



Options to ensure that plumbing and drainage products are fit for purpose

a Regulation Impact Statement for Consultation

September 2014

This Regulation Impact Statement (RIS) accords with the requirements of *Best Practice Regulation: A Guide for Ministerial Councils and National Standard Setting Bodies*, as endorsed by the Council of Australian Governments in 2007. Its purpose is to inform interested parties and invite their feedback on options to ensure that plumbing and drainage products are fit for purpose.

The Australian Building Codes Board

The Australian Building Codes Board (ABCB) is a joint initiative of all levels of government in Australia, together with the construction industry. Its mission is to oversee issues relating to health, safety, amenity and sustainability in buildings. The ABCB promotes efficiency in the design, construction and performance of buildings through the National Construction Code, and the development of effective regulatory and non-regulatory approaches. The Board aims to establish effective and proportional codes, standards and regulatory systems that are consistent between States and Territories. For more information go [here](#).

Comments by Stakeholders

Comments on this RIS are invited by 31 October 2014 and can be sent to the ABCB at abcbris@inet.net.au

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Glossary

Abbreviation	Full Name
ABCB	Australian Building Codes Board
ACCC	Australian Competition and Consumer Commission
CABs	Conformity Assessment Bodies
COAG	Council of Australian Governments
CodeMark	CodeMark Certification Scheme
JAS-ANZ	Joint Accreditation System of Australia and New Zealand
NCC	National Construction Code
NPRF	National Plumbing Regulators Forum
OBPR	Office of Best Practice Regulation
PCA	Plumbing Code of Australia
RIS	Regulation Impact Statement
WaterMark	WaterMark Certification Scheme
WELS	Water Efficiency Labelling and Standards Scheme

Introduction

Purpose of this RIS

This Consultation Regulation Impact Statement (RIS) is intended to provide stakeholders with a regulatory analysis of options to ensure that plumbing and drainage products are fit for the purpose for which they are intended. Stakeholders are invited to comment and provide feedback on any issue raised in this regulatory analysis, and are encouraged to provide information and data that would make the analysis more robust. In summary the purpose of this Consultation RIS is to inform stakeholders of the regulatory analysis and seek comments and information from them.

Stakeholder comments, information and data are invited by 31 October 2014.

Stakeholder feedback is included in a subsequent RIS, the Final RIS, which is a report considered by decision-makers at the time they are making a decision about options to ensure plumbing and drainage products are fit for purpose. The Final RIS is an input to decision-making but the decision-makers are not bound to follow its conclusions – the decision-makers will make a decision with reference to the Final RIS but they need not necessarily agree with it. In this case the decision-makers will be Ministers of the Building Ministers' Forum.

The Consultation RIS and the Final RIS must comply with the Council of Australian Governments' *Principles of Best Practice Regulation* as assessed by the Office of Best Practice Regulation.

A Brief History and Next Steps

The WaterMark Certification Scheme is a mandatory scheme that certifies that most plumbing and drainage products are fit for purpose. It was launched in 2005 by the National Plumbing Regulators Forum and administered by Standards Australia. The Building Ministers' Forum, an initiative of the Council of Australian Governments, considered the future of the scheme in 2011 and decided that responsibility for its administration should be transferred to the ABCB. WaterMark transferred to the ABCB on 25 February 2013. The ABCB subsequently undertook a broad ranging review of WaterMark and engaged in an extensive consultation process with stakeholders. In January 2014 the ABCB released the findings of its review, including measures to enhance the scheme, in a public consultation document.

This Consultation RIS takes the findings of the ABCB review as indicating a problem that needs to be addressed, focusses broadly on the outcome to be achieved – to ensure that plumbing and drainage products are fit for purpose – and includes measures to enhance the WaterMark scheme as one option to be considered in achieving the outcome. Note that the ABCB has undertaken preliminary consultation with some regulators and some industry participants members of in the WaterMark Working Group – their comments are included in text in *italics*.

The ABCB will include stakeholder comments in the Final RIS. It is intended that the Final RIS will be considered by the ABCB Board early in 2015 and subsequently by the Building Ministers' Forum when making a decision on this matter in the first half of 2015.

Potential Risks in Plumbing and Drainage Installations

Summary

In countries less developed than Australia, there are potential risks to water supply and plumbing and drainage installation. Many fatalities occur each year from diarrhoeal diseases associated with failures of water supply and plumbing / drainage installations.

The risks in plumbing and drainage systems are not directly observed in Australia. This is due to:

- Australia being a developed economy with established civil liability frameworks;
- Market-based incentives for manufacturers to maintain market share and avoid reputational damage from publicised product failures;
- A high level of education, training and occupational licensing requirements in the plumbing industry;
- High quality engineering and construction of the water supply infrastructure; and
- The role of regulation, namely the Plumbing Code of Australia (PCA).

Some industry participants and regulators contest this view and instead comment that the potential risks in plumbing and drainage installations are generally very high, with public health consequences if not managed properly.

Questions for Stakeholders: do you perceive the overall potential risks in plumbing and drainage installations in Australia to be relatively low, or very high as suggested by industry and regulators? What information or data from Australia indicate the overall potential risks?

Some of these measures are ex-post safeguards against the potential harm from chemical contamination or incorrect installation. In addition, these harms may take many years to become evident. On these bases, Australia has implemented ex-ante regulation – that is, regulation of the products and installation *before* they enter the market.

The PCA contains the technical provisions for the design, construction, installation, replacement, repair, alteration and maintenance of plumbing and drainage systems, to and within buildings.

Manufacturers design and manufacture products to be used in the systems; plumbers and drainers install the systems and are also involved in the repair, alteration and maintenance of them; and enforcement agencies of the States and Territories operate inspection and audit programs.

The PCA contains detailed provisions and references to Australian and New Zealand standards regarding the installations – including the products and materials that comprise them and how the installations are to be constructed - to be followed by plumbers and drainers and designers. The enforcement agencies ensure that the PCA provisions for correct construction of the installations are followed by the plumbers and drainers.

Through the regulatory hierarchy the PCA also contains detailed provisions and references to Australian and New Zealand standards regarding the suitability of materials, and of the products themselves, used in plumbing or drainage installations. A pertinent objective of the PCA reads:

Every part of a plumbing or drainage installation must be constructed in an appropriate manner to achieve the requirements of the PCA, using materials and products that are fit for the purpose for which they are intended.

This objective must be achieved by the manufacturers and ensured by the installers. Manufacturers do this by providing evidence of suitability – evidence to show that their materials and products satisfy a Performance Requirement or a Deemed-to-Satisfy Provision. The PCA prescribes two approaches to report evidence of suitability:

1. General certification – a report by a recognised expert or a registered engineer, or any form of documentary evidence that correctly describes properties and performance.
2. WaterMark certification – where materials and products are certified by independent Conformity Assessment Bodies as conforming to the requirements of the PCA.

Most plumbing and drainage products are certified by WaterMark Conformity Assessment Bodies. The enforcement agencies have responsibility for ensuring that the materials and products in plumbing and drainage installations are fit for purpose and are supported by appropriate evidence of suitability.

Some industry participants expressed concern about a general lack of enforcement, that rely on installers to ensure the product installed is WaterMarked.

Question for Stakeholders: do you have any comments on the current level of inspections and enforcement?

The NCC and PCA

The National Construction Code (NCC) is an initiative of the Council of Australian Governments to incorporate all on-site construction requirements into a single code. Building regulation is covered in Volumes One and Two – the Building Code of Australia (BCA) – and Volume Three covers plumbing regulation – the PCA. The NCC is model regulation, developed by the ABCB and takes effect through legislation of the States and Territories, which also administer and enforce building and plumbing regulation. The NCC does not involve any Commonwealth legislation. The development of model regulation for the NCC is supervised by the ABCB Board, comprising representatives from all States and Territories, the Commonwealth and Local Government and industry, with an independent Chair.

The NCC is performance based regulation, for both building and plumbing, with a strict performance hierarchy. The following diagram shows the hierarchy for plumbing regulation in the PCA.



Objectives present the reason the community wants a matter regulated. They are expressed in general terms and usually refer to the need to safeguard people from illness, injury or loss of amenity. Functional Statements set out in general terms how a plumbing or drainage solution could be expected to satisfy the Objectives. Performance Requirements outline a suitable level of performance which must be met by plumbing and drainage materials, components, design factors and construction methods in order for the installation to meet the relevant Functional Statement. These are the mandatory components of the structure. Plumbing and Drainage Solutions set out the means for achieving compliance with the Performance Requirements. There are two types of plumbing or drainage solutions:

- If industry can develop a solution that meets the Performance Requirements, and can demonstrate its compliance with the Performance Requirements to a regulatory authority, then it can be approved.
- Industry can adopt Deemed-to-Satisfy Provisions in the PCA which may include materials, products, design factors, installation and construction methods which, if used, will result in compliance with the Performance Requirements. The Deemed-to-Satisfy Provisions include references to AS/NZ 3500 as a means to comply with the Performance Requirements.

The BCA and PCA both require products used for building and plumbing to be fit for purpose. Both require products to be certified as being fit for purpose which involves suppliers having evidence of suitability, which may be a report from a recognised expert, professional engineer or another form of documentary evidence. This is general certification of products.

The PCA contains further provisions relating to evidence of suitability of materials and products:

- a reference to AS/NZ 4020 that describes the procedures to test the materials in new products that convey water intended for drinking; and
- a requirement for products, as listed on a schedule, to be assessed for certification under the WaterMark Certification Scheme. Some products are assessed as not requiring WaterMark certification and are itemised on a List of Exempt Products - they are still required to satisfy general PCA certification. The WaterMark scheme would include most products used in plumbing and drainage installations.

WaterMark



WaterMark is an adjunct to the PCA. Under the code there is a requirement for certain plumbing and drainage materials and products, that are available to be installed by industry, to be certified under the WaterMark scheme.¹ They are certified and authorised by Conformity Assessment Bodies (CABs), under evaluation criteria that include risk assessment. Accreditation of the Conformity Assessment Bodies is undertaken by the Joint Accreditation System of Australia and New Zealand.

Certification is required of all products used in plumbing and drainage installations in Australia. WaterMark certification applies equally to domestically produced and imported products, and the Conformity Assessment Bodies have facilitated imports into Australia by assessing production facilities overseas.

Some industry participants and regulators acknowledge that a multitude of factors address the potential risks in plumbing and drainage installations, including the licensing of plumbing practitioners. They consider the WaterMark product certification scheme successfully mitigates potential risks and is a key factor in ensuring safe outcomes in Australian plumbing and drainage installations.

Questions for Stakeholders: do you consider that WaterMark successfully mitigates potential risks? How important is WaterMark relative to other factors that address the potential risks in plumbing and drainage installations?

The Plumbing Industry

There is little published data on the plumbing industry. The ABCB has drawn inferences from its data of subscribers to the NCC and it appears there are about 60,000 practitioners in the industry: including 1,500 hydraulic engineers and the remainder being plumbers and drainers.

The WaterMark product database indicates there are around 450 manufacturers of plumbing and drainage products supplying the Australian market, of which 50% of addresses are overseas. Some of the Australian addresses would be local offices of overseas manufacturers so the proportion of imports could be higher than 50%. This level of import supply to the Australian market indicates that the WaterMark scheme would not be a non-tariff barrier and would not impede the flow of imports. This level of imports also indicates that prices would be around import parity levels and so Australian manufacturers would have to be internationally competitive.

The number of manufactures, of 450, includes some large companies that produce a variety of plumbing and drainage products, and others that produce just a few products. Some companies

¹ A list of products covered by the WaterMark scheme is presented in Table A2.1 of the *Plumbing Code of Australia*.

could supply just a few niche products to the Australian market, but in volume. The ABCB is unaware of data that would give a clearer view of the structure of the manufacturing industry.

Retailers supply the trade and individuals / households while industry supply outlets supply industry practitioners.

Question for Stakeholders: can you provide data or recommend published data that enables a more definitive description of the plumbing industry?

The Problem

The regulation of plumbing and drainage products and installations in Australia is achieved through two regulatory regimes: those relating to the installation and product selection; and those relating to the design and materials of the products themselves.

However, given Australia's status as a developed economy with high levels of education, training and occupational licensing, the overall risk associated with plumbing and draining products and installations is relatively low. The potential risks in plumbing and drainage installations are not directly observed in Australia. Any plumbing-specific, ex-ante regulation should therefore be targeted to the areas of high risk.

The problem is that the WaterMark product certification scheme is poorly targeted and imposes unnecessary costs on some manufacturers. This is because of the following four reasons, as indicated from the findings of the ABCB review².

1. The coverage of the scheme goes beyond what is strictly necessary to achieve the stated health and safety goals of the plumbing regulations.
 - A number of objectives of the WaterMark scheme do not align with the goals of the PCA nor do they assist the Board to deliver its mission under the Inter-Government Agreement. The ABCB's mission is to address issues relating to safety, health, amenity and sustainability in the design, construction and performance of buildings. The goal of the PCA is to enable the achievement of nationally consistent, minimum necessary standards of relevant safety, health, amenity and sustainability objectives efficiently.
 - An objective of the WaterMark scheme - that plumbing and drainage installations do not create significant risks of personal illness, injury, loss or death - is aligned with the PCA goals safety and health.
 - However the WaterMark scheme contains several objectives that are outside the ABCB's mission and hence beyond the ABCB's role and responsibility. These other objectives relate to environmental degradation, contamination of the water resource, impact on infrastructure and property protection. These objectives are most effectively addressed by public authorities that have primary responsibility for these matters. Their inclusion in the WaterMark scheme is a distraction from the ABCB's core business of the safety and health of occupants in buildings.
2. There is inconsistency in the application of the assessment process for products by CABs.
 - The body that currently accredits CABs has limitations on its capacity to undertake appropriate surveillance of the CABs and their adherence to referenced documents. This creates a problem for the scheme in that the CABs' activities are not being adequately monitored for compliance with the reference documents. The accreditation body has its own reference documents but these are not enforceable within the scheme. Another issue is that the accreditation of CABs focusses on competencies in the certification process rather than technical competencies. Some CABs are not complying with the rules and are also behaving aggressively towards

² ABCB (January 2014) *Review of the WaterMark Certification Scheme – Consultation Draft*

industry, regulators and the WaterMark administrator; yet these CABs are unable to be disciplined under the scheme. A mechanism to review and have action against industry users of the scheme is not possible under the current agreements. This creates problems for enforcement and achievement of the scheme's objectives.

3. Perceived inefficiencies with the separate operation of the Watermark and other related schemes, specifically CodeMark (for building products) and the Water Efficiency Labelling and Standards Scheme - WELS - (water efficiency of some plumbing products).
 - With regard to the WELS scheme, the problem is that presently manufacturers of some plumbing and drainage products may need to comply with both WELS and WaterMark. In such cases the administrators of the WELS scheme will not consider applications for new products without those products first being certified under WaterMark. Whilst the two schemes are independent, with their own administrators, objectives, processes, fees and requirements for compliance, there is a perception that there is unnecessary duplication and overlap.
 - With regard to CodeMark, industry observes that WaterMark and CodeMark are two schemes referenced in the NCC, both with requirements for risk assessment and certification of products, with a need for accredited CABs. However these schemes are operated independently and the plumbing and building sectors of industry face different and inconsistent certification approaches.
4. The standards are contained in many reference documents, with inconsistent language, duplication and inconsistencies between them, making compliance and administration difficult.
 - WaterMark includes 38 different reference documents for stakeholders to follow. Several include strict procedural requirements for product certification and others for the development of technical specifications. The fragmented structure, inconsistent language, duplication and contradictions across the many documents results in difficulty for many stakeholders to comply in a consistent manner and maintain every element required for compliance.
 - Descriptions of the roles and responsibilities of stakeholders within the scheme are fragmented amongst the many reference documents, creating a problem for some participants where their required duties are not perceived or undertaken.
 - The certification process is fragmented within the reference documents as well as amongst CABs. This has created difficulties for the management of client expectations, the enforcement of scheme requirements and means there is inconsistency throughout the scheme.

Questions for Stakeholders: do you have comments on the statement of the problem, that “the Watermark product certification scheme is poorly targeted and imposes unnecessary costs on some manufacturers”? Do you have comments on the findings of the ABCB review that support this statement of the problem?

The problem, of WaterMark being poorly targeted and imposing unnecessary costs on some manufacturers, is also indicated by a review of the WaterMark risk assessment process by Meacham Associates³. The key findings of the Meacham review are:

- A mismatch between the WaterMark objectives and the NCC's focus on health and safety allows the breadth of risk control measures under WaterMark to go beyond the scope of the NCC.
- The WaterMark risk assessment process, while referencing risk assessment principles, is in fact implemented as a consequence-based process, which is inappropriate to the stated risk assessment objectives of WaterMark.
 - When describing risk it is necessary to state both the consequences and likelihood.
 - In WaterMark terms, likelihood is described as "frequency". Hence the WaterMark risk assessment process focusses wholly on consequence, and lacks frequency. A true measure of risk requires frequency as well as consequence.
 - The difficulty with the precautionary principle is that it tends to focus the attention of regulators on some particular events and corresponding losses, rather than the entire range of possibilities. Regulators may then base their determinations on the "worst case" that could disproportionately result in over-regulation.
- There is no assurance that products which carry a WaterMark stamp are installed in such a way that is fit for purpose.
 - A complete lack of monitoring of the WaterMark scheme is a significant shortcoming if the risk assessment intends the certification to be an indication of products being "fit for purpose".
 - There seems to be little control that products are being used within the limits of their technical specifications and certification.
 - Inspectors are not going back to the technical specifications for each product, so what certainty is there that the appropriate product is being used? This would be a violation of the "fit for purpose" and overall risk management objectives of WaterMark and could result in inappropriate products being installed.
 - There appears to be a "trust in the system" that products with a WaterMark stamp are in fact genuine, without in-use surveillance requirements.

Questions for Stakeholders: do you have any comments on the findings of the Meacham review? Do you have comments specifically about the lack of likelihood in the risk assessment process, or the possibility of products being used outside their technical specifications and certification?

The regulatory framework includes a comprehensive scheme for mandatory certification, that includes WaterMark. Countries with similar performance-based regulatory systems to Australia rely on non-mandatory certification systems for plumbing products, and none of them report significant

³ Meacham Associates (May 2014) *Review of the Appropriateness of the Risk Assessment Process as Embodied in SAA MP78 (1999) with Respect to Recognised Risk Assessment and Management Processes, the Risk Management Objectives of the WaterMark Certification Scheme and the Objectives of the National Construction Code.*

issues relating to or stemming from the regulation of plumbing products. In these countries, mandatory certification to demonstrate evidence of suitability is unnecessary.

Some industry participants suggested that Germany, and most other European countries, address product compliance through enforcement activities that are more demanding than in Australia.

Questions for Stakeholders: can you confirm that enforcement of plumbing and drainage installations is more demanding in Europe than Australia? How important are the certification regimes in Europe, compared with enforcement activities, in ensuring products' fitness for purpose?

Objectives

The first objective, as stated in the PCA, is to ensure that every part of a plumbing or drainage installation uses materials and products that are fit for the purpose for which they are intended.

The second objective is that the materials and products in plumbing and drainage installations contribute to the PCA objectives of safety, health, amenity and sustainability.

The third objective is that the desired PCA outcomes of safety, health, amenity and sustainability should be achieved efficiently.

In contributing to the third objective, the provisions in the PCA to ensure product quality should be efficient.

Options

Five alternative choices are presented for consideration by the Board.

The choices are ordered from no regulatory change (in the Status Quo) to a small regulatory refinement (Option 1 – an enhanced WaterMark scheme) to increasing levels of deregulation through Options 2, 3 and 4 where Option 4 is the most deregulatory and relying on civil liability regimes. The question for stakeholders, and ultimately for the Board, is where in this range of possible regulation is the appropriate level to ensure the fitness for purpose of plumbing and drainage products.

Question for Stakeholders: which option do you consider most appropriate to ensure the fitness for purpose of plumbing and drainage products?

The Status Quo

The Status Quo is the default choice for decision-makers in considering alternatives to achieve the objectives. Where the incremental impacts of other options would result in more costs than benefits, or would be ineffective in addressing the problem or achieving the objectives, the RIS will conclude in favour of the Status Quo.

The Status Quo will be regarded as a baseline, as a basis to determine the incremental impacts of the other options.

Under the Status Quo all aspects of the WaterMark certification scheme would be maintained, as at present.

Option 1 – an enhanced mandatory Watermark scheme

Under Option 1 WaterMark would be amended in accordance with the findings of the ABCB review.⁴

The objectives of the scheme would be more focussed and align with the NCC. With a tighter risk assessment process the number of products covered under the scheme would be less than at present; and would be those products that could be demonstrated to involve high risks in relation to health and safety. Linkages with other certification schemes would be examined. Administration of the scheme would be improved including a database with greater functionality and full cost recovery. Documentation would be consolidated into a single document.

Under Option 1 WaterMark would provide the evidence of suitability that plumbing and drainage products are fit for the purpose for which they are intended.

Details of the proposed enhanced scheme are provided below.

Objectives

1. Revise the objectives of the scheme to align more closely with the mission and objectives of the ABCB and the goals of the PCA.
2. Review and refine the scope of the scheme to align with the revised objectives.

⁴ ABCB (January 2014) *Review of the WaterMark Certification Scheme – consultation draft* available on the ABCB website.

Risk Assessment

3. Revise the risk assessment process and risk profiles to align with the revised objectives to accurately determine what products are included or excluded from the scheme.
4. Redraft and tighten the risk assessment process; review and revise existing scope to include in a single level scheme the deemed relevant Level 1 and Level 2 products.

Linkages with Other Schemes

5. Regarding linkages with CodeMark, where possible align administrative and other certification business processes for efficiency gains.
6. Regarding a possible linkage with WELS, await the outcome of a review of WELS currently being undertaken by the Commonwealth and, taking account of the review's conclusions, consider whether and / or how to take this matter forward.

Administration of the Scheme

7. Regarding the WaterMark Product Database – 1) review and update the WaterMark Product Database function and capacity to “value add” to the scheme, including automating administration and financial functions; and 2) review and update the search function to be reflective of the needs of the WaterMark administration, State and Territory administrations, practitioners and the general public.
8. Regarding cost recovery arrangements, recommit to the expectation of full cost recovery for the scheme using a simplified fee structure.

Specification Development

9. Regarding specification development – the administrator to appoint an expert specification drafter (via tender process) for a set term for direct engagement by manufacturers to ensure competencies are brought to the process – only peer review and approvals would be undertaken in house by CABs.

Compliance and Enforcement

10. Regarding the scheme rules and documentation – revise and consolidate the scheme rules into a single document that is independent of the PCA and freely available to the public. The document should remain a primary reference document within the PCA. The roles and responsibilities of, and agreements for, the various stakeholders within the scheme be consolidated and located within the document.
11. Review and revise PCA sections A and G to align more closely with NCC performance format and enhanced scheme objectives, scope, rules and documentation.
12. Review, revise and update the WaterMark Schedule of Specifications and List of Exempt Products to reflect the revised scheme objectives and scope.
13. Regarding the function of accrediting CABs, go to tender and appoint successful service provider.

Materials and products that would be no longer covered under the WaterMark scheme must nevertheless be certified by an appropriate authority, as described in Part A2 of the PCA.

Option 2 – a voluntary WaterMark scheme

Under Option 2, WaterMark would be retained as a voluntary scheme which would no longer be mandatory. Each manufacturer would have the option of continuing in the WaterMark scheme, as at present, or choosing to certify some or all of its products under the general certificate provisions as described in Part A2 of the PCA. Each manufacturer could choose to demonstrate evidence of suitability by obtaining one of the following:

1. A report by a recognised expert;
2. A certificate from a professional engineer;
3. Any other form of documentary evidence that correctly describes properties and performance; or
4. A certificate from a voluntary WaterMark scheme.

Under Option 2, third party certification (including a voluntary WaterMark scheme if chosen by manufacturers) would provide the evidence of suitability that plumbing and drainage products are fit for the purpose for which they are intended.

Option 3 – quality assurance via general PCA certification

Under Option 3, evidence of suitability of products' fitness for purpose would be provided as described in the general provisions of Part A.2 of the PCA. WaterMark would not be mentioned. Each manufacturer could choose to demonstrate evidence of suitability by obtaining one of the following:

1. A report by a recognised expert;
2. A certificate from a professional engineer; or
3. Any other form of documentary evidence that correctly describes properties and performance.

Under Option 3, third party certification (under the general provisions of the PCA) would provide the evidence of suitability that plumbing and drainage products are fit for the purpose for which they are intended.

General certification would include results from the testing of materials and products, as is currently required under the PCA.

Under Option 3, all plumbing and drainage products would carry a certificate that could convey evidence of suitability of fitness for purpose which would be able to be viewed by practitioners during installation and by regulators during inspections. This certificate would replace the current WaterMark stamp on products.

Option 4 – quality assurance without certification

Under Option 4, the evidence of suitability of products' fitness for purpose would be held by each manufacturer and may be included in the documentation accompanying each product for the information of installers and regulators. The evidence would include results from the testing of materials and products, as currently required under the PCA. Third party certification demonstrating evidence of suitability would not be required.

Under Option 4 it would be desirable for manufacturers, installers and regulators to have a working knowledge of the full range of plumbing and drainage products on the market and how each product relates to the PCA requirements for fitness for purpose. Installers and regulators may find the manufacturers' documentation to be informative, if it exists, but there is no guarantee that the evidence held by manufacturers would be accessible to the installers or regulators.

This situation is quite usual for many goods and products in some other sectors of the economy. If a product has a fault – so it would not be fit for purpose – civil liability is available to deal with product quality issues and complaints can be made to the Australian Competition and Consumer Commission (ACCC).

Option 4 would require affected building owners and occupants to be able to obtain corrective action and redress in relation to faulty product through civil liability regimes. It could also involve a tailored enhancement of the enforcement arrangements.

Civil Liability

Whether civil liability regimes are suitable for ensuring the fitness for purpose of plumbing and drainage products is a matter for careful consideration.

Civil liability in Australia is available to deal with product quality issues and can be applied to concerns raised about the quality of products used in plumbing and drainage installations. The common law applies in either single or class actions and can be utilised by consumers against manufacturers of defective products. In addition there are statutory laws that cover product safety regulations, namely the Commonwealth *Competition and Consumer Act 2010* which also extend remedies to consumers in the area of general warranty and refund / product liability provisions.

These civil and statutory regimes are *ex post* measures that operate after the event, after concerns have been raised about the quality of a specific product. For plumbing and drainage products, where their performance addresses potential risks concerning the safety and health, the *ex post* characteristic of civil and statutory regimes can create significant difficulties for occupants. When a product failure occurs the harm to occupants will continue over a period of time, while: evidence is gathered to demonstrate a faulty product; due legal process is followed which could take months or years; and in the case of class actions, identifying the people affected and forming a group willing to support legal action. The time to redress a faulty product could be excessively long if the harm to occupants is continuing and significant. Further, the outcome of a court process is not assured and there is no guarantee that a court determination will effectively solve a problem of product failure from the occupants' perspective.

The ACCC has stated that plumbing products fall outside its scope, and in practice household complaints about plumbing and drainage installations are made to the installers and to the plumbing administrations in each State and Territory. It should be noted that the ACCC's position has not been tested in the courts.

Civil liability currently operates alongside the PCA and is available to address issues of product quality in plumbing and drainage. However the ABCB is not aware of any such action in relation to plumbing or drainage products. The State and Territory plumbing administrations' role in receiving

product complaints would be a contributing factor, as would the PCA being *ex ante* regulation which aims to achieve the health and safety objectives by preventing product failures.

Question for Stakeholders: how effective do you consider civil liability regimes would be in ensuring the fitness for purpose of plumbing and drainage products?

Enhanced Enforcement Arrangements

Inspection is an *ex ante* measure that would complement the *ex post* nature of civil liability, and indeed may diminish the need to rely on civil liability regimes.

Inspections are effective in assessing whether plumbing and drainage solutions comply with the Deemed-to-Satisfy Provisions relating to installation and construction methods. Inspections also could be effective in assessing appropriate products for each solution, where regulators have a detailed understanding of products used by plumbers and drainers and their appropriate use in installations.

Inspections can reinforce the commercial incentives for manufacturers to avoid publicity around faulty products. For this to be effective the profile of enforcement may need to be raised, with a more visible enforcement regime inspecting a set proportion of installations supported by specified penalties for breaches of the PCA.

Questions for Stakeholders: do you have any suggestions how the enforcement arrangements could be enhanced to give greater weight to inspections?

However inspection cannot determine whether plumbing products are composed of appropriate materials. This is especially important for products intended to convey drinking water. Visual inspections cannot guard against chemical risks – where chemicals in a product leach into the water supply and contaminate it. The major risk is lead poisoning with a cumulative adverse effect on the health of occupants. The PCA references AS/NZS 4020 that lists a number of tests to demonstrate that the materials used in products intended to convey drinking water do not contain contaminants.

Question for Stakeholders: are you aware of any means by which an inspector could identify contaminants in the material composition of a plumbing product?

Impact Analysis

The impact analysis is focussed on the costs of the options – in terms of the cost savings that are possible compared with the Status Quo. The options do not generate additional benefits over and above the Status Quo because the options are intended to achieve the objectives – the health and safety of occupants – which are already achieved under the Status Quo. If an option is assessed to be unable to achieve the objectives, this would not be considered a negative benefit but rather grounds to dismiss the option as non-viable.

Stakeholders Affected by the Options

The following stakeholders will be affected by the Options:

- Domestic and overseas manufacturers of plumbing and drainage products.
 - All manufacturers are required to provide evidence of suitability that their products are fit for purpose. Any change in the PCA certification provisions – which is currently how manufacturers demonstrate fitness for purpose – will impact primarily on manufacturers.
- Practitioners, the plumbers and drainers who install plumbing and drainage products.
 - Mostly small businesses and sole operators and also including larger firms that handle the larger installations.
 - Options 1, 2, and 3 do not require practitioners to have a greater understanding of products than they presently have, although the means of communicating the products' fitness for purpose could change (a certificate instead of a Watermark stamp).
- Conformity Assessment Bodies (CABs) – that assess new products for certification.
 - Options 1 and 3 involve a change in the rules of certification and operations of certifying bodies, which the CABs would need to understand and abide by.
- All Australian governments.
 - The eight State and Territory governments and the Commonwealth are the owners of WaterMark and so bear legal liability for the performance of products certified under the scheme.

The following stakeholders will not be affected, or not significantly affected, by the Options:

- Enforcement agencies in the States and Territories – who inspect installations.
 - The inspection regimes are not required to change under Options 1, 2, or 3 so the operation of the enforcement agencies need not change.
- Hydraulic consultants – who design plumbing and drainage products.
 - Hydraulic consultants will still be required to develop new products that satisfy the PCA certification requirements.
- Testing laboratories – that test new products.
 - New products will still need to be tested to meet Australian Standards and the requirements of the PCA, so there should be no change in the activities of the laboratories undertaking the required new product tests.
- Retailers and industry supply outlets - will continue to supply to the market what is provided to them by the manufacturers.

- The PCA applies at the point of installation, not at the point of sale, so retailers and industry supply outlets will not be exposed to changes in the PCA.
- Occupants of buildings – should not notice any change because health and safety Objectives will continue to be achieved.
 - A key consideration of the impact analysis will be whether each option can achieve the Objectives. Where the weight of evidence shows that any option will not be able to achieve the Objectives, then that option will not be supported by the regulatory impact analysis.

Question for Stakeholders: should any other stakeholders be included in this list? Do you have any comments on the reasons why these stakeholders will or will not be significantly affected by the options?

Impacts of Option 1 – an enhanced mandatory WaterMark scheme

The proposals to enhance the WaterMark scheme address the issues that were described in the Problem chapter and detailed at Attachment A. The impacts – the consequences of addressing these issues - are described in detail below and largely show administrative benefits being achieved. Any associated costs are also noted. The major changes involve a smaller and more targeted scheme, and the option also includes a range of proposals that seek to improve the more administrative aspects of the scheme.

Overall the WaterMark scheme would become smaller, more obviously targeted to products with health and safety issues, and based on clearer risk management principles. As a guide the ABCB considers that there could be scope to reduce the number of products by 30%. A working group comprising representatives from industry and the regulators, and from the ABCB, is currently assessing products and re-evaluating which products should remain in the scheme and which products could be excluded. The working group will report to the ABCB by the end of this year and the ABCB will then have a clearer understanding of the scope of the enhanced scheme. The ABCB expects products able to be excluded from the scheme to be mostly those where water is not intended for drinking.

Questions for Stakeholders: do you have any views on the extent to which the WaterMark scheme could become smaller and better targeted? Does a 30% reduction in the number of products seem about right, or should the reduction be greater / lesser? Which product classes might be excluded?

If the WaterMark scheme does reduce by 30% then Option 1 would deliver financial savings, in present value terms, of \$20 million (ABCB costings) or \$14 million (based on initial comments from stakeholders).⁵

The WaterMark scheme is designed to give confidence that a certified product will be fit for purpose. The certification bodies – the CABs – are themselves accredited by JAS-ANZ as having the capacity to certify plumbing and drainage products. In circumstances where the potential plumbing

⁵ See calculations of financial savings from the current WaterMark scheme under Option 3.

risks in building installations is high, WaterMark would be an effective approach to address the high risks. WaterMark would be an important factor contributing to the health and safety Objectives of the PCA and NCC.

On the other hand, if the potential risks of plumbing and drainage installations in buildings are relatively low, then the regulatory apparatus of accrediting the CABs and mandating that certification occur through them could be considered as unnecessary regulatory over-reach. These aspects of the current regulation may be considered to be unnecessary to achieve the health and safety Objectives in a relatively low risk environment.

Enforcement and business compliance costs of Option 1

Option 1 does not rely on any change in enforcement activity, so there would not be any additional enforcement costs under this option.

The compliance burden of Option 1 is indicated below.

- Notification – the requirements for new products to be assessed and listed on the WaterMark product database would not change.
- Education – under a narrower scope for the scheme, manufacturers would need to review their products and determine which would remain covered by the scheme and which would be excluded; this would be a once off cost.
- Permission – there are no implications for permission under this option.
- Purchase – manufacturers would purchase fewer services from CABs, as indicated above; there would be no implications for installers.
- Record keeping – the requirement for new products to be tested, and the test results documented, will not change under this option.
- Enforcement – no change in enforcement activity is expected under this option so business would not incur additional costs of cooperating with inspections.
- Publication and documentation – the requirements for manufacturers to document the results of new product testing would not change under this option.
- Procedural – no non-administrative costs have identified.
- Other - no other costs have been identified.

Option 1 in detail

Objectives

The number of objectives would be reduced from several, currently, to just those that align with the PCA objectives of health and safety. This change enhances the clarity and direction of the scheme, and facilitates the scheme becoming fully within the ABCB's mission. The elimination of other objectives removes distractions that can impede the focus on health and safety objectives.

The elimination of other objectives also would mean that some other contributions of the scheme will no longer be made. It is not known whether or how much the scheme actually contributed to the following:

- Environmental degradation
- Contamination of the water resource

- Infrastructure
- Property protection

These are issues that are best addressed directly by the responsible agencies; the indirect contribution from WaterMark could be marginal in comparison. Note that contamination of the water resource from within a building is a major health issue and is addressed in the PCA through installation regulations, including those to control backflow. Contamination of the water resource in the water supply – beyond the building boundary – is the responsibility of the municipal water authorities.

Risk Assessment

The proposal to revise the risk assessment process to align with the PCA objectives of health and safety will reduce the number of products covered under WaterMark; reducing industry's costs of participating in the scheme and government enforcement costs. It will focus the scheme on those products used in installations that have discernible health and safety risks, and hence the scope of the scheme would match the extent of risks in plumbing and drainage installations.

The proposal to tighten the risk assessment process will reinforce the targeting of products with clear health and safety implications, supporting the reduction in the number of products covered under WaterMark. This will be a major change from the Status Quo where most plumbing and drainage products are included under levels 1 or 2 of the scheme and where risk assessment is mainly used to sort between levels 1 and 2. The revised, tighter risk assessment process will also provide clear guidance to the CABs and promote transparency and consistency in risk assessment to be followed by all CABs.

Products that would be no longer covered by the scheme would incur a once off cost to remove the WaterMark stamp from its production equipment. If a transition period was allowed for implementation, for example over a two or three year period, then this transition cost could be minimised with the stamp being removed when the production equipment was upgraded.

Linkages with Other Schemes

It is proposed to develop linkages between WaterMark and the CodeMark Certification Scheme (CodeMark) for building products, which is also administered by the ABCB. CodeMark uses Certification Bodies to certify new building products, in the same way as Watermark uses CABs to certify plumbing and drainage products, so developing a common approach to risk assessment and certification would apply a standard approach across the construction sector. Learnings in risk assessment processes in one area (say building) could be extended to the other area (say plumbing and drainage). Administration of certification risk assessment processes across the construction sector would be simplified and easier to manage. Industry would have similar expectations about risk assessment requirements in all areas of the construction sector.

With regard to the perception that there is unnecessary duplication and overlap between WaterMark and the Water Efficiency Labelling and Standards Scheme (WELS), it should be noted that the two schemes are independent, with their own administrators, objectives, processes, fees and requirements for compliance. WELS is currently being reviewed by the Commonwealth and the issue of perceived duplication and overlap would be more usefully considered when that review is complete.

Administration of WaterMark

It is proposed that the WaterMark product database be upgraded to be able to collect and enable retrieval of information necessary for the administration of the scheme. This would facilitate management of the scheme by the administrator by enabling tracing of activity and financial payments on a monthly basis, and also provide accurate and up to date information to the scheme's stakeholders, providing transparency on the operation of the scheme and building trust between the administrator and stakeholders. The cost of upgrading the database would be allocated to the cost of administration (see below).

All CABs should deliver accurate and regular data entry into the database. While this is a current requirement, some CABs do not bother too much about accuracy or regularity in their data entries, and hence for them the change in the database could lead to a higher level of effort and costs.

The cost of ABCB administration of WaterMark is \$650,000 per year. Of this \$200,000 is received from the CABs under royalty arrangements and the ABCB is temporarily making up the deficit of \$450,000. This level of resourcing supports four full time staff and is considered by the ABCB to be the minimum necessary to deliver responsible administration. The amount of \$450,000 represents 4% of the scheme's annual turnover. The Building Ministers' Forum transferred the scheme to the ABCB on the specific understanding that it be fully cost recovered.

Question for Stakeholders: is industry willing to pay an additional \$450,000 per year for administration by the ABCB?

The mechanism of cost recovery is proposed to change from the current royalty system to a per product charge, to be more transparent and equitable to all participants in the scheme.

Specification Development

It is proposed that the administrator appoint an expert specification drafter to draft new WaterMark technical standards that are needed occasionally when new product applications extend beyond the bounds of current standards. An expert specification drafter would bring professionalism to this exercise. This would be an improvement on the current situation where each new WaterMark technical standard is drafted by a CAB and manufacturer, which is then reviewed and edited by the Administrator (ABCB), and circulated back to the CAB for redrafting, in a circular process that can take several iterations.

The cost of an expert drafter could be covered from ABCB administration funds. The benefit of an expert drafter would be that all industry would be able to use a generic new standard, in contrast to the current arrangements where a new standard may be oriented towards the sponsoring company.

Compliance and Enforcement

It is proposed to facilitate compliance by collating the 38 different reference documents and resolving the fragmented structure, inconsistent language and contradictions across many documents so that the guidance material for the scheme is clear. The roles and responsibilities of participants in the scheme will also be clear.

The effort to improve the scheme's guidance material will be undertaken by the ABCB as one task of the four staff on the scheme's administration. The cost will be included in the ABCB's administration budget.

It is also proposed to improve the way CABs are accredited, to focus on technical competencies as well as capability to manage a certification process, with monitoring of each CAB's performance and enforceable instruments to ensure adequate performance. These matters will be formally included in a new contract between the administrator and the accreditation body; the accreditation body with these responsibilities will be selected by tender.

The cost of developing a suitable contract between the administrator and the accreditation body will be included in the ABCB's administration budget. The operational costs of the accreditation body are expected to be much the same as for the current accreditation body.

Question for Stakeholders: do you have comments on the impacts of Option 1?

Impacts of Option 2 – a voluntary WaterMark scheme

The WaterMark scheme would appear in the PCA on the list of alternative means to provide evidence of product suitability in section A2.2, but it would not be mandatory. The other alternatives would be a report by a recognised expert, professional engineer or other suitable documentary evidence.

The impacts of WaterMark becoming a voluntary scheme are uncertain and depend on the market response.

1. If manufacturers consider that moving away from WaterMark would provoke an industry perception that their products lack quality assurance, that would be a negative in marketing, then they would continue to list their products under the scheme as at present.
 - a. The Status Quo would continue in terms of WaterMarked products.
2. Manufacturers could decide that their lower risk products do not need the WaterMark quality assurance, because these products are perceived in the market as obviously lower risk and the WaterMark stamp is of little benefit in terms of marketability. New lower risk products would be certified under general PCA certification.
 - a. For example, manufacturers could withdraw 30% of their product range from the WaterMark scheme with savings to industry compared with the Status Quo, in present value terms, either \$20 million (ABCB costings) or \$14 million (based on initial comments from stakeholders).⁶
3. Some suppliers could decide to shift all their products to other means of certification.
 - a. For example, If 30% of products shifted away from WaterMark, then savings to industry compared with the Status Quo, in present value terms, would be either \$20million (ABB Office costings) or \$14 million (based on initial comments from stakeholders).⁷

⁶ See calculations of financial savings from the current WaterMark scheme under Option 3.

⁷ Ibid.

- b. Over time the percentage of products that shift away from the scheme could grow, if no adverse consequences are observed for the initial products that shifted away, increasing the savings to industry.

One regulator commented that should WaterMark become voluntary under Option 2, the market behaviour over time will likely mirror that of the current voluntary CodeMark scheme, which has been shown to be ineffective.

Questions for Stakeholders – do you have comments about a voluntary WaterMark scheme? Could a voluntary scheme better reflect industry’s understanding of high risk products with only the high risk products remaining in the scheme?

Products that would be no longer covered by WaterMark would incur a once off cost to remove the WaterMark stamp from its production equipment. If a transition period was allowed for implementation, for example over a two or three year period, then this transition cost could be minimised with the stamp being removed when the production equipment was upgraded.

Enforcement and business compliance costs of Option 2

Option 2 does not rely on any change in enforcement activity, so there would not be any additional enforcement costs under this option.

The compliance burden of Option 2 is indicated below.

- Notification – the requirements for new products to be assessed and listed on the WaterMark scheme database would not change.
- Education – this option does not impose additional requirements to keep abreast of regulatory developments.
- Permission – there are no implications for permission under this option.
- Purchase – manufacturers could purchase fewer services from CABs, as indicated above; there would be no implications for installers.
- Record keeping – the requirement for new products to be tested, and the test results documented, will not change under this option.
- Enforcement – no change in enforcement activity is expected under this option so business would not incur additional costs of cooperating with inspections.
- Publication and documentation – the requirements for manufacturers to document the results of new product testing would not change under this option.
- Procedural – no non-administrative costs have identified.
- Other - no other costs have been identified.

Question for Stakeholders: do you have comments on the impacts of Option 2?

Impacts of Option 3 – quality assurance via general PCA certification

Currently some products comply with general PCA certification, while most plumbing and drainage products are certified under the WaterMark scheme. Under Option 3 a large shift would occur: all products would be certified under the general PCA certification provisions and no products would be certified by WaterMark.

Section A2.2 of the PCA specifies the evidence of suitability that is required for plumbing and drainage products that would demonstrate that the products are fit for purpose. Under Option 3 the reference to Watermark would be removed from A2.2 and the evidence would be: a report by a recognised expert; a certificate from a professional engineer; or any other form of documentary evidence that correctly describes properties and performance.

The outcome of this assessment process would be a certificate attached to the product. The certificate could be relied on by practitioners and regulators in exactly the same way as the WaterMark stamp on products is currently, *i.e.* as authoritative evidence that the product is genuine and fit for purpose. A certificate that is accepted and used in the same way the WaterMark stamp is now would not require any change in the behaviour of practitioners or regulators. It is possible that the certificate might also state the purpose for which the product is intended.

Note that new products would still be required to satisfy Australian standards and undergo laboratory testing as appropriate, with test results reported in the certification documentation, as occurs currently.

Note also that the CABs could continue to provide certification assessment services to manufacturers of new products, as they do currently, if they are competitive with recognised experts and professional engineers who also provide these services.

Some regulators suggest that Option 3 would shift the compliance burden from WaterMark to the regulators and increase compliance costs. Rather than all installers being able to rely on WaterMark, Option 3 would shift the onus onto regulators to detect that a product is not certified. Option 3 will likely result in greater failure rates and therefore a greater number of complaints to regulators.

Questions for Stakeholders: do you have any comments about the compliance costs that could occur under Option 3? What information supports your view?

Some industry participants and regulators comment that Option 3 would create major weakness in the quality and safety of plumbing products used in installations, and greater failure rates of products and materials.

Questions for Stakeholders: do you have any comments on the possible product failure rates under Option 3? What information supports your view?

Option 3 would shift the legal liability for certification from the nine Australian governments that stand behind the WaterMark scheme, currently, to the certifying bodies and experts / engineers and the manufactures of certified products.

The impact on occupants would be negligible under Option 3 if the operation of general PCA certification provisions for all products could achieve the health and safety Objectives. Comments from stakeholders on the issues raised in this section will inform a discussion on the efficacy of Option 3. If the health and safety Objectives cannot be achieved, then Option 3 will be assessed as not feasible.

Products that would be no longer covered by the scheme would incur a once off cost to remove the WaterMark stamp from its production equipment. If a transition period was allowed for in implementation, for example over a two or three year period, then this transition cost could be minimised with the stamp being removed when the production equipment was upgraded.

Financial Savings of Option 3

Option 3 would generate savings by discontinuing ongoing fees currently charged to industry under the WaterMark scheme.

It is important that the broad quantum of cost associated with WaterMark be understood so that the financial implications of each option are known and considered as part of the overall assessment of impacts. The financial information that is currently available about the operation of WaterMark is patchy, of variable quality and incomplete.⁸ Nevertheless estimates of the scheme's financial operation have been made using information from its database and reports from the National Plumbing Regulators Forum. This data has been interpreted conservatively by the ABCB to provide as far as possible minimum cost estimates.

Some key parameters used in estimating the financial operations of WaterMark are:

- The total number of products in the scheme of 50,000
 - Interpreting the WaterMark database yields a range of 45,000 to 60,000 products, hence 50,000 is a conservative parameter.
- The total number of licences in the scheme is 2,000
 - Interpreting the WaterMark database yields a range of 2,000 to 3,000 products, hence 2,000 is a conservative parameter.
 - This implies an average of 25 products per licence.
- The total number of new products assessed each year under the scheme is 500
 - Research by NPRF⁹ indicated that 582 new products were certified in 2006. The parameter of 500 is conservative.

Cost of annual fees

It is understood that JAS-ANZ, the body that accredits the CABs, receives \$100 per year for each product listed on the scheme. This means JAS-ANZ receives each year:

$$\$100 \times 50,000 = \$5,000,000$$

⁸ Inadequacies in the data reflect the short time that the ABCB has had to collect information, and the condition of the WaterMark product database that was transferred to the ABCB from the previous administrator.

⁹ *Ibid*

It is understood the CABs charge annual fees on all products in the scheme; however these fees have not been disclosed. If the CABs charge an annual fee of \$1,000 per licence (equivalent to \$40 per product) then the cost of annual CAB fees would be:

$$\$1,000 \times 2,000 = \$2,000,000$$

One CAB commented that there are no annual audit or other fees.

Questions for Stakeholders: do you have information annual fees charged by JAS-ANZ and the CABs? Can you confirm that the CABs do not charge annual fees?

Cost of re-certifying existing products

All products in the scheme require re-certification every three to five years. This can be done on a per licence basis. Conservatively, a minimum of 400 licences would be reviewed each year (1/5 of 2,000). The fees charged by the CABs for re-certifying has not been disclosed. If the CAB re-certification fee is \$5,000 per licence (or \$200 per product) then the cost of re-certification that occurs each year would be, at a minimum:

$$\$5,000 \times 400 = \$2,000,000$$

An industry body understands that there is no additional charge for re-certification by the CABs. One CAB refers to an application fee of \$2,500 (and not \$5,000) that includes the first year of certification.

Questions for Stakeholders: do you have information on the fees charged by the CABs for re-certifying existing products? What proportion of products would be re-certified every 3 years compared with products re-certified every 5 years?

Cost of administration

The full cost of the administration by the ABCB is \$650,000 each year. Of this amount, \$200,000 is received from the CABs currently under royalty arrangements, and would ultimately be paid by industry, while the ABCB is temporarily making up the deficit of \$450,000 per year.

Summary of the Ongoing Costs of WaterMark

The ongoing costs of WaterMark would be a financial saving under Option 3.

These costs are summarised in the following table, on the basis of ABCB parameters and taking into account the information provided by some stakeholders. The ABCB estimates the ongoing costs to be \$9.2 million each year, with a present value over 10 years of \$69 million, while costings based on initial comments from stakeholders would put the annual cost at \$6.2 million with a present value of \$46 million.

Table 1 – Ongoing Costs of WaterMark, each year

	ABCB	Initial Comments
Cost of annual fees		
JAS-ANZ	\$5,000,000	\$5,000,000
CABs	\$2,000,000	\$0
Cost of re-certifying existing products	\$2,000,000	\$1,000,000
Cost of administration	\$200,000	\$200,000
Total annual costs	\$9,200,000	\$6,200,000
Present Value over 10 years	\$69,140,137	\$46,594,440

Cost of New Product Testing and Assessment

Under Option 3 new products would still be required to be tested and assessed. The costs of testing and assessment would continue to be incurred and so would not contribute to financial savings. The costs of new product testing and assessment are documented at Attachment B, for the record, but do not contribute to the impact analysis of Option 3.

Enforcement and business compliance costs of Option 3

Option 3 does not rely on any change in enforcement activity, so there would not be any additional enforcement costs under this option.

The compliance burden of Option 3 is indicated below.

- Notification – the requirements for new products to be assessed and listed on the WaterMark product database would not change.
- Education – this option does not impose additional requirements to keep abreast of regulatory developments.
- Permission – there are no implications for permission under this option.
- Purchase – manufacturers would not be required to purchase assessment services from CABs, as indicated above; there would be no implications for installers.
- Record keeping – the requirement for new products to be tested, and the test results documented, will not change under this option.
- Enforcement – no change in enforcement activity is expected under this option so business would not incur additional costs of cooperating with inspections.
- Publication and documentation – the requirements for manufacturers to document the results of new product testing would not change under this option.
- Procedural – no non-administrative costs have identified.
- Other - no other costs have been identified.

Question for Stakeholders: do you have comments on the impacts of Option 3?

Impacts of Option 4 – quality assurance without certification

Under Option 4 manufacturers would ensure that their products are fit for purpose, as required by the PCA, but they would not certify products under the provisions of the PCA. Manufacturers would still be required to undertake appropriate tests for new products and to appraise these test results. Manufacturers would not be required to use third party certifiers. The WaterMark scheme would be discontinued. Quality assurance of plumbing and drainage products would occur through each manufacturer's management, the commercial incentives for manufacturers to avoid reputational damage from publicity of a faulty product, the civil liability regime that deals with faulty products (which manufacturers would also wish to avoid) and, possibly, enhanced enforcement arrangements where non-compliance could be more visibly and more decisively responded to.

Under Option 4 manufacturers would realise savings from discontinuation of WaterMark, saving the ongoing costs of \$9.2 million annually or \$69 million as a present value over ten years.¹⁰

Manufacturers would still be required to test and assess the compliance of new products with the provisions of the PCA, hence costs of testing and assessing new products would continue to be incurred. The cost of assessing new products would be transferred from third party certifiers to the manufacturers, and each manufacturer would acquire expert knowledge of the PCA provisions as they apply to its new products. Overall there could be little difference between Option 4 and the Status Quo in the costs of testing and assessing new products.

A qualitative assessment of impacts

A qualitative assessment of other impacts indicates a range of costs associated with Option 4.

Option 4 works by *ex post* controls and the impacts will be those that follow a faulty product being discovered, through civil liability processes and possibly enhanced enforcement. Both these measures would depend on the incidence of faulty products and both could involve significant costs. Where a litigant is pursuing a complaint through the courts then the costs of legal process include the costs of participants on a daily basis and the time that legal resources are used. Where a class action is pursued there are additional costs of identifying, organising and obtaining financial commitments from the aggrieved parties. Legal process typically occurs over months or years, so each case will be expensive.

The number and incidence of faulty products will be influenced by the commercial incentives on manufacturers to avoid litigation and reputational damage to their brand that would affect future sales. It is possible that the incidence could be minimal. On the other hand management systems can be imperfect in controlling risk and manufacturers' attitudes could become relaxed over time, leading to a steady stream of faulty products onto the market. Some faulty products would be expected.

Another factor that could increase the incidence of faulty products would be imperfect knowledge by manufacturers, installers and regulators, where a large amount of information is needed about the range of products and the applicability of PCA provisions to them, and there are gaps in the knowledge of some participants.

¹⁰ See calculations under *Financial Savings of Option 3*.

If the prospective cost of litigation dissuades some occupants from pursuing their complaints through the courts, and harm is occurring as a result of faulty products, then Option 4 will have failed to achieve the health and safety objectives. Whether this would be a material consideration, or not, is difficult to gauge.

Installers could consider that if they installed a faulty product, the courts could find them liable. Under Option 4, it is likely that all installers would have professional indemnity insurance, which would be an additional cost over the Status Quo (where the WaterMark stamp indicates that a product is genuine).

Option 4 could be implemented with enhanced enforcement, such as a higher frequency of inspections and the specified penalties for non-compliance. This approach would complement the civil liabilities regime in strengthening the commercial incentives for manufacturers to avoid faulty products. It would require significant additional enforcement resources.

Question for Stakeholders: can you design an enhanced enforcement regime that would be suitable for Option 4?

Visual inspections would not determine whether plumbing products are composed of appropriate materials and in particular could not guard against chemical risks – where chemicals in a product leach into the water supply and contaminate it. This is important for products intended to convey drinking water. The major risk is lead poisoning with a cumulative adverse effect on the health of occupants. This risk would be managed under Option 4 after a long period of time for the cumulative effects of the contamination to become evident. Significant harm may have occurred to occupants that cannot be resolved by *ex post* measures such as civil liabilities actions. Under Option 4 occupants are exposed to any risks of chemical contamination and lead poisoning.

Question for Stakeholders: are ex post measures such as civil liabilities actions sufficient to address exposure to chemical contamination and lead in drinking water?

Enforcement and business compliance costs of Option 4

Option 4 includes a possible enhanced enforcement regime which would involve significantly higher costs for regulators.

The compliance burden of Option 4 is indicated below.

- Notification – the requirements for new products to be assessed and listed on the WaterMark product database would not change.
- Education – this option imposes high additional information requirements on manufacturers, installers and regulators to ensure that products are fit for purpose.
- Permission – there are no implications for permission under this option.
- Purchase – manufacturers would not be required to purchase assessment services from CABs, as indicated above; installers would be likely to purchase professional indemnity insurance.
- Record keeping – the requirement for new products to be tested, and the test results documented, will not change under this option.

- Enforcement – greater enforcement activity is possible under this option so business could incur additional costs of cooperating with a greater number of inspections, and responding to a more definitive penalties regime.
- Publication and documentation – the requirements for manufacturers to document the results of new product testing would not change under this option.
- Procedural – no non-administrative costs have identified.
- Other - no other costs have been identified.

Question for Stakeholders: do you have comments on the impacts of Option 4?

Competition Effects

Each of the four options would impact generally across industry and without specific competition effects.

Would any option affect the number and range of suppliers?

No. The options do not: grant exclusive rights, affect the ability of some firms to participate in public procurement, alter the costs of entry or exit, or create geographic barriers to supply. The PCA does require standards that, when certified, do permit manufacturers to market their products; the options change some product standards to be achieved and these changes apply to all suppliers of the products.

Would any option change the ability of suppliers to compete?

No. All options would reduce costs, which could be reflected in lower prices, but the options would not control the actual prices charged by businesses. The options would not alter the ability of suppliers to advertise their products or alter costs of some suppliers relative to others. Each option would change the standards for products, and these changes would apply to all suppliers of the products.

Would any option alter suppliers' incentives to compete vigorously?

No. The options would not create a self-regulatory or co-regulatory regime. The mobility of customers between suppliers would not be affected. Companies would not be required to publish company information. There would not be any exemptions from general competition law.

Question for Stakeholders: do you consider that any option would affect the ability of any participant in the plumbing and drainage sector to compete in the market?

Consultation

The ABCB invites comments from stakeholders on any matter raised in this report. Stakeholders may express views on issues, generally, or provide details of how the options may affect them directly. The ABCB encourages stakeholders to provide detailed information and data.

The ABCB believes meaningful consultation can promote trust between industry, the community and government. Transparency allows stakeholders to see and judge the quality of government actions and regulatory decisions. Consultation also provides an opportunity for stakeholders to participate in the development of policy solutions and encourages broad ownership of those solutions. For more information on the ABCB's consultation philosophy and objectives, [visit](#).

Invitation for Stakeholders: to comment on this consultation RIS by 31 October 2014. Specific questions are included throughout the text, to help with specific issues, and stakeholders may also provide comments and information about any other matters included in this RIS.

Comments can be emailed to the ABCB at: abcbris@iinet.net.au

Conclusion

The regulation of plumbing and drainage products and installations in Australia is achieved through two regulatory regimes: those relating to the installation and product selection; and those relating to the design and materials of the products themselves.

The regulatory framework includes a comprehensive scheme for mandatory certification. Countries with similar performance-based regulatory systems to Australia rely on non-mandatory certification systems for plumbing products, and none of them report significant issues relating to or stemming from the regulation of plumbing products. In these countries, mandatory certification to demonstrate evidence of suitability is unnecessary.

Given Australia's status as a developed economy with high levels of education, training and occupational licensing, the overall risk associated with plumbing and drainage products and installations appears to be relatively low. Any plumbing-specific, ex-ante regulation should therefore be targeted to the areas of high risk.

The problem is that the WaterMark scheme is poorly targeted and imposes unnecessary costs on some manufacturers. This is because:

- The coverage of the scheme goes beyond what is strictly necessary to achieve the stated health and safety objectives of the regulations.
- The risk assessment process is inadequate, being consequence-based and lacking the consideration of likelihood which is required for a true assessment of risk. Assessments that are made on "worst case" consequences could dispose the scheme to over-regulation.
- The WaterMark scheme does not ensure that certified products, when installed, are fit for the purpose of that installation.

Some industry participants and regulators have commented that the potential risks in plumbing and drainage installations are generally high, and that WaterMark is a key factor in the safe plumbing outcomes achieved in Australia. The weight of evidence, at present, would appear not to support this view. This Consultation RIS contains several specific questions, for consideration by stakeholders, to gather more information on this issue.

The objectives are: to ensure that plumbing and drainage products are fit for the purpose for which they are intended; and that PCA regulations to achieve this are efficient and support health and safety outcomes for occupants.

Five choices are presented for consideration by the Board.

- **Status Quo** – the default choice if the alternatives do not satisfactorily address the problem and objectives, or if their costs would exceed their benefits.
- **Option 1** – an enhanced mandatory Watermark scheme.
- **Option 2** – a voluntary WaterMark scheme.
- **Option 3** – quality assurance via general PCA certification.
- **Option 4** – quality assurance by without certification.

The Status Quo is regarded as a baseline to assess the impacts of the options.

The table below shows the financial savings of the options under ABCB costings and on the basis of initial comments by stakeholders, in terms of the present value over ten years. The savings could be described as moderate. Options 3 and 4 generate higher financial savings.

Table 2 – Financial Savings of the Options

	ABCB	Initial Comments from Stakeholders
Option 1	\$20 million	\$14 million
Option 2	\$20 million	\$14 million
Option 3	\$69 million	\$46 million
Option 4	\$69 million	\$46 million

Present values at a 7% discount rate over 10 years.

Options 1, 2 and 3 impose minimal or no additional compliance costs on business and do not rely on additional enforcement activity.

Option 4 would impose significant business compliance costs and possibly also regulatory costs, and so could be the highest cost option. There are doubts whether Option 4 could achieve the objectives, in terms of occupants’ ability to successfully pursue litigation to resolve complaints and the risk of chemical contaminants in drinking water.

Initial consultation with some stakeholders indicated a strong view that the potential risks in plumbing and drainage installations are high – and these risks need to be managed properly. From this point of view Option 1 – an enhanced WaterMark scheme – would be most efficacious in addressing risk because the third party certifiers are themselves subject to accreditation. However if the potential risks are relatively low then this level of scrutiny of third party certifiers is unnecessary and Options 2 and 3 could provide adequate third party certification outcomes. Evidence on the level of potential risks in plumbing and drainage installations, and hence the efficacy of the options, is incomplete and submissions from stakeholders will be helpful to inform this issue.

Tentatively, the weight of evidence at present supports Option 3 – general PCA certification. The health and safety objectives would appear achievable under Option 3 and it would also generate higher financial savings. The weight of evidence at present indicates the potential risks in plumbing and drainage installations to be relatively low. This reflects: Australia as a modern economy; quality water supply infrastructure; a trained and skilled plumbing workforce; and commercial incentives of manufacturers to maintain market share. The impact of current regulation in the PCA, including WaterMark, would be in addition to these factors that already reduce potential risks. Option 3 would be implemented in the same way as WaterMark is currently, with a certificate attached to each product that could be viewed in the same way as the WaterMark stamp is now as evidence of certification, by practitioners and regulators. Hence there would not be additional compliance costs under Option 3. There are also limitations on the effectiveness of the current WaterMark scheme in addressing risk. First, risk assessment is undertaken as a consequence-based process and lacks consideration of likelihood, which is essential to true risk assessment. Second, the scheme does not ensure that WaterMarked products, when assembled in a plumbing or drainage installation, are fit for the purpose of that installation. The fact that plumbing and drainage installations are generally

safe for occupants in Australia, in the context of limitations to the WaterMark scheme's capacity to mitigate risk, provides a further indication that the potential risks in plumbing and drainage installations are relatively low.

This conclusion is tentative and based on the weight of evidence currently available. Stakeholders are invited to provide information and data to inform consideration of these issues.

Implementation and Review

Implementation should be sensitive to two issues.

First, an appropriate transition time could be considered, say two to three years. This would mean that manufacturers of products removed from the WaterMark scheme could re-tool the production process for these products to remove the WaterMark stamp at a time when the production process may be upgraded, at a commercially convenient time.

Second, certification would appear to be focussed on the product, without consideration of the installations in which they will be used. This is a potentially hazardous omission for products used in the higher risk installations. If the higher risk installations in Australia address serious and high potential risks, then it would be desirable for the certification of products to cover the performance of products in the installations for which they are intended. This would require monitoring and appropriate enforcement by regulators.

The consideration of options to ensure that plumbing and drainage products are fit for purpose, follows a major review by the ABCB of the WaterMark certification scheme; the only review in the past ten years. The ABCB does not contemplate another major review in the short term but will monitor developments over the next three years as part of its role in managing the implementation of changes to the certification of plumbing and drainage products.

Attachment A - Issues with WaterMark

WaterMark is the key product certification scheme that addresses potential risks in plumbing and drainage installations. WaterMark is given legislative effect via the PCA. There are a number of areas that were identified during the ABCB review of Watermark where the scheme would appear to be inefficient or to lack effectiveness, or to be addressing matters outside the scope of the ABCB's mission.

Objectives

A number of objectives of the scheme do not align with the goals of the PCA nor do they assist the Board to deliver its mission under the ABCB Inter-Government Agreement of 2012.

The ABCB's mission is to address issues relating to safety, health, amenity and sustainability in the design, construction and performance of buildings. The goal of the PCA is to enable the achievement of nationally consistent, minimum necessary standards of relevant safety, health, amenity and sustainability objectives efficiently.

One objective of the WaterMark scheme does align with the PCA goal – that the plumbing and drainage installations do not create significant risks of personal illness, loss, injury or death.

Other scheme objectives are outside the ABCB's mission: relating to environmental degradation, contamination of the water resource, impact on infrastructure and property protection. The ABCB is not responsible for these outcomes.

Risk Assessment

Risk assessment is undertaken by the Conformity Assessment Bodies (CABs) and involves evaluating materials and products for certification. There are two levels of risk assessment:

- Level 1 – for materials and products in contact with drinking water or with a risk evaluated as high, which are tested for conformity and assessment of quality.
- Level 2 – for products with a risk evaluated as medium, generally drainage products, which are tested for conformity only.

Materials and products with a risk evaluated as low are exempt from WaterMark and are identified on a List of Exempt Products.

The problem is that there is no clear specification of the risk assessment process, so there is no way for each CAB to deliver an evaluation that is consistent with other CABs. Hence risk assessment is inconsistent across the scheme. In addition the risk assessment process does not align with the goals of the PCA so there is no assurance that priority is accorded to safety and health.

The conformity assessment process includes inspections by the CABs of sites and products, but there is no requirement for a CAB to demonstrate its competency to undertake inspections. Hence there is a problem that the risk assessment outcomes of the CABs may be poorly informed by inspections.

Linkages with Other Schemes

WaterMark has possible linkages with two other certification schemes relating to building and plumbing products. The other two schemes are:

- CodeMark Certification Scheme (CodeMark) – administered by the ABCB; a voluntary scheme to assist the building industry by providing confidence to regulatory authorities about the conformity of certified building products to the requirements of the NCC.
- Water Efficiency Labelling and Standards Scheme (WELS) – a mandatory scheme established under Commonwealth legislation and aims to conserve water supplies through providing information to consumers about the water efficiency of products and by promoting water efficient technologies.

With regard to CodeMark, WaterMark and CodeMark are two schemes referenced in the NCC, both with requirements for risk assessment and certification of products, and a need for accredited CABs. However these schemes are operated independently and the plumbing and building sectors of industry face different and inconsistent certification approaches.

With regard to the WELS scheme, the problem is that presently manufacturers of some plumbing and drainage products may need to comply with both WELS and WaterMark. In such cases the administrators of the WELS scheme will not consider applications for new products without those products first being certified under WaterMark. Whilst the two schemes are independent, with their own administrators, objectives, processes, fees and requirements for compliance, there is a perception that there is unnecessary duplication and overlap.

Administration of the Scheme

There are a number of problems in administering the scheme, as outlined below.

Documentation of internal and external operational procedures is inadequate to enable a reasonable accountability of participants in the scheme.

The scheme database is compromised to the extent that it does not allow verification of royalty amounts due to the scheme. Not all database search functions work or provide sufficient or accurate information for stakeholders. There is also inconsistency between CABs in the information provided and the way they upload information to the database. These difficulties impede real time management and administration of the scheme.

The terms of the licence agreements, that permit industry to use the WaterMark certification trademarks are poorly understood by some CABs and some industry. There is currently no formal strategy to promote the scheme, provide useful information to participants or to engage with stakeholders.

The current funding arrangement, that supports administration of the scheme, is unreliable and makes accurate financial projections impossible. Current funding is derived from royalties on the revenue CABs gain from undertaking work for the scheme. However the extent of work undertaken in the scheme cannot be validated by the administrator, and there is considerable variation in the

interpretation of what should attract the royalty and in the fees and charges imposed by the CABs for undertaking work in the scheme.

The current funding arrangement does not provide a sustainable basis for administering the scheme. Current receipts of \$200,000 per year are inadequate to support proper administration (which has both an ongoing operational component and a one off development / repair of past issues component) – which is small compared with the scheme’s annual turnover of \$9.2 million. Previous reviews of the scheme indicated a lack of strategic direction, ineffective administration and poor enforcement – all due to insufficient resourcing.

Specification Development

The procedures for the development of technical specifications for WaterMark are documented in three references:

- PCA
- SAA Miscellaneous publication MP78 – *Manual for the Assessment of Risks of Plumbing Products*
- Procedures for Developing Technical Specifications

The problem is that this information about the scheme is fragmented and inconsistent between these references. This leads to uncertainty and ambiguity about what is required and permits the development of differing specifications.

The quality of existing specifications is variable which means that some outcomes will be inferior compared with the general status of the scheme. The existence of inferior outcomes undermines the integrity of WaterMark.

Compliance and Enforcement

There are several compliance and enforcement issues.

WaterMark includes 38 different reference documents for stakeholders to follow. Several include strict procedural requirements for product certification and others for the development of technical specifications. The fragmented structure, inconsistent language, duplication and contradictions across the many documents results in difficulty for many stakeholders to comply in a consistent manner and maintain every element required for compliance.

Descriptions of the roles and responsibilities of stakeholders within the scheme are fragmented amongst the many reference documents, creating a problem for some participants where their required duties are not perceived nor undertaken.

The certification process is fragmented within the reference documents as well as amongst CABs. This has created difficulties for the management of client expectations, the enforcement of scheme requirements and means there is inconsistency throughout the scheme.

Enforcement of the compliance of plumbing or drainage installations with the PCA is generally undertaken by local councils, although their activity varies between councils ranging from 5% to

100% of the work. The inspectors will accept WaterMark certification as sufficient; although standard installations are not actively checked for compliance with WaterMark and the installing plumber is rarely questioned.

Some industry participants expressed concern about a general lack of enforcement, that rely on installers to ensure the product installed is WaterMarked.

Question for Stakeholders: do you have any comments on the current level of inspections and enforcement?

The body that currently accredits CABs has limitations on its capacity to undertake appropriate surveillance of the CABs and their adherence to referenced documents. This creates a problem for the scheme in that the CABs' activities are not being adequately monitored for compliance with the reference documents. The accreditation body has its own reference documents but these are not enforceable within the scheme. Another issue is that the accreditation of CABs focusses on competencies in the certification process rather than technical competencies.

The costs of accreditation, with respect to the value add and services provided by the accreditation provider, are considered excessive by many CABs.

Some CABs are not complying with the rules and are also reported to be behaving aggressively towards industry, regulators and the WaterMark administrator; yet these CABs are unable to be disciplined under the scheme.

A mechanism to review and have action against industry users of the scheme is not possible under the current agreements. This creates problems for enforcement and achievement of the scheme's objectives.

Attachment B - Costs of New Product Testing and Assessment

Under the Options new products would still be required to be tested and assessed. The costs of testing and assessment would continue to be incurred and so would not contribute to any financial savings of the options. The costs of new product testing and assessment are documented below, for the record.

The testing new products is required under the PCA and so the costs of testing would be attributable to the PCA rather than WaterMark. The results of testing are used by the CABs in their assessments of new products for certification.

NPRF research indicated that the costs of initial testing for plumbing products was between \$50,000 and \$70,000 per product. Taking account of inflation between 2009 and 2014, these fees would increase to around \$55,000 and \$80,000. On the assumption that these fees are split 70 / 30 across new products:

$$\$55,000 \times 500 \times 70\% = \$19,250,000$$

$$\$80,000 \times 500 \times 30\% = \underline{\$12,000,000}$$

$$\underline{\$31,250,000}$$

Hence the cost of independently testing new products, as required by the PCA, is estimated to be around \$30 million per year.

Some industry participants suggests that new products would be dominated by products that are small and typically testing of these products would not exceed \$10,000.

Question for Stakeholders: do you have information that would inform the consideration of new product testing costs?

Cost of New Product Assessment

The fee charged by CABs to assess each new product has not been disclosed. However a consultant engaged by the NPRF suggested that new product assessment fees were between \$5,000 and \$10,000 per product. Taking account of fees increasing over the period from 2006 to 2014, the certification cost of new products each year would be:

$$\$10,000 \times 500 = \$5,000,000$$

Some industry participants suggests that new product assessment fees charged by CABs are more likely to be between \$2,000 and \$2,500 per product.

Question for Stakeholders: do you have information on the fees charged by the CABs for new product assessments?