Standards Change

Universal

Across the 3 listed standards the (AS3500.1, AS3500.2 & AS3500.4:2020)

- definitions have been removed and relocated to AS3500.0
- Individual product standards have been removed. Products require a water mark and specific product conformance can be found in the National Construction Code, Plumbing Code of Australia (PCA)
    - Further information for
        - AS3500.1 & AS3500.4 can be found in Appendix B
        - AS3500.2 Can be found in Appendix A

3500.1

(iii) Back flow provisions

- Appendix F, removed types of backflow prevention
- 4.4.1 refers you to standard AS2845.2 for Air Gap conformance
- 4.6.1 note, clause 4.6.1(b) does not apply to firefighting water services
- 4.6.2.2 Accessibility, does not refer to AS2845.3 anymore
- 4.6.3.3 Non-testable devices, a (iii) removed referral to AS2845.1
- 4.6.3.3 Non-testable devices, c note 1 removed referral to app f
- 4.6.3.3 Non-testable devices, e note 1 removed referral to app f

(v) Jointing requirements

- 5.2 Added Installation of pipes and fittings
    - Lists standards for individual pipe material
    - 5.2.1 copper pies and fittings
    - 5.2.2 plastic pipes and fittings
- Has moved all sections from 5.2 to the next section due to the addition of installation of pipes and fittings eg, Proximity to other services was 5.2 but is now 5.3
- 5.6.9 Changed to jointing of plastic pipes (previously solvent cement joints)
    - Included PVC (AS2032), PE (AS2033), ABS (AS3690) and other plastic pipes
    - Other pipes include PB (AS2542.3 and AS5082.2), PE-X (AS2537), Multi Layer Pipes MLP (AS4176), PP-R (ISO15874-3)

(vi) Marking of pipes

- Changes to pipe identification 5.19
    - Changed to class 2-9 buildings (Originally class 3-9)
    - At spacings not exceeding 6m (Originally 8m)
    - In addition to the existing requirements of being adjacent to branches, junctions, valves, floor and wall penetrations, identification is also required at service appliances, bulkheads and at every floor level with vertical ducts and riser cupboards.

(vii) Metal Framed Wall

- Changes 5.5.2.1 (c)
    - Water services shall be installed in existing preformed holes where possible. Additional holes, where required, shall be no larger than the preformed holes installed by the manufacturer or 32 mm when there are no pre-existing holes. The additional holes shall be placed.
    - with hole centres no further from the centreline of the member than ± 10 % of the
      member depth
    - at a minimum spacing or end distance of 4 times the hole diameter (for single holes)
    - at a minimum spacing or end distance of 8 times the hole diameter (for pair-to-pair
      or single-to-pair holes), see Figure 5.5.2.1(C)
    - If holes are less than 4 times the hole diameter apart, they are considered a pair.
    - Holes may be plain (unflared) or flared. For plain holes, metal and polymer pipes shall be
      protected from contact with the hole edge. For flared holes, metal pipes shall be isolated from
      contact with the hole flare. Protection or isolation shall be provided using suitable grommets,
      insulation or a short sleeve of oversize pipe firmly secured in the framework to be inserted
      around the pipe. There shall be no direct contact between the pipe and framework and there shall be free longitudinal movement of the pipe through the grommet, lagging or sleeve.

(ix) Section 12 Installation of water supply to specified fixtures has been removed and moved to PCA

AS 3500.2

(iii) Wet Wells

- 12.5.2 Construction of wet wells now replaces 12.5.2 Construction and 12.5.3 Materials
- Expanded to include prefabricated wet wells

(iv) Pipe Identification 10.10

- In commercial and industrial buildings, accessible pipework shall be permanently marked so as to be readily identifiable as part of the sanitary and plumbing drainage service within.
    - Includes class 2-9 buildings
    - At spacings not exceeding 6m
    - Required location of markings, adjacent to branches, junctions, valves, floor and wall penetrations, service appliances, bulkheads and at every floor level with vertical ducts and riser cupboards.

(v) Connection requirements for drains at grade

- 4.9.1 Drains installed at grade

    - 4.9.1.1 has removed part (b) this allowed a branch and main drain of the same size to be connected on grade
    - Addition of 4.9.1.2, New installations, where connection of a two DN100 drains (branch drain to another drain) the entry level of the branch drain shall be elevated at a minimum 15-degree incline
    - Addition of 4.9.1.3, Other installations, Repairs or extension of existing drain or when the main and branch drain are not DN100, junctions may be on grade
- 6.6.2.4 Junctions installed at grade
    - Removed part (a) this allowed a branch and main drain of the same size to be connected on grade
    - Inclusion of 6.6.2.4.2, New installations, where connection of a two DN100 drains (branch drain to another drain) the entry level of the branch drain shall be elevated at a minimum 15-degree incline
    - Inclusion of 6.6.2.4.3, Other installations, Repairs or extension of existing drain or, junctions may be on grade
- See Figure 4.9.1(a) for example

(vi) Removal of the requirement for a commercial dishwasher to drain just to connect to a DG with a 10m discharge

- See Appendix B, options to now connect to a Vented drain and stack systems

(vii) Guidance on requirements to meet AS2870 (Residential Slabs and Footings) for flexible connectors to be installed in plastic pipe drainage systems.

- Addition of Appendix G Drains in unstable soils
- Applies to Class 1 buildings (Residential)
- Cover flexible connectors, lagging and water ingress under the slab
- Accommodates a range of different soil classes

As 3500.4

(iii) Jointing requirements for plastic pipes

- Addition of section 4.4.8 Jointing of plastic pipes
- 4.4.8.1 PVC, States use of PVC pipes and fittings must be in accordance with AS2032
- 4.4.8.2 Other plastic pipes, includes pipes include PB (AS2542.3 and AS5082.2), PE-X (AS2537), Multi Layer Pipes MLP (AS4176), PP-R (ISO15874-3) must be installed in accordance with listed standard

(iv) Identification of piping

- 4.13.2 (previously 4.12.2) is updated with new pipe identification requirements
    - Encompasses class 2-9 buildings
    - At spacings not exceeding 6m

- Requirements include being adjacent to branches, junctions, valves, floor and wall penetrations, service appliances, bulkheads and at every floor level with vertical ducts and riser cupboards.

(v) Installation of services located in metal framed walls

- 4.6.1.1

- (c) in addition to existing
- *Metal wall framework* — Water services shall be installed in existing preformed holes where possible. Additional holes, where required, shall be no larger than the preformed holes installed by the manufacturer or 32 mm when there are no pre-existing holes. The additional holes shall be placed —
    - with hole centres no further from the centreline of the member than ± 10 % of the member depth;
    - at a minimum spacing or end distance of 4 times the hole diameter (for single holes); and
    - at a minimum spacing or end distance of 8 times the hole diameter (for pair-to-pair or single-to-pair holes). See Figure 4.6.1.1(C).
    - If holes are less than 4 times the hole diameter apart they are considered a pair.
    - NOTE 2 An engineered system may have more numerous or closely spaced holes depending on the design. Holes may be plain (unflared) or flared. For plain holes, metal and polymer pipes shall be protected from contact with the hole edge. For flared holes, metal pipes shall be isolated from contact with the hole flare. Protection or isolation shall be provided using suitable grommets, insulation, or a short sleeve of oversize pipe firmly secured in the framework to be inserted around the pipe. There shall be no direct contact between the pipe and framework. There shall be free longitudinal movement of the pipe through the grommet, lagging or sleeve.
      All pipes shall be secured in accordance with Clause 4.5.

- 4.6.1.1 (d) Additional information
    - *Metal beams, bearers and joists* — Holes made in metal beams, bearers and joists shall be in accordance with Figure 4.6.1.1(D).

(vi) Proximity to other services

- 4.3.2.2 changed - Above ground heated water services, proximity to electrical cables has been reduced to 25mm (previously 100mm)

(vii) Wasted hot water

- 10.1 Applies to installations limited 65 degrees (no temperature previously not stated)
- 10.2 Addition of - Note 3 A water heater delivery temperature set point of 65 °C is sufficiently hot for most applications.
- 10.4.2 Maximum differential (moved from 1.9.4.2, additional information)
    - Where heated water is mixed with cold water at a mixing valve or combined tap, the dynamic pressure differential between the heated and cold water supplies shall not exceed 10 %.

- NOTE 1 Where storage tanks or booster pumps may be required to achieve minimum pressure, both the cold water service and the water heater should be supplied from the same source.
- NOTE 2 Limiting the pressure differential reduces the likelihood of crossflow across the mixing valve or combined tap.
- ***C10.4.2*** *Crossflow of cold water into a heated water secondary circulating flow at mixing valves or*
- *combined taps will reduce heated water delivery temperature at downstream outlets. Transfer of heated water into a cold water service increases the likelihood of legionella bacteria growth and increases heat losses from the system, resulting in increased energy consumption.*

- 10.9.3 Branch take off with water meter, Introduced
  - 10.9.3.1 General, A heated water meter on a dead leg branch serving a single apartment, dwelling or secure area shall be located in common property and be accessible by the individual apartment, dwelling or secure area occupier.
- 10.9.3.2 Length and capacity of dead leg with water meter
  - The circulatory flow, the branch offtake and the heated water meter located in the common property shall be installed as close as practicable to the apartment, dwelling or secure area they serve.
  - NOTE 1 Volumetric capacity of pipes are given in Table Q.2.
  - NOTE 2 See Appendix Q for a guide to determine capacity of dead legs and estimating wait times.
  - NOTE 3 Dead legs with volumetric capacity exceeding 2l may require additional water heaters or trace heating.
  - NOTE 4 See Table 8.2.2 for pipe insulation requirements.
  - NOTE 5 See Figure Q.3 for the volumetric capacity of any dead leg, measured from the branch offtake at the circulatory flow to its outlet, should not exceed 2l.
- Introduced Appendix Q, Sizing of branches from circulatory heated water systems.

(viii)

- Clause 1.11.2 Sanitary fixtures delivery temperature & 1.11.3 Solutions for control of delivery temperatures have been removed and transferred to the National Construction Code Volume 3, Plumbing code of Australia (PCA) Part B2 heated water systems