

Submission No: ..20.....
Date Received: ..20/8/07.....
Secretary: ..[Signature].....



SUBMISSION BY THE
Housing Industry Association

to the
**House of Representatives Standing Committee on
Environment & Heritage**
on the
**Inquiry into the Regulation of Plumbing Product
Quality in Australia**

20 August 2007

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HIA ::

Kristin Tomkins, Executive Director, Building Policy
Housing Industry Association
4 Byfield Street
NORTH RYDE NSW 2113
Phone: 02 9978 3319
Email: k.tomkins@hia.com.au

HIA is the leading industry association in the Australian residential building sector, supporting the businesses and interests of over 43,000 builders, contractors, manufacturers, suppliers, building professionals and business partners.

HIA members include businesses of all sizes, ranging from individuals working as independent contractors and home based small businesses, to large publicly listed companies. 85% of all new home building work in Australia is performed by HIA members.



1 Introduction

The Housing Industry Association (HIA) welcomes the opportunity to provide this submission on the Regulation of Plumbing Product Quality in Australia to the House of Representatives Standing Committee on Environment and Heritage.

1.1 About HIA

The HIA is Australia's peak national industry association for businesses in the residential building, renovation and development industry. With more than 43,000 members nationally, HIA members include builders and building contractors (residential and commercial), consultants, land developers, major manufacturers and suppliers of building products.

HIA has a presence in all states and territories of Australia. This level of coverage facilitates broad industry participation through our extensive volunteer committee structure and maximises the association's capacity to liaise with industry practitioners across the full spectrum of the housing industry.

The majority of HIA members are small and medium sized companies, with larger organisations from both the building and manufacturing sectors ensuring HIA represents all sectors of the housing industry.

1.2 HIA relationship with plumbing industry

In relation to the plumbing industry, HIA's National Manufacturer's Council, in conjunction with HIA's association with the Building Products Innovation Council, provides HIA with input from a significant number of major Australian manufacturers and suppliers of plumbing products.

This submission has been prepared with input from a broad range of HIA members including plumbers, manufacturers and retailers of hot water heating appliances, manufacturers and suppliers of bathroom and kitchen fittings, builders, kitchen and bathroom builders, along with input from HIA Apprentices and the HIA Youthbuild Foundation.

HIA is also represented on Australian Standard's committees involved with the plumbing including AS 3500 National Plumbing and Drainage, AS 3740 Wet areas in buildings and AS 4654 External Waterproofing Membranes.

1.3 Terms of Reference

The Terms of Reference for this Inquiry have been used as the basis for preparing HIA's submission, as a Discussion Paper has not been prepared. The Terms of Reference are:

- The appropriateness and effectiveness of the current plumbing product quality regulatory arrangements;
- Potential improvements to the plumbing quality regulatory system;
- Scale of environmental benefits from controlling plumbing product quality;
- Trade implications of controlling plumbing product quality;





- The appropriate level of government to administer plumbing product quality regulation, that is, the states (as is now) or the Commonwealth.

HIA considers that the Terms of Reference seek input on a broad range of plumbing matters all of which affect HIA members. This response puts forward HIA's position on each, showing the affects on the construction process of new housing across Australia, the manufacture and supply of plumbing products to the housing industry, the building approval and inspection process and the impact on existing housing through plumbing maintenance.

Terms of Reference 1, 2 and 5 address the area of regulations and hence this submission combines these issues for comment within section 2. Terms 3 and 4 are separately address in sections 4 and 5 respectively.

1.3.1 What is 'plumbing product quality'?

HIA has interpreted *plumbing product quality regulation* to include the application of:

- Plumbing product manufacturing regulation & standards including:
 - National Plumbing and Drainage Code (AS 3500 series),
 - Minimum Energy Performance Standards (MEPS),
 - Water Efficient Labelling Standards (WELS) Scheme (AS 6400), and
 - Watermark accreditation (AS 5200).
- Plumbing product installation regulations & standards including:
 - State Plumbing and or Building Regulations,
 - Australian Standards (in particular AS 3500),
 - State Codes of Practice,
 - the National Plumbing Code (Plumbing Code of Australia),
 - the Building Code of Australia, and
 - state or local water authority standards.

In addition, to address the trade implications of controlling plumbing product quality, it is essential to understand the impacts of the supply and availability of plumbers and the scope of plumbing trade certification and what work this permits them to undertake in each jurisdiction.

Over time, the plumbing profession has developed specialty trades who undertake work based on the type of building or plumbing work involved. The issues of concern for each of these groups may be slightly different based on the differing application of plumbing regulations. However, the general impact of plumbing regulations tends to affect all sectors equally. The major division of plumbers is based on the type of building they carry out work on, being:

- New home construction (attached and detached low rise),
- Maintenance plumbing installations in existing homes, and
- Commercial/industrial/high rise residential (new and maintenance)

It is also worthwhile identifying the various aspects of plumbing work to assist in understanding where the areas of concern arise for each type of plumber. Generally this can be separated into water supply, sewerage infrastructure and stormwater infrastructure.





2 Administration of plumbing regulations

2.1 Existing administration of plumbing regulations

The existing plumbing regulations are administered by a range of authorities in each state and territory. Generally administration is by the local water authority, which may be a larger corporate entity such as Melbourne Water or Sydney Water, or a small rural council, takes on responsibility for water and sewer infrastructure. Local councils, whether water authorities or not, have responsibility for stormwater management.

In the main, the extent of the variations is based on the number of water authorities within the state who are able to establish their own local codes or standards to control plumbing. Whilst there is a high level of consistency in adopting the AS 3500 series, there is no limit on the number or reason for any variations that a local authority may impose.

The administration of regulations for the installation of plumbing work in new buildings is more complex, overlapping with local government planning and building administration, who are increasingly applying performance standards for plumbing fixtures without regard to any national or state administration.

The administration of plumbing product standards is also complex, with the lack of a single national authority responsible for guiding, developing and reviewing product standards making the process reactive and adhoc in its outcomes.

2.2 National plumbing regulator

At present there is no national regulator for plumbing. The National Plumbing Regulators Forum (NPRF) was established in 2002 to facilitate greater national consistency in plumbing standards across all Australian states and territories. However, the Forum is not a statutory authority and has only indirect associations with the Commonwealth government. The NPRF provides an opportunity for government regulators to exchange views on policy and technology developments across the plumbing industry.

HIA believes there is a need for a national plumbing regulator with statutory authority, as is the case with building regulations administered by the Australian Building Codes Board (ABCB).

It may be appropriate to formalise the NPRF or it may be appropriate to establish a closer association with the ABCB and develop a separate stream of administration which can facilitate development and adoption of the Plumbing Code of Australia (PCA) in place of all existing regulations.

It may be appropriate that a member, or members, of the NPRF take on a position on the ABCB Board to provide suitable cross over of regulations, policy direction and regulatory oversight.

A larger group of plumbing regulators, plumbing and construction industry, manufacturers and suppliers, could be established as a Plumbing Codes Committee, acting in an advisory role to the ABCB/NPRF, as does the existing Building Codes Committee.





A national regulator could take on responsibilities for:

- The development and maintenance of the Plumbing Code of Australia;
- Reviewing all existing state and local regulations which conflict with the PCA
- Administration of the WELS and WaterMark certification processes,
- Coordination of the development of all Australian Standards for plumbing products,
- Review and maintain all existing Australian Standards for plumbing products.

HIA recommends:

1. That the National Plumbing Regulators Forum become amalgamated with the Australian Building Codes Board to provide a single national regulator for all plumbing matters including responsibility to:
 - develop and maintain the Plumbing Code of Australia in accordance with COAG principles for good regulation,
 - seek agreement by all states and territories to adopt the PCA, and to review existing state and local regulations which conflict with the PCA to remove inconsistencies,
 - undertake administration of the WELS and WaterMark certification processes,
 - coordinate the development of any new Australian Standards for plumbing products, and
 - review and maintain all existing Australian Standards for plumbing products.
2. That the ABCB establish a Plumbing Codes Committee to review the Plumbing Code of Australia and all associated Australian Standards to ensure that all plumbing regulations meet the COAG principles for good regulation.





3 Plumbing product quality regulations

3.1 Background

Traditionally the plumbing profession has been responsible for protecting the health, safety and amenity of building occupants by maintaining water quality within a building, and external to the building. This area of building control is vital to public health and safety. Similarly, the removal of waste water in all its forms and the control of stormwater to protect buildings from damage are fundamental tasks undertaken by the plumbing profession.

The existing framework of plumbing product quality regulation should be addressed in accordance with the functional areas of the legislation. HIA believes that the key functional areas of plumbing regulation are:

- the *installation* of plumbing products,
- the *manufacture* of plumbing products, and
- the *environmental performance* of plumbing products.

Separately, the administrative provisions used to enact a wide range of regulations and other non-statutory standards within each State and Territory must be considered when reviewing the regulatory problems.

The following table sets out the regulatory framework of plumbing controls in Australia showing that all states have a different administrative framework.

Table 1 – State plumbing regulations at 1 August 2007. Compiled by HIA.

State	PCA adopted?	State act/ regulations	Additional regulations	State dept/authority
Queensland	Yes. Excluding parts D, E, F	Plumbing Act 2002. Standard Plumbing and Drainage Regulations 2003	Plumbing and Waste Water Code	Department of Local Government and Planning and Sport and Recreation
NSW	No	Water Management Act, Local Government Act, Environmental Planning & Assessment Act 1979	Sydney Water Act, Hunter Water Act, Code of Practice for Plumbing and Drainage (CUPDR). Local water authorities variations	Dept of Energy, Utilities and Sustainability (DEUS)
ACT	Yes (in part) 1 Sept '06 Parts A,B,C & G	Water & Sewerage Act 2000 & Regulation 2001	Gas Safety Act 2000 Gas Safety Regs 2001	ACT Planning & Land Authority



Victoria	No	Building Act 1993. Plumbing Regulations 1998	Gas Safety Act 1997. Water Act 1989. Water industry Act 1994	Plumbing Industry Commission
South Australia	No	Waterworks Act Waterworks Regulation 1996		SA Water
Western Australia	No	Water Services Coordination Act, Water Services Licensing Regulations 2000	No	Department of Consumer and Employment Protection via the Plumbers Licensing Board
Tasmania	Yes - in full with state variations June 2006	Building Act 2000 Plumbing Regulation 2000	Tasmanian Plumbing Code 2006	Department of Justice and Workplace Relations
Northern Territory	No	Building Act & Regulation	Water supply & Sewerage Act 1983	Department of Planning & Infrastructure

3.2 National requirements

There is presently no Commonwealth oversight or direct control of plumbing regulations, apart from the WELS scheme.

The National Plumbing Regulators Forum developed the Plumbing Code of Australia (PCA) in 2004, with the intention of establishing a single national code for all plumbing installation requirement and standards for plumbing products associated with those installations. The PCA is intended to be adopted by all states and territories in place of existing regulations. However, only Queensland and the ACT have adopted the PCA through their state regulations, and only then Parts A, B, C and G.

3.2.1 The Plumbing Code of Australia

The PCA addresses:

- Water services (Part B),
- Sanitary plumbing and drainage systems (Part C),
- Stormwater drainage systems (Part D),
- Heating , ventilation and air conditioning (Part E),
- On-site wastewater systems (Part F), and
- Materials and products certification and authorisation (Part G).

The PCA is based on the format and objectives of the Building Code of Australia (BCA) whereby all state and territory jurisdictions adopt the PCA as the primary plumbing quality regulation.





HIA is supportive of the intention of the PCA and the ongoing development of the PCA into a nationally consistent regulatory framework for all plumbing activities. If this were to occur, HIA believes that several changes would be required to ensure that the PCA meets existing Council of Australia Government (COAG) requirements for good regulation making.

The objectives of the PCA as they presently exist, combine policy goals with technical standards and good intentions, making it inappropriate in its present format for use as regulation by the plumbing and building industry.

“The goal of the PCA is to enable the achievement of an acceptable standard of installation at all times in order to provide for public health, safety and amenity, resource and environment conservation, sustainability and protection of public and private infrastructure for the benefit of the community now and in the future.”

To achieve this goal, the PCA:

- a) creates an accountable and transparent framework for product authorisation,*
- b) establishes national objectives for plumbing work on a performance basis,*
- c) fosters water and energy conservation,*
- d) encourages best practice,*
- e) reference effective solutions,*
- f) calls up relevant Australian Standards, and*
- g) is compatible with the Building Code of Australia.”*

In particular, HIA does not believe that if the PCA were to be instituted as a regulatory document that it should be the vehicle for promoting “best practice”. This should remain within the realm of voluntary industry best practice guidance by government and be supported by all levels of government, but not mixed with regulatory intent.

The content of the PCA would also need to be closely scrutinised to meet COAG guidelines, due to the extensive use of arbitrary terms and standards. Simple examples can be found in the definitions, such as:

“adequate” means adequate to achieve the particular objective of the Code, and

“loss” means either: physical damage, financial loss or loss of amenity.

<p>HIA recommends</p> <ol style="list-style-type: none">2. That the Plumbing Code of Australia be reviewed and written to meet the COAG principles for good regulation to provide a single national uniform set of standards for plumbing product quality.3. That the Plumbing Code of Australia be adopted by all states and territories and any state based variations presently in place be removed or incorporated into the PCA in accordance with COAG requirements by 2010.





3.2.2 Plumbing and the Building Code of Australia

Presently the Building Code of Australia (BCA) only addresses two aspects of plumbing control being:

- stormwater including drainage and roof guttering to ensure the safe removal of stormwater from and around buildings, and
- the construction requirements for rooms with wet areas.

The BCA calls up AS 3500.3 as the acceptable construction manual for stormwater control and AS 3740 for wet area waterproofing.

HIA believes that the present controls within the BCA are appropriate and relate to the structural integrity of buildings, meeting the BCA's traditional objectives to promote "health, safety, amenity".

The BCA's objectives were amended in 2006 and now incorporate the "sustainability" as a fourth objective for all new buildings. HIA understands that this amendment creates new opportunities to consider what aspects of building work should be covered by the BCA. Based on the recent Scoping Study on Water Efficiency undertaken for the Australian Building Codes Board, it is clear that water efficiency within buildings is an area where new regulations may be considered over the next decade. If this is the case, the relationship to the plumbing industry will need to be considered. This may require a closer alignment between the BCA and the PCA.

HIA is cautious of moves which may introduce into the BCA for the first time controls for the performance of internal fittings and fixtures of a building. The BCA is a technical standard for the construction of new buildings and does not have any bearing on existing buildings, unless extensive alterations are proposed. The benefit of regulating fixtures, including plumbing fixtures through the BCA should be carefully considered to ensure that it does not establish a precedent.

HIA believes greater benefit can be achieved through broader initiatives, such as WELS and Minimum Energy Performance Standards, which can be applied to all building fixtures, whether installed in new or existing buildings.

HIA recommends:

4. That the Building Code of Australia maintain its protocol for only adopting Australian Standards which meet COAG principles for good regulation.
5. That the Building Code of Australia not be used as a regulatory mechanism to control the fittings and fixtures within new buildings.

3.3 State regulations and statutory requirements

The existing regulatory framework for plumbing control is state based. The state regulations are a mixture of plumbing and building act provisions, with subordinate regulations. In every state and territory, the regulations adopt the Australian Standard 3500 series *National Plumbing and Drainage Code* in its parts, as the primary set of technical standards for plumbing installations standards. In some states, such as NSW, the regulations are enacted by





a number of water authorities who operate across the state, therefore rather than a regulation, an alternative has been adopted, being the NSW Codes of Practice for Plumbing and Drainage.

The operation of the current plumbing product quality regulations can be significantly improved to increase the consistency of application and outcomes expected of plumbing work.

a) Water authority variations to state regulation & AS 3500

The state regulations provide broad scope for the relevant water authority to vary the standards set out for plumbing installations. This is generally in the form of variations to AS 3500 standards. These variations, whether done at a state level or by a local water authority, are being undertaken outside of the CoAG principles for regulation making.

Whilst HIA acknowledges that the subsequent public infrastructure is a future asset for the water authority, it is questionable as to whether there is a need for local variations to the extent that they presently operate.

The ability to vary installation requirements, creates uncertainty and inconsistency for plumbers and builders, whereby changes can be made to what appears to be a state regulation, through a local amendment, without any public notice and without that local authority being required to undertake any type of cost benefit analysis to determine whether there is a negative impact on housing affordability.

For example, the NSW Code of Practice for Plumbing and Drainages sets out 57 changes to AS 3500.1, 45 changes to AS 3500.2, only 2 changes to AS 3500.3 and 11 changes to AS 3500.4. Given AS 3500.5 is a combination of Parts 1 to 4, it is then possible that all or none of these amendments will apply to domestic plumbing work, making the Code even more confusing.

HIA recommends:

- 6. That each state should adopt a single technical standard (AS 3500 or the PCA) which meets the COAG principles for good regulation making. Local variations by water authorities should not be permitted.

b) Introduction of plumbing standards through state planning & building regulations

The application of state regulations is also variable depending on the type of plumbing work being undertaken. “New building work” is subjected to all relevant standards of the day including plumbing standards. However, maintenance plumbing within existing buildings is not necessarily subjected to the same standards, in particular if no approval is required. The main area of concern appears to relate to plumbing product standards for fixtures such as hot water heaters, showerheads and tapware.

Several states have introduced planning and building regulations which establish performance criteria for plumbing products within new buildings. Table 2 sets out the state planning and building regulations which have introduced performance standards for plumbing products.

HIA’s concern over this approach is that the standard is not applied to existing housing which makes up approximately 98% of existing residential building stock at any point in time.





HIA believes that to achieve effective environmental outcomes and for consistency of plumbing controls, existing houses should be subject to the same plumbing requirements as new housing for any replacement of plumbing installations. The most effective way to achieve this outcome is to control the manufacturing standards for plumbing products, thereby achieving a consistent application of the law without any cost differential between new homes and existing homes and without leading to additional approval processes for existing homes owners to show compliance.

More importantly, the regulations which have been used to introduce these provisions have often not been the subject of regulatory impact assessments which prove that the home owner would gain a net cost benefit from the regulation. HIA does not support any regulations being developed outside the COAG principles for good regulation.

From a manufacturing perspective, these state based regulations creates difficulty for manufacturer's to develop safe, efficient and environmentally friendly products at the rate demanded by the Australian market and by the variety of regulators.

HIA recommends:

7. The establishment of a national plumbing regulator that administers regulations and Standards agreed by all jurisdictions as suitable for their specific demographic, geographic and climatic circumstances without local variations or additional requirements.





TABLE 2 - National summary of state based water efficiency regulations for plumbing products Complied by HIA @ 1 July 2007

	NSW – BASIX Planning regulation	VICTORIA – BCA/Building & Plumbing Regulations	QUEENSLAND – BCA/Qld Development Code	WESTERN AUSTRALIA – BCA variation (5 star plus)	TASMANIA BCA/Plumbing Regulation	ACT BCA/Plumbing Regulation	SOUTH AUSTRALIA BCA/Plumbing Regulation
Showerheads	3 star WELS	3 star WELS	3 star WELS	3 star WELS	3 star WELS	3 star WELS	3 star WELS
Toilets	3-4 star WELS	3-4 star WELS	3-4 star WELS	4 star WELS		3 star WELS	
Basin Taps	3 star WELS	3 star WELS		4 star WELS			
Pressure values		Comply with AS 3500.1. A pressure reduction valve required if may exceed 500kPa.	Comply with AS 3500.1. A pressure reduction valve required if may exceed 500kPa.	Comply with AS 3500.1. A pressure reduction valve required if may exceed 500kPa.			
Hot water	3.5 stars or better MEPS	<i>Optional</i> - 5 star HWS - Gas boosted solar (or electric boost where gas not reticulated)	Equivalent to 5 star hot water services – solar, electric heat pump or gas systems	5 star HWS – Solar gas boosted, gas or electric heat pump			
Alternate water supply to garden, laundry, and/or toilets	<i>Optional (subject to location)</i> <ul style="list-style-type: none"> • Rainwater tank • Stormwater • Reticulated grey water 	<i>Optional</i> 2000 litre rainwater tank connected to 50m ² roof & all toilets	5000 litre rainwater tank or reticulated grey water system	<i>Stage 2</i> <ul style="list-style-type: none"> • Rainwater tank • Bore water • Reticulated grey water 			1,000 litre rainwater tank
3 rd pipe water supply system	<i>Optional</i> - Install dual-pipe systems new developments	<i>Variable</i> - Install dual-pipe systems new developments		<i>Stage 2</i> Separate pipework to toilets & laundry for future supply			
Greywater diversion system				<i>Stage 2- Greywater ready</i> Separate pipework from shower, bath, laundry tub & washing machine.			



3.4 Technical controls for installation (AS 3500 series)

Performance standards for the manufacture of plumbing products are applied through a variety of other Australian Standards, which cover the specific design requirements for a plumbing fixture, such as hot water heaters, toilets or tapware. These standards focus on ensuring the fixture is “fit for purpose” and meets appropriate standards for water quality and the like. The primary standard is AS 5200:2006 *Technical specification for plumbing and drainage products*.

In conjunction with the product standards, MP 52 -2005 *Manual of authorisation procedures for plumbing and drainage products* provides the framework for the checking or accreditation of plumbing products in accordance with the relevant product standards. It is under this standard that a plumbing product obtains Watermark accreditation.

a) AS 3500 series does not meet CoAG principles for good regulation

Each of the state regulations adopt the Australian Standard 3500 series for plumbing and drainage. These standards have generally been developed outside the Council of Australian Governments (CoAG) requirements for good regulation making and are non-statutory documents, despite being called up in regulation.

In developing the BCA, any primary reference document (generally Australian Standards) which in turn call up secondary reference standards, must show that the secondary reference meets COAG principles for good regulation making. HIA does not believe that all secondary and further reference documents called up throughout the AS 3500 series meet the COAG principles.

The following provides a small number of example from AS 3500.5 – National Plumbing and Drainage Part 5 Domestic installations which HIA believe do not meet COAG principles for regulation.

Clause 2.2 states:
“2.2 EQUIVALENT PIPE SIZES - Where the nominal size of a pipe is specified in this Standard, an equivalent pipe size, for the material to be used, shall be selected from Table 2.1 for Australian requirements.....”

Table 2.1 follows setting minimum pipe sizes. Clause 2.5 then goes onto state
“2.5 LIMITATIONS ON THE USE OF PIPES AND FITTINGS
2.5.1 General
Limitations on the use of pipes and fittings shall also comply with the manufacturer’s installation specifications.

Should the manufacturer’s installation specification set a size different pipe, in particular a size smaller than Table 2.1, the plumber needs to determine which provision prevails.

2.4 SELECTION AND USE OF MATERIALS
The materials and products used shall be selected to ensure satisfactory service for the life of the installation within and outside the property





5.6.2.3.2 Other than roof areas

Stormwater from other than roof areas shall, in general, be collected and conveyed via site stormwater channels and inlets to site stormwater installation.

Clause 5.5.9.2 sets out provisions for roof materials, but includes a note which is contrary to the clause and appears without clear justification.

5.5.9.2 Requirements

Support systems shall—

(a) be fabricated from materials that—

(i) are compatible with the supported roof drainage systems; and

(ii) where exposed to direct sunlight, are resistant to ultraviolet light;

NOTE: Incompatible materials may be used, provided the contact surfaces are lined with a non-abrasive, impervious, non-conducting material.

HIA believes that much of the interpretation and inconsistency outlined above for state regulations, arises because the AS 3500 series it is not written in regulatory terms. AS 3500 provides scope for local authorities to separately adopt provisions either in place or in addition to those in AS 3500. The terminology of the standards also creates a situation where technical requirements are open to interpretation.

Evidence from the plumbing industry is that the application of installation standards is inconsistent and requires businesses operating across more than one water authority area, to adjust their practices to suit each authority, at times to even suit individual employees within one authority.

HIA recommends:

- 8. That AS 3500 National Plumbing and Drainage, Parts 1 – 5 be reviewed to ensure they meet the COAG principles for good regulation, being written in regulatory terms and provides technical standards which achieve a net cost benefit for the building owner and the community.

b) Development of AS 3500 series

HIA also considers there is a lack of resources in the areas of the maintenance of Australian Standards and the enforcement of regulations. The breadth of industry and regulator representation on the AS 3500 committees is extensive. However, it is essential that Standards Australia provide appropriate direction to these committees as to their purpose and their responsibility to develop standards which are intended to be endorsed via legislation and which meet CoAG principles for good regulation making. This is leading to a general difficulty in maintaining Australian Standards to accommodate the rate of technology development.

The changing requirements of regulations which are largely based on the Australian Standards, given the change of focus of Standards Australia and subsequent reduction in staffing levels, the general diminution of the skills and knowledge of these staff, and the increased level of justification needed to develop standards, will continue in the foreseeable short to medium term.





The consequent frustration experienced by manufacturers, regulators, retailers and consumers can often lead to a level of mistrust in programmes like WaterMark (AS 5200) to the point they are no longer valued or used as criteria when selecting product, despite being called up via state regulations.

HIA recommends:

9. That Standards Australia ensure appropriate coordination, development and in conjunction with a national plumbing regulator, oversight of all Australian Standards for plumbing which are referenced in regulation, whether Commonwealth or State.

c) Availability of AS 3500

The number of Australian Standards which apply to the plumbing industry is extensive and the purchase of all relevant standards can be an extremely costly exercise. For example, the Victorian Plumbing Industry Commission provides an order form for relevant plumbing standards on their webpage which would total over \$3,000 for the first time purchaser.

HIA recommends:

10. That Australian Standards referenced in Commonwealth or State regulations be made freely available online to the plumbing and building industry.

3.4.2 The relationship between Standards for product design and product installation

The ultimate safety of plumbing systems starts with safe components, products and appliances. The requirements for these are established in AS 5200 or referenced product Standards where these exist. These Standards have been prepared through consultation between manufacturers, regulators and consumer interests though the major input has been from manufacturers as this is where the knowledge resides and the participation of regulators, certifying bodies and consumer interests (despite having positions on “balanced membership” Standards Committees) has been typically low or non-existent. In some instances, regulators have worked outside the committees to develop contradictory or impractical requirements.

Further confusion arises through the development of product installation Standards, such as AS/NZS3500.4 for hot water heaters, by Standards committees with limited manufacturer input and the dominance by regulators. The outcome is often a product installation Standard that contradicts or has different requirements for product than those outlined in the Standard for the specific product.

An example of this is the slight but significant differences between requirements in AS 3498 (the product Standard), AS/NZS 3500.4 (the installation Standard) and the Plumbing Code of Australia regarding the requirements for minimising legionella hazards in water heaters and heater water supply systems.

HIA recommends:

11. That a national plumbing regulator should be responsible for coordinating the development of relevant plumbing standards to ensure consistency across the range of plumbing products and to remove any duplication and to ensure that product installation standards and manufacturing standards do not conflict.





3.5 Product controls and accreditation (AS 5200)

3.5.1 Watermark

HIA believes that effective national plumbing product quality standards and approval procedures are currently in place through the Watermark certification scheme. WaterMark identifies products that can be used in authorised plumbing and drainage work and is referenced in the PCA, AS 3500 and state based regulations.

Whilst HIA believes that the certification process for WaterMark is effective, there are inconsistencies in the control of non certified plumbing products, in that it is not illegal to sell a product which is not WaterMarked, but it is illegal to install a product which is not WaterMarked.

HIA believes that the operation of an effective testing and certification scheme must be underpinned by appropriate distribution controls to ensure that there is a level playing field for manufacturers and suppliers of locally manufactured and imported products. This serves to remove any confusion for both the plumbing industry and consumers, who can then be guaranteed that the plumbing product they purchase complies with Australian regulations and is fit for purpose.

HIA recommends:

12. That the Commonwealth government ensure that the operation of the WaterMark scheme is supported by appropriate distribution controls.

3.5.2 Product safety

HIA understands that the application of Risk Management approaches when setting priorities for work on Standards and regulations could be improved. Specifically, the Standards Australia publication “MP78, Manual for the assessment of risks of plumbing products” is rarely, if ever, used to establish the essential requirements for product in terms of safety. This often leads to the imposition of inappropriate and impractical requirements for plumbing products which typically lead to increased costs and no apparent benefits for the community or environment.

One example of this is the requirement in some Standards to use DR Brass components in appliances such as water heaters. In operation, this standard is onerous as the life span of the appliance is significantly less than the time taken for dezincification to occur. It is also excessive given that failure of the product by dezincification is not usually a threat to life, health or the environment.

There are also several plumbing products which are not required to be certified under AS 5200, such as basins, baths, shower bases and sinks. However, the smaller component fittings used in conjunction with these products are required to be certified. For example, a hand basin may not be tested for safety, but the waste outlet within the basin is required to be certified.





HIA recommends:

13. That a national plumbing regulator undertake a review of all existing product standards and installation standards to identify any inconsistencies, overlap, duplication or inappropriate controls.

3.6 Environmental controls (AS 6400 & MEPS)

The major environmental control of plumbing products was introduced in 2005 through the Water Efficiency Labelling and Standards Act 2005 (WELS). WELS introduced requirements for certain water using products to meet an environmental benchmark for water usage. AS/NZS 6400:2005 *Water efficient products - Rating and labelling* sets out the relevant criteria for each product.

HIA is supportive of the WELS scheme as a first step in nationally consistent labelling of all water products. However, it is apparent that the scheme could be expanded further over time to improve the operation and to ensure the environmental outcomes. There are also operational problems with the scheme and how it relates to the WaterMark requirements. HIA believes that the WELS can provide an effective vehicle to control all water using products without the need for further building regulations, such as changes to the Building Code of Australia.

a) Implementation and operation of WELS

WELS is regulated by the Department of Environment and Water Resources (DEW). At the time of introduction, HIA did not receive any detailed information on the changes, or material which could have been distributed to all members to assist in communicating to industry the new requirements.

HIA has developed our own material regarding the changes to ensure members can find out more on the scheme. However, it would be beneficial for DEW to provide written material and other information that could be distributed to all members.

Public education on both the WELS scheme and WaterMark scheme would greatly improve the operation of WELS and assist plumbers in ensuring they provide appropriately labelled and compliant plumbing products.

b) Relationship between WELS and WaterMark

There is a significant disconnection between the WELS scheme and the requirement for all plumbing products to have a WaterMark. Plumbing products are able to obtain a WELS rating without being WaterMark approved. Consumers are unaware of the two standards for plumbing products and as the WELS standard takes the form of a visible label, it is understandable that a consumer would believe that having a WELS label means the product is both efficient and safe to use.

This problem has been exacerbated by the ability to sell plumbing products which are not WaterMarked, despite theoretically not being able to install those products.

If WELS is to maintain integrity in its present form it is important that the scheme being tailored to work with other regulatory requirements for plumbing products. A combination of the WELS requirements with WaterMark could be introduced to resolve the issue, by making it mandatory to have a WaterMark before being able to apply for a WELS rating.





This could be achieved by adjusting the application requirements and effectively promote compliance with both schemes. The WELS regulator should be required to refuse any application for a rating of a product which is not WaterMarked. This would not increase the work of the WELS regulator, as they would only be seeking proof from the applicant and they would not be encumbered to verify the WaterMark. Such an amendment would also improve compliance with the WaterMark provisions.

HIA recommends:

14. That all products seeking WELS certification be required to show proof of WaterMark accreditation as part of the application to the WELS regulator.





4 Scale of environmental benefits from controlling plumbing product quality

HIA believes that the environmental benefit, namely water conservation, that may be gained from the control of plumbing products is extensive. HIA has interpreted environmental benefit to mean the ability for plumbing product quality control to lead to:

- reduced water consumption within buildings, and
- reduced greenhouse gas emissions via reduced energy usage by hot water systems.

The housing industry acknowledges the need to building environmentally responsible housing and land developments through reducing demand for water and, where appropriate, identifying alternative water sources to potable water where appropriate.

HIA supports voluntary market based solutions, such as our successful GreenSmart program as the most appropriate way to encourage better practice and innovation in water efficient housing and land development.

Where regulation is necessary to achieve water efficiency in housing, HIA support minimum necessary regulations through the National Plumbing and Drainage Code (AS 3500) and WELS.

In addition to WELS, Minimum Energy Performance Standards (MEPS) are also relevant to some plumbing products, including hot water systems and dishwashers. MEPS separately rates the electrical usage, hence potential reduction in greenhouse gas emissions which can be achieved by plumbing products.

4.1 Expansion of WELS

WELS applies a consistent labelling framework for plumbing products. However, WELS does not presently extend to create minimum performance standards for water using products.

As discussed in section 3.3, several state governments have used planning and building regulations to mandate minimum performance of plumbing fixtures in new buildings making reference to WELS (and the previous A rating scheme). To date, HIA is unaware of any states moving to regulate minimum performance requirements for existing buildings, apart from the application of AS 3500 for the performance of toilet suites.

There is considerable scope to use WELS, in conjunction with the watermark accreditation, to introduce minimum performance for water efficiency in major plumbing fixtures. HIA would only support this use of WELS if the provision apply to all products and is controlled at the point of sale for all products.

MEPS also apply to some plumbing appliances, such a hot water heaters. It would be appropriate to establish a combined labelling scheme for all plumbing products which reflects both their energy and their water consumption ratings.

HIA recommends:

15. The WELS regulation extend to provide mandatory minimum performance standards for plumbing products.





16. That the national plumbing regulator investigate potential ways to amalgamate WELS and MEPS for plumbing products to provide a single product efficiency label.

4.2 Retrofitting existing buildings

Considerable environmental saving could be achieved if plumbing products within existing buildings were to be upgraded to meet current regulatory standards for new housing.

State and local water authorities have provided significant support in various forms over the last decade to promoting water conservation in existing homes. However, there has been no national scheme or support. The state based schemes have focused on the replacement of showerheads and provided rebates for efficient hot water systems and rainwater tanks. Recently, Sydney Water has provided funding through its Water Conservation Fund for a pilot toilet retrofit program which will replace single flush toilet suites with 3 or 4 star toilets.

There are presently 3.1 million single flush toilets in Australian buildings. HIA believes there is a significant opportunity for the Commonwealth government to work with industry to develop broader retrofit schemes which target single flush toilet suites, as well as expanded the penetration of more efficient shower and tap fittings. The introduction of national support for water efficiency in existing homes could provide the necessary incentive and support for real improvements in the 98% of existing homes which are not as efficient as new homes are required to be.

HIA recommends:

17. That the Federal government investigate an appropriate rebate and retrofit scheme for existing dwellings which targets the replacement of single flush toilet suites, non WELS-rated tapware and showerheads.

4.3 Regulating plumbing in new buildings

HIA does not consider there is a present need for further regulations of new housing at this time as it is essential that the regulations begin to focus on existing housing stock which represents approximately 98% of housing.

There is an opportunity to improve the operation of the existing regulations for new buildings to ensure that the expected environmental benefits are achieved by achieving greater national consistency across the variety of planning, building and plumbing regulations which have been introduced in an adhoc manner over recent years. HIA believes it is important to gain consistency in these regulations before any further increase in the performance standards for new homes are considered. It is also essential to maintain housing affordability, that the gap between the performance of new homes and existing homes not be further widened through higher regulations on new housing.





5 Trade implications of controlling plumbing product quality

5.1 Background

The building and construction industry is a \$1 billion industry that employs 892,800¹ people with 61,530² persons registered under formal Australian Apprenticeship training contracts. Building and construction represents more than 6.5 per cent of gross domestic product (larger than mining or agriculture).

It is essential that the housing industry increase the size and productivity of its workforce to maintain the availability of skilled trades to meet demand. Despite existing demand easing slightly since the 2003-2004 peak, the housing and plumbing industry has been unable to reverse the acute skills shortage of plumbers and several other major trades. HIA suggest that this indicates that the current skilled labour shortage cannot be dismissed as a transitional problem of an industry adjusting to increasing demand.

Skilled people in key trades are in short supply. Over the last year, skilled people in 9 of the 13 key trades in the industry have become less rather than more available.

5.2 Implications of trade shortages in the plumbing sector

The plumbing sector is not immune to the chronic skills shortage crisis. Plumbing is one of the key trades identified as being in short supply and according to recent figures³ is suffering from a further deterioration in trade availability.

While the number of plumbing apprenticeships commenced has improved dramatically, this is insufficient to reverse the skills shortage due to:

- the lack of commencements in the previous two decades;
- increased apprenticeship attrition rates with cancellations and withdrawals rising from 37% to 71% in the period 2000 – 2005⁴; and
- the potential shortfall created by an ageing population with many plumbers set to retire in the next 5 years⁵.

The effects of this skills shortage are already being felt. Plumbing contractors' prices have risen by approximately 20% per cent between the September 2002 and the March 2007 quarters⁶. If this continues to go unchecked then building delays and quality and performance issues will be added to the economic consequences. This then becomes a community issue as the ability to contact a plumber on short notice to fix a leak may be problematical if there is a shortage of qualified tradespeople. To cope with demand there is likely to be an emergence of semi-skilled or unskilled workers in the plumbing area that has the real potential to compromise product quality.

¹ ABS data – August 2006 ABS Labour Force, Cat # 6291.0.55.003

² NCVET March 07 Qtr Outlook

³ HIA Trades Report – March 2007

⁴ NCVET 2006

⁵ Workforce Tomorrow: Adapting to a more diverse Australian Labour Market' (March 2006)

⁶ HIA Austral Bricks Trades Report – March 2007





There is a further issue that has arisen with respect to plumbing. With the heightened level of industry innovation and new technologies there is a need to ensure plumbers have the ability to obtain the necessary skills to perform a range of activities and applications connected to their plumbing work. For example, the installation of a replacement gas hot water system or solar hot water system from an electric hot water system requires an enhancement to traditional plumbing skills. The existing workforce must become more skilled as community expectations, and regulatory requirements, become more exacting.

5.3 Strategies to address trade shortages in the plumbing sector

5.3.1 Increased flexibility in training

A common barrier to the uptake of plumbing trades is the systemic lack of choice, flexibility and accessibility in the training system. This is not a new revelation. In February 2006, COAG signed off on an historic package of training reforms that recognises a range of new and intermediate qualifications underpinned by a competency based system of progression to address skills shortages.

This has resulted in the Construction and Property Services Industry Skills Council reviewing the BCP03 package and proposing new and intermediate qualifications. These qualifications will provide a range of 'flexible career pathways' from Certificate 2 to Certificate 4 level. They will also have their own individual flexibility through the incorporation of electives that enable competencies to be achieved in areas of water, drainage, sanitation, roofing, mechanical services and gas services (in particular the cert. 3 and 4 courses). This will attract a broader and more diverse range of workers to the industry. (Table 3)

These new qualifications maintain the opportunity for multi-skilling to ensure that plumbers can undertake a wide range of applications including electrical and gas installation where it is associated with plumbing work.

There are additional benefits to the introduction of these new and intermediate qualifications. Intermediate qualifications provide a safety net for those undertaking apprenticeships or a diploma by recognising a minimum qualification if they fail to complete despite obtaining a number of competencies. This will allow them to re-engage with industry if they wish to complete their original qualification in the future. The prospect of having to recommence a qualification is often a major deterrent to reconnecting with industry. This is particularly important given the current rate of attrition in the completion of apprenticeships.





Table 3 – Proposed national plumbing qualifications

Draft Plumbing Qualifications	Scope of qualification	Nominal period (contingent on existing qualifications)	Proposed competency units under new BCP package (as at July 07)
BCP20107 Certificate II in Drainage	Drainer	2 years	22 units: <input type="checkbox"/> 18 compulsory units <input type="checkbox"/> 4 elective units
BCP20207 Certificate II in Metal Roofing and Cladding	Roofer	2 years	24 units: <input type="checkbox"/> 14 compulsory units <input type="checkbox"/> 10 elective units
BCP20307 Certificate II in Urban Irrigation	Irrigation technician	2 years	20 units: <input type="checkbox"/> 13 compulsory units <input type="checkbox"/> 7 elective units
BCP30107 Certificate III in Plumbing	Plumber; Plumber and Drainer; Plumber and Gasfitter; Gasfitter; Roof Plumber	3 - 4 years	* Stream 1 and Stream 2 plus any 3 of the other Stream
BCP30207 Certificate III in Plumbing (Mechanical Services)	Plumber	3 years	* Stream 1 and Stream 4 plus any 2 of the other Streams
BCP30307 Certificate III in Roof Plumbing	Roof plumber	3 years	25 units: <input type="checkbox"/> 21 compulsory units <input type="checkbox"/> 4 elective units
BCP30407 Certificate III in Gas Fitting	Gasfitter	3 years	32 units: <input type="checkbox"/> 26 compulsory units <input type="checkbox"/> 6 elective units
BCP30507 Certificate III in Fire Protection	Fire services technician	3 years	15 units: <input type="checkbox"/> 8 compulsory units <input type="checkbox"/> 7 elective units
BCP40107 Certificate IV in Plumbing and Services	Plumbing contractor; Fire services supervisor; Air conditioning technician	3 - 4 years	Number of units and their compulsory or elective status determined by streams undertaken
BCP50107 Diploma of Plumbing and Services	Senior plumber; Fire Services technician; Air conditioning and mechanical services technician; Plumbing manager	3 - 4 years	Number of units and their compulsory or elective status determined by streams undertaken

5.3.2 Need for competency based training

A competency based system is also desperately needed as it facilitates a more rapid injection of skilled labour into the plumbing sector. It is a more attractive option for a person who has achieved the desired competencies than having to bide their time in seeing out the remaining period of a traditional plumbing apprenticeship that is based on time served.





It is incumbent on all governments to implement the COAG initiatives and to recognise the qualifications in their industrial frameworks. Failure to effect these fundamental changes that introduce choice, flexibility and accessibility to the obtainment of plumbing qualifications will be devastating to the availability of skilled workers. These skilled workers are essential to the delivery of a quality product and in certifying that the plumbing work meets industry standards.

5.3.3 School based pre-training and apprenticeships

HIA Youthbuild Foundation brings together industry leaders to drive an innovative “work at school” program based on strong partnerships between schools, industry, business and local communities. The Foundation will oversee projects that provide new opportunities for young people to enter the industry via real work programs undertaken at school.

Youthbuild aims to:

- Prepare young people for a career in the housing industry
- Enhance local programs working on skills formation
- Create a seamless transition to work
- Increase employment opportunities
- Integrate school and work

HIA’s Group Apprenticeship scheme presently involved over 1,100 apprentices across a range of building trades including plumbing. The Apprenticeship scheme provides a direct avenue for plumbing training, whether following initial training in-school or via direct entry to the TAFE training course, after school.

