



SMS (Sewer Maintenance Shaft) Pty Ltd

PRODUCT APPRAISAL REPORT 1317 Issue 3

Polypropylene (PP) Maintenance Shafts and Chambers

WSA 137:2019 - Industry standard for unplasticized polyvinyl chloride (PVC-U), polypropylene (PP) and polyethylene (PE) maintenance shafts, maintenance chambers and maintenance holes for sewerage

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Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak industry body representing the urban water industry. Our members provide water and sewerage services to over 20 million customers in Australia and New Zealand and many of Australia's largest industrial and commercial enterprises.

Based around our vision of 'customer driven, enriching life', WSAA facilitates collaboration, knowledge sharing, networking and cooperation within the urban water industry. We are proud of the collegiate attitude of our members which has led to industry-wide approaches to national water issues.

WSAA can demonstrate success in the standardisation of industry performance monitoring and benchmarking, as well as many research outcomes of national significance. The WSAA Executive retains strong links with policy makers and legislative bodies and their influencers, to monitor emerging issues of importance to the urban water industry.

WSAA was formed in 1995 as a non-profit organisation to foster the exchange of information between industry, government and the community, and to promote sustainable water resource management.

The urban water industry is committed to anchoring its services to customers' values, and to enrich communities where water services have broad economic, environmental and social values. In line with this our main activities focus on four areas:

1. influencing national and state policies on the provision of urban water services and sustainable water resource management
2. promoting debate on environmentally sustainable development and management of water resources and the community health requirements of public water supplies
3. improving industry performance and establishing benchmarks and industry leading practices for water service processes; and
4. fostering the exchange of information on education, training, research, water and wastewater management and treatment and other matters of common interest.

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1 EXECUTIVE SUMMARY

SMS (Sewer Maintenance Shaft) Pty Ltd is a wholly owned Australian company specialising in the supply of sewer maintenance shafts and chambers for the Australian water industry.

This Appraisal is for a range of polypropylene (PP) sewer maintenance shafts and chambers, including associated fittings, manufactured in conformance with WSA 137:2019 *Industry standard for PVC-U, PP and PE maintenance shafts, maintenance chambers and maintenance holes for sewerage*.

The PP maintenance shaft base units and associated PVC-U fittings are manufactured in Germany by BT Nyloplast GmbH and the PP maintenance chamber base units are manufactured in The Netherlands by DYKA Plastics NV.

This Issue 3 is to incorporate AXEDO 600 PP maintenance chambers, previously appraised in PA 1801 (which had reached its 5-year expiry date) into this Appraisal report. PA 1801 will be withdrawn upon publication of this report. QA certifications have also been updated.

Issue 2 of this Appraisal was a replacement and amalgamation of Parts 1 and 2 which had reached their 5-year expiry dates.

The PP maintenance shaft base units are available for use with DN 100, DN 150 and DN 225 gravity sewer installations in the following sizes and configurations:

- DN 300 x DN 100 inline or junction
- DN 300 x DN 150 inline or junction
- DN 300 x DN 225 in-line
- DN 225 x DN 100 inline or junction
- DN 225 x DN 150 inline or junction
- DN 375 x DN 100 in-line
- DN 375 x DN 150 in-line
- DN 375 x DN 225 in-line

The scope of this appraisal also includes PVC-U terminal maintenance shaft assemblies in sizes DN 225 x DN150, DN 300 x DN 150 and DN 300 x 225. These fittings are used at end of line situations.

The PP AXEDO 600 maintenance chamber base units are moulded with DN 150 or DN 225 outlets and the following configurations:

- DN 600 x DN 150 straight, 120° offset, tee or swept cross.
- DN 600 x DN 225 straight or swept cross.

Further details are provided in Section 3.

SMS Pty Ltd, BT Nyloplast GmbH and DYKA Plastics NV all hold ISO 9001:2015 Quality Management System Licences.

The sewer maintenance shafts and chambers have ISO Type 5 GlobalMark Product Certification to WSA 137 and conformity certification to EN 13598.2 *Plastics piping systems for non-pressure underground drainage and sewerage - PVC-U, PP and PE- Part 2: Specifications for manholes and inspection chambers*. PVC-U fittings have conformity certification to EN 1401-1 *Plastics piping systems for non-pressure underground drainage and sewerage - PVC-U specifications for pipes, fittings and the system*.

This Appraisal has determined that SMS sewer maintenance shafts and chambers, as detailed in this report, meet the requirements of WSA PS 341:2019 *Maintenance Shafts (MS)* -

Polypropylene (PP) for Non-Pressure Applications – Sewerage and WSA PS 337 Maintenance Chambers (MC) – Polypropylene (PP) for Non-Pressure Applications –Sewerage and are considered as 'fit-for-purpose'.

1.1 Recommendation

It is recommended that WSAA members, subject to any specific requirements of the member, accept or authorise the SMS polypropylene sewer maintenance structures and associated fittings, as detailed in this report, for use in sewer applications provided any relevant conditions relating to the design, installation, acceptance testing and commissioning are in accordance with applicable WSAA Codes and manufacturer's requirements.

2 THE APPLICANT

The Applicant is SMS (Sewer Maintenance Shaft) Pty Ltd.

2.1 The Supplier

SMS (Sewer Maintenance Shaft) Pty Ltd is a wholly owned Australian company established in 2003 in Melbourne and is a specialist supplier of sewer maintenance shafts and chambers for the Australian water industry. Additional information is available at <https://sewerms.com.au/>

2.2 The Manufacturers

BT Nyloplast GmbH, located in Germany, manufactures the sewer maintenance shafts and associated PVC-U fittings. More information is available at <https://www.btnyloplast.com/en>.

DYKA Plastics NV Located in The Netherlands, manufactures the sewer maintenance chambers. More information is available at <https://www.dyka.com/en/dyka>

Both BT Nyloplast and DYKA Plastics are members of the Tessengerlo Group.

Tessengerlo Group is a diversified industrial group that focusses on agriculture with a worldwide presence providing solutions in food, agriculture, water management and efficient use and re-use of natural resources. More information is available at <https://www.tessengerlo.com/en>.

3 THE PRODUCT

This Appraisal is for a range of polypropylene (PP) sewer maintenance shafts and chambers, including associated fittings, manufactured in conformance with WSA 137:2019 *Industry standard for PVC-U, PP and PE maintenance shafts, maintenance chambers and maintenance holes for sewerage*.

The shafts and chambers are manufactured to comply with EN 13598.2 *Plastics piping systems for non-pressure underground drainage and sewerage - PVC-U, PP and PE– Part 2: Specifications for manholes and inspection chambers*. Sockets and elastomeric seals, including fittings, are dimensionally and performance compliant with AS/NZS 1260. Elastomeric seal materials comply with EN 681.1 or EN 681.2.

Maintenance shafts are defined as having a riser of size DN 225 to DN 450 to provide access to the sewer for inspection and some maintenance equipment.

A terminal maintenance shaft is located at the end of a reticulation sewer.

Maintenance chambers are defined as having a riser of size DN 600 to DN 800 to provide access to the sewer for inspection and most maintenance equipment.

Shafts and chambers are not suitable for man entry.

3.1 Sewer maintenance shafts

The polypropylene maintenance shaft base units are available for use with DN 100, DN 150 and DN 225 gravity sewer installations in the following sizes and configurations:

- DN 300 x DN 100 inline.
 - DN 300 riser, can be modified to DN 225 using a DN 300-DN 225 PVC-U taper.
 - DN 100 inlet and outlet at 180° with solvent cement joints (SCJ).
- DN 300 x DN 100 junction.
 - DN 300 riser, can be modified to DN 225 using a DN 300-DN 225 taper.
 - DN 100 outlet and triple branch inlets, in line and 45° either side with solvent cement joints (SCJ).
- DN 300 x DN 150 inline.
 - DN 300 riser, can be modified to DN 225 using a DN 300-DN 225 taper.
 - DN 150 inlet and outlet at 180° with rubber ring joints (RRJ).
- DN 300 x DN 150 junction.
 - DN 300 riser, can be modified to DN 225 using a DN 300-DN 225 taper.
 - DN 150 outlet and triple branch inlets, in line and 45° either side with rubber ring joints (RRJ).
- DN 375 x DN 225 in-line.
 - DN 375 riser, can be modified to DN 300 using a DN 375-DN 300 taper.
 - DN 225 inlet and outlet at 180° with rubber ring joints (RRJ). The inlet and outlet size can be modified to DN 150 or DN 100 using PVC-U DN 225-DN 150 or DN 225-DN 100 tapers.

See Figure 1 for examples of configurations.



DN 225 x DN 100 Inline



DN 300 x DN 150 inline



DN 225 x 100 Junction



DN 300 x DN 150 Junction



DN 300 x DN 225 Inline

FIGURE 1 EXAMPLES OF SEWER MAINTENANCE SHAFTS

The AS/NZS 1260 – SN4 DN 225 or DN 300 PVC-U DWV riser pipe for the shafts are cut to length on site.

An appropriately sized PVC-U RRJ cap (to allow for surcharge) or a PVC-U SWJ cap with a screw top lid (does not cater for surcharge) is used to cap the riser.

Only two of the inlets can be used on a junction type shaft. The third outlet is sealed using a PVC-U RRJ or SCJ plug.

The shafts provide for a 3° sewer gradient through the base unit when the riser is set vertically.

The shafts are suitable for installation depths up to 4 metres.

The scope of this appraisal also includes PVC-U terminal maintenance shaft assemblies in sizes DN 225 x DN 100, DN 225 x DN150, DN 300 x DN 150 and DN 300 x 225. These fittings are used at end of line situations and are made by jointing together injection moulded fittings. See Figure 2 for an example.



FIGURE 2 EXAMPLE OF TERMINAL MS ASSEMBLY

3.2 Sewer maintenance chambers

The PP AXEDO 600 maintenance chamber base units are moulded with DN 150 or DN 225 outlets and the following configurations:

- DN 600 x DN 150 straight, 120° offset, tee or swept cross.
- DN 600 x DN 225 straight or swept cross.

See Figure 3 for details.



Base Unit



Assembly



Straight



120° Offset



Tee



Swept Cross

FIGURE 3 AXEDO 600 MAINTENANCE CHAMBERS AND FLOW PROFILES

The chambers provide for a 0° sewer gradient through the base unit when the riser is set vertically.

The chamber assembly incorporates a DN 600 riser cut to length from Vinidex SN8 StormPro[®], a twin wall corrugated polypropylene pipe with a white liner for non-pressure applications. A polyethylene cap and lid are fitted to the top of the riser. The riser is jointed to the base and cap utilising the StormPro elastomeric jointing system. The lid can be supplied with either a 300mm or 500mm clear opening and is fitted to the cap with a 90° bayonet lock. The shaft is finished at surface level with a Class B or Class D AS 3996 ductile iron access cover and frame incorporating a shroud and surround.

SMS also provides components to install a 615 mm clear opening Class D 'Top Hat' frame and safety grill to fit the riser pipe.

The chambers are suitable for installation depths up to 6 metres.

3.3 Fittings

Other fittings, not included in this appraisal, include drop tees, access covers, push-in plugs, lateral connectors, couplings, long radius bends and injection moulded elbows.

Additional product information is available in Appendix A or at <https://sewerms.com.au/>

4 SCOPE OF THE APPRAISAL

The scope of this appraisal is for a range of PP sewer maintenance shafts and chambers, including associated fittings, as detailed in Section 3 and included in the ISO Type 5 GlobalMark Product Schedules in Appendix B.

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts polypropylene sewer maintenance structures manufactured in compliance with WSA 137:2019 *Industry standard for PVC-U, PP and PE maintenance shafts, maintenance chambers and maintenance holes for sewerage* and duly certified by means of an ISO Type 5 product certification scheme undertaken by a JAS-ANZ accredited Conformity Assessment Body (CAB) or by an international accreditation system recognised by JAS-ANZ.

The manufacturer is generally expected to have a production management and control system that has been duly accredited in accordance with AS/NZS ISO 9001 as a prerequisite to undergoing a product certification audit.

The ISO Type 5 Product Certification Scheme shall meet the criteria described in WSA TN-08.

5.2 Performance Requirements

The SMS polypropylene sewer maintenance structures have been appraised for compliance with WSA 137:2019 *Industry standard for PVC-U, PP and PE maintenance shafts, maintenance chambers and maintenance holes for sewerage*.

Appraisal criteria are also determined by the WSAA Product Appraisal Technical Advisory Group and regularly reviewed to ensure that the criteria reflect the requirements of WSAA members.

The following Product Specifications are relevant to this application:

WSA PS 337 *Maintenance Chambers (MC) - Polypropylene (PP) for Non-Pressure Applications – Sewerage*.

WSA PS 341 *Maintenance Shafts (MS) - Polypropylene (PP) for Non-Pressure Applications – Sewerage*.

Copies of the Product Specifications are available at the following link:

<https://www.wsaa.asn.au/shop/product/60961>

6 COMPLIANCE WITH APPRAISAL CRITERIA

6.1 Compliance with Quality Assurance Requirements

SMS has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. 94646674106E69CBCA2587100016B908 issued to Sewer Maintenance Shaft Pty Ltd by Global-Mark Pty Ltd
- ISO 9001:2015 Certificate of Registration No. 00638.EQU/22.R issued to BT Nyloplast GmbH by SKZ.
- ISO 9001:2015 Certificate of Registration No. K-0206115/01 issued to Dyka BV by Kiwa Nederland.
- WSA 137:2019 ISO Type 5 Global-Mark Product Certification Licence No. 9F8CA0BF1CF87F74C12589460038F115 issued by Global-Mark Pty Ltd. (Shafts)
- WSA 137:2019 ISO Type 5 Global-Mark Product Certification Licence No. 695C406014802DCCC125881500313273 issued by Global-Mark Pty Ltd. (Chambers)
- EN 13598.2 Conformity Certificate No. 6449 issued to BT Nyloplast GmbH by SKZ.
- EN 13598.2 ISO Type 5 Kitemark No. KM 667428 issued to Dyka BV by BSI.
- EN 1401.1 Conformity Certificate No. 3611 issued to BT Nyloplast GmbH by SKZ.

Copies of the Quality Assurance and Product Certification licences have been included in Appendix B and are also available from WSAA.

Copies of Quality Assurance certificates have also been supplied for the component suppliers and are held on file by WSAA.

6.2 Compliance with Material Requirements

6.2.1 Materials

6.2.1.1 Polypropylene Material

WSA 137 nominates polypropylene (PP) material in compliance with nominated Standards as acceptable material for the base units.

The PP material used for the manufacture of the maintenance shafts is Borealis Grade BA204E block copolymer.

The PP material used for the manufacture of the maintenance chambers is Eltex TUB 400 IM01 impact co-polymer.

Previous issues of this appraisal have reported durability tests undertaken for both materials to demonstrate conformance with the requirements of WSA 137.

6.2.1.2 Polyethylene material

The caps and lids for the chambers are manufactured by Viscount Plastics from Qenos Alkatuff[®] Grade LL711UV PE, a hexene LLDPE material specifically designed for rotational moulding applications. The material is designed for chemical and water tanks and other applications where toughness, stiffness and UV protection is important.

6.2.2 PVC-U fittings

PVC-U fittings are sourced from BT Nyloplast and are in compliance with EN 1401.1, which corresponds with the requirements of AS/NZS 1260. The fittings are covered by ISO Type 5 product certification to EN 1401.1.

Where PVC-U fittings are not sourced from BT Nyloplast, SMS utilises AS/NZS 1260 fittings with ISO Type 5 product certification from Australian suppliers.

6.2.1.3 Elastomeric Seals

The various SBR and EPDM seals are sourced from Bode GmbH, M.O.L. Gummiverarbeitung GmbH and Vinidex, who in turn source their seals from Hultec. All companies are ISO 9001 certified and the seals are covered by ISO Type 5 Product Certification to EN 681.1 or EN 681.2

Copies of quality certificates for these companies are held on file by WSAA.

6.2.2 Dimensions

6.2.3.1 Sockets and Spigots.

Spigot diameters for polypropylene components manufactured to ISO 8773 are nominally identical and with tighter tolerance in comparison to AS/NZS 5065 and AS/NZS 1260.

ISO 8773 wall thicknesses for each DN are almost identical to AS/NZS 5065 and AS/NZS 1260. The Australian standards nominate maximum wall thicknesses 0.1 mm thinner than the ISO Standard. Wall thicknesses for sockets in ISO 8773 are identical to AS/NZS 5065 and AS/NZS 1260.

EN 1401-1 dimensional requirements for PVC injection moulded fittings comply with the dimensional requirements of AS/NZS 1260.

The connections to the PP base units and PVC-U reducers are metric sockets with elastomeric seals dimensionally compatible with AS/NZS 1260 PVC-U DWV pipe.

The minimum length of engagement of the pipe spigot beyond the elastomeric seal is identical for all sizes in ISO 8773, AS/NZS 5065 and AS/NZS 1260.

The elastomeric joints are capable of providing 2° deflection.

Note: Polypropylene (PP) spigots and sockets cannot be solvent cement welded or solvent cement welded to PVC.

The BT Nyloplast injection moulded PVC-U fittings are provided with an elastomeric seal however, with the seal removed may be solvent cement jointed. EN 1401.1 specifies parallel sockets for solvent cement jointing and in Australia a gap filling solvent cement complying with AS/NZS 3879 must be used. With the elastomeric seal removed sufficient contact length is available for an adequate solvent cement joint seal.

Note: Solvent cement jointing with parallel sockets requires gap filling solvent cement in compliance with AS/NZS 3879

7 PERFORMANCE REQUIREMENTS

Test reports have been submitted by SMS for previous issues of the relevant appraisals to demonstrate compliance with the performance requirements of WSA 137. Tests include structural integrity of base, impact resistance of base, ring stiffness of riser, accessibility test, joint watertightness between pipe and base, joint watertightness between base and riser, joint watertightness between reducer and riser, watertightness telescopic section of riser, effective seal for root intrusion, riser and riser joint load resistance.

8 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

SMS Installation Instructions are included in Appendix A.

Polypropylene sewer maintenance structures are installed as part of the PVC-U sewer line using the same embedment and compaction. This pipelaying process should be carried out by experienced pipelayers / contractors and any training is usually a requirement of the water agency. SMS provide personalised customer service with 24 hour technical and “in field” support where required.

The lower half of the shaft base unit has strengthening ribs on the underside that does not cause impediment to bedding and footing ribs for ease of standing and locking into the underlay material. The DN 300 / 375 riser section of the base unit has circular strengthening ribs that do not cause impediment to the free flow of granular bedding material. The PVC-U riser should be installed with embedment compacted in layers, as specified by the water agency.

The underside of the chamber base unit has a strengthening plate that does not cause impediment to bedding and provides footing ribs for ease of standing and locking into the underlay material. The DN 600 riser section has circular strengthening ribs that do not cause impediment to the free flow of granular bedding material. The StormPro PP riser should be installed with embedment compacted in layers as prescribed in the SMS product manual.

9 PRODUCT MARKING

The maintenance structures are marked in accordance with the requirements of EN 13598.2 and WSA 137 as follows:

- Manufacturers name: DYKA, BT
- Date of manufacture: Month/year
- Material identification: PP
- Nominal size: e.g., 600 x 225
- Maximum installation depth: e.g., 4mt, 6mt
- The number of the standard: EN 13598.2 / WSA 137
- Product certification mark and number:

SMS also includes the following marking using an adhesive label.

- WARNING: DO NOT STORE UNCOVERED IN DIRECT SUNLIGHT FOR MORE THAN 3 MONTHS.
- Not to be used in areas of temporary or permanent fluctuating high water table without anti-flotation device.

Risers and fittings are marked in accordance with the relevant product standard.

10 PACKAGING AND TRANSPORTATION

The assembled maintenance structure units are loaded onto pallets or skids, shrink wrapped and strapped down for delivery.

Where polypropylene maintenance structures are manhandled, they should not be thrown around or subjected to loading with heavy objects that may distort the shape. However, some minor distortion to fittings will recover when left unencumbered for 24 hours.

11 PRODUCT WARRANTY

The products are covered by the normal commercial and legal requirements of the *Competition and Consumer Act 2010 (Cth)*, which covers manufacture to the relevant standard, and details of SMS Pty Ltd’s warranty is included in their terms and conditions of sale.

12 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD-TESTING REPORT

These products have been available in Australia since 2004 and a majority of water agencies have approved the products.

13 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

There are no outstanding issues.

14 FUTURE WORKS

No future works have been identified.

15 DISCLAIMER

This Product Appraisal Report (Report) is issued by the Water Services Association of Australia Limited on the understanding that:

This Report applies to the product(s) as submitted. Any changes to the product(s) either minor or major shall void this Report.

To maintain the recommendations of this Report any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the Report and appropriate action. Appraisals and their recommendations will be the subject of continuous review dependent upon the satisfactory performance of products.

WSAA reserves the right to undertake random audits of product manufacture and installation. Where products fail to maintain appraised performance requirements the appraisal and its recommendations may be modified and reissued. Appraisal reports will be reviewed and reissued at regular intervals not exceeding five (5) years.

The following information explains a number of very important limits on your ability to rely on the information in this Report. Please read it carefully and take it into account when considering the contents of this Report.

Any enquiries regarding this report should be directed to the Program Manager, Carl Radford, Phone: 03 8605 7601 email carl.radford@wsaa.asn.au.

15.1 Issue of Report

This Report has been published and/or prepared by the Water Services Association of Australia Limited and nominated Project Manager and peer group of technical specialists (the Publishers).

The Report has been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Report (the Recipients).

By accepting this Report, the Recipient acknowledges and represents to the Publisher(s) and each person involved in the preparation of the Report that the Recipient has understood and accepted the terms of this Disclaimer.

15.2 Limits on Reliance on Information and Recommendations

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15.2.3 Need for independent assessment

The information and any recommendation contained (expressly or by implication) in this Report are provided in good faith (and subject to the limitations noted in this Report). However, you should treat the information as indicative only. You should not rely on that information or any such recommendation except to the extent that you reach an agreement to the contrary with the Publisher(s).

This Report does not contain all information that a person might require for the purposes of assessing any product discussed or appraised within it (Product). The product appraisal criteria used in preparing this Report may not address all relevant aspects of the Product.

Recipients should seek independent evidence of any matter which is material to their decisions in connection with an assessment of the Product and consult their own advisers for any technical information required. Any decision to use the Product should take into account the reliability of that independent evidence obtained by the Recipient regarding the Product.

Recipients should also independently verify and assess the appropriateness of any recommendation in the Report, especially given that any recommendation will not take into account a Recipient's particular needs or circumstances.

WSAA has not evaluated the extent of the product liability and professional indemnity insurance that the provider of the product maintains. Recipients should ensure that they evaluate the allocation of liability for product defects and any professional advice obtained in relation to the product or its specification including the requirements for product liability and professional indemnity insurance.

15.3 No Updating

Neither the Publisher(s) nor any person involved in the preparation of this Report [has] [have] any obligation to notify you of any change in the information contained in this Report or of any new information concerning the Publisher(s) or the Product or any other matter.

15.4 No Warranty

The Publisher(s) do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Report, or the accuracy, completeness or reasonableness of any recommendation in this Report.

APPENDIX A – PRODUCT LITERATURE

Sewer Maintenance Shafts

SMS polypropylene maintenance shafts provide a low cost and safe alternative to traditional concrete manholes in sewerage and drainage systems.

They have been developed to ensure better occupational health and safety for construction and maintenance personnel by removing the need to enter confined spaces and provide access for all modern maintenance and cleaning equipment from above ground.

The SMS maintenance shaft reduces construction cost by up to 75% compared to concrete manholes and provides ongoing operation and maintenance cost savings.

- Complies fully with the performance testing requirements of AS/NZS 4999 PVC-U Maintenance Shafts.
- Appraised by Water Services Association of Australia (WSAA PA 02/08) and reissued (WSAA PA 09/08) in August 2010 and recommended for use by its members and associates.
- No infiltration and is resistant to most chemicals.
- Compatible with modern remote inspection CCTV, root cutting and cleaning systems from above ground.
- Strong, lightweight and impact resistant.
- Fast and easy to install by pipelayers without additional equipment.
- Polypropylene base with choice of in-line (180°) or triple entry (2 × 45° and 1 × 180°) branches with rubber ring joint (RRJ) sockets.
- Suitable for VC, PVC, Ultra-Rib or polypropylene sewer pipes.
- 'Fit for purpose' up to 6 metres deep for PVC products and 4 metres for polypropylene products.
- Life expectancy in excess of 100 years.



WATER SERVICES ASSOCIATION
of Australia

- Approved by Plumbing Industry Commission Victoria
- Approved by Water Authorities
- Approved by National Plumbing Regulators Forum



SMS MAINTENANCE SHAFT



300 x 150 STRAIGHT SHAFT FITTED WITH A 225 REDUCER. CODE: MS1
400 x 150 STRAIGHT SHAFT FITTED WITH A 300 REDUCER. CODE: MS10



300 x 150 STRAIGHT SUITABLE FOR 300 RISER. CODE: MS8



300 x 150 JUNCTION FITTED WITH A 225 REDUCER AND PLUG. CODE: MS2
400 x 150 JUNCTION FITTED WITH A 300 REDUCER AND 150 PLUG. CODE: MS11



300 x 150 JUNCTION WITH 150 PLUG SUITABLE FOR 300 RISER. CODE: MS9



225 x 225 PVC STRAIGHT SHAFT SUITABLE FOR 225 RISER. CODE: MS3
225 x 225 PVC STRAIGHT SHAFT SUITABLE FOR 300 RISER. CODE: MS4



225 x 150 PVC TERMINAL SHAFT. CODE: MS5
300 x 150 PVC TERMINAL SHAFT. CODE: MS6
300 x 225 PVC TERMINAL SHAFT. CODE: MS7



90 DEGREE PVC SHAFT 150 x 150 SUITABLE FOR 300 RISER. CODE: MS12
90 DEGREE PVC SHAFT 225 x 225 SUITABLE FOR 300 RISER. CODE: MS13



225MM PVC BENDS
45 DEGREE CODE: B1
30 DEGREE CODE: B2
15 DEGREE CODE: B3



PVC DROP TEES
300 x 150 CODE: DT3
225 x 225 CODE: DT4
225 x 150 CODE: DT5



PVC CONNECTORS
225MM WITH CENTRE REGISTER. CODE: C2
150MM SLIP SOCKET. CODE: C3
225MM SLIP SOCKET. CODE: C4



400MM PVC SHROUD. CODE: PS1



LIGHT DUTY CONCRETE ACCESS COVERS
400MM CLEAR OPENING. CODE: AC2
340MM CLEAR OPENING. CODE: AC3



PVC LOCKING CAPS
300MM CODE: LC1
225MM CODE: LC2



CLASS B COVER AND FRAME (ENCASED). CODE: AC1



PVC PUSH IN (MALE) PLUGS
300MM CODE: PIP1
225MM CODE: PIP2
150MM CODE: PIP3



CLASS D 400MM CLEAR OPENING COVER. CODE: AC6
(ALSO AVAILABLE ENCASED. CODE: AC5)



PVC PUSH ON CAPS
400MM CODE: PC1
300MM CODE: PC2
225MM CODE: PC3



150MM LONG RADIUS SWEEP BENDS
45 DEGREE CODE: LRB1
30 DEGREE CODE: LRB2
15 DEGREE CODE: LRB3
10 DEGREE CODE: LRB4
5 DEGREE CODE: LRB5



Quality
ISO 9001



SMS (Sewer Maintenance Shaft) Pty. Ltd.
9A Colemans Rd, Carrum Downs VIC 3201

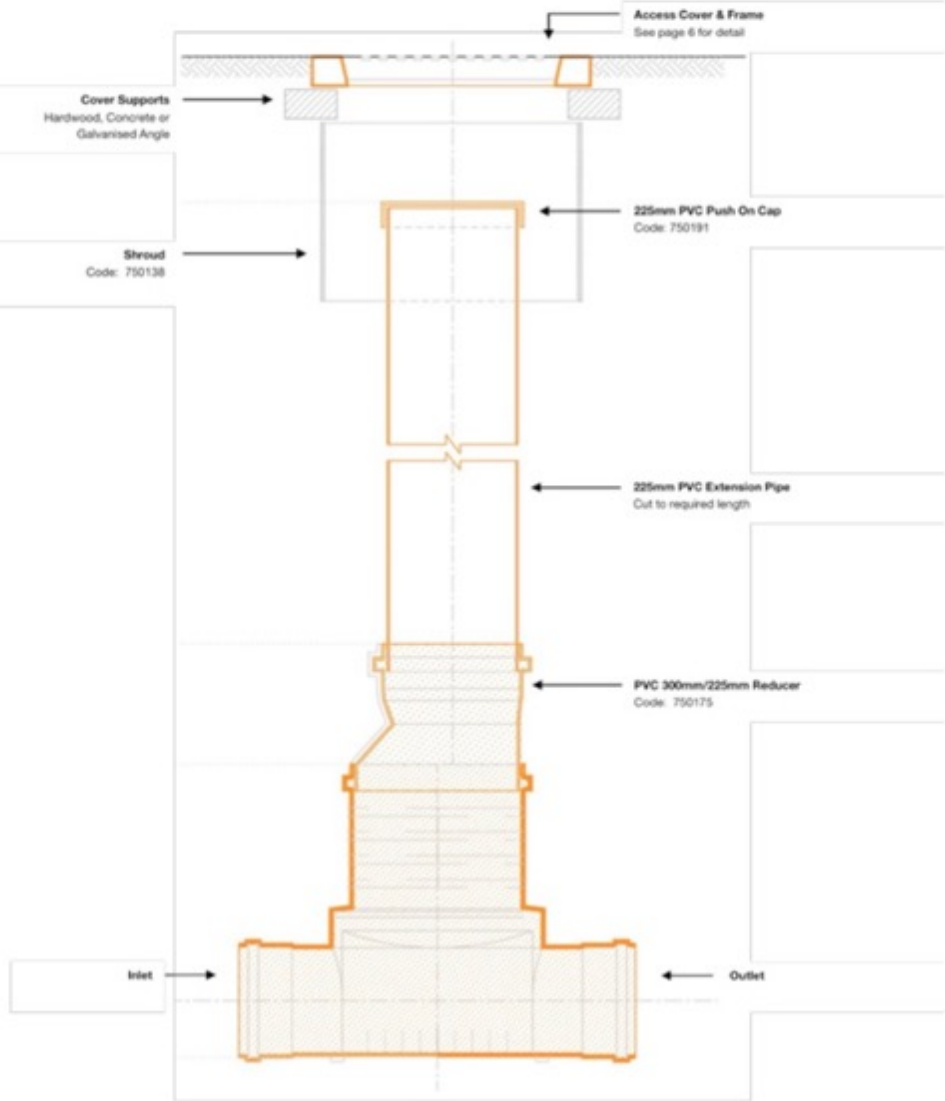
Call 1300 482 228 or visit www.sewerms.com.au

Due to limitations in the printing process the colours in this brochure are a guide only. The manufacturer/distributor reserves the right to vary specifications or delete models from their range without prior notification. The manufacturer/distributor takes no responsibility for printing errors.

ABN No. 77 005 234 293

SMS Maintenance Shafts

Installation Overview



Copyright – SMS (Sewer Maintenance Shaft) Pty Ltd ABN No. 77 005 234 293

SMS Maintenance Shafts

Installation Overview

General Installation Instructions

Step 1 – Preparation of the site

Prepare sewer pipe trench and bedding material as per the site plan and in accordance with local regulatory requirements.

Step 2 – Placing the Maintenance Shaft

Scallop out sufficient material at the base of the trench to accommodate the base of the Sewer Maintenance Shaft. Place SMS maintenance shaft into position in the trench ensuring sockets are at the same depth as the adjoining pipes.

Step 3 – Connecting the Downstream and Upstream Pipes

Connect downstream and upstream sewer pipes using the rubber ring joints and an appropriate bacterial lubricant. SMS shafts are designed for use with standard sized PVC Sewer Pipes. Ensure that the pit is level by placing a level across the top of the vertical riser.

Step 4 – Compact the Sewer Maintenance Shaft into Place

Place and compact fine support material/sand around the base of the shaft to a minimum cover of 100mm.

Step 6 – Connecting the Vertical Riser

Prepare the PVC pipe riser and install as per the instructions on **page 5**.

Step 7 – Backfill

Complete backfill around the shaft and in the sewer pipe trench as per the site plan and in accordance with local regulatory requirements.

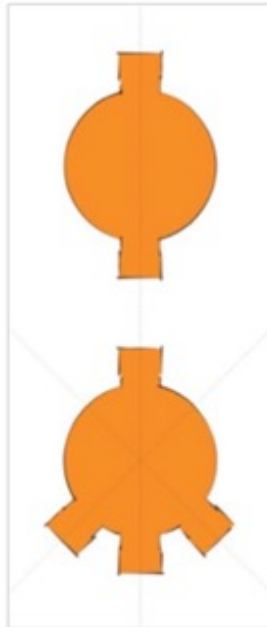
Step 8 – Installing the Access Cover

Cut the PVC pipe riser between 200mm and 300mm below the finished surface level and install the PVC end cap.

Place the shroud over the pipe riser and install access cover and supports as per the instructions on **page 6**.

SMS Maintenance Shafts

Connections



Maintenance Shaft - Straight

The Maintenance Shaft Straight features in-line 180 degree throughput only.

Maintenance Shaft - Junction

The Maintenance Shaft Junction features in-line 180 degree throughput plus two additional 45 degree inlets.

NOTE: ONLY TWO OF THE THREE INLETS MAY BE USED AT ANY SINGLE JUNCTION. ONE INLET MUST ALWAYS BE SEALED USING A PVC PUSH IN PLUG (CODE: 750141)

Push In Plug Installation

When installing the mandatory push in plug, local restrictions may specify that the plug is secured in place using a method specified by local water authority or council.

Some current methods include:

- Placing a bag of dry cement in front of the plug
- Placing a wet mix of concrete in front of the plug
- Placing a small wooden or metal stake/peg in front of the plug

Please check the particular method specified in your area with the local council or water authority.



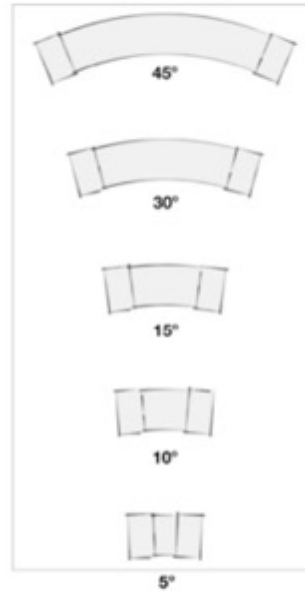
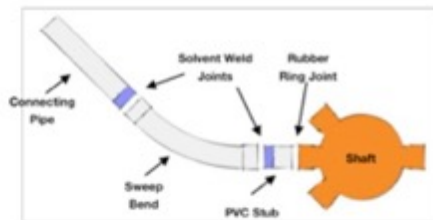
SMS Maintenance Shafts

Connections & Angles

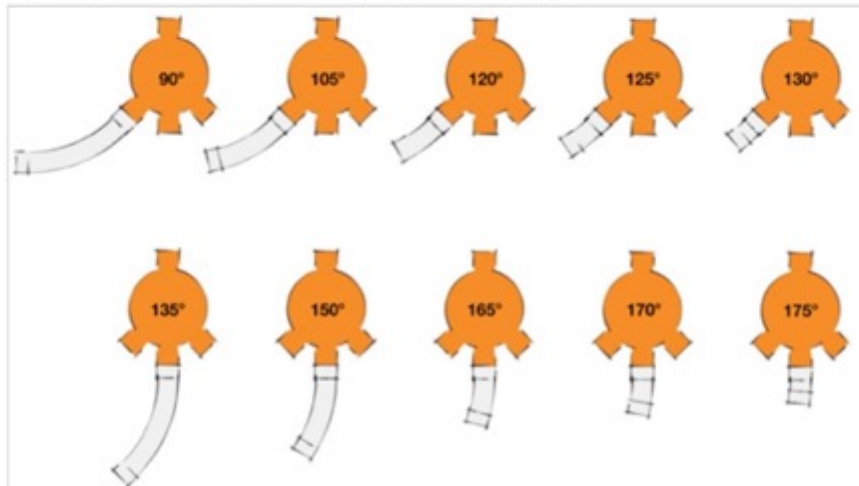
PVC Sweep Bends

To achieve different approach angles when using Sewer Maintenance Shafts, a variety of PVC sweep bends can be used in combination with the existing outlets on our maintenance shafts.

All sweep bends feature a 1020mm radius and sockets at both ends. In order to join them to the maintenance shafts, a small stub of PVC is solvent welded to the sweep bend socket and inserted into the Rubber Ring Joint.



Using PVC Sweep Bends, SMS Maintenance Shafts allow the easy joining of sewer inlet pipes at many angles. See the illustration below for examples of achievable angles.



SMS Maintenance Shafts

Vertical Riser

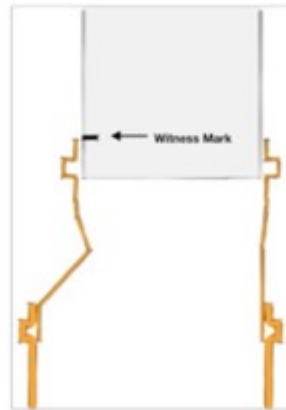
Allowing for Differential Settlement

When preparing the extension pipe riser, care must be taken to ensure that allowances are made for settlement and consolidation.

Place a witness mark on the pipe 30mm less than the depth of the socket.

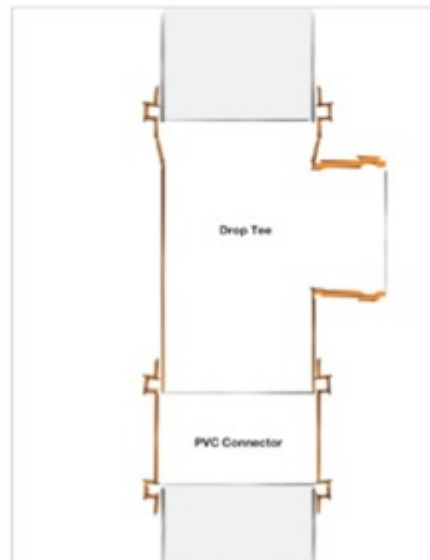
When the Shaft is in place, insert the pipe into the socket up to the witness mark.

This prevents load transmission to both the maintenance shaft and sewer line.



Additional Inlets

Depending on local restrictions, additional inlets can be installed using Drop Tee's attached to the Extension Pipe Riser. Up to two additional inlets can be provided using this method.



SMS Maintenance Shafts

Access Cover Installation

Access Cover

The access cover is installed independently of the maintenance shaft and riser pipe. Key components of the access cover installation include;

Support Beams /Frame – These can be made from Hardwood, Concrete or Galvanised Steel Angle and support the full weight of the access cover.

Shroud – Either Polyethylene or PVC material and 450mm in diameter. The shroud forms a barrier to the backfill material and ensures that easy access to the pipe riser is maintained. The supports are placed either side of the shroud and bear the full weight of the cover.

Load Class – Select an access cover with an appropriate load class for the type of for the traffic which will be crossing the channel.

A Class

Areas (including footways) accessible only to pedestrians and pedal cyclists and closed to other traffic.

750179 – CONCRETE SHAFT COVER WITH 340MM CLEAR OPENING

750112 – CONCRETE SHAFT COVER WITH 400MM CLEAR OPENING

B Class

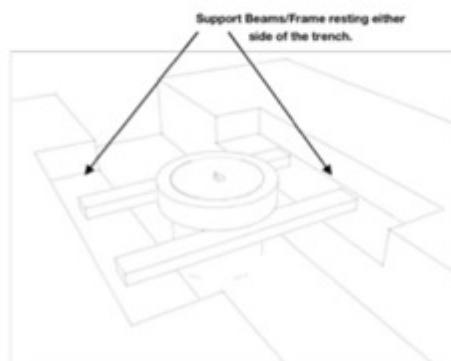
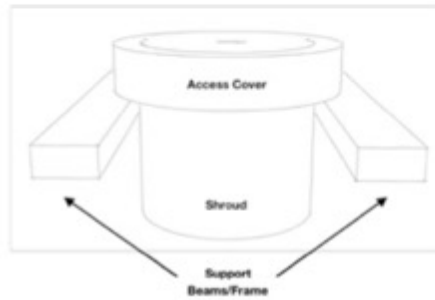
Areas (including footways and light tractor paths) accessible to vehicles (excluding commercial vehicles) or livestock

750178 – CLASS-B CONCRETE SHAFT COVER WITH 370MM CLEAR OPENING

D Class

Carriageways of roads and areas open to commercial vehicles.

750140 – CLASS-D DUCTILE IRON SHAFT COVER WITH 400MM CLEAR OPENING



MAINTENANCE CHAMBERS

Axedo 600

The Axedo 600 Maintenance Chamber is designed to be installed at depths of up to 6m and comprises of a base chamber unit available in various channel configurations, with a 600mm riser shaft in plain white liner, sealing ring and sealed polyethylene cap.

The shaft is finished at surface level with an AS 3996 Class B or Class D cover with independent support. The Axedo 600 base unit is also available with AS/NZS 1260 compliant deflection sockets in 150mm, 225mm sizes accommodating up to 7.5° angular movement in all directions. Pipeline design and layout can also be accommodated with the use of long radius sweep bends and inlet reducers.





The AXEDO 600 Maintenance Chambers are suited to manual handling (each base unit is less than 25kg). Riser shafts may require mechanical handling depending on size and DN 600 access covers will require mechanical handling. Installation of the Axedo 600 will be quicker than the installation of traditional products. This results in a considerable cost saving.

Page 12

The AXEDO 600 has flat bottom to ensure good stability during installation.

Leak tightness

The leak tightness of the installation is important to prevent:

- Pollution of soils and water tables and
- Infiltration of ground water adding costs to operation of treatment plants.

The Axedo 600 chambers have elastomeric seals to provide the same water tightness properties as PVC pipe and comply with pressure or vacuum testing requirements for sewer and drain installation.

Chemical resistance to corrosion

The polypropylene materials provide excellent resistance to various chemical compounds.

The AXEDO 600 Maintenance Chamber is effective against corrosive attacks:

- * Externally: from aggressive soils,
- * Internally: from the fluids conveyed

Resistance to live loads

The installation of the access cover is separated from the maintenance chamber riser and cap. The access cover is independently supported on ground external to the chamber riser pipe.

A physical gap maintained between the underside of the access cover and the top of the AXEDO 600 riser cap.

Ease of inspection and maintenance

The chamber profile of the AXEDO 600 facilitates the easy use of cleaning, maintenance and inspection tools.

Quality (ISO system and standards)

The AXEDO 600 Maintenance Chambers are produced in ISO 9001: 2008 and ISO 14001 certified factories. These products have been made to the European standards EN 13598-1, EN 13598-2 and EN 476. They are appraised to WSAA-137.2013 as WSAA appraisal report 1801 (formerly 1505).



Axedo Chambers are supplied in 'kit' form comprising of:

1. Class B or Class D DI Cover and frame (600mm opening)

2. Concrete surround for DI Cover

3. Shroud (PE)

4. Cap (PE)

5. Cap rubber sealing ring

6. Cover (PE)

7. 600mm shaft sealing ring*

8. Riser Vinidex 600mm "Storm Pro" or equivalent approved.
Supplied by others

9. 600mm shaft sealing ring*

10. Axedo base chamber unit. Available in various channel configuration



* Only suitable for "Storm Pro".

INSTALLATION

Excavation

Inspect the excavated trench floor for rock outcrops and soft and loose areas. Take appropriate action to ensure that the Maintenance Chamber will not be subject to differential settlement in the future. Where rock outcrops are present, trim the trench floor and fill and compact with granular material to restore the design trench floor level limits. Treat soft and loose areas as specified by the water agency.

The general dimensions of the Maintenance Chamber excavation area should be at least 300mm wider than each side of the Maintenance Chamber to enable access to conduct the following operations:

- Embedment, backfilling and compacting with appropriate equipment and
- Connection of pipes.

In all cases, the installation drawings and local water agency requirements are to be complied with.

Bedding the Axedo 600 Maintenance Chamber

Remove all debris and water before bedding material is placed.

The bedding shall be granular material:

- Embedment sand (WSA-PS-360) or
- 5mm minus crushed rock-(WSA-PS-361)

The bedding shall be placed flat and horizontal with a minimum thickness of 100mm.

Installation of Axedo 600 Maintenance Chamber

Before installation, the base component will be prepared as follows:

- Check if the seal(s) are clean,
- Lubricate the seal(s),

Installation of the Axedo 600 base component:

- Set the Axedo 600 base unit level into the prepared compacted bedding.
- Ensure pipes to be connected are correctly chamfered and swarf removed.
- Lubricate the male ends with pipe jointing lubricant prior to jointing.
- Joint pipework, bends or reducers as necessary, using the angular deflection up to +/-7.5° available in Axedo 600 sockets for perfect alignment.
- Close off sockets that that will not be used with socket plugs.

Embedment of the Axedo 600 Maintenance Chamber

The Axedo 600 Maintenance Chamber complete with all pipeline attachments shall be embedded up to the base of the riser socket using the granular bedding material described above. The embedment shall be compacted around the Maintenance Chamber to stabilise it prior to installing the riser shaft.

Embedment material shall be placed and compacted evenly around the Maintenance Chamber base to prevent displacement. Care shall be taken to place and compact the embedment material evenly around the base in 150mm layers and to avoid unbalanced lateral loading.

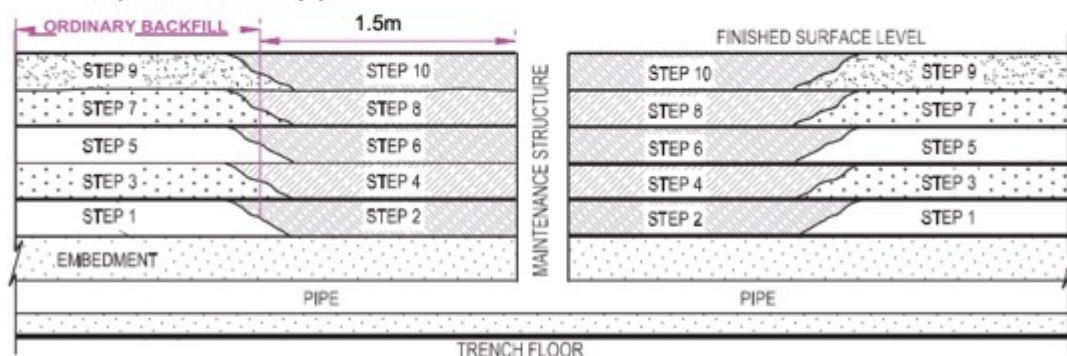
Installation of the riser

The riser pipe is Vinidex DN 600 Storm-Pro corrugated polypropylene pipe and shall be installed vertically as follows;

- Position the sealing ring in the pre-cleaned first full corrugation of the Storm-Pro pipe then lubricate the ring outer surface with pipe jointing lubricant.
- Once the shaft is positioned onto the base mechanical assistance can be used to gently push the shaft and sealing ring fully into the base to create the watertight seal. Ensure a wooden block or similar is used to protect the shaft from damage and push vertically.
- Locate the riser shaft vertically and apply a structure to hold it in the vertical position for backfilling.
- Cut the riser pipe between 200mm and 300mm below the finished surface level.

Backfilling the riser

- The backfill shall be granular material as described above.
- The backfill shall be placed and compacted evenly around the shaft to prevent displacement.
- Care shall be taken to place and compact the backfill evenly around the structure in 150mm / 300mm layers, to avoid unbalanced lateral loading.
- High compactive effort shall not be used against the riser pipe to ensure damage is prevented.
- All open trench within 1.5m of the perimeter of the riser shaft shall be backfilled as per the schematic diagram below.
- Backfill to a finished surface level around the riser pipe at three (3) corrugations below the top of the cut riser pipe.



AXEDO 600 MAINTENANCE CHAMBER TRENCH BACKFILL SCHEMATIC ONLY

Installing the cap on the riser shaft

- Lubricate and install the rubber ring seal in the first full corrugation below the cut surface of the riser pipe.
- Push on the cap and lid assembly fully to stop. No mechanical assistance should be required.
- Place the 'shroud' over the riser pipe and lid assembly with the 800mm (large) opening at the base.

Supporting structure for access cover

The access cover is installed independent of the maintenance chamber and riser pipe cap. In other words the access cover shall be installed at least 50mm clear of the top of the riser assembly to ensure no surface load is applied to the riser.

Key components of the access cover installation include:

- SHROUD - The PE shroud forms a barrier to the backfill material and ensures clean access to the pipe riser is maintained. The shroud should be installed to maintain a small clearance from the underside of the access cover.
- LOAD CLASS - Class 'B' access cover for non-trafficable installation areas.
Class 'D' access cover for trafficable installation areas.
- ACCESS COVER SUPPORT – Class 'B' installation – SUPPORT BEAMS - CONCRETE or RECYCLED PLASTIC (minimum 75mm x 75mm) or cement stabilised crushed rock bedding for a Class 'B' access cover with a concrete surround – surface to suit.
Class 'D' installation - a full concrete slab designed to suit the installation and the access cover cast in or on top with road surface to match access cover height.

Access cover installation

- The supports are placed either side of the shroud and bear the full weight of the cover. See diagram page 5.

Testing

THE SMS AXEDO 600 MAINTENANCE CHAMBER CAP AND LID IS NOT DESIGNED FOR PRESSURE TESTING AND MUST NOT BE USED FOR THIS PURPOSE WITHOUT CONTACTING SMS.

Vacuum Testing

Where the test method is not specified, undertake a vacuum test. In this instance the Axedo 600 cap and lid can be used to seal against vacuum at the top of the shaft.

Apply a test vacuum (negative pressure) as specified by the Regulatory authority. Observe all safety practices and requirements during the vacuum test.

APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certification Certificates are available from WSAA

**TABLE B1
SMS (SEWER MAINTENANCE SHAFT) PTY LTD – MANAGEMENT SYSTEMS**

9A Colemans Road Carrum Downs Victoria	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	94646674106E69CBCA2587100016B908
Certifying Agency	Global-Mark Pty Ltd
First Date of Certification	9 February 2015
Current Date of Certification	17 August 2021
Expiry Date of Certification	23 August 2024

**TABLE B2
BT NYLOPLAST GMBH – MANAGEMENT SYSTEMS**

Oberbernbacher Weg 24 D-86551 Aichach Germany	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	00638.EQU/22.R
Certifying Agency	SKZ
Current Date of Certification	4 April 2023
Expiry Date of Certification	3 April 2026

**TABLE B3
DYKA BV – MANAGEMENT SYSTEMS**

Produktieweg 7 8331 LJ Steenwijk Netherlands	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	K-0206115/01
Certifying Agency	Kiwa Nederland
First Date of Certification	1 July 2002
Current Date of Certification	17 March 2022
Expiry Date of Certification	15 June 2025

TABLE B4
SMS (SEWER MAINTENANCE SHAFT) PTY LTD – PRODUCT CERTIFICATION

9A Colemans Road Carrum Downs Victoria	
Product Standard/Spec.	WSA 137:2019 (Shafts)
Certificate No.	9F8CA0BF1CF87F74C12589460038F115
Issuing Certification Body	Global-Mark Pty Ltd
First Date of Certification	17 April 2015
Current Date of Certification	12 April 2022
Expiry Date of Certification	30 August 2026

TABLE B5
SMS (SEWER MAINTENANCE SHAFT) PTY LTD – PRODUCT CERTIFICATION

9A Colemans Road Carrum Downs Victoria	
Product Standard/Spec.	WSA 137:2019 (Chambers)
Certificate No.	695C406014802DCCC125881500313273
Issuing Certification Body	Global-Mark Pty Ltd
First Date of Certification	12 September 2016
Current Date of Certification	12 April 2022
Expiry Date of Certification	30 August 2026

TABLE B6
BT NYLOPLAST GMBH – PRODUCT CERTIFICATION

Oberbernbacher Weg 24 D-86551 Aichach Germany	
Product Standard/Spec.	EN 13598.2
Certificate No.	6449
Issuing Certification Body	SKZ
First Date of Certification	10 May 2017
Current Date of Certification	1 January 2022
Expiry Date of Certification	31 December 2026

TABLE B7
DYKA BV – PRODUCT CERTIFICATION

Produuktieweg 7 8331 LJ Steenwijk The Netherlands	
Product Standard/Spec.	EN 13598.2
Certificate No.	KM 667428
Issuing Certification Body	BSI
First Date of Certification	7 November 2017
Current Date of Certification	16 August 2021
Expiry Date of Certification	6 November 2023

TABLE B8
BT NYLOPLAST GMBH – PRODUCT CERTIFICATION

Oberbernbacher Weg 24 D-86551 Aichach Germany	
Product Standard/Spec	EN 1401.1
Certificate No.	3611
Issuing Certification Body	SKZ
First Date of Certification	4 August 2014
Current Date of Certification	2 May 2022
Expiry Date of Certification	1 May 2027



Certificate of Approval

This certificate confirms that the company below complies with the following standard:

<i>Company Name</i>	Sewer Maintenance Shaft Pty Ltd		
<i>Company Other Name</i>	SMS		
<i>Client ID</i>	101381	<i>Scheme</i>	Quality Management Systems Scheme
<i>Certification Standard</i>	AS/NZS ISO 9001-2016: Quality management systems - Requirements		
<i>Scope of Certification</i>	Testing and supply of polypropylene products and associated fittings for waste water		
<i>Type of Certification</i>	Management System		

CERTIFICATE DATES:

<i>Original / Initial</i>	9/02/2015	<i>Last Certificate update</i>	17/08/2021
<i>Certification / Re Certification</i>	1/07/2021	<i>Expiry</i>	23/08/2024
<i>Last Certification Decision</i>	17/08/2021		

APPROVED COMPANY / SITE ADDRESS(ES):

9A Colemans Road Carrum Downs VIC 3201 Australia

The use of the Accreditation Mark indicates accreditation by the Joint Accreditation System of Australia and New Zealand in respect to those activities covered by JAS-ANZ accreditation. Refer to www.jas-anz.org/register for verification.

This certification remains valid until the above mentioned expiry date and subject to the organisation's continued compliance with the certification standard, and Global-Mark's Terms and Conditions.

This Certificate of Approval remains the property of Global-Mark Pty Ltd, Company Number: ACN. 108 - 087-654



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JAS-ANZ



WWW.JAS-ANZ.ORG/REGISTER



Certification Manager

Unique Certificate Code: 94646674106E69CBCA2587100016B908

Global-Mark Pty Ltd, Copyright 2005 - 407, 32 Delhi Road, North Ryde NSW 2113, Australia

Das Kunststoff-Zentrum



Certificate

The SKZ - Cert GmbH certifies to the company

BT Nyloplast
Nature's Network

BT Nyloplast GmbH
Oberbernbacher Weg 24
86551 Aichach

the introduction and application of a management system according to

ISO 9001:2015

ISO 14001:2015

ISO 50001:2018

Scope:

Project management, Production and sales of plastic moulded fittings

The proof has been furnished by an audit.

This certificate is valid from: **04.04.2023** to: **03.04.2026**

Certificate No.: **000638.EQU/22.R**

Würzburg, 03.04.2023

Dipl.-Ing. Robert Schmitt
Certification Body





Certificate K-0206115/01

Issued on	2022-07-14	Page	1 of 2
First issue	2002-07-01	Expiry date	2025-06-15
Replaces	KSC-K22342/09	Previous expiry date	2022-06-15
		Recertification	2022-03-17

ISO 9001:2015

With this certificate Kiwa confirms that the management system implemented by

Dyka B.V.

meets the requirements of ISO 9001:2015 for the scope:

The development, production and supply of plastic piping systems.
Providing related (trade) items, tailor-made solutions, technical advice and logistic service.

Ron Scheepers
Country manager Kiwa Nederland

CERTIFICATE

8000011

Consult www.kiwa.com in order to ensure that this certificate is still valid.

Kiwa Nederland B.V.
Sir Winston Churchillaan 273
Postbus 70
2288 AB RIJSWIJK

Tel. +31 88 998 44 00
Fax +31 88 998 44 20
info@kiwa.nl
www.kiwa.nl

Company details
Dyka B.V.
Produktieweg 7
8331 LJ STEENWIJK
NETHERLANDS
KVK 05027284

Sites

De names and addresses of the sites
can be found on page 2 of this certificate





Certificate of Approval

This certificate confirms that the company below complies with the following standard(s):

Company Name	SMS (Sewer Maintenance Shaft) Pty Ltd	Client ID	101381
Company Other Name	SMS	Type of Certification	Product Certification; System 5
Certification Standard	WSA 137-2019 : Industry standard for Uplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and Polyethylene (PE) maintenance shafts, maintenance chambers and maintenance holes for sewerage - Issue 3.1		
Certification Review Date	24/01/2023	Certification Expiry Date	5/01/2027
Certificate Issue Date	17/04/2015	Certificate Last Update Date	25/04/2023

APPROVED COMPANY/SITE ADDRESS(ES):

Oberbernbacher Weg 24 Aichach - 86551 Germany
9A Colemans Road Carrum Downs VIC 3201 Australia

This certification remains valid until the above mentioned expiry date and subject to the organisation's continued compliance with the certification standard, and Global-Mark's Terms and Conditions. This Certificate of Approval remains the property of Global-Mark Pty Ltd, Company Number: ACN.108-087-654.



Certification Manager

Unique Certificate Code: 9F8CA0BF1CF87F74C12589460038F115
Global-Mark Pty Ltd, 407, 32 Delhi Road, North Ryde NSW 2113, Australia - Copyright 2005





Model(s) on which the Global-Mark logo may be applied by the certificate holder as a declaration of compliance by the certificate holder:
In placing the authorised mark on the product, the certificate holder makes a declaration of compliance with the certification standard(s) and confirms that the product is identical to the product certified herein. In issuing this Certificate of Approval Global-Mark has relied on the expertise of external bodies (laboratories, and technical experts).

Model Identification	Model Name	Brand Name	Product Description/Attributes	Date Approved
MS14	375 x 225 Polypropylene Straight Maintenance Shaft, suitable for 300mm or 225mm riser	Sewer Maintenance Shaft	Polypropylene in-line 180° straight with 225mm rubber ring joint (RRJ) sockets	26/02/2015
MS8	300 x 150 Polypropylene Straight Maintenance Shaft, suitable for a 225 mm or 300 mm riser	Sewer Maintenance Shaft	Polypropylene in-line 180° straight with 150 mm rubber ring joint (RRJ) sockets	12/02/2013
MS8A	300 x 100 Polypropylene Straight Maintenance Shaft, suitable for a 225 mm or 300 mm riser	Sewer Maintenance Shaft	Polypropylene in line 180° straight with 100mm SCJ DWV solvent cement joint Inlet/Outlet	03/08/2015
MS9	300 x 150 Polypropylene Junction Maintenance Shaft with 150 mm plug, suitable for a 225 mm or 300 mm riser	Sewer Maintenance Shaft	Polypropylene triple entry (2 x 45° and 1 x 180°) branches with 150 mm rubber ring joint (RRJ) sockets	12/02/2013
MS9A	300 x 100 Polypropylene Straight Maintenance Shaft, suitable for a 225 mm or 300 mm riser	Sewer Maintenance Shaft	Polypropylene triple entry (2 x 45° and 1 x 180°) branches with 100mm SCJ DWV solvent cement joint Inlet/Outlet	03/08/2015

Comments:

Nil

End of the document



Certification Manager

Screenshot



Certificate of Approval

This certificate confirms that the company below complies with the following standard(s):

<i>Company Name</i>	SMS (Sewer Maintenance Shaft) Pty Ltd	<i>Client ID</i>	101381
<i>Company Other Name</i>	Dyka B.V.	<i>Type of Certification</i>	Product Certification; System 5
<i>Certification Standard</i>	WSA 137-2019 : Industry standard for Uplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and Polyethylene (PE) maintenance shafts, maintenance chambers and maintenance holes for sewerage - Issue 3.1		
<i>Certification Review Date</i>	29/08/2016	<i>Certification Expiry Date</i>	30/08/2026
<i>Certificate Issue Date</i>	12/09/2016	<i>Certificate Last Update Date</i>	12/04/2022

APPROVED COMPANY/SITE ADDRESS(ES):

**Produktieweg 7 LJ Steenwijk . 8331 Netherlands
9A Colemans Road Carrum Downs VIC 3201 Australia**

This certification remains valid until the above mentioned expiry date and subject to the organisation's continued compliance with the certification standard, and Global-Mark's Terms and Conditions. This Certificate of Approval remains the property of Global-Mark Pty Ltd, Company Number: ACN.108-087-654.



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In placing the authorised mark on the product, the certificate holder makes a declaration of compliance with the certification standard(s) and confirms that the product is identical to the product certified herein. In issuing this Certificate of Approval Global-Mark has relied on the expertise of external bodies (laboratories, and technical experts).

Model Identification	Model Name	Brand Name	Product Description/Attributes	Date Approved
AXEDO 1	DN600 x 150 Base x 180° Channel RRJ (0 - 180°) Sewer Maintenance Chamber	Sewer Maintenance Shaft	Polypropylene swept in-line 180° straight with 150 mm rubber ring joint (RRJ) sockets	7/09/2016
AXEDO 10	DN600 x 225 Base x Swept Cross RRJ Sewer Maintenance Chamber	Sewer Maintenance Shaft	Polypropylene swept Cross with 225 mm rubber ring joint (RRJ) sockets	7/09/2016
AXEDO 2	DN600 x 150 Base x Tee Channel RRJ Sewer Maintenance Chamber	Sewer Maintenance Shaft	Polypropylene swept Tee with 150 mm rubber ring joint (RRJ) sockets	7/09/2016
AXEDO 3	DN600 x 150 Base x single offset 120° Channel RRJ (0 - 120°) Sewer Maintenance Chamber	Sewer Maintenance Shaft	Polypropylene swept single offset 120° with 150 mm rubber ring joint (RRJ) sockets	7/09/2016
AXEDO 4	DN600 x 225 Base x 180° Channel RRJ (0 - 180°) Sewer Maintenance Chamber	Sewer Maintenance Shaft	Polypropylene swept in-line 180° straight with 225 mm rubber ring joint (RRJ) sockets	7/09/2016
AXEDO 5	DN600 x 225 Base x single offset 120° Channel RRJ (0 - 120°) Sewer Maintenance Chamber	Sewer Maintenance Shaft	Polypropylene swept single offset 120° with 225 mm rubber ring joint (RRJ) sockets	7/09/2016
AXEDO 6	DN600 x 225 Base x Tee Channel RRJ Sewer Maintenance Chamber	Sewer Maintenance Shaft	Polypropylene swept Tee with 225 mm rubber ring joint (RRJ) sockets	7/09/2016



Certification Manager

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Model Identification	Model Name	Brand Name	Product Description/Attributes	Date Approved
AXEDO 7	DN600 x 150 Base x single offset 90° Channel RRJ (0 - 90°) Sewer Maintenance Chamber	Sewer Maintenance Shaft	Polypropylene swept single offset 90° with 150 mm rubber ring joint (RRJ) sockets	7/09/2016
AXEDO 8	DN600 x 225 Base x single offset 90° Channel RRJ (0 - 90°) Sewer Maintenance Chamber	Sewer Maintenance Shaft	Polypropylene swept single offset 90° with 225 mm rubber ring joint (RRJ) sockets	7/09/2016
AXEDO 9	DN600 x 150 Base x Swept Cross RRJ Sewer Maintenance Chamber	Sewer Maintenance Shaft	Polypropylene swept Cross with 150 mm rubber ring joint (RRJ) sockets	7/09/2016

Comments:

End of the document



Certification Manager

ZERTIFIKAT

SKZ

Certification Body

CONFORMITY CERTIFICATE

Reg.-No. **6449**

Herewith we confirm in accordance with article 16 and article 21 of the Bavarian Building Regulations (BayBO), as published on 14 August 2007 (GVBl. p. 588, BayRS 2132-1-B), updated by Article 4 of the Act of 25 May 2021 (GVBl. p. 286) that the building products

**Manholes and inspection chambers made of polypropylene
for non-pressure underground drainage and sewerage**

of the producer

**BT Nyloplast GmbH
Oberbernbacher Weg 24
86551 Aichach
Deutschland**

production plant

**BT Nyloplast GmbH
Oberbernbacher Weg 24
86551 Aichach
Deutschland**

according to the results of the internal production control and the third-party control carried out by the testing institute, recognized under building regulations,

**SKZ - Testing GmbH
Friedrich-Bergius-Ring 22
97076 Wuerzburg
Germany**

comply to the requirements of the standards

DIN EN 13598-2:2010-05 in conjunction with **DIN CEN/TS 13598-3:2012-07**

as published at the Administrative Regulation for Technical Building Regulations (VVTB) in the State of Bavaria of October 2018, Chapter C2.

Date of initial certification: 10 May 2017

Date of expiry: 31 December 2026

Wuerzburg, 1 January 2022



i. V. 
Dipl.-Ing. Hans-Peter Krause
Head of Certification Body

The original language of this certificate is German. In case of doubt, the German version is obligatory.



Kitemark™ Certificate

This is to certify that:

Dyka BV
Produktieweg 7
Steenwijk
8331 AA
The Netherlands

Holds Certificate Number:

KM 667428

In respect of:

BS EN 13598-2
Manholes and inspection chambers in traffic areas and deep underground

This issues the right and licence to use the Kitemark in accordance with the Kitemark Terms and Conditions governing the use of the Kitemark, as may be updated from time to time by BSI Assurance UK Ltd (the "Conditions"). All defined terms in this Certificate shall have the same meaning as in the Conditions.

The use of the Kitemark is authorized in respect of the Product(s) detailed on this Certificate provided at or from the above address.

For and on behalf of BSI:


Frank Lee, Product Certification Technical and Compliance Director

First Issued: 2017-11-07

Effective Date: 2021-08-16

Latest Issue: 2021-08-16

Expiry Date: 2023-11-06



Page: 1 of 3

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This certificate has been issued by and remains the property of BSI Assurance UK Ltd, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP, United Kingdom and should be returned immediately upon request.
To check its validity telephone +44 (0) 345 080 9000. An electronic certificate can be authenticated [online](#).

BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A member of BSI Group of Companies.

ZERTIFIKAT



CONFORMITY CERTIFICATE

Reg.-No. **3611**

Herewith we confirm in accordance with article 16 and article 21 of the Bavarian Building Regulations (BayBO), as published on 14 August 2007 (GVBl., p. 588, BayRS 2132-1-B), updated by Article 4 of the Act of 25 May 2021 (GVBl. p. 286) that the building products

Fittings made of unplasticized polyvinylchloride PVC-U for non-pressure underground drainage and sewerage and for plants to store and rack-off liquid manure, silage percolating juice

of the producer **BT Nyloplast GmbH**
Oberbernbacherweg 24
86551 Aichach
Germany

production plant **BT Nyloplast GmbH**
Oberbernbacherweg 24
86551 Aichach
Germany

according to the results of the internal production control and the third-party control carried out by the testing institute, recognized under building regulations,

SKZ - Testing GmbH
Friedrich-Bergius-Ring 22
97076 Würzburg
Germany

comply to the requirements of the standards

DIN EN 1401-1: 2009-07 in conjunction with **DIN CEN/TS 1401-2: 2012-09**
 Additionally valid is: **annex C 2.12.2**

as published at the Administrative Regulation for Technical Building Regulations (VVTB) in the State of Bavaria of April 2021, Chapter C2.

Date of initial certification: 4. August 2014
 Date of expiry: 1 May 2027

Würzburg, 2 May 2022



i. V. 
Dipl.-Ing. Hans-Peter Krause
 Head of Certification Body

The original language of this certificate is German. In case of doubt, the German version is obligatory.

SKZ - Testing GmbH, Friedrich-Bergius-Ring 22, 97076 Würzburg, Germany, Tel. +49 931 4104-0, testing@skz.de, www.skz.de

APPENDIX C - SUPPLIER CONTACTS

(SMS) Sewer Maintenance Shaft Pty Ltd

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