.0-3.5 | 3375 |
| 375 | 3 | 20 | 20-42 | 2.7-3.5 | 3240 |
| 450 | 2 | 18 | 35-50 | 3.0-3.5 | 3780 |

TWINWALL ROAD DRAINAGE SYSTEM DETAILS

LAND DRAINAGE PIPE (COILS)

Manufactured from recycled plastic, Land Drainage Pipes are manufactured in a range of internal diameters 64mm, 80mm, 94mm, 100mm and 150mm. Available in varying coil lengths and is specifically designed for land drainage management. It offers significant improvements in areas where poor drainage negatively affects ground stability.

The flexible nature of the Land Drainage Pipe makes it suitable for agricultural applications, road drainage, sports and leisure projects and drainage of water logged areas.

Land Drainage Pipe - Manufactured in accordance to B.S.4962

| ID Ø mm | OD Ø mm | Length (m) | Weight kg/m (Approx.) | Socketed /Straight |
|---------|---------|------------|-----------------------|--------------------|
| 64 | 80 | 50 or 100 | 0.30 | Straight |
| 94 | 110 | 50 or 100 | 0.36 | Straight |
| 100 | 116 | 50 or 100 | 0.37 | Straight |
| 150 | 175 | 35 | 0.80 | Straight |

Specific lengths available on request: please contact our sales team for further information.



ADVANTAGES:

The Condron Concrete Land Drainage pipes in compliance to B.S.4962 is an effective sub-surface drainage system and can assist in the following;

1. Reduces ponding in low permeable soils.
2. Lowers surrounding water table to assist flood relief.
3. Drier soils greatly increase agricultural and recreational activities.
4. Suitable for all types of soils.
5. Slot perforated for superior drainage.
6. A full range of fittings available for various connections.

| MATERIAL PROPERTIES/ TYPICAL VALUES | |
|-------------------------------------|--|
| PROPERTY | TEST METHOD REFERENCE |
| Bulk Density | EN ISO 60: 2000 |
| Melt Mass Flow Rate (MFR) | EN ISO 1133: 2005 Procedure A (2.16 Kg) |
| Ash Content | EN ISO 3451 Method A |
| Izod Impact | EN ISO 180 Type A |
| Tensile Stress @ Yield | EN 527-2 Type A1 |
| Tensile Strain @ break | EN 527-2 Type A1 |
| Oxidation Induction time | BS EN 728 |

TWINWALL ROAD DRAINAGE SYSTEM ACCESSORIES

| Coupler Fitting | Pipe Diameter Offset | | | | | |
|-----------------|----------------------|-------|-------|-------|-------|-------|
| | 100mm | 150mm | 225mm | 300mm | 375mm | 450mm |
| Straight | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |



| Nominal internal/external pipe diameter (mm) | Coupler dimensions | |
|--|---------------------|--------------------------|
| | Nominal length (mm) | Nominal seal height (mm) |
| 100/129 | 145.0 | 10.4 |
| 150/260 | 180.0 | 17.2 |
| 225/260 | 220.0 | 23.5 |
| 300/345 | 245.0 | 31.5 |
| 375/435 | 330.0 | 40.6 |
| 450/500 | 335.0 | 36.9 |

| T - Junctions Fitting | Pipe Diameter Offset | | | | | |
|-----------------------|----------------------|-------|-------|-------|-------|-------|
| | 100mm | 150mm | 225mm | 300mm | 375mm | 450mm |
| 100mm | ✓ | | | | | |
| 150mm | ✓ | ✓ | | | | |
| 225mm | ✓* | ✓ | ✓ | | | |
| 300mm | ✓* | ✓ | ✓* | ✓* | | |
| 375mm | ✓* | ✓* | ✓* | ✓* | ✓* | |
| 450mm | ✓* | ✓* | ✓* | ✓* | ✓* | ✓* |



Note: * denotes fabricated and pressure tested to order

| Y - Junctions Fitting | Pipe Diameter Offset | | | | | |
|-----------------------|----------------------|-------|-------|-------|-------|-------|
| | 100mm | 150mm | 225mm | 300mm | 375mm | 450mm |
| 100mm | ✓ | | | | | |
| 150mm | ✓ | ✓ | | | | |
| 225mm | ✓* | ✓ | ✓ | | | |
| 300mm | ✓* | ✓ | ✓* | ✓* | | |
| 375mm | ✓* | ✓* | ✓* | ✓* | ✓* | |
| 450mm | ✓* | ✓* | ✓* | ✓* | ✓* | ✓* |



Note: * denotes fabricated and pressure tested to order



TWINWALL ROAD DRAINAGE SYSTEM ACCESSORIES

| Bends | Pipe Offset | | | | | |
|-------|-------------|-----|-------|-----|-----|-----|
| | 11.25° | 15° | 22.5° | 30° | 45° | 90° |
| 100mm | ✓ | ✓ | ✓* | ✓ | ✓ | ✓ |
| 150mm | ✓* | ✓ | ✓* | ✓ | ✓ | ✓ |
| 225mm | ✓* | ✓* | ✓* | ✓* | ✓ | ✓ |
| 300mm | ✓* | ✓* | ✓* | ✓* | ✓ | ✓ |
| 375mm | ✓* | ✓* | ✓* | ✓* | ✓* | ✓* |
| 450mm | ✓* | ✓* | ✓* | ✓* | ✓* | ✓* |



| Reducer Fitting | Pipe Diameter | | | | | |
|-----------------|---------------|-------|-------|-------|-------|-------|
| | 100mm | 150mm | 225mm | 300mm | 375mm | 450mm |
| 100mm | | ✓ | ✓* | ✓* | ✓* | ✓* |
| 150mm | ✓ | | ✓ | ✓* | ✓* | ✓* |
| 225mm | ✓* | ✓ | | ✓* | | |
| 300mm | ✓* | ✓* | ✓* | | | |
| 375mm | ✓* | ✓* | ✓* | ✓* | | |
| 450mm | ✓* | ✓* | ✓* | ✓* | | |



Note: * denotes fabricated and pressure tested to order



TWINWALL ROAD DRAINAGE SYSTEM ACCESSORIES

STANDARD COUPLINGS DESCRIPTION

Designed for sewage, drainage and all non and low-pressure applications up to 2.5 bar. When used individually or combined with bushes, Condron Standard Couplings have many applications in the construction, repair and maintenance of pipe systems:

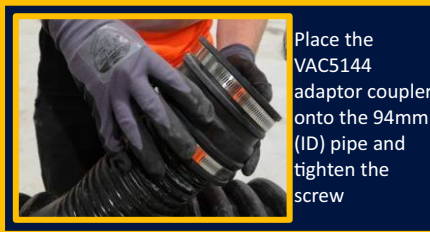
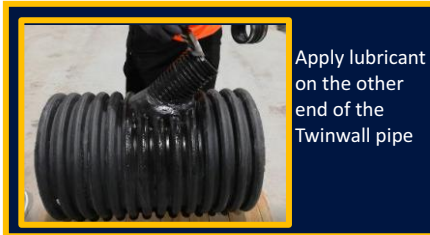
- As a joint for plain ended pipes
- Repair and maintenance of existing pipelines
- Connecting short and cut lengths of pipe
- Making post construction connections to an existing pipeline
- Reconnection of laterals on renovated sewers

| Pipe Diameter | Repair Couplings | | | | | |
|---------------|------------------|-------|-------|-------|-------|-------|
| | 100mm | 150mm | 225mm | 300mm | 375mm | 450mm |
| 100mm | ✓ | | | | | |
| 150mm | | ✓ | | | | |
| 225mm | | | ✓ | | | |
| 300mm | | | | ✓ | | |
| 375mm | | | | | ✓ | |
| 450mm | | | | | | ✓ |



INSTALLATION OF ADAPTOR COUPLERS

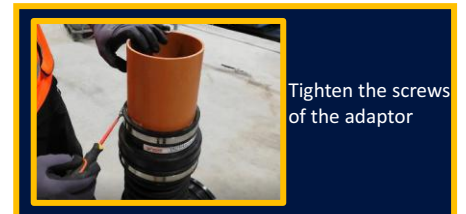
116mm to 110mm Adaptor Coupler



175mm to 110mm Adaptor Coupler



175mm to 160mm Adaptor Coupler



Note: A video guide showing the installation of Adaptor Couplers is available on our website at www.condronconcrete.ie

SURFACE WATER INFILTRATION SYSTEMS

INFILTRATION SYSTEMS

Sustainable Urban Drainage Systems (SUDS) is becoming more prevalent in drainage design. One key SUDS technique is to encourage surface water to infiltrate into the ground at source.

The Condron Concrete Works Twinwall Pipe system is available in unperforated, half-perforated, one third-perforated and two thirds-perforated and fully perforated configurations. The perforated and half-perforated pipes may be used to form several different infiltration devices. With carrier pipes used to transport surface water to the point of infiltration, enabling a single integrated system to be used, where required.

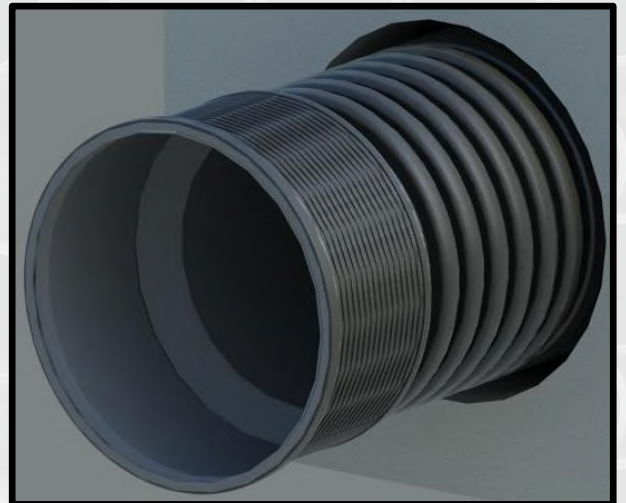
Typical infiltration structures, using the Condron Concrete Works Twinwall Pipe system, are:

- Ring soakaway
- Horizontal tank soakaway
- Trench soakaway
- Infiltration trench
- As part of a drainage blanket (increasing its storage capacity and reducing the volume of stone required)

Please contact to Condron Concrete Works Technical Staff for further information of SUDS and infiltration structure design.

The Condron Concrete Works Twinwall Pipe system for applications subject to the Manual of Contract Documents for Highway Works in diameters up to 900mm

The pipes shall be thermoplastic structured wall pipes. The system shall be stored, handled, transported and installed in accordance with the Manual of Contract Documents for Road Works. The pipes shall be of carrier / fully perforated / half perforated (solid invert) configuration. Solid invert and carrier drainage pipe shall be installed with sealed joints.



DISCLAIMER

The information given in this manual is, to the best of our knowledge, correct. But, customers, assigned certifiers, design certifiers, engineers, architects and specifiers, must satisfy themselves that any particular product is suitable for their specific requirements. The installation of all Condron Concrete Works Twinwall plastic pipes, fittings and accessories shall be strictly in accordance with the manufacturer's instructions. Condron Concrete Works, or their employees or agents, do not accept any liability whatsoever arising from anything contained in this manual.



Condron Concrete Works Twinwall Pipes can be delivered with any order for roof tiles, OG Pipes, S&S Pipes, Manhole Rings, Manhole covers and road gullies on the same delivery.

Structural Twinwall Pipe Loading per bale

| Internal Pipe → | Approx. Number of Structural Twinwall pipes per bale |
|-----------------|--|
| 94-110mm | 100 |
| 100mm | 77 |
| 150mm | 36 |
| 225mm | 14 |
| 300mm | 8 |
| 375mm | 5 |
| 450mm | 4 |
| 600mm | 2 |
| 750mm | 1 |
| 900mm | 1 |

Please contact the office or local Sales Representative for more details.

| Office | +353 57 9349000 +353 57 9321220 | Contact | John Cantwell- Concrete Pipes, Manholes & Accessories & Twinwall Plastic Pipes. john.cantwell@condronconcrete.com |
|---|---|--|---|
| Email | info@condronconcrete.com | | |
| Web | www.condronconcrete.com | | |
| For all queries from Northern Ireland on Concrete Pipes, Manhole's & Accessories, Twinwall Plastic Roof Pipes & Roof Tiles please contact the office | | Contact | David Dunne – Concrete Pipes, Manhole's & Accessories, Twinwall Plastic Pipes & Tiles david.dunne@condronconcrete.com |
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Condron Concrete is continually innovating and improving its products and services. Therefore, we reserve the right to change product specifications without notice. Please contact us for the latest information or visit www.condronconcrete.ie

