Bord Agrément na hÉireann
Irish Agrément Board

CERTIFICATE NO. 97/0089

Wavin Ireland Limited
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Co. Dublin
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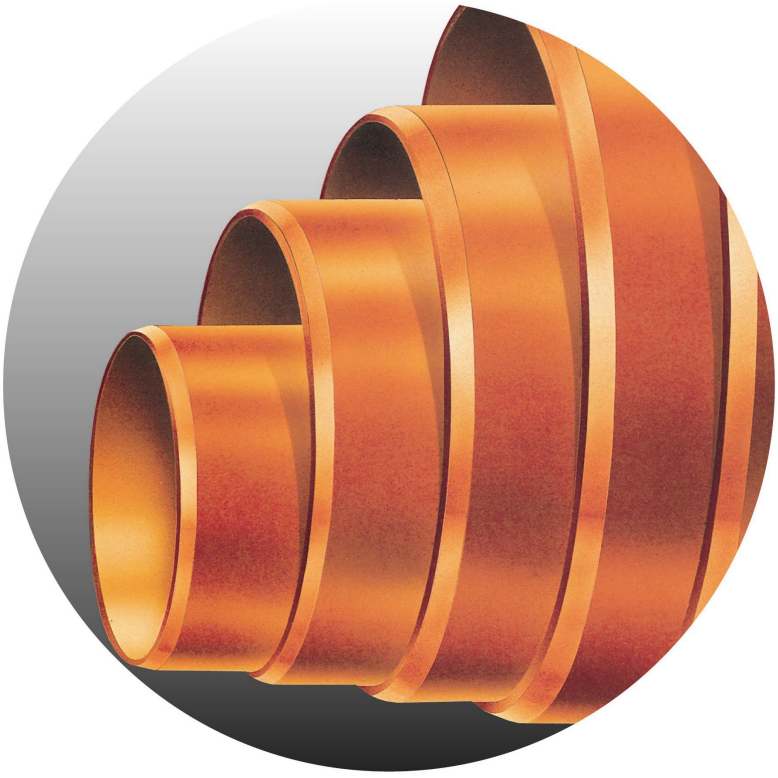
Wavin TRITEC Drain and Sewer Pipe

Eléments de drainage souterraíns
Dräungssystem

NSAI Agrément (Irish Agrément Board) is designated by Government to issue European Technical Approvals.

NSAI Agrément Certificates establish proof that the certified products are **'proper materials'** suitable for their intended use under Irish site conditions, and in accordance with TGD Part D of the second schedule of the **Building Regulations 1997 and subsequent revisions**.



PRODUCT DESCRIPTION AND USE:
This Certificate relates to the Wavin TRITEC Underground Drain and Sewer Pipe. The pipe consists of PVC-U internal and external layers with a foamed PVC-U core. Both the internal and external surfaces are smooth. The pipe is extruded in golden brown (Ral No. 8023) PVC. Pipes are produced in standard 6 meter lengths in either plain ends or single socket complete with a TPE ring seal.

The pipes are for use in domestic drainage systems and public and private sewerage systems with Wavin Underground Drain and Sewer fittings made to IS EN 1401-1: 1998, IS EN 13476-1: 2007, BS 4660: 2000 and BS 5481: 1977.

This Certificate does not apply to the use of the product for untreated trade effluent.

MANUFACTURE AND MARKETING:
The product is manufactured and marketed by:
Wavin Ireland Ltd.
Balbriggan
Co. Dublin
Ireland
Tel: 01-8020200 Fax: 01-841 5555
Email: info@wavin.com.

Bord Agrément na hÉireann
Irish Agrément Board

Part One / Certification 1

1.1 ASSESSMENT

In the opinion of the Irish Agrément Board (IAB), Wavin TRITEC Underground Drain and Sewer Pipe is satisfactory for the purposes defined above, and meets the requirements of the Irish Building Regulations 1997 and subsequent revisions, as indicated in Section 1.2 of this Certificate.

1.2 BUILDING REGULATIONS

REQUIREMENTS:

PART H – DRAINAGE AND WASTE DISPOSAL
H1 Drainage systems:
Wavin TRITEC Underground Drain and Sewer Pipe is easily installed to provide for the adequate disposal of foul water and surface water from buildings and can meet the Building Regulation requirements.

Part D – Materials and Workmanship
D3 – The Wavin TRITEC Underground Drain and Sewer Pipe as certified in this IAB Certificate, are proper materials fit for their intended use (see Part 4 of this Certificate).

D1 The Wavin TRITEC Underground Drain and Sewer Pipe as certified in this IAB Certificate, can meet the requirements for materials and workmanship.

Part Two / Technical Specification and Control Data 2

2.1 PRODUCT DESCRIPTION

This Certificate relates to the Wavin TRITEC Underground Drain and Sewer Pipe. The pipe consists of PVC-U internal and external layers with a foamed PVC-U core. Both the internal and external surfaces are smooth. The pipe is extruded in golden brown (Ral No. 8023) PVC. Pipes are produced in standard 6 meter lengths in either plain ends or single socket complete with a TPE ring seal. The ring seal consists of a flexible thermoplastic elastomer sealing element bonded to a polypropylene retaining ring.
The pipes are for use in domestic drainage systems and public and private sewerage systems with Wavin Underground Drain and Sewer fittings made to IS EN 1401-1 : 1998, IS EN 13476-1 :2007, BS 4660 : 2000 and BS 5481: 1977.
This Certificate does not apply to the use of the product for untreated trade effluent.

2.1.1 ANCILLARY ITEMS:

Elastomeric seals conforming to IS EN 681-2:2000 *Elastomeric seals. Material requirements for pipe joint seals used in water and drainage applications. Thermoplastic elastomers*.

2.2 MANUFACTURE

The pipe is extruded in golden brown (Ral No. 8023) PVC. Pipes are produced in standard 6 meter lengths in either plain ends or single socket. Ring seals manufactured to IS EN 681-2:2000 are inserted into each socket. Socket details are shown in Figure 1 with pipe dimensions shown in Table 1.

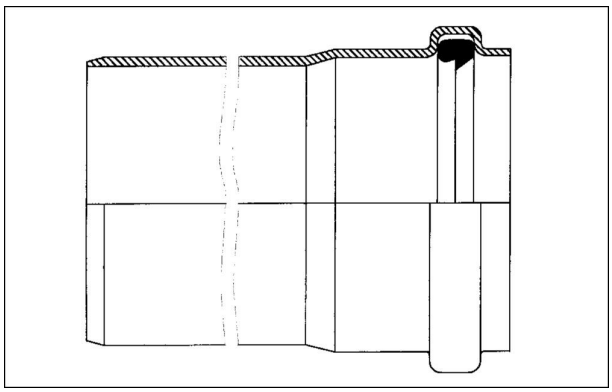


Figure 1. Socket Details.

Nom OD (mm)	Mean O.D. Min (mm)	Mean O.D. Max (mm)	Individual O.D. Min	Individual O.D. Max	Pipe Wall Thickness Min. (mm)	Inner Skin Wall Thickness Min. (mm)
110	110.0	110.4	108.0	112.4	3.2	0.4
160L	160.0	160.6	157.1	163.5	3.9	0.5
160	160.0	160.6	157.1	163.5	4.1	0.5
200	200.0	200.6	197.1	203.5	5.1	0.6
250	250.0	250.7	246.6	257.1	6.4	0.7
9"	244.1	244.8	240.9	247.3	6.25	0.6
315	315.0	315.8	307.4	323.8	7.7	0.8

Table 1: Pipe Dimensions.

2.2.1 PRODUCT QUALITY CONTROL

Quality control tests are carried out continuously during manufacture in accordance with the schedule indicated in Table 2.
The management systems of Wavin Ireland Ltd. have been assessed and registered as meeting the requirements of IS EN ISO 9001: 2000 – *'Quality Management Systems - Requirements'* by the National Standards Authority of Ireland (Certificate No. 19.0411).

2.3 DELIVERY, STORAGE AND MARKING

Handling, storage and transportation should be in accordance with BS 5955: Part 6: 1980. and SR 7: 1981*Recommendations for handling and installation of PVC buried drains and sewers.*
As with all PVC pipes when long-term storage is envisaged the pipe must be protected from direct sunlight. The pipe must also have adequate protection against damage from site traffic.
Each pipe length is indelibly marked at one meter intervals with the manufacturer's name, IAB Certification Mark incorporating the number of this Certificate, product name, nominal size (outside diameter and wall thickness), day number, shift number and year of manufacture.

TEST	FREQUENCY
Appearance (visual inspection)	Continuous
Dimensions (ref. Table 1)	Continuous
Reversion	Once every 8 hours
Impact resistance (at 0º C)	Once every 8 hours
Internal pressure (1 hour at 20º C)	Once every 24 hours

Table 2: Testing schedule.

2.4 INSTALLATION PROCEDURE

2.4.1 GENERAL

Drain and sewer systems utilising the pipe should be installed in accordance with the recommendations of BS 5955 Part 6: 1980, IS EN 742 Parts 1-4 : 1996 – 1998 and SR 7: 1981 and the recommendations given in this Certificate.

2.4.2 Jointing procedure

The spigot end and the inside of the socket must be clean and free from grit, dust or dirt and the sealing ring should be seated evenly in the socket groove. Approved lubricant is smeared evenly on the chamfered pipe end or fitting spigot.
The spigot is inserted into the socket and pushed fully home.

2.4.3 Laying pipes

Pipes are laid on the trench bottom in granular material or as dug material depending on trench conditions. Where the as-dug material is suitable* for use as bedding, the bottom of the trench may be trimmed to form the pipe bed *(see Figure 2.)*.
Small depressions should be made to accommodate the pipe sockets or couplings. After the pipe has been laid these should be filled carefully to ensure that no voids remain under the socket.
**Suitable material is defined as granular material in accordance with the recommendations of I.S. 5 Aggregates for Concrete or BS 5955 Par t 6: 1980 Appendix A having a nominal particle size not exceeding 10 to 14 mm for 110 mm to 160 mm OD and up to 20mm for sizes greater than 160 mm OD.*

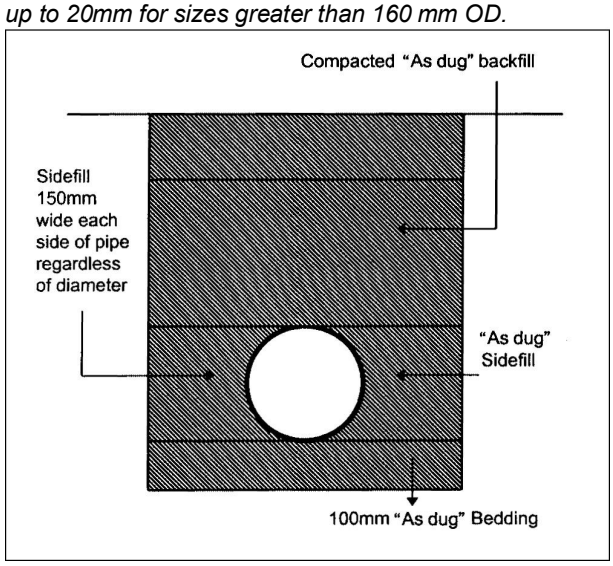


Figure 2: Pipe installation detail.

When the formation is prepared, the pipe should be laid upon it true to line and level within the specified tolerances. Each pipe should be checked and any necessary adjustments to level made by raising or lowering the formation, ensuring that the pipes finally rest evenly on the adjusted formation throughout the length of the pipes. Adjustments should be made by local packing.

Where the formation is low and does not provide continuous support, it should be brought up to the correct level by placing and compacting suitable material. When the as-dug material is not suitable as a bedding, a layer of suitable granular material (See *above) must be spread evenly on the trimmed trench bottom before the pipes are installed.
The trench should be excavated to allow for the thickness of granular bedding under the pipes. The trench formation should be prepared, the bedding placed and the pipes laid in accordance with SR 7: 1981, BS 5955: Part 6: 1980, IS EN 742 Parts 1-4 : 1996-1998 and the recommendations of this certificate.

Where the as-dug material can be hand trimmed by shovel and is not puddled when walked upon, a 50 mm depth of bedding material may be used. In this case the material must be between nominal 10-14 mm dia. single sized aggregate with no sharp edges, i.e. pea gravel *(See Figure 3).*
When the pipes are to be laid on rock, compacted sand and gravel requiring mechanical means of trimming and in very soft wet ground, the bedding should be a minimum of 100 mm in accordance with SR 7: 1981 and BS 5955: Part 6: 1980 (See Figure 4).

2.4.4 Sidefill
In all cases the sidefill must be of the same specification as the bedding material and extend to the level of the crown of the pipe, and placed and compacted in accordance with SR 7: 1981 and BS 5955: 1980: Part 6.

2.4.5 Backfill
Backfill above the level of the crown of the pipe should be in accordance with SR 7: 1981 and BS 5955 Part 6: 1980 (See Figures 2, 3 and 4).

Backfill Sequence:
(i) Place suitable sidefill material evenly on each side of the pipe in 100 mm layers. Pay particular attention to the area under the lower quadrants of the pipe. Hand tamp well at each layer up to the exposed pipe crown.

(ii) If 'as dug' material is free from stones exceeding 14mm dia., imported granular material is not needed above the pipe crown (see Fig. 3). Cover the pipe crown with a minimum of 300 mm of compacted 'as-dug' material. If the 'as dug' material contains stones larger than 14 mm dia., or the pipe is deeper than 2 meters in poor ground, extend the selected granular material for at least 100 mm above the pipe crown. (See Figure 4).

(iii) In both cases, hand tamp the materials fully at the side of the pipe while tamping lightly over the crown. Continue hand tamping until the finished layer of 300 mm has been placed over the pipe.

(iv) 'As-dug' material may be backfilled in 300mm layers and mechanically tamped. Dumpers or other vehicle must not be driven along the pipe tracks as a means of compacting. Surround vertical or steeply graded pipes with 150mm of bedding material, suitably tamped up to the invert level of the incoming pipe (Backdrops) or to ground level (Rodding eyes). Then backfill as above.

2.4.6 Dept of Cover
Pipes normally should be laid with a cover, measured from the top of the pipe to the surface of the ground, of not less than:

- 0.9m under roads
- 0.6m in agricultural land and in gardens within cartilage of dwellings.

Where such cover is not practicable the designer should specify alternative methods of protection. The designer should at all times take into consideration in his design any conditions, existing or envisaged, which might adversely affect the performance of the pipes.

When future landscaping or development works are envisaged sufficient depth should be allowed over pipes to ensure that the load bearing capacity of the pipe will not be exceeded due to surcharge and/or surface loads.

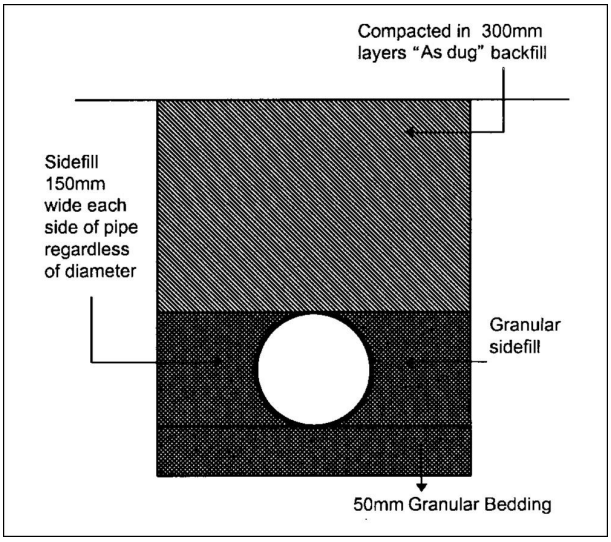


Figure 3: Pipe installation detail.

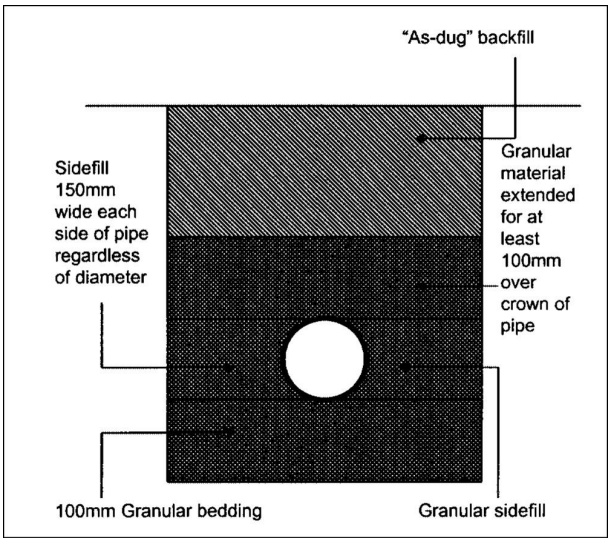


Figure 4: Pipe installation detail.

3.1 GENERAL
Wavin TRITEC Underground Drain and Sewer Pipe has been assessed for use with fittings complying with IS EN 1401-1 : 1998, IS EN 13476-1 :2007, BS 4660 : 2000 and BS 5481: 1977. 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 Public Health Acts.

Performance of joints:
The performance of joints will not be adversely affected by thermal expansion or contraction when correctly made. Joints with the pipeline remain watertight under conditions of pipeline movement in excess of those expected to occur in normal good drainage practice ie. less than or equal to 3 degrees.

Flow characteristics:

The pipe will have flow characteristics associated with PVC-U underground drainage and sewerage systems. Full bore discharges and velocities are given in Table 3. These values are based on accepted classical techniques.

	Nominal Outside Diameter 110mm														Nominal Bore 103.6mm				
Roughness	Gradient 1 in	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	400
(mm)	Velocity (m/s)	3.3	2.3	1.9	1.6	1.4	1.3	1.2	1.1	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.5	0.5
0.06	Flow (l/s)	27.8	19.4	15.7	13.5	12.0	10.9	10.0	9.3	8.8	8.3	7.5	6.9	6.4	6.1	5.7	5.1	4.6	3.9
0.15	Velocity (m/s)	3.0	2.1	1.7	1.5	1.3	1.2	1.1	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.4
	Flow (l/s)	25.4	17.8	14.5	12.5	11.1	10.1	9.4	8.7	8.2	7.8	7.1	6.5	6.1	5.7	5.4	4.8	4.4	3.7
0.6	Velocity (m/s)	2.5	1.8	1.4	1.2	1.1	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5	0.4	0.4
	Flow (l/s)	21.2	14.9	12.2	10.5	9.4	8.5	7.9	7.4	7.0	6.6	6.0	5.6	5.2	4.9	4.6	4.1	3.8	3.3

	Nominal Outside Diameter 160mm														Nominal Bore 151.8mm				
Roughness	Gradient 1 in	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	400
(mm)	Velocity (m/s)	4.2	2.9	2.4	2.0	1.8	1.7	1.5	1.4	1.3	1.3	1.1	1.1	1.0	0.9	0.9	0.8	0.7	0.6
0.06	Flow (l/s)	76.0	53.1	43.1	37.1	33.0	30.0	27.6	25.7	24.2	22.9	20.8	19.1	17.8	16.7	15.8	14.0	12.7	10.9
0.15	Velocity (m/s)	3.8	2.7	2.2	1.9	1.7	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.9	0.9	0.8	0.7	0.7	0.6
	Flow (l/s)	69.5	48.9	39.7	34.3	30.6	27.8	25.7	24.0	22.6	21.4	19.4	17.9	16.7	15.7	14.9	13.3	12.0	10.3
0.6	Velocity (m/s)	3.2	2.3	1.9	1.6	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.5
	Flow (l/s)	58.4	41.2	33.6	29.1	26.0	23.7	21.9	20.5	19.3	18.3	16.7	15.4	14.4	13.6	12.9	11.5	10.5	9.0

	Nominal Outside Diameter 200mm														Nominal Bore 189.8mm				
Roughness	Gradient 1 in	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	400
(mm)	Velocity (m/s)	4.8	3.4	2.7	2.4	2.1	1.9	1.8	1.6	1.5	1.5	1.3	1.2	1.1	1.1	1.0	0.9	0.8	0.7
0.06	Flow (l/s)	136.6	95.6	77.5	66.8	59.4	54.0	49.8	46.5	43.7	41.3	37.5	34.6	32.2	30.3	28.6	25.4	23.0	19.7
0.15	Velocity (m/s)	4.4	3.1	2.5	2.2	1.9	1.8	1.6	1.5	1.4	1.4	1.2	1.1	1.1	1.0	1.0	0.8	0.8	0.7
	Flow (l/s)	125.0	88.0	71.5	61.8	55.1	50.2	46.4	43.3	40.7	38.6	35.1	32.4	30.2	28.4	26.9	24.0	21.8	18.7
0.6	Velocity (m/s)	3.7	2.6	2.1	1.9	1.7	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.9	0.9	0.8	0.7	0.7	0.6
	Flow (l/s)	105.5	74.5	60.7	52.5	46.9	42.8	39.6	37.0	34.9	33.1	30.2	27.9	26.1	24.5	23.3	20.8	18.9	16.3

	Nominal Outside Diameter 244.1mm (9")														Nominal Bore 231.6mm				
Roughness	Gradient 1 in	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	400
(mm)	Velocity (m/s)	5.5	3.8	3.1	2.7	2.4	2.2	2.0	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.2	1.0	0.9	0.8
0.06	Flow (l/s)	230.1	161.3	130.8	112.7	100.4	91.3	84.2	78.5	73.8	69.9	63.5	58.5	54.5	51.2	48.4	43.0	39.0	33.5
0.15	Velocity (m/s)	5.0	3.5	2.9	2.5	2.2	2.0	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.8
	Flow (l/s)	210.8	148.4	120.7	104.3	93.0	84.8	78.3	73.1	68.8	65.2	59.4	54.8	51.1	48.1	45.6	40.6	36.9	31.7
0.6	Velocity (m/s)	4.2	3.0	2.4	2.1	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	1.0	0.9	0.8	0.8	0.7
	Flow (l/s)	178.4	126.0	102.8	88.9	79.5	72.5	67.1	62.7	59.1	56.0	51.1	47.2	44.2	41.6	39.4	35.2	32.1	27.7

	Nominal Outside Diameter 250mm														Nominal Bore 237.2mm				
Roughness	Gradient 1 in	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	400
(mm)	Velocity (m/s)	5.5	3.9	3.2	2.7	2.4	2.2	2.0	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.2	1.0	0.9	0.8
0.06	Flow (l/s)	244.9	171.7	139.3	120.0	106.9	97.2	89.7	83.6	78.6	74.4	67.6	62.3	58.1	54.6	51.6	45.8	41.6	35.7
0.15	Velocity (m/s) Flow (l/s)	5.1 224.4	3.6 158.0	2.9 128.6	2.5 111.0	2.2 99.1	2.0 90.3	1.9 83.4	1.8 77.9	1.7 73.3	1.6 69.4	1.4 63.2	1.3 58.4	1.2 54.5	1.2 51.3	1.1 48.5	1.0 43.2	0.9 39.3	0.8 33.8
0.6	Velocity (m/s) Flow (l/s)	4.2 190.1	3.0 134.2	2.4 109.5	2.1 94.7	1.9 84.6	1.7 77.2	1.6 71.4	1.5 66.8	1.4 62.9	1.3 59.7	1.2 54.4	1.1 50.3	1.0 47.0	1.0 44.3	0.9 42.0	0.8 37.5	0.8 34.2	0.7 29.5

	Nominal Outside Diameter 315mm														Nominal Bore 299.6mm				
Roughness	Gradient 1 in	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	400
(mm) 0.06	Velocity (m/s) Flow (l/s)	6.4 451.0	4.5 316.0	3.6 257.0	3.1 221.0	2.8 197.0	2.5 179.0	2.3 165.0	2.1 154.0	2.0 145.0	1.9 137.0	1.7 124.0	1.6 115.0	1.5 107.0	1.4 101.0	1.3 95.0	1.2 85.0	1.0 77.0	0.9 66.0
0.15	Velocity (m/s) Flow (l/s)	5.8 414.0	4.1 291.0	3.3 237.0	2.9 205.0	2.6 183.0	2.3 166.0	2.1 153.0	2.0 144.0	1.9 135.0	1.8 128.0	1.6 116.0	1.5 108.0	1.4 100.0	1.3 94.0	1.2 89.0	1.1 80.0	1.0 72.0	0.8 62.0
0.6	Velocity (m/s) Flow (l/s)	5.0 352.0	3.5 248.0	2.8 202.0	2.4 175.0	2.2 156.0	2.0 143.0	1.8 132.0	1.7 123.0	1.6 116.0	1.5 110.0	1.4 100.0	1.3 93.0	1.2 87.0	1.1 82.0	1.1 77.0	0.9 69.0	0.9 63.0	0.7 54.0

The following is a summary of the technical investigations which were carried out on Wavin TRITEC Underground Drain and Sewer Pipe.

4.1 Strength
The pipe has adequate strength for use in situations where pipe to IS EN 1401-1 : 1998, IS EN 13476-1 :2007, BS 4660 : 2000 and BS 5481: 1977 is specified. The pipe has a characteristic impact value of H50 at 2m and TIR not exceeding 10% at 23°C.

4.2 Resistance to chemicals
The pipe is suitable for use where pipe manufactured to IS EN 1401-1 : 1998, IS EN 13476-1 :2007, BS 4660 : 2000 and BS 5481: 1977 is normally specified. It has adequate resistance to the type and quantity of chemicals likely to be found in domestic sewage. The material of manufacture of the Wavin Tritec pipe is PVC-U and details of the chemical resistance of PVC-U are given in CP 312: Part 1: 1973.

4.3 Resistance to elevated temperatures
The pipe is for use where pipes and fittings manufactured IS EN 1401-1 : 1998, IS EN 13476-1 :2007, BS 4660 : 2000 and BS 5481: 1977 are normally used. It has adequate resistance to temperatures likely to be found in domestic sewage.

4.4 Practicability of installation
The pipe is easily installed under normal site conditions.

4.5 Maintenance
Drains and sewers incorporating the pipe can be maintained using jetting equipment to Wavin's specification or rodded using conventional flexible drain rods. Toothed root cutters, as used with some mechanical cleaning systems, could damage the pipe and fittings and should not be used.

4.6 Durability
In the opinion of the IAB no significant deterioration of the product will take place when used in the context of this Certificate and installations will have a life equivalent to traditional PVC-U drainage systems.

4.7 Tests and Assessments were carried out to determine:

- watertightness of joints under conditions of pipe deformation and hydrostatic pressure to I.S. EN 1277: 2004 *Plastics piping systems – Thermoplastics pipe systems for buried non-pressure applications – Test methods for leaktightness of elastomeric sealing ring type joints .*

- watertightness of joints under the combined conditions of angular deflection and pipe/socket assembly deformation and hydrostatic pressure to I.S. EN 1277: 2004 *Plastics piping systems – Thermoplastics pipes systems for buried non-pressure applications – Test method for leaktightness.*

- airtightness under vacuum of joints under the combined conditions of angular deflection and pipe/socket assembly deformation to I.S. EN 1277: 2004 *Plastics piping systems – Thermoplastics pipe systems for buried non-pressure applications – Test method for leaktightness*

- ring flexibility to I.S.EN 1446 : 1996 *Plastic piping and ducting systems – Determination of Ring Flexibility.*

- impact resistance to I.S.EN 744 : 1996 *Plastic piping and ducting systems – Thermoplastics pipes – Test method for resistance to external blows by the round the clock method.*

- Vicat softening temperature of material to I.S.EN 727: 1995 *Plastics piping and ducting systems – Thermoplasticspipes and fittings – Determination of Vicat softening temperature (VST).*

- long term material strength to I.S.EN 921: 1995 *Plastics piping systems – Thermoplastics pipes – Determination of resistance to internal pressure at constant temperature.*

- ring stiffness to I.S.EN ISO 9969 : 1995*Thermoplastics pipes. Determination of ring stiffness.*

- longitudinal reversion to I.S. EN ISO 2505 : 2005 *Thermoplastics pipes – Longitudinal reversion – test method and parameters.*

- dichloromethane test, PVC skins material to I.S.EN 580
- dimensional accuracy
- tensile strength, PVC skins material to BS 4660

Examination was made of data relating to:
- resistance to chemicals
- flow characteristics
- resistance to high pressure water jetting

4.8 Other Investigations:

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

(ii) Site visits were conducted to assess the practicability of installation.

(iii) No failures of the product in use have been reported to the IAB.

Part Five / Conditions of Certification 5

5.1 National Standards Authority of Ireland ("NSAI") following consultation with the Irish Agrément Board ("IAB") has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from date of issue so long as:

(a) the specification of the product is unchanged.

(b) the Building Regulations and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.

(c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.

(d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.

(e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.

(f) the registration and/or surveillance fees due to IAB are paid.

5.2 The IAB mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid the Certificate holder must not use the IAB mark and certification number and must remove them from the products already marked.

5.3 In granting Certification, the NSAI makes no representation as to;

(a) the absence or presence of patent rights subsisting in the product/process; or

(b) the legal right of the Certificate holder to market, install or maintain the product/process; or

(c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.

5.4 This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.

5.5 Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act. 2005, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.

5.6 The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.

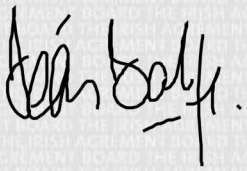
5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards. Manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certification.

The Irish Agrément Board

This Certificate No. **97/0089** is accordingly granted by the NSAI to **Wavin Ireland Ltd** on behalf of The Irish Agrément Board.

Date of Issue: **11th April 1997**

Signed



Seán Balfe
Director of Irish Agrément Board

Readers may check that the status of this Certificate has not changed by contacting the Irish Agrément Board, NSAI, Glasnevin, Dublin 9, Ireland. Telephone: (01) 807 3800. Fax: (01) 807 3842. www.nsai.ie

Revisions

- **September 2007:** Addition of 315mm diameter pipe.
- **12 January 2018:** General Revisions
- **15 June 2023:** References to Building Regulations updated.