AUSTRALIAN STEEL INSTITUTE

3 August 2015

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Senate Standing Committees on Economics
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Senate inquiry into non-conforming building products

Dear Sir/Madam,

Please find attached the Australian Steel Institute's (ASI) submission to the current Australian Senate Inquiry into Non-conforming Building Products.

This submission reflects the thrust of the Institute's work program in shepherding the introduction of several compliance schemes over recent years in response to widespread industry concern over the increasing threat of sub-standard materials that are not fit for purpose.

We are fully aware and supportive of the Government's desire to minimise regulation and 'red tape' and have taken this into account during our deliberations and recommendations contained within our submission.

In summary we feel that urgent steps have to be taken as imported Non-conforming Products (NCP) impact on industries and the Australian people in the following ways:

1. Increase risk to public safety (refer to ASI and AiG examples).
2. Lack of a 'level playing field' as we build to Australian Standards at a cost whilst clearly a lot of imports do not and can cut costs accordingly.
3. Value for money especially as taxpayers' money is not being fully realised with NCPs accepted or reworked and repaired.
4. Loss of local jobs as a consequence of an uneven playing field with a significant amount of jobs being lost to low cost inferior imports while we build to Australian Standards as specified.

We look forward to the Senate Standing Committee's response to industry's comments and recommendations toward mitigating building and construction risks across vital supply chains.

Yours sincerely,

Tony Dixon
Chief Executive

Ian Cairns
National Manager – Industry Development and Government Relations

AUSTRALIAN STEEL INSTITUTE

Senate Inquiry Non-Conforming Product

Submission by the Australian Steel Institute
Prepared By David Ryan and Ian Cairns

Senate Inquiry into Non-conforming Building Products

Submission by the Australian Steel Institute

Prepared by David Ryan and Ian Cairns

(August 2015)

Executive Summary

The Australian Steel Institute (ASI) supports the Senate Inquiry into non-conforming product as the prevalence of steel product and materials not meeting relevant Australian standards has increased significantly since the move to global sourcing and purchasing practice in recent years.

The effect of this is loss of jobs through assessment of tenders on upfront costs rather than all of life cost, value for money, unproductive rework and inefficiencies in construction practice.

The ASI is suggesting that the main contributors to this are:

1. **A regulatory system that allows for easy passing off of fraudulent materials or supply of non-conforming product (NCP).**
2. **Ineffective surveillance for NCP.**
3. **A lack of or lack of use of existing of third party certification systems.**
4. **A lack of effective reporting and enforcement of existing standards requirements.**
5. **An uneven playing field for importers compared with local producers on non-compliant product requirements that substantially disadvantage local supply.**

The ASI in this submission seeks to inform the Inquiry that whilst the National Construction Code (NCC) and Australian Standards are effective building blocks to support construction, for our industry the conformity assessment component of this is broken. Our Industry is cognisant of a need to reduce regulation and therefore is taking the lead to fix the problem by introducing compliance schemes and educating the market as illustrated in the report. However, it cannot succeed on its own and needs government support.

This requested support is covered in the recommendations.

Finally there is undoubtedly a major issue of NCP in Australia and our construction industry. The NCC and Australian Standards are not the Pareto problem but it is the current conformity assessment regime which does not identify or penalise the use of NCP that we have issue with.

The ASI believes that this lack of risk-based effective conformity assessment is being used to reduce the upfront cost of building components:

- **At the expense of the total all of life cost of the project.**
- **At the expense of the reliability and safety of construction products.**
- **At the expense of a level playing field in competing product.**
- **At the expense of the viability of supplier companies spending on infrastructure and quality systems to be compliant.**
- **At the expense of jobs in the Australian economy.**

Introduction

The ASI is submitting these comments on behalf of its member companies, although some of these companies may also submit their own individual company views. These members include the full spectrum of companies and individuals involved in the design, manufacture, distribution, fabrication, design detailing, education, surface protection and construction of steel, as well as suppliers of goods and services to the steel industry.

In the steel industry the 'building product' may be a fabricated assembly to engineering design specifications or a finished proprietary 'branded' product, both produced to Australian standards, and this report reflects that mix.

We stress that this problem is not just restricted to the housing market as infrastructure, industrial and commercial construction is also affected by NCP.

Representation

With over 100,000 direct jobs (see page 8 for more detail), the Australian steel industry is a significant employer and key industry in this country. The ASI is Australia's peak steel industry association representing and promoting Australian steel in manufacturing and construction and representing the whole steel value chain.

The majority of member companies are small to medium enterprises (SME) within the steel fabrication and processing segment of the value chain. The ASI's core membership comprises:

The ASI's direct membership covers over 9000 individuals and over 600 companies and has member associations through 15,000 stakeholders and over 2000 businesses. This covers the full spectrum of steel industry activity from the steel mills and manufacturers through distribution and fabrication to engineering design, architecture and education. The majority of member companies are small to medium enterprises (SMEs) within the steel fabrication and processing segment of the value chain. The ASI's core membership comprises:

- **Steel manufacturers**
- **Steel distributors/processors**
- **Steel fabricators**
- **Associate companies**
- **Engineering and design companies and individuals**
- **Building industry**
- **University students and early graduates**

The ASI is a not-for-profit organisation comprising three sustaining members, BlueScope Steel, OneSteel and Fletcher Group and a large number of company members, associates and individuals.

Through industry association partners like the Welding Technology Institute of Australia (WTIA), Australasian Corrosion Association (ACA), Galvanizing Association of Australia (GAA) and the Australian Institute of Non-Destructive Testing (AINDT) who support this submission, the overall representation covers the supply chain and those industries that see the effect of non-conforming product in the field.

Index

1. Background

This issue of non–conforming building products has been widely known and reported on for some time. For example, the following extract on standards and conformity from the Prime Minister's Manufacturing Taskforce Report of non-government members (August, 2012) states:

> *"Australian manufacturers acknowledge and support the role of standards in facilitating commerce and underwriting consumer and business confidence. Australia has a strong standards infrastructure but one that is at risk of being undermined by non-conformity and, in some cases, misrepresentations about conformity.*
>
> *Australian manufacturers are increasingly finding that they are competing against products that do not conform to regulatory requirements and do not meet standards to which domestic businesses adhere. This places complying and conforming businesses at a cost and competitive disadvantage.*
>
> *The non-government members of the Taskforce recommend that that the Commonwealth Government develop an approach to conformity marking along the lines of Europe's CE Marking; that it evaluate, in consultation with industry, the effectiveness of existing regulators with responsibilities for product assessment with a view to improving the effectiveness of conformity assessment; and that it enters a dialogue with the ACCC and, through the State and Territory Governments, Offices of Fair Trading, to increase the priority given to addressing misleading claims of conformity with regulation and voluntary standards."*

Additionally…

The following quote from the Australasian Procurement and Construction Council (APCC) provides the context to this report as follows:

> ***"The Australian construction industry operates in a global marketplace and utilises a vast, increasingly complex and innovative range of construction products, many of which are manufactured overseas… Regardless of the origin of the manufacturer of the construction product there is a lack of credible and accurate information available in Australia to assist all stakeholders involved in construction projects to verify construction product conformance and performance. This has the potential to create significant constraints and risks to a construction project. In Australia there have been numerous instances where non-compliant construction products have caused the collapse of buildings, motorway signs, glass panels and more. The risk of loss of life and severe injury should not be underestimated. The quality and compliance of construction products is a major risk management issue which needs to be addressed. It is vital that we create an environment in Australia in which all stakeholders in the building and construction process, including the community, are assured that all construction products meet a minimum acceptable level of performance and are fit for the purpose to which they are intended."***
>
> **APCC Director Strategic Projects, Jane Montgomery-Hribar**

2. The Problem

In Australia, concern about a number of significant steel projects by the state transit authority in Queensland prompted a national report entitled "Structural Steel Industry Review Compliance sustainability and value for TMR" published on 12 August 2011 in which the ASI assisted with an educational campaign in support of the findings. Quality issues on a number of major projects stemming from non-compliant product prompted a tightening of compliance provisions for both the Queensland and NSW transit authorities. This focused the ASI's attention to be alert to non-compliance in a whole range of steelwork and representations have been made on quality issues ranging from portal frames, guard rails, sheds, bridge trusses and building construction projects.

Observable defects such as substandard welding that needed to be ground out and replaced, laminations in plate that could cause catastrophic failure, substandard corrosion protection affecting the life of an asset and generally poor workmanship were found unfortunately to be commonplace on imported structural steelwork. There also is a price depressing effect from these imports that affects a sector of local fabricators that are forced to chase price at the expense of maintaining their quality systems and procedures. The knock-on effect is that currently many fabricators and steelwork manufacturing SMEs are unable to maintain a reasonable profit that would allow them to reinvest in their businesses.

Testing by the steel industry has also identified metallic coated and pre-painted steels that do not meet Australian Standards and regulations. Examples include substandard metallic coating and paint thicknesses and non-conforming levels of lead in paint.

The non-compliances are not limited to poor quality and bad workmanship but extend to deliberate fraudulent behavior with examples such as falsified test certificates, welds made with silicone rubber and then painted, attachment of bolt heads with silicon rather than a through bolt and water filled tube to compensate for underweight steelwork with fraudulent claims that their products meet particular Australian Standards.

See photos and reports on examples at the end of this submission (Appendices 1-3, pages 30-34)

3. Extent of the problem

The Australian Government Department of Industry and Science sponsored a survey by the Australian Industry Group (AiG) to gauge the extent of the NCP problem on the Australian building products industry (November 2013).

In the subsequent AiG report to government entitled "The quest for a level playing field – The non-conforming building products dilemma", the steel sector represented almost half of all responses and indicated that overall 92 percent of industry responders were aware of NCP in their supply chain affecting their industry, and this figure rose to 95 percent for steel.

Ref: http://www.aigroup.com.au/policy/reports

4. The impact of the Problem on the Australian steel industry

Size and scope of Australian steel manufacturing and fabrication

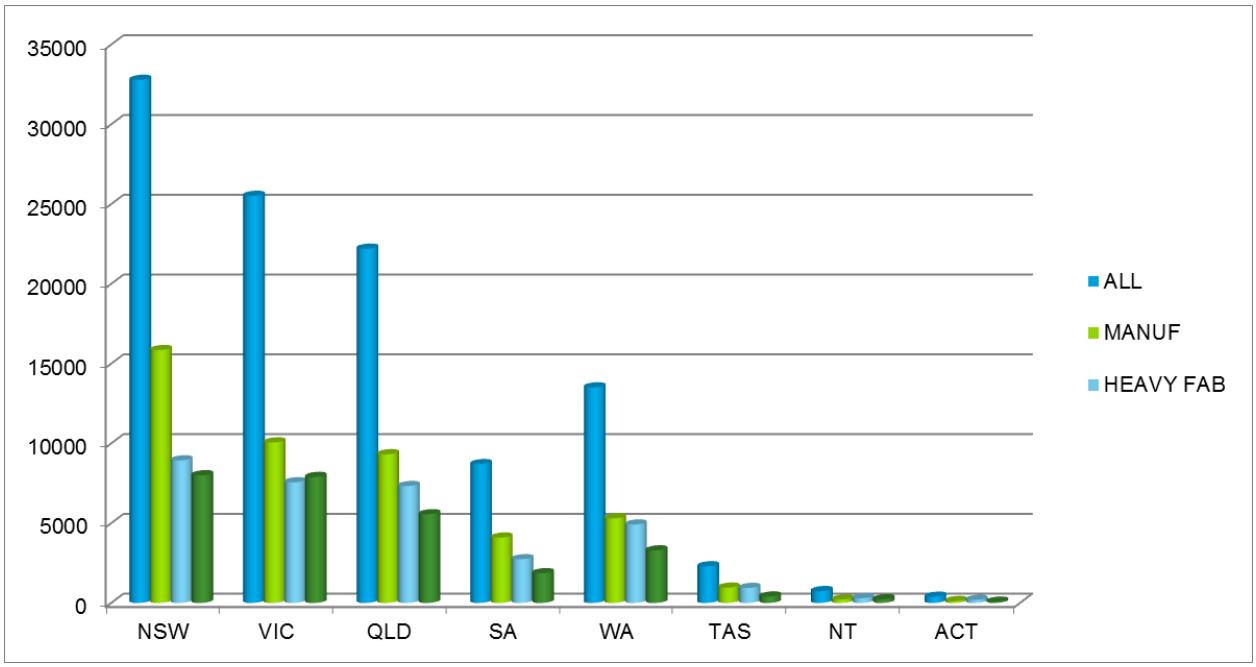
There are 106,144 people employed in the steel industry nationally (Source ABS Census 2011).

The State breakdown is as follows:

ALL EMPLOYEES - STEEL INDUSTRY BY STATE

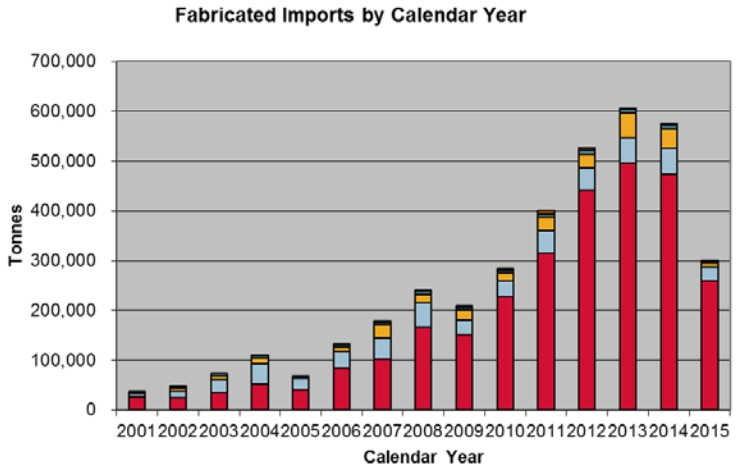
STATE	ALL	MANUFACTURING	HEAVY FABRICATION	MEDIUM FABRICATION
NSW	32786	15849	8936	8001
VIC	25517	10058	7563	7896
QLD	22205	9319	7327	5559
SA	8700	4095	2740	1865
WA	13510	5302	4916	3292
TAS	2297	957	940	400
NT	741	214	300	227
ACT	388	118	189	81
TOTAL	106144	45912	32911	27321

Source: ABS 2011 Census



The Australian steel fabrication and manufacturing industry is being adversely affected by the high level of low-cost non-compliant imports particularly from China. The Australian steel industry believes this competition is unfair because of the savings this provides the importer in not meeting the requirements of Australian Standards.

The following graph shows the level of increase in imported fabricated structural steelwork. The ASI does not have data on the growth in imported of manufactured steel goods but it is likely to be similar.



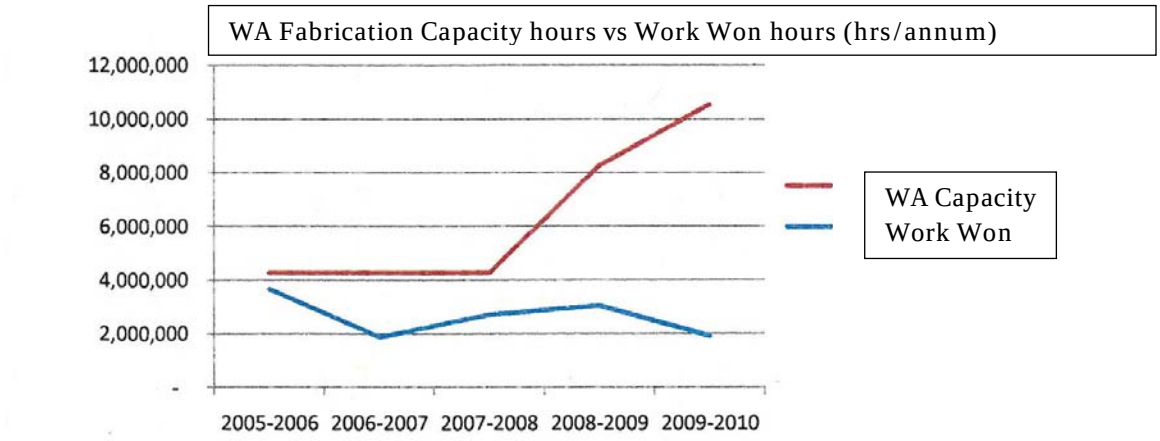
Note1: 2015 data only represents a 6 month period

Note 2: This data excludes import tariff categories of fabricated product such as specialised capital equipment (e.g; iron ore and LNG plant and equipment)

Import statistics as supplied by ABS using the HTISC system

Australian fabrication capacity

Total Australian fabrication capacity in 2010 was approximately 1.6 million tonnes; WA capacity in 2010 was in the order of 600,000 tonnes (Source: ASI Inpex Report: Capabilities of the Australian steel industry to supply major projects in Australia, April 2010)



Source: ASI fabricator survey (2010)

The effect of the rapid rate of growth of imports can been seen in the following capacity versus work won chart from WA as fabricators geared up for work associated from the mining boom which never eventuated for them. Capacity oversupply is similar in all states of Australia; however in most areas Australian fabricators are now de-staffing from lack of available work and some have gone out of business.

An example of closures in recent years has been in the fabrication sector where the following have closed shop in Victoria losing the following tonnage capability:

Alfasi	6500
Apollo Engineering	4000
Greensborough Eng	2500
Preston Structural	3500
AMS	2500
Monks Harper	3000
A J Demuri	2000
Nycon	1200
RMB Metalwork	2000

This represents a loss in capacity of 27,000 tonnes. It is estimated that the flow-on effect through the full value chain is that 800 jobs have been lost in the past few years in Victoria.

In Queensland and the Northern Territory, examples of some of the fabricator losses are as follows:

QUEENSLAND	
DLF Enterprises	1000
Fritz Steel (QLD)	1000
Ironbark T/A Maklah Steel Fabrication	5000
John Holland Energy and Resources	1500
John Holland SMP	10,000
Milfab	5000
Northern Engineering (Qld)	1000
Rimco Building Systems	10,000
Transafe Engineering	1000
Vulcan Engineering Gladstone	1500
Watson Engineering (QLD)	5000
RPG	3000
NORTHERN TERRITORY	
Transcon	5000
Universal Engineering (NT)	10,000

This 60,000 tonnes of capacity loss represents a flow-on effect of approximately 2000 job losses in the past few years.

The conclusion from this data is that Australian fabricators have the capacity to do the work required but are not receiving the orders and a major contributor is the ready availability of cheap non-conforming product from overseas.

The ASI estimates that the local steel supply chain has contracted by 30 percent since 2010 with estimated job losses close to 30,000.

An independent report completed by AEC Group Limited for the Industry Capability Network (ICN) in late 2012 (summary Appendix 4) shows that maximising local content is good for State and National economies alike and that for every $million of local manufacturing output gained or retained there is:

- ***$713,400 of gross value-added generated***
- ***Six full-time equivalent jobs created or retained***
- ***$225,300 of tax revenue generated***
- ***$64,900 worth of welfare benefits saved***

Compliance costs

The ASI believes that compliance costs to produce compliant product, safely and within environmental requirements, should be a natural part of doing business. The issue here is that a manufacturer or importer can cut costs significantly by not establishing the business structure, training and skills to conform to the relevant Australian Standards and legal requirements.

Australian Standards require that qualified workers are employed for skilled tasks and that supervision is also experienced and qualified by accredited bodies. Requirements for traceability through the entire supply chain, product marking costs, load restraint requirements and onsite client inspection charges are areas which often escape the inspection process for imported product.

For 'special processes' like welding and painting, the only way to ensure conforming product is to have conforming processes and Australian Standards reflect this by seeking to control the process. The ASI is aware from its own investigations that traceability, conforming test certificates, control of special processes in line with the Australian Standard are very often non-conforming with imported product/materials - a significant area of cost avoidance.

The regulatory OH&S, environmental and Government reporting requirements impact substantially on Australian manufacturers for the cost of doing business in Australia.

The cost of compliance across all the regulatory areas through the Australian supply chain is thought to be in the order of 30 percent, is accumulative and will vary up and down across the supply chain.

What the ASI is doing

The ASI an active partner of the Construction Products Alliance (CPA) has been a co-author of the APCC report[4] and supported the AiG in the NCP survey[5].

As indicated earlier, the ASI has initiated third party conformance associated with the National Structural Steelwork Compliance Scheme (NSSCS), The ASI also has a scheme called ShedSafe deemed necessary by the ASI to provide safe shed structures in Australia following many failures, particularly after cyclones in Queensland. The ASI also supports the Australasian Certification Authority for Reinforcing and Structural Steels (ACRS) for surveillance of steel at the mill level.

5. Impact of Problem on Australian construction industry

Affecting the viability of the Australian structural steel industry

The ASI in conjunction with other building product associations believes NCP is impacting on market competitors through lost market share, lost margin and ultimately reduced employment numbers. There is a cost to the economy of prematurely replacing failed products, components and infrastructure. This is demonstrated through the following extract from a letter to support this submission from the Welding Institute of Australia (WTIA).

> ***"WTIA members are often engaged to repair non-conforming products as best as they are able. However, the outcome is inevitably a compromise between the reality of the manufactured product and the design specification. This compromise leads to two significant cost burdens on the purchaser:***
>
> ***a. project delay caused by the need to rework components can lead to significant contractual damages and lost production revenue.***
>
> ***b. a substantial increase in whole of life project costing caused by increased maintenance and repair requirements."***

The scope and scale of this effect on the building and construction industry is currently not being reported and in fact often is being hidden by the practice of subcontractors and engineers involved in rectification of non-conforming product being muffled through contractors demanding confidentiality agreements signed under the threat of not receiving further work.

According to the APCC working Group on NCP:

> ***"Productivity in the construction industry is critical to Australia's growth and the economy. The building and construction industry account for 7.5% of Australia's GDP and employs 9.1% of the workforce. In 2011 approximately $203 billion was the value of work done by the building and construction industry in Australia. Construction products are estimated to be 30% of project costs therefore this equates to approximately $61 billion dollars spent in 2011. The quality of construction products is directly proportional to the service life and quality of the building. The cost of rework on projects is an average of 0.25% and 2.5% of the total contract value therefore in 2011 approximately $0.5 to $5billion dollars was wasted on rework on building and construction projects in Australia. There are numerous potential consequences to the construction industry, the community and the Australian economy of the failure of construction products including the possibility of loss of life."***

For the full APCC report, "Procurement of Construction Products - A guide to achieving compliance" visit: http://www.apcc.gov.au/SitePages/Publication%20-%20Construction.aspx

Workplace safety and associated risks

Another major impact of NCP is the risk to public safety. The Australian Work Health and Safety (WH&S) Act 2011 reinforces the need for Australian product compliance.

There is an expectation in the Australian community that our standards and systems will provide the necessary safeguards to enable the installation and use of infrastructure to be done safely.

The new harmonised WH&S Act puts significant shared responsibility on all parties in the construction value chain, specifically manufacturers, importers, suppliers, designers and constructors.

The ASI believes and is supported by the safety authorities that material and product compliance is a necessary component of the solution for safe design and construction.

The ASI position is that it is not a justifiable position to warrant that a structure as safe if it is not known if the material and workmanship involved in its construction is compliant to the required Standard or not.

The link in the WH&S Act between safety and compliance needs to be explicitly stated and enforced under the duty of care obligations.

The instances of NCP listed in Appendices 1-3 demonstrate the nature of NCP in the steel sector and the unsafe nature of NCP. In Europe structural steel is deemed a safety product and compliance capability certification is legislated as mandatory. This is a holistic, risk-based compliance scheme, audited annually and supported by the European Union. The ASI-led NSSCS is based on the structure and principles of this proven scheme (see below).

6 Overall quality of Australian buildings and infrastructure

ASI member companies have been engaged in rectification work or have cited extreme cases of NCP on a significant number of projects where steel has been imported from overseas and found non-conforming. The ASI has a library of NCP examples in the building and construction area.

Some examples in recent years include:

- **Southern Expressway, South Australia**
- **TLF Medical Centre building, Perth**
- **Transgrid building, Ultimo Sydney**
- **Queensland Busway project**
- **Barangaroo developments, Sydney**
- **Busselton Pedestrian Bridges WA**
- **Roadway sound barrier bridge superstructure, Penrith Sydney**
- **Brisbane City ferry terminals**
- **Peninsula Link Freeway guardrails, Melbourne**

7 Existing policing framework for fabricated steelwork used in Construction

Overseas Regulation and Australian Steelwork Compliance

1. European Union (including UK)

The CE Mark states that a product has been assessed before being placed on the market and thus satisfies the legislative requirements (e.g; a harmonised level of safety and compliance). It means that the manufacturer has verified that the product complies with all relevant essential requirements and if required, has been certified by a qualified conformity body. CE Marking is a self-certification scheme based on a manufacturer's declaration but a range of products requires type testing against technical standards by notified bodies. Because steel components are deemed 'safety critical', CE Marking is mandated in legislation and certification is not allowed unless the Factory Production Control (FPC) system under which they are produced has been assessed by a suitable certification body that has been approved by the European Commission.

2. USA

The American Institute of Steel Construction (AISC) initiated a contractor certification system in the mid 1970s that has developed into a Total Quality Management system. This system is audited by an independent Quality Management Company (QMC). This is an open to all countries, voluntary system but one which has universal acceptance across the country and has over 1500 fabrication companies certified. Qualification follows categories of construction like general fabrication, erection and bridge fabrication.

3. Canada

The Canadian Institute of Steel Construction (CISC) runs a fabricator certification program. The CISC program is similar to that run by its American counterpart, the AISC. It is also open to non-Canadian members. Fabricators must have a valid current and audited letter of validation to the Canadian Welding Bureau (CWB). CWB certification is legislated through parliament and so this is a powerful tool in keeping steel construction products and materials quality controlled and audited by Canadians. There are two categories of certification offered by CISC: Structures and Bridges. Both are subject to independent auditing.

4 Australia

The ASI in 2014 implemented a National Structural Steelwork Compliance scheme that requires steelwork fabricators to elect to be audited for compliance capability. It is not mandatory and relies on contractor engagement and good purchasing practice for its success.

It is modelled on the steel product compliance principles used in the UK where there is a risk categorisation for each type of structure and the fabricator capability requirements are commensurate with the level of complexity and nature of the risk profile involved. This is also a voluntary scheme as per the model used in the USA.

The scheme is open to all fabrication companies from any country and provides the engineer and client reassurance that the subcontractor is certified as being capable of carrying out the work to Australian Standard requirements at a predetermined risk category of the project.

Steel reinforcing and structural steel product manufactured in or imported into Australia is covered by a compliance scheme managed by the Australasian Certification Authority for Reinforcing and Structural Steels (ACRS). This scheme seeks to certify compliant structural and reinforcing steel by auditing at the steel mill level. It is well established and has a very good track record in ensuring compliant quality steel is used in construction.

Steel garages and sheds are managed by the ASI scheme called ShedSafe. This seeks to ensure that the shed design is appropriate for the climatic zone categorisation and the design and product meet the relevant Australian Standard. This scheme has universal acceptance from the Australian shed industry.

These schemes can only be effective if they have industry and Government engagement and support. The ASI is seeking that all governments, State and Federal, get behind appropriate industry-led compliance schemes and for structural steelwork stipulate that all Government projects should be using suitably certified steel fabricators. This is a recommendation also of the APCC report.

Assessment Systems - Surveillance of imported building products

The current regime of self-inspection and certification for structural steelwork (self-certification) does not work and Australia needs a better compliance regime in which to operate.

In past years it was commonplace that the building's engineer was contracted to be responsible for ensuring all products used in the building were compliant with his original design specifications. Typically today, the engineering community is no longer contracted to do site inspections and is predominantly contracted only for the base design. The ASI is aware from regular discussions with our members that engineers and architects are being continuously put under pressure to sign off on substituted foreign materials and material standards where there is a cost saving to their contractor.

ASI members express frustration at being unable to safely report NCP due to confidentiality clauses in construction contracts and sensitivity of relationships in the building products supply chain. This makes continuous improvement or a 'Safety Alert' process impossible. The key to the success of reporting NCP is anonymity coupled with qualified review of the matter reported.

This is ably demonstrated through the confidential reporting scheme previously known worldwide as CROSS, now known as Structural Safety, an authority that operates a confidential reporting on structural safety scheme that allows stakeholders to report anonymously on unsafe building products and practices in structures. This is funded by the UK structural and civil engineering as well as health and safety sectors supported by the UK Government. This has positively influenced change to improve safety in the UK construction industry.

A major instance of structural failure of a bridge truss in Sydney was recently reported on through this mechanism. The ASI has proven its effectiveness to Australia.

The ASI has been active in endeavouring to gain support for a confidential reporting system for instances of fraudulent supply of steel and steelwork and has been in discussion with Engineers Australia on this matter. ASI members support the availability of such a scheme.

This issue of non-compliant substitutions concerns building surveyors or inspectors who do not have the engineering expertise, knowledge or often opportunity to identify steel defects or check whether the steel supplied is compliant.

Builders and project managers may take on the responsibility of site inspection but often do not have the skills or knowledge to understand compliance at a material or fabrication level. For structural steelwork there is currently no reliable system for surveillance of imported building products apart from product failure. However, if defects with major structural steel items are discovered, the prime contractor often has no alternative to meet the time constraints but to accept faulty product or try to patch repair any defects.

The implementation of a system that requires the supplier and all stakeholders in the construction chain to ensure that the products that they are selling are certified to comply with relevant standards and fit for purpose responsibilities within their scope, will be good for Australia.

8 Restrictions and penalties on non-conforming products

The ASI believes that the current systems in place through the Australian Competition and Consumer Commission (ACCC) or the Building Code of Australia (BCA) are demonstratively ineffective in preventing non-conforming steel building products.

We see no effective discouragement or penalty for contractors to seek conforming product where the non-conforming product is cheaper. When failure occurs, the current industry practice is to employ the local industry to undertake rectification works under confidentiality contracts.

These confidentiality contracts restrict the opportunity for disclosure of important safety information which could be in the public interest.

The local industry sees an un-level playing field in this area as local suppliers are treated quite differently to overseas suppliers in terms of rectification commitments and responsibilities.

9 Recommendations for Government action supported by actions from steel industry

The ASI recommends that the Federal and State governments establish a clearly defined framework for product and material conformity based on the National Construction Code (NCC) and Australian Standards. Our recommends are as follows:

1. **That all State and Federal government procurement guidelines fully support and stipulate the use of the 12 principles in the APCC guide for procurement.**

2. **That all Government contracts stipulate the use of industry backed third party compliance schemes for key structural product areas (e.g; structural steel) where available. Refer examples in the APCC Guide[4].**

3. **That the State-based Workplace Health and Safety Act be strengthened and clearly articulated to support the enforcement of penalties for unsafe supply of non-conforming product in the building industry and that the Act or guidance documents from the Act provide specific examples relating safety and non-conforming product.**

4. **That the liability for non-conformance for building products and certification of conformity be available at point of sale.**

   Point of sale certification places responsibility on manufacturers or importers to provide appropriate evidence to companies along the supply chain such as fabricators, distributors and end users to be able to satisfy them that the products they are buying comply with relevant standards and fit for purpose responsibilities. This is important because of the current inability of the construction industry client to be assured of compliance through existing processes. Point of sale product compliance will need to be accompanied by clearly defined regulatory authorities and policies so that all stakeholders are aware of their requirements and what policy enforcement applies to them.

   This does not abdicate responsibility from the rest of the supply chain who should also be ensuring that their documentation of contract for products they order be required to comply with specifications. If they have not done this then as per other 'chain of responsibility' criteria, they should also be held responsible.

5. **The ASI believes that the NCC and Australian Standards are good documents, but lack effective conformity assessment support mechanisms. The ASI recognises that industry needs to reduce regulation and 'red tape'. In the context of conformity assessment it is important that there is a risk categorisation of the project, project component or product that guides the level of assessment.**

   In the case of structural steel the ASI has introduced the concept of 'construction categories' to ensure that the industry recognises that low conformity assessment is adequate for low risk items. This is consistent with overseas practice. The Australian steel industry believes that this principle should guide any recommendation to lessen the added

burden of industry regulation in assessing compliant product.

6. **There needs to be strict enforcement of the compliance to building code processes and penalties for knowingly signing off on NCP. In some states the engineer needs to sign off on the structural soundness of a structure and the ASI is often contacted by members about pressure being applied from the builder to do this where there is evidence of NCP.**

7. **That all Government building contracts seek to have transparency of non-conformance reporting. This could be through the supply contract (e.g: contractor agrees that any record which is evidence of non-conformity is not kept confidential). This seeks to ensure that NCP is brought to the attention of the client and not repeated in the next project, particularly where safety is involved.**

8. **That Government support industry to set up a confidential reporting scheme for non-conforming product similar to the UK Structural Safety scheme (previously CROSS) as per the Construction Products Alliance (CPA) recommendations to the Building Ministers conference.**

10 Endnote

It is clearly in the Economic and the Public interest that we minimise the amount of Non Conforming Products in the Building and Construction industries.

The ASI is keen to see the suggestions and recommendations above looked upon favorably and adopted at the earliest. We stand ready to assist or clarify any part of this submission to the Inquiry.

Further information on the ASI and the member companies involved in this submission can be found by following the web link:

www.steel.org.au

For further information about this submission, please contact:

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11 Letters of support from associated industry organisations

Welding Technology Institute of Australia

24 July 2015

David Ryan
National Marketing Manager
Australian Steel Institute
Level 13, Mount Street
North Sydney
NSW 2060

Dear David,

Australian Senate Enquiry into Non – Conforming Building Products Letter of Support

The Welding Technology Institute of Australia (WTIA) is the national peak body representing industries involved in welding, cutting and additive manufacturing. The WTIA is a member of the International Institute of Welding (IIW) and accredited body for the certification and qualification of welders and companies engaged in welding processes.

Our corporate members include the largest asset management, mining, oil and gas, shipbuilding, construction, and fabrication companies in Australia. Individual members are at the forefront of material science, welding engineering, welding technology and delivery of welding services to industry.

The WTIA strongly supports the Australian Steel Institute submission to the Senate enquiry into nonconforming building products. In particular we would like to emphasise two key messages:

i. **Safety.** Through member feedback and its own advisory services to industry the WTIA is aware of many instances where components are imported into Australia with significant safety defects which include:
   a. poor Welding disguised with silicon filler
   b. safety ladders and walkways inappropriately tack welded
   c. welded structural steel components unable to meet their design loads
   d. weld failures caused by the use of steel which does not meet appropriate Australian or International standards

   "It is only a matter of time before there is a serious accident resulting in loss of life."

ii. **Cost.** WTIA members are often engaged to repair nonconforming products as best as they are able. However, the outcome is inevitably a compromise between the reality of the manufactured product and the design specification. This compromise leads to 2 significant cost burdens on the purchaser:
   a. project delay caused by the need to rework components can lead to significant contractual damages and lost production revenue
   b. a substantial increase in whole of life project costing caused by increased maintenance and repair requirements

   "It is estimated that delays caused by nonconforming components cost the Australian economy in excess of AUD$1 billion annually"

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WTIA
Welding Technology Institute of Australia

The WTIA urges the Senate to take note of the ASI Submission and this strong letter of support. Whilst the country can rely upon the diligence and ability of its engineers, inspectors and tradesmen there remains a significant risk of an incident which will lead to loss of life. In addition in the current economic climate it is unreasonable to ask Australian industry to bear the financial burden of products which do not meet Australian or International standards.

Yours sincerely,

Geoff Crittenden
Chief Executive Officer

Friday, July 24, 2015

Australian Senate Enquiry into non-conforming Building Products – Submission by the Australian Steel Institute

The Australasian Corrosion Association Inc (ACA) is a membership based, not-for-profit, industry association established in 1955 to promote the co-operation of academic, industrial, commercial and governmental organisations in relation to the dissemination of information on all aspects of corrosion and its prevention or control by promoting lectures, symposia, publications, training and other activities.

Corrosion can cause costly and dangerous damage to bridges, buildings, and other major infrastructure with the annual cost of corrosion worldwide is estimated to be 3% of the world's GDP.

ACA's vision is reducing the impact of corrosion.

The ACA currently has a diverse membership of over 2,200 members including coating manufacturers, coating applicators, engineering consultants, asset owners, researchers, and more. Members belong to a range of industries such as oil & gas, mining, water, government, defence, energy, building, manufacturing and others.

Corrosion of metals costs the Australian community billions of dollars each year, as well as being a waste of resources and energy. Substandard steel fabrication and corrosion protection, such as poor quality paint work, as a result of some work being carried out overseas add to this cost. Encouraging local fabrication, galvanizing and painting would, we believe, provide better quality corrosion protection to the benefit of all members of the Australian public.

The ACA is in support of the submission from the Australian Steel Institute of non-conforming products.

Kind regards

Wesley Fawaz
Executive Officer

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galvanizers
ASSOCIATION OF AUSTRALIA

Australian Steel Institute
Level 13, 99 Mount Street
North Sydney NSW 2060
Australia
Attention: David Ryan

28 July 2015

Dear David,

Re: Senate Enquiry into non-conforming building products.

The Galvanizers Association of Australia (GAA) is pleased to support the Australian Steel Institute's submission to the Senate Enquiry on non-conforming building products. The GAA represents the majority of the hot dip galvanizing industry in Australia, providing corrosion protection to steel fabrications which typically increases the durability of steel by 7 times over that of uncoated steel. In addition, a galvanized coating provides low life-cycle energy use, is resource efficient, forever recyclable, and is one of the most cost efficient corrosion protection methods available.

Our members and associated companies employ around 1,000 people in Australia and are significant employers in both metropolitan and rural areas. The Australian hot dip galvanizing industry is highly reliant on Australian steel fabricators. Our members need high quality steel fabrications and, in turn, steel conforming to recognised Standards, to supply a conforming and durable product to our consumers.

In addition to the examples shown in your submission to the Senate Enquiry, the GAA and its members have other recent documented cases of non-conforming products in the three categories shown below.

1. The quality of imported fabricated and galvanized steel has compromised the durability of the structure, or where the galvanizing was lower than the agreed Standard – whether that be local or internationally recognised Standards.
2. Disputes between our members and their customers have escalated due to fraudulent steel certificates or poor quality steel where the steel was not fit for galvanizing and provided poor quality outcomes unfairly blamed on the galvanizing process.
3. Members have re-galvanized overseas galvanized products because of the poor quality supplied, leading to increased costs for the local building and mining industries.

Again, the GAA is pleased to support the ASI in its submission to the Senate Enquiry.

Yours Sincerely

Peter Golding
Chief Executive Officer
Galvanizers Association of Australia

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28 July 2015

Mr David Ryan
National Marketing Manager
Australian Steel Institute
PO Box 6366
NORTH SYDNEY NSW 2059

Dear Mr Ryan,

Senate inquiry into non-conforming building products conducted by the Economics Reference Committee

Austube Mills welcomes the Senate inquiry into non-conforming building products. Consequently, we are writing to you in support of the Australian Steel Institute submission as well as providing additional material to the inquiry. We are also working with other government departments on the matter in related areas.

Executive Summary

The importance of product conformance cannot be understated. Austube Mills is a quality pipe & tube manufacturer providing products that are compliant with Australian Standards. However, like numerous other Australian industries being subject to global supply chains and their related Standards, product non-conformance has become a critical issue.

Product non-conformance can manifest itself in various forms, however, this submission will focus on products having false and/or misleading documentation – specifically for structural steel pipe and tube. This includes:

(a) The use of results from test laboratories that are not compliant with the requirements of Australian Standards for product documentation such as test certificates.

(b) Other forms of documentation with false and/or misleading information such as –
- Minimum information on steel chemical composition not being supplied
- Chemical elements which are outside the allowable limits in the Standard
- Reporting grades not listed in the Standard
- Missing traceability link between the pipe and tube product to the actual product documentation
- Test procedures not being undertaken correctly.

This submission primarily focusses on (a). To our knowledge, the other areas of product non-conformance are being covered in separate submissions by Australian Industry Group (AiG), Australasian Procurement and Construction Council (APCC), Bureau of Steel Manufacturers of Australia (BOSMA), Construction Products Alliance (CPA), Galvanizers Association of Australia (GAA), Welding Technology Institute of Australia (WTIA) as well as the other parts of the submission by the Australian Steel Institute (ASI).

Compliance to Standards provides much needed confidence in products being procured in terms of public safety risk, fit-for-purpose, further processing and value for money.

Definition of structural steel pipe and tube

Structural steel pipe and tube can be best described as steel hollow section (HS) long products produced in shapes such as Circular (CHS), Rectangular (RHS), Square (SHS) and hybrid circular-rectangular ("Rail") sections. These products are used in engineering and construction applications to transmit structural loads and, due to the nature of their manufacturing process, are typically formed from a steel coil which eventually is shaped into a HS with a continuous weld seam. In the Australian context, the most common product Standard that describes the final attributes of the HS is AS/NZS 1163 *Cold-formed structural steel hollow sections*. AS/NZS 1163 is considered to be a substantial and sophisticated product Standard as it was benchmarked off the equivalent European Standard (EN 10219). The application area for these products does not include pressure, fluid reticulation and line pipe.

Austube Mills standard prime HS market offer complies with AS/NZS 1163 and all our mill sites are third-party certified by the Australasian Certification Authority for Reinforcing and Structural Steels (ACRS) to manufacture HS products to

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that Standard.

False and/or misleading product documentation for structural steel pipe & tube

Due to concerns on the accuracy of claims made by some manufacturers with their product documentation, AS/NZS 1163 requires qualified, minimum information on a test certificate (TC) coupled with the need for product traceability. Product documentation for HS such as a TC display two main components: Chemical analysis (the elements that make up the steel) and Mechanical testing (the physical properties of the steel).

AS/NZS 1163 further stipulates that a testing laboratory must be competent in the field and class of testing it is undertaking as well as being third-party certified by an independent accrediting body that is a signatory to the International Laboratory Accreditation Corporation (ILAC). In Australia, such testing laboratories are accredited by the National Association of Testing Authorities (NATA) and there are equivalent signatories in other countries. Such laboratory accreditation ensures the testing laboratory undertakes the correct testing method, uses correctly calibrated equipment and adequately reports the results. This requirement has been in place since 2009.

It has come to our attention that the majority of HS exporters are not displaying the appropriate ILAC signatory accreditation number on their TCs for their laboratory approved for chemical testing. In some other situations, neither the chemical analysis laboratory nor the mechanical testing laboratory are ILAC accredited.

This is problematic on two fronts:

- It fails to comply with the Australian Standards' requirement for chemical and mechanical testing to be undertaken by an approved competent laboratory and for the approval number to be displayed on the TC (where multiple laboratories are used for testing each laboratory must be displayed)
- It misleads readers of the TC as the automatic assumption is that the accreditation number covers both mechanical and chemical testing.

Fundamentally, the laboratory could be reporting the wrong or incomplete results. Other items noted for false and/or misleading HS product documents include:

(a) Minimum information on steel chemical composition

AS/NZS 1163 requires that all listed chemical elements used to make the steel coil and listed in the Standard are also noted on the TC. There are various overseas HS manufacturers that do not note all the listed chemical elements in their TCs. The problem here is that the purchaser does not know at what level the unlisted chemical elements are and this may have downstream problems in processing (welding, galvanizing, etc) and material behaviour (such as ductility in order to avoid brittle failure).

(b) Chemical elements which are outside the allowable limits in the Standard

AS/NZS 1163 lists the maximum limits for the specified chemical elements in the Standard. Some overseas manufacturers blatantly breach these limits, list them in their TCs, and have these HS still on-sold into the end-use market. The negative effects of breaching these chemical limits are noted in (a).

(c) Reported grades not listed in AS/NZS 1163

Amongst other parameters, the grade of HS noted in AS/NZS 1163 indicates how strong the HS is as well as its ability to perform in a non-brittle manner in lower temperature conditions. There are only three (3) strength grades listed in AS/NZS 1163. These strength grades then nominate the respective limits on chemical composition and mechanical properties. However, some HS manufacturers note a strength grade that is not considered in AS/NZS 1163 yet claim compliance with the Standard. The problem here is the purchaser does not know what the chemistry and mechanical property levels/limits are plus the effect of further processing and overall material behaviour are not known.

(d) Traceability to actual TC

AS/NZS 1163 requires a unique identification mark be noted in the TC and on the HS product individual length and pack label. Typical identification marks include heat numbers, date-time of manufacture and pack label

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number. The importance of complying with this mandatory provision is that the purchaser can immediately relate the actual product they have purchased to the results on the TCs. If this traceability link is not present, then any batch TC can be used to note the qualities (strength, etc) of the HS – i.e. a "rubber stamp" or "dummy" TC is supplied which is meaningless.

(e) Test procedures not undertaken correctly

Particularly for mechanical properties, the two test methods in AS/NZS 1163 require specific provisions for test specimen orientation and testing methodology. Some manufacturer's test laboratories do not follow the required methods as per the Standard and still report the results. This will have a significant effect on the grading, processing and the useability of the HS product.

In summary, true, correct and traceable-to-product documentation is very important for project delivery and supply chain participants – i.e. purchasers (fabricators, manufacturers, OEMs, etc), engineers, regulators, government agencies, certifiers, etc.

Apart from misrepresentation, the problem here is that false and/or misleading product documents significantly dilute these participants' confidence of the products used as the purchaser does not accurately know the reported HS results will ensure adequate strength, ductility, ability for further processing, be suitably forgiving under overload and non-standard environmental conditions. This then has significant public safety risk implications.

There are also significant economic risks which include industry risk relating to injury caused by lost sales to non-compliant product seeking a competitive advantage and falsification of documents in order to avoid paying duties and taxes.

As noted in other submissions to the inquiry, Australia lacks a significant conformance infrastructure system (unlike that in Europe) and Australian Standards are somewhat dilute in significant conformity provisions within respective Standards. In terms of false and/or misleading product documentation of steel products, it is clear that whist standards can dictate the use of accredited facilities for testing, exporters and importers are willing and able to falsify documentation to feign compliance. Some possible solutions could include:

- Use of heightened vigilance by project participants (though this is not practical when considering the very large range of products and details involved)
- Surveillance, policing and/or prompt complaints handling by government departments, agencies and regulators
- Compulsory use of cost-effective third-party conformity assessment schemes for products subject to finished product Australian Standards. An example of such an initiative is the ACRS certification scheme which provides third party certification of Standard(s) compliance thereby providing the confidence that the construction and engineering supply chain are getting what is specified and ordered.

Thank you for the opportunity to be involved with this inquiry. Austube Mills will be pleased to be further involved with, or supply additional information to, this forum.

Yours sincerely

Arun Syam *BE (Hons), ME, MIEAust, CPEng(Ret), Hon. Fellow WTIA*
Industry & Trade Development Manager

AINDT FEDERAL OFFICE

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30 July, 2015

Attn: Mr David Ryan
National Manager Marketing
Australian Steel Institute
Level 13, 33 Mount St
North Sydney

Re: **Australian Senate Enquiry into Non-Conforming Building Products**

Dear David,

Thankyou for the opportunity to write in full support of your Institutes submissions on the above subject.

The Australian Institute for Non Destructive Testing is a Not For Profit "Peak Body" for personnel employed in the Non Destructive Testing & Condition Monitoring fields & is therefore accredited to provide 3rd Party Certification Services to International Standards by way of our JAS-ANZ Accreditation.

We therefore are heavily involved in both the New Build Inspections as well as life extension as part of our Asset Integrity Programs and we represent some 1100 Individual and Company Members (ranging from SME's to Multi Nationals) including 4485 Certified Inspectors whom see the growing Non-Conformance in Steel Building Products etc; on a daily basis.

It is our people who find the hidden defects in both Materials & Fabrication Techniques, that cause the sort of potential for catastrophic failure seen overseas in recent years. Therefore we are only a small step away from major loss of life within our own shores, should this growing problem be permitted to continue.

We therefore trust that rather than waiting for this inevitable "Loss of Life", something gets done to remove the probability of it happening at all.

Added to this is the Governments own reports which point quite clearly to what seems to be a systemic problem with low quality products & services, which continue to be placed upon the tax payer as an eventual burden, when these products do fail in service.

Yes we are only a small player in this field, but as the ones with a high quality inspection & certification background, we are continually being the catch point for substandard supplies & manufacturing techniques.

We therefore, once again, FULLY support the lead being taken in these matters by the Australian Steel Institute.

Les Dick
Chief Executive Officer
AINDT
Australian Institute for Non-destructive Testing

PO Box 52, Parkville VIC 3052, Australia

12 References

- **1. Prime Minister's Manufacturing Taskforce Report of non-government members (August 2012)**
- **2. Structural Steel Industry Review - Compliance Sustainability and Value for TMR (12 August 2011)**
- **3. Inpex Report: Capabilities of the Australian steel industry to supply major projects in Australia (April 2010)**
- **4. Procurement of Construction Products - *A guide to achieving compliance* (APCC Construction Product Quality Working Group: 2014)**
- **5. The Australian Industry Group, *The quest for a level playing field, The non-conforming building products dilemma (*2013)**

Appendix 1

Examples of steelwork failures

Photo 1
Bolts failure

(Source: APCC-ATIC standards presentation, 18 April 2011)

Photo 2
Poor galvanizing due to steel chemistry

Photo 3
Silicon Welds

Photo 4

Diagonal chords on this bridge truss when cut were found to be filled with water. This is extremely unusual and is thought possibly to have been deliberate to build up the weight of the structure to have a mass within overall specification.

Photos 5-6

Poor paint finish against a specification of 75um inorganic zinc silicate, 6. 125um epoxy and 75um urethane. Top coat left off.

Photos 7–8
Steel cracking on imported fabricated product

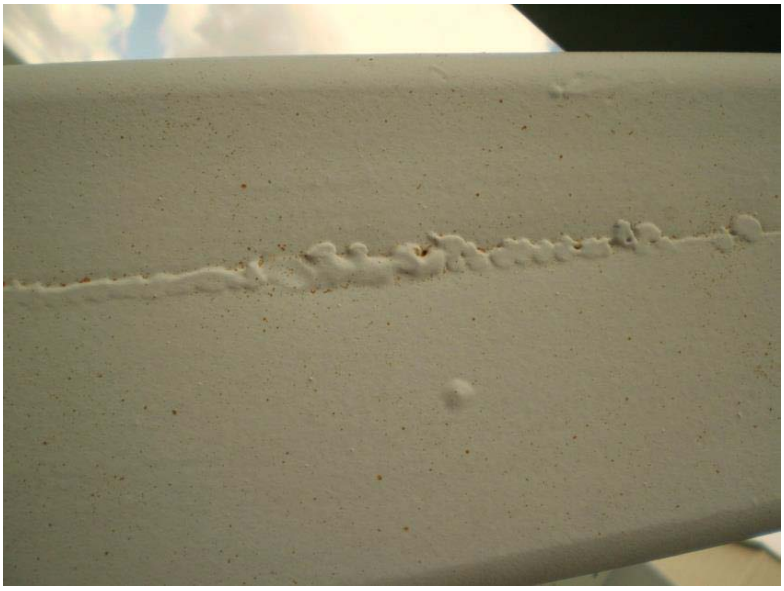

Photo 9
Very poor seam welding or rectification of an unwelded section

Appendix 2

Falsification of test reports

Steelwork tested and analysed by ALS NATA certified laboratory

Tensile testing showed the steel was 338 MPa yield strength versus a 450 MPa grade to AS/NZS 1163 Grade C450L0 called up in the engineer's documentation.

Extract:

COMPLIANCE STATEMENT: The tensile test results reported herein **fails to comply** with the requirements specified in Table 6 of the AS/NZS 1163: 2009 for Grade C450L0.
CVN impact test results reported herein **comply** with the requirements specified in Table 7 of the AS/NZS 1163: 2009 for Grade C450L0.

Non- Compliant welding statement

Figure 5: Weld quality statement accompanying goods manufactured overseas

Appendix 3

Non-compliant shed design

Photo 10

Appendix 4

AECgroup Report Summary

Industry Capability Network (ICN) is an Australian and New Zealand-based organisation that helps local suppliers gain access to the supply chains of major projects.

Since 1984, ICN has monitored the economic impact of its services and the benefits to the economy when a local supplier wins or keeps business. It uses these studies to report benefits to the Australian economy including:

- job creation
- revenue to governments in taxes and statutory charges
- economic value adding.

In 2012, ICN commissioned AECgroup to update these economic indicators for the manufacturing and services sectors. The updated data is based primarily on ABS information on Australian industries to 30 June 2010, published in June 2011. Other ABS data sets (regarding price indices and labour force information) are also used where relevant.

The significance of manufacturing

The manufacturing industry has been under pressure from a number of global macro-economic issues, such as a weakened global economy following the global financial crisis (GFC), competitive pressure from increasing wages and the strong Australian dollar, and competition for labour from the resource industry. The industry is likely to face additional pressure in the future from the introduction of a carbon tax and rising energy costs.

Over the last six years, the manufacturing industry contributed an average of 9.5% to gross value added (GVA) and an average of 9.5% of total employment in Australia. In the period 2004-05 to 2009-10, turnover grew in absolute terms by 19.5%, GVA increased in absolute terms by 10.3% and total employment decreased by 7.3%.

Economic benefits – manufacturing

For every $1 million that is new or retained manufacturing business for Australia, the following effects flow through the economy:

- $713,400 worth of gross value added (GVA) generated
- 6 full-time equivalent jobs created
- $64,900 worth of welfare expenditure saved
- $225,300 worth of tax revenue generated.

Produced by Industry Capability Network (ICN) from data compiled by AEC Group Limited (AECgroup)

ICN
Industry Capability Network

The significance of services

The Australian services sector makes up more than half of Australian gross domestic value added (GVA). The services sector has been affected by the global financial crisis (GFC), the strengthening of the Australian dollar, and rising wages. Retail services have experienced increased competition due to changing spending habits and the affects of the GFC.

Over the last four years, the services sector contributed an average of 52.7% to GVA and an average of 76.2% of total employment in Australia. From 2006-07 to 2009-10, turnover in the sector grew at an average of 3.8% per annum, employment increased by 7.9%, wages rose slightly by 1.1% and labour productivity grew by 6.7%

Economic benefits – services

For every $1 million that is new or retained services business for Australia, the following effects flow through the economy:

- $837,500 worth of gross value added generated
- 8 full-time equivalent jobs created
- $85,300 worth of welfare expenditure saved
- $264,500 worth of tax revenue generated.

Flow-on benefits to the wider economy

Every dollar spent on new or retained business in the services and manufacturing sectors creates benefits to not only those sectors but also the wider Australian economy. Industries that meet the consumption demands of the manufacturing and service sectors also benefit which results in more jobs, wages and salaries.

For full copies of the AECgroup reports go to www.icn.org.au or call your local ICN office on 1300 961 139.

Produced by Industry Capability Network (ICN) from data compiled by AEC Group Limited (AECgroup)

ICN
Industry Capability Network