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SECTION A : ACCEPTABLE FITTINGS AND MATERIALS

1.0 SCOPE

This specification covers the list of materials and fittings acceptable for use within the Council water supply network, and covers materials or fittings which Council has, or will, assume responsibility for. Fittings not in accordance with this list will be rejected, unless written approval is given prior to installation, by Council. Rejected products and materials will be subject to removal at the contractor or subdividers cost.

This list of Acceptable Fittings and Materials will be updated in July and December each year or at other times when four or more acceptable products need to be incorporated into the list.

All applications to the Acceptable Fittings and Materials list must be accompanied by the pro-forma Volume 4: Quality Checklists & Appendices Part 9 Appendix 6: Application for Acceptance of Water or Drainage Product for Use in the Council Water Supply Area or Drainage District.

Requirements for acceptance of materials are as follows:

- conforms to appropriate New Zealand, Australian or British standards with evidence of the licence number issued;
- manufacturer operates to an acceptable quality assurance standard;
- details of composition, dimensions, specific use and design life are supplied by the manufacturer;
- details of acceptance by other New Zealand local authorities
- details are supplied by the manufacturer on how the product should be installed;
- the product is acceptable to Council (taking into account such factors as compatibility with other approved products, ease of use, etc.)

Where there is no standard, the manufacturer will be required to supply copies of their quality assurance procedures and producer statements to support their performance and composition claims for the products concerned.

Completed applications and supporting information should be addressed to:

The Asset Manager
City Waters Unit
Hamilton City Council
Private Bag 3010
Hamilton

Council reserves the right to refuse any material or fitting from the Acceptable Fittings and Materials list for any reason and at any time. In such circumstances, Council will provide written notification, stating reasons why the material or fitting has been refused or removed from the Acceptable Fittings and Materials list.

- 1.1** For specific pipe, fittings and water meter marker requirements in participating districts refer to Part 6 Volume 5.

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2.0 PIPE MATERIALS

Manufacturer/Product ID

2.1 Watermains 300 mm and Larger

Materials for large diameter pipelines will be specifically approved and or specified by HCC. The specification shown below for spiral welded pipe, ductile iron pipe PVC-O and mPVC are indicative of what is likely to be approved.

2.2 Watermains 250mm Diameter

Steelpipe NZ Ltd

i) 286.0mm cement lined spiral welded pipe; 3.2mm wall thickness, rubber ring joints and Polyken YG111 external wrapping or "Speed Steel" with polyethylene coatings to NZS 4442:1988 or AS 1579:2001. Iplex (Licence #SMKP 20682)

ii) 286mm OD Biaxially Orientated PVC (PVC-O) Series 2, PN 12.5, Design Matieral Class 355, conforming to AS/NZS 4441:2008.

iii) 286.0mm Class K9 ductile iron, light cement lined with Tyton joints. External protection with greensleeve. Manufactured to AS/NZS 2280:1995 2004 and amendments.

Tubemakers, Australia (as supplied by Humes (Licence # 2029).

iii) 250mm Class PN12 mPVC RRJ coloured blue with compatible outside diameters to asbestos cement, ductile iron and spiral welded steel. Manufactured to AS/NZS 4765:2007 Series 2

Iplex Licence # SMK 02570)
Marley Genex Blue (Licence #2624)
KeyplasMetro (Licence #2542)

iv) TYTON EXCEL PN20 & PN35 Cement lined Ductile Iron Pipe with TYTON JOINT elastomeric seals and socket/spigot joints (with blue polyethylene sleeving). Manufactured to AS/NZS 2280:2004 and amendments.

Tyco Tyton Excel (Licence # SMK0883)

v) Micron PVC-O Series 2 Pipe
AS/NZS 4441:2008, ISO 9001:2008

Promains (Licence #SMKP/WMKA 21977)

2.3 Watermains 100mm, 150mm & 200mm diameter

Iplex (Licence # SMK 2570)

i) Class PN12 mPVC RRJ, coloured blue with compatible outside diameters to asbestos cement, ductile iron and spiral welded steel. Manufactured to AS/NZS 4765:2007 Series 2

MarleyGenex Blue (Licence # 2624)
KeyplasMetro Blue (Licence # 2542)

-121.99mm OD

Iplex (Licence # SMKP20682)

-177.4mm OD

-232.2mm OD Biaxially Orientated PVC (PVC-O) Series 2, PN 12.5, Design Material Class 355, conforming to AS/NZS 4441:2006.

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- | | |
|--|--|
| <ul style="list-style-type: none"> ii) 177.3mm cement lined spiral welded pipe
232.2mm cement lined spiral welded pipe

3.2 mm wall thickness, rubber ring joints & Polyken YG111 external wrapping or "Speed Steel" with polyethylene coatings. iii) 177.3mm light cement lined manufactured Class K9 ductile iron
232.3mm light cement lined manufactured Class K9 ductile iron

Tyton joints with external protection with greensleeve. iv) TYTON EXCEL PN20 & PN35 Cement lined Ductile Iron Pipe with TYTON JOINT elastomeric seals and socket/spigot joints (with blue polyethylene sleeving). Manufactured to AS/NZS 2280: 1995 and amendments. v) Micron PVC-O Series 2 Pipe
AS/NZS 4441:2008, ISO 9001:2008 | <p>Steelpipe NZ Ltd</p> <p>Humes - Tubemakers, Australia —
Licence # 2029</p> <p>Tyco Tyton Excel (Licence # SMK0883)</p> <p>Promains (Licence #SMKP?WMKA 21977)</p> |
|--|--|

2.4 Rider mains 63mm OD
63mm OD MDPE PE80B, PN12.5, SDR 11 (coloured blue or blue strip) pipe manufactured to AS/NZS 4130: 2003 and amendments.

Iplex Blue Line Licence #SMK P20400
Marley Pushlok Pipe (Licence # 2639)
RX Plastics (Licence #SMKP21662)

2.5 Service Lines

<ul style="list-style-type: none"> i) 25mm, 32mm, , 63mm OD MDPE PE80B, PN12.5, SDR 11 (coloured blue or blue stripe) manufactured to AS/NZS 4130: 2003 and amendments. ii) 20mm & 25mm half copper tube. Manufactured to NZS 3501:1976 and amendments. 	<p>Iplex Blue Line Licence #SMK P20400 Marley Pushlok Pipe (Licence # 2639) RX Plastics (Licence #002)</p> <p>Mico Wakefield Crane Enfield Metals McKechnie Metals, Auckland (Licence #2003)</p>
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NOTE: mPVC or PVC-O will be used for service lines requiring a larger flow capacity than that provided by 63mm OD MDPE pipe.

2.6 Seal Rings
Seal rings to comply with AS 1646.1-2007:
Elastomeric seals for waterworks purposes

3.0 FITTINGS

3.1 Reticulation

- i) Cast iron pipe flanged, socket and spigot fittings Gillies

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to AS/NZS 1830:2007 and AS/NZS 2544: 1995 with flanges to Table D and coated to AS/NZS 4158: 2003 and amendments. Rated at PN16 or higher.

- | | |
|---|---|
| <p>ii) Ductile iron pipe flanged, socket and spigot fittings to AS/NZS 2280:2004 with flanges to Table D, or raised, faced and drilled to AS 4087, and coated to AS/NZS 4158:2003 and amendments.</p> | <p>Crevet Griptite (Licence # 943 & 950)
Humes (Licence # 2029)
Surecast
Tyco TYTON JOINT (Licence # PRD/R61/0412/1</p> |
| <p>iii) Stand Alone Flanges to Table D
PVC; Ductile or Cast iron coated to AS/NZS 4158:2003 & amendments</p> | <p>Iplex PVC
Marley PVC
Uniflange Adaptor DI
(as supplied by Steel & Tube NZ Ltd)
Ajax</p> |
| <p>iv) Bolts, nuts and washers to be hot dipped galvanised with minimum of 15mm diameter in accordance with AS 1111:2000 "ISO Metric Hexagon Commercial Bolts and Screws" and AS1112:2000 "ISO Metric Hexagon Nuts, Including Thin Nuts, Slotted Nuts and Castle Nuts".</p> | |

Stainless steel bolts, nuts and washers are acceptable alternatives to hot dip galvanised fastenings provided they are 316 grade stainless steel with factory applied molybond coating and complying with AS/NZS 1252:1996 — High Strength Steel Fastenings.

- | | |
|--|--|
| <p>v) Gibaults
- Cast coated in accordance with AS/NZS 4158:2003 & amendments and hot dipped galvanised bolts as per iv)
-
- Gunmetal DR LG2 with ABS belly
- M16 316 stainless steel, with clips fusion coated to AS/NZS4158:2003 and 316 stainless steel fasteners</p> | <p>Gillies
Viking Johnson Ltd — Maxifit (with Sheraplex coated bolts)</p> <p>Crevet
Milnes Pty Ltd
Tyco Vari-Gib</p> |
| <p>vi) MDPE Fittings</p> | <p>Durafuse (Licence #9603049)
Iplex — Plasson (Licence #2018)
Marley — Philmac (Licence # 1271)
Marley — Pushlok (Licence # 1494)
Plassim Licences # 1494 & 1271)
Plastic Systems — Alprene A16
Easygrip (Licence # 1157)
PPI Corporation - GF+ Compression Fittings (Licence # 1157)</p> |

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vii) Brass Fittings

McKechnie Metals Methven

3.2 Service

3.2.1 MDPE fittings

Durafuse (Licence #9603049)
 Iplex — Plasson (Licence #2018)
 Marley — Philmac (Licence # 1271)
 Marley — Pushlok (Licence # 1494)
 Plassim Licences # 1494 & 1271)
 Plastic Systems — Alprene A16
 Eeasygrip (Licence # 1157)
 PPI Corporation - GF+ Compression
 Fittings (Licence # 1157)

3.2.2 Manifold

FB Hall & Co Ltd — HCC Copper
 Manifold Acuflo Industries Ltd —
 Acuflo GM900s 20mm manifold

3.3 Ferrules

3.3 Gunmetal with Polyethylene fittings

Keyplas Milnes — Self Tapping
 (Licence # 1281) Talbot & Co Ltd
 — Self Tapping TB0020ST
 - Standard TB0019

4.0 VALVES

4.1 Gate Valves for Reticulation

Resilient Seated - manufactured to NZS/AS
 2638.2:2006, anti-clockwise closing with Teflon
 gland packing or 2 or more "o" ring seals and dust
 cover. External and internal protective coating to
 AS/NZS 4158:2003 & amendments. Rated at
 PN16. Flanges to be raised face and drilled to AS
 4087.

AVK Series 55 & 57 valves (Licence SAI
 #2420 & 2573)
 Gillies SF Series
 Tyco Figure 500 Series
 (Licence # PRD/R61/0412/2)
 Crevet Ltd Norcast (Licence # 1327)
 Hawle 4060E2 and 4500E2AS Series
 (Licence # SMKP20123)

4.2 Stop Taps

15, 20, 25, 40, & 50mm Gate valves

Dezincification resistant materials or LG2 gunmetal
 to BS 5154:1991 or AS 1628:1999 and
 amendments with Malleable (cast) iron T bar
 handles. PN16 or higher.

Kitz Fig AS-H (with handle retaining
 nut changed to DR type)
 (Licence #2054)
 Tour Andersson Series 64MT DZR brass
 gate valve
 (Licence #0772)
 Maxiflo A59m JY-Zas gate valve
 (Licence #2766)

5.0 FIRE HYDRANTS

5.1 Fire Hydrant

Tall (median allowed on existing mains) pattern
 screw down standard, with approved polyurethane
 cup washer (see below) to NZS/BS 750 :1984.

Crevet — Hydravalve
 Gillies
 AVK Series 29 Hydrant
 Tyco F502 Series

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Pure PTFE gland packing (see below) or "O" ring sealing system and coated to AS/NZS 4158:2003 & amendments. To be rated PN16 or higher.

6.0 TAPPING BANDS & SADDLES

Standards Australia MP 52-2001 — 'Manual of Authorisation Procedures for Plumbing and Drainage Products', Chapter 6, Licence Specifications, Section 6.25 Specification number 025-Tapping bands.

6.1 40mm-80mm

- a) LG2 gunmetal DR type — fully enclosed
- b) Polyethylene type — fully enclosed with stainless steel bolts
- c) Glass filled NORYL two part moulded with stainless steel bolts.

Milnes Pty Ltd (Licence # W134)
Plassim (Licence # 1494)

"4N", Stockbands, Ace Plastics (Licence #149588 A & B)

6.2 100mm — 250mm

- a) LG2 gunmetal DR type. Fully enclosed for mPVC, blue brute, superblue, cast iron and spiral steel (AC sizing). Swivel bolt type with a flexible band for existing AC watermain.

Milnes Pty Ltd — Series 60B
Milnes Pty Ltd Series 61 Maintenance
Milnes Pty Ltd Insulated type for ductile, cast or steel mains
(Licence # W134)

- b) Glass filled NORYL two part moulded with stainless steel bolts

"4N", Stockbands, Ace Plastics (Licence #149588 A & B)

7.0 WATER METERS

Manufactured to OIML R49 — 'Water Meters intended for the metering of cold potable water' with Class C measuring accuracy.

All meter installations, 50mm and above, are subject to specific approval by HCC. Suppliers listed on the Acceptable Fittings & Materials list will be contacted to assist in selecting a meter which is fit for purpose (e.g. Class B or C or combination meter).

Actaris Metering Systems Actaris TD8 Class C water meter (20, 25, 32mm)
Actaris Flostar M Class C water meter (50 to 150mm)
Actaris Aquadis+ Class C Co-axial Qn 1.5 water meter

Acuflo Industries Ltd Maddalena DS TRP Class C inline water meter (20 to 50mm)

AD Riley Ltd Elster Kent PSM-T Class C inline water meter (20 to 40mm)
Elster Kent MSM (Qn 1.5) Class C co-axial water meter
Elster Kent C4000 combination water meter

Deeco Services Ltd Sensus 620 (20 to 40mm) Class C inline water meter
Sensus 620 (Qn 1.5) Class C co-axial water meter

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Meistream Pluss Class C Bulkmeter 40 to 150mm.

8.0 BACKFLOW PREVENTION DEVICES

- Devices manufactured to satisfy the NZWWA publication 'Backflow Prevention for Drinking Water Suppliers Code of Practice':
- AS 2845.1-1998 'Water Supply — Backflow Prevention Devices — Materials, Design and Performance Requirements' or
- ASSE Standards (American Society of Sanitary Engineers Standards)
- Non-Testable dual check — low risk

Deeco Services Ltd

Wilkins 705 non-testable dual check valve (20 and 25mm)

Taylor's Transmark FCX

FEBCO Series 510 non-testable dual check valves (20-25mm)

Deeco Services Ltd

Wilkins 350 testable double check valve (20 — 300mm)

Taylor's Transmark FCX

FEBCO MasterSeries 850 testable double check valve (20 to 250mm)

Tyco Flow Control

Tyco DC03 testable double check valve (20 to 150mm)

- Testable double check devices — medium risk

Deeco Services Ltd

Wilkins 375 testable reduced pressure zone valve (20 to 300mm)

Taylor's Transmark FCX

FEVCO MasterSeries 860 testable reduced pressure zone valve (20 to 250mm)

Tyco flow Control

Tyco RP03 testable reduced pressure zone valve (20 to 150mm)

Testable Reduced Pressure Zone Device — high risk

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Manufacturer/Product ID

9.0 VALVE, FIRE HYDRANT, METER BOXES, PACKERS AND VALVE MARKER PLATE

- | | | |
|-----|--|---|
| i) | Cast iron to HCC Standard Drawings TS601, TS607-612 and TS620-621. | Hygrade Products Ltd (except TS601)
Surecast |
| ii) | Polypropylene or polyethylene meter boxes with black lids. Other colour lids may be installed only as approved by the Water & Waste Services Unit. | Acuflo Industries Ltd
Acuflo polypropylene (AMB and AMBT Series)
Draper Enterprises Ltd
Draper polyethylene water meter boxes and lids (DRA20/1 Standard Tall, DRA40/1 Reverse Taper Tall) |

NOTE: Only cast iron meter boxes may be used in driveways or carriageways.

10.0 CONCRETE PRODUCTS

- | | | |
|------|--|--|
| 10.1 | Valve Marker Post
— to HCC Standard Drawing TS602. | Humes Pipelines
Hynds Pipelines
Newstead Concrete Products |
| 10.2 | Fire Hydrant Concrete Surrounds
to HCC Standard Drawings TS613, 617 & 618. | As for 10.1 |
| 10.3 | Valve Concrete Surrounds
- to HCC Standard Drawings TS 614 & 615 | As for 10.1 |

11.0 WOODEN PRODUCTS

- | | | |
|------|--|-----|
| 11.1 | Wooden Valve Post
- to HCC Standard Drawing TS 602 | N/A |
|------|--|-----|

12.0 TOBY BOXES

- | | | |
|-----|---|----------------------------------|
| i) | Cast iron — to HCC Standard Drawing TS604, 605, and TS606 | Hygrade Products Ltd
Surecast |
| ii) | Polyethylene to HCC Standard Drawing TS603. | Chevron Industries (Hamilton) |

13.0 TOBY BOX RISERS

- | | | |
|-----|---|-------------------------|
| i) | 150mm earthenware — to HCC Standard Drawing TS627 | Marton Brick & Tile Co. |
| ii) | 150mm mPVC offcut to HCC Standard Drawing TS627 | Iplex
Marley |