

Appendix G: Approved Materials

Approved materials for:

1. Stormwater and Wastewater
See NZS4404, page 101, Table 4.2, and Modifications in Part 4 of Supplement Document.
2. Water Supply
See attached list.

WDC APPROVED MATERIALS LIST – TABLE 4.2

Pipe Materials	Applicable Manufacturing Standards	Stormwater	Wastewater	Water Supply	Comments
VC (Vitrified Clay pipes)	AS/ 1741	√	√		Has benefits for particularly aggressive wastes or ground conditions.
PVC – U (Unplasticised Poly Vinyl Chloride Pipe) Class SN4 to 16 as required by TA	AS/NZS 1260	√	√		For gravity pipes.
PE (Poly Ethylene Pipe)	AS/NZS 4130	√	√	√	Note AS/NZS 4130 – for pressure applications. Also for gravity drainage and sewage applications.
PVC	AS/NZS 1477		√		For pressure pipes. Wastewater applications only.
PVC-M (Poly Vinyl Chloride Pipe)	AS/NZS 4765		√	√	Generally pressure pipes.
PVC – O (Poly Vinyl Chloride Oriented Pipe)	AS/NZS 4441			√	For pressure pipes, generally water applications only.
GRP (Glass Reinforced Plastic Pipe)	AS/NZS 4256.3		√		Lightweight. Resists many aggressive wastes in wastewater applications. Note: Wastewater application only.
RRJ reinforced concrete and Concrete Manhole Risers	NZS 4058	√	√ (Large Pipe)		Sometimes used for waste water pressure lines but subject to hydrogen sulphide attack.
Spiral welded steel	NZS 4442	√	√	√	Internal linings included concrete, epoxy, bitumen and galvanizing.
Ductile iron pipe	AS/NZS 2280	√	√	√	Generally suspended pipes and high structural loadings.
Corrugated aluminium pipe	AS/NZS 2041	√			Not acceptable to some TA's. Generally of short length (culverts etc). Joints need consideration in fine soils with high water tables. Invert may need lining. Stormwater applications only.
Corrugated steel pipe	AS/NZS 2041 NZS 4405 NZS 4406	√			Not acceptable to some TA's. Generally of short length (culverts etc). Joints need consideration in fine soils with high water tables. Invert may need lining. Stormwater applications only.
Grey Iron	AS/NZS 2544		√	√	Generally special fittings pump stations etc.
ABS (Acrylonitrile-Butadiene Styrene High Pressure Pipe)	AS/NZS 3518		√	√	Generally limited to pump stations, manifolds etc.
Stormboss Pipe	AS/NZS 5065	√			Limited to stormwater applications only. Prior approval required from the TA.
CLS (Concrete Lined Steel)	NZS 4442			√	Suitable for gravity applications, principal mains only.
RCP pipe (Roller Compacted Pipe)	BS-EN ISO 13477	√			Shall only be used if it can be shown and verified that each individual pipe has passed the factory hydrostatic test.
EW Manhole Channel Forms (U Shaped channel)	BS EN295-4	√	√		All manhole channels shall be formed using Earthen Ware type preformed channels.

This approved materials list covers acceptable materials and fittings for use within the TA district, and covers the products which the TA has, or will assume responsibility for.

Products which are not in accordance with this list will be rejected, unless written approval is given prior to installation by the TA Engineer. Rejected products will be subject to removal at the subdividers cost.

All of the materials supplied by the subdivider shall be the best of their respective kinds and conform to the appropriate New Zealand, Australian or British Standard and or Specifications as specified hereafter. All materials and fittings shall be free from flaws and defects, and shall be subject to such tests as the TA Engineer may impose.

Unless otherwise specified the standards and specifications (and latest amendments) shall apply to the various materials and fittings installed.

The TA reserves the right to refuse any material or fitting from the Acceptable Materials list for any reason and at any time. In these circumstances the TA will provide written notification, stating the reasons why the material is not fit for purpose.

WDC APPROVED MATERIALS FOR WATER

Fittings	Approved Type, Brand Name or Manufacturer
<p align="center">Universal (Gibault) Joints (cast coated in accordance with AS/NZS 4158 and amendments) All bolts shall be Stainless Steel grade 316 with factory applied molybond coating and complying with AS/NZS 1252</p>	AVK Tyco
<p align="center">Mechanical Tapping Bands (standards Australia MP 52-2001, chapter six, section 6.25) Note: Aluminium and Universal tapping bands with u bolt support straps shall not be used All tapping bands on PVC shall be gunmetal DR LG2 - fully enclosed All tapping bands on MDPE shall be plassim – fully enclosed All bolts shall be Stainless Steel grade 316 with factory applied molybond coating and complying with AS/NZS 1252</p>	Crevet Taptite Milnes Pty Ltd Plassim
<p align="center">Medium Density Poly Ethylene pipe – MDPE Fittings All MDPE pipe shall be joined using compression fittings</p>	Plasson /Iplex Philmac / Marley Pushlok / Marley Easygrip
Valves and Fire Hydrants	Approved Type, Brand Name or Manufacturer
<p align="center">Sluice Valves (manufactured to AS/NZS 2638:2, coatings to comply with AS/NZS 4158 and amendments, flanges to be drilled to AS 4087) 15mm diameter and larger. Resilient seated, nylon coated, minimum class PN 16, open clockwise with a non-rising stainless steel spindle, coated internally and externally with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured blue Valves shall be flanged (table D) when laid in conjunction with other ductile fittings. All valves 100mm or larger shall be strapped to a concrete anchor block ≈ Surface boxes shall be cast iron fully coated with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured blue. Concrete base blocks shall be approved by the Engineer. They are to be accurately centred over the main and the lids are to conform to the finished ground surface. The "V" in SV lid is to point in the direction of pipe that the valve controls</p>	AVK Series 55 and 57 Gillies SF Series Tyco figure 500 Series Hawle 4060E2 and 4500EAS Series. ≈ Technicast Surecast
<p align="center">Fire Hydrants (manufactured to NZS/BS 750, coatings to comply with AS/NZS 4158 and amendments, polyurethane cup washer to NZS/BS 750) Resilient seated, nylon coated tall pattern screw down standard, minimum class PN 16, with approved polyurethane cup washer, pure PTFE gland packing or "O" ring sealing system. Coated internally and externally with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured blue ≈ Risers and tee's are to be ductile iron coated with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured blue. ≈ Surface boxes shall be cast iron fully coated with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured yellow. Concrete base blocks shall be approved by the Engineer. They are to be accurately centred over the main and the lids are to conform to the finished ground surface.</p>	AVK Series 29 Hydrant Tyco F502 Series Gillies Humes Torq-loc ≈ Humes AVK Tyco ≈ Technicast Surecast
<p align="center">Gate Valves (manufactured to NZS/AS 1628 Gunmetal to BS 5154) 15mm, 20mm, 25mm, 40mm and 50mm Diameter Dezincification resistant materials or LG2 gunmetal with malleable (cast) iron T bar handles, minimum class PN 16</p>	Kitz Fig AS-H (with handle retaining nut changed to DR type) Tour Anderson Series 64MT DZR brass gate valve Maxiflo A59m JY gate valve
<p align="center">Combination Valves 2 or 3 way valves ≈ Combi bases, risers 1050mm Diameter, Depth 450, 600mm or to suit. ≈ Combi frame and lid – cast iron fully coated with fusion bonded Epoxy to 200u or nylon risan 11, coloured blue.</p>	Hygrade ≈ Humes ≈ Humes
<p align="center">Isolation valves Note: Suitable for Suitable for rider mains only Threaded Male, PE push fit (must include nose cone), Resilient seated, nylon coated, non-rising stainless steel spindle, coated internally and externally with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured blue</p>	Humes SSV 10

Valves and Fire Hydrants	Approved Type, Brand Name or Manufacturer
<p align="center">Domestic Tobies (manufactured to AS 1460*)</p> <p>Standard connection 15mm diameter, unless prior approved by the TA, female to female connection.</p> <p align="center">≈</p> <p>Toby boxes shall be a black high density polyethylene (HDPE) surface box, with base plate, and with a blue lid marked 'water'.</p> <p align="center">≈</p> <p>Risers shall be 150mm Diameter PVC stormwater pipe by 260mm long.</p>	<p>Plasson Compression Stopcock.</p> <p align="center">≈</p> <p>Acuflo Industries Ltd Hygrade Products Ld Draper Enterprises Ltd</p> <p align="center">≈</p>
Miscellaneous	Approved Type, Brand Name or Manufacturer
<p align="center">Standard Water Meter (Supplied by the Principal)</p> <p>Note: Device shall conform to Water NZ Water Meter Code of Practice 2003 15 – 40mm Diameter Fan Jet / Class C</p>	<p align="center">Socam</p>
<p align="center">Combo Water Meter (Supplied by the Principal)</p> <p>Note: Device shall conform to Water NZ Water Meter Code of Practice 2003 50 – 150mm Diameter Combination (meter and Backflow)</p>	<p align="center">Meinecke Metwin / Sensus</p>
<p align="center">Fire Meter</p> <p>Note: Device shall conform to Water NZ Water Meter Code of Practice 2003 Shall be used on dedicated fire sprinkler mains</p>	<p align="center">Metwin / Sensus</p>
<p align="center">Backflow Preventer (Supplied by the Principal)</p> <p>(Shall comply with AS/NZS 2845.1 and the ASSE standards).</p> <p>Note: Type to be installed shall comply with the Levels of Risk table as defined in the Building Code G12. The device shall comply with the Water NZ Backflow Prevention for Drinking Water Suppliers Code of Practice.</p> <p align="center">Non testable dual check valve – Low risk</p> <p align="center">≈</p> <p align="center">Testable double check valves – Medium risk</p> <p align="center">≈</p> <p align="center">Testable Reduced Pressure Zone Device (RPZ) – High risk</p>	<p align="center">Wilkins</p>
<p align="center">Repair Straps</p> <p>Straps should be used with 316 stainless steel bolt sets. Mild steel minimum dimensions 60mm wide x 6mm thick</p>	
<p align="center">Pipe Wrapping 50 – 100 mm Petroleum based</p>	<p align="center">Polyken Petrotech</p>
<p align="center">Thread Tape</p> <p>Note: To be used when joining PVC or MDPE to metal fittings</p>	<p align="center">Ceelon (red only)</p>
<p align="center">Hemp (with manufacturers specified grease) Shall be used for all metal to metal fittings.</p>	<p align="center">Good quality, standard plumbers Hemp</p>
<p align="center">Conduit trace Wire 1.5mm Copper sheathed in PVC Installed with all non-metallic pipe (including mains, riders and connections).</p>	<p align="center">Installed with all non-metallic pipe (including mains, riders and connections)</p>
<p align="center">Gaskets 32mm thick diameter to suit flanges Nylon Reinforced Insertion Rubber</p>	
<p align="center">Bolt Sets 316 stainless steel</p> <p>All new replacement bolt sets are to include bolt, nut, flat washers and one spring washer. 'ROCL' grease is to be used will all bolt installations.</p>	
<p align="center">Security Cage Lockable galvanised steel cage fixed onto a Concrete pad</p>	
<p align="center">Valve Packing (for existing valves) PTFE 210kg/tm2 (20,594 KPa) Chesterton, Style 1724 Super –Lon To be installed as per Chesterton's recommended packing procedure.</p>	