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# CONSTRUCTION ENGINEERING AUSTRALIA

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**CONSTRUCTION  
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**CRYSTAL  
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## AQUATIC FACILITIES SPECIAL



# ACRS 2-STAGE CERTIFICATION

**SO YOU KNOW YOU'RE GETTING THE STEEL YOU SPECIFIED**

**A**s we all know, not all building materials are manufactured, processed, or fabricated to the minimum performance requirements of Australian and New Zealand Standards. So, when designers and procurement officers specify steel to particular standards, steel suppliers, builders, and building surveyors need to actively confirm that the steel they receive and sign off for or certify as meeting Regulations, is not just the right steel - they equally need to confirm that this conforming steel was cut, bent, and welded so it is still compliant when it is delivered and installed on the project.

Philip Sanders the Executive Director of ACRS, explained:

"You can take the best steel in the world and easily ruin it by inappropriate processing or fabrication - and if the steel was the wrong steel in the first place, the best steel processing, or fabrication won't make it right."

Using steel certified through ACRS' integrated, 2-stage certification system takes away that problem.

The ACRS 2-stage certification system was adapted for Australian and New Zealand conditions from European best practice for high-risk building materials. The ACRS system certifies both the steelmaking at the mill and again the last point at which the steel properties can be

changed before delivery and installation in the structure. This type of system is called a "bookended" system and is far more robust than a single point certification of either just the mill, or just the processor or fabricator (or of one stage being certified by one certifier and the second stage by another).

As ACRS steel certification covers both ends of the supply chain, the ACRS 2-stage system inherently includes full materials traceability - not just for reinforcing and prestressing steels, but also for structural welded sections manufacture, covering CC1 to CC3 to AS/NZS 5131, which are increasingly used in construction.



## ACRS MAKES IT EASY

A simple check for the ACRS logo on the markings or tags and labels on the delivered material, matched to the supplier's ACRS certification - which can be checked and validated by visiting the ACRS website ([www.steelcertification.com](http://www.steelcertification.com)) - provides easy and stringent validation that the materials being used meet both the relevant materials and design and construction Standards, as well as the building Codes or government specifications.

ACRS Stage 2 certification of the reinforcement processor, or welded structural section fabricators is the vital link between the steel producer (ACRS Stage 1 certified) and the end-user on the construction site, ensuring that:

- All steel is from an approved source and satisfies the requirements of the relevant product Standard.
- Steel is correctly handled and processed so materials performance is not compromised during subsequent rebar processing or steelwork fabrication.
- The necessary procedures and documentation are in place to ensure full product traceability from steel mill through materials scheduling and fabrication to delivery to site.

Regrettably, ACRS is approached for help with too many examples of insufficient care in purchasing and later signing-off delivery of materials. This problem has been reported to ACRS on industrial building projects, multi

storey buildings, and even bridge projects.

Whilst the majority of projects manage procurement and supply well and are aware of the pitfalls, ACRS now often hears the excuse that just-in-time (JIT) supply practice means that even if the contract and specification calling up AS/ NZS Standards with ACRS certification is available months, or even more than a year ahead, the steel is ordered just a short time before delivery is required to site "...and we had to take what steel we could get to keep the contract moving".

Some suppliers and distributors have told ACRS that they often don't get the original contract specification, or were never informed ACRS certified material was a contract requirement.

Although not a uniform practice by any means, it is happening far more often than it should. The solution is simple: Inform the steel supplier, processor, or fabricator, and check on receipt that ACRS certified steel has been supplied.

This growing problem in some areas of the supply chain is why, in July 2019 and following in-depth development with industry, ACRS released a *Steel Traceability Scheme* offering steel and steel product suppliers (such as rebar coupler and structural bolt suppliers), distributors, and steelwork fabricators the opportunity to demonstrate the same rigour in product traceability as provided by ACRS Stage 1 and Stage 2 certificate holders.

For more details, contact ACRS at: [info@steelcertification.com](mailto:info@steelcertification.com)

## WHY IS ACRS INDEPENDENT 2-STAGE STEEL CERTIFICATION SO IMPORTANT?

Philip Sanders, speaking on behalf of the Australasian Certification Authority for Reinforcing and Structural Steels ("ACRS") says: "You cannot just accept certification of the steel mill (Stage 1). You need to know what arrives on site. Is all the steel you expect? If it is, has it then been properly processed or fabricated?"

"Historically, Australia and New Zealand have accepted a more relaxed product verification regime at the processor or fabricator (Stage 2) level than most developed countries, and these less onerous requirements have saved builders significant time and money in checking and testing costs."

"However, in today's dynamic market with global sourcing and supply, we can only maintain our traditional approach by the use of expert and independent certification systems to provide the minimum necessary assurance of both steel manufacture and equally the supply of that steel to site," he added. "If not, as shown increasingly over the past few years, there will be more poorly performing structures as non-conforming materials are substituted for those the customer, and the public have been led to expect."

"ACRS was set up to do this in 2000, based on the system set up in the EU and UK - who were some of the first to experience these problems," Philip Sanders explained. "In the last 20 years, ACRS has developed and expanded this system to meet the specific needs of Australian and New Zealand construction industries government and public."



## WHY YOU NEED BOTH ACRS STAGE 1 & STAGE 2 CERTIFICATION

### ACRS End-to-End Traceability

When we say 'end-to-end', we're talking about the ability to track information on all raw materials, components, and associated processes across the supply chain, including the design, manufacturing, supply, and delivery phases.

'End-to-end' traceability is part of the ACRS product certification scheme's cornerstone 'All Products, All Locations rule' which has provided market confidence in steels supplied under ACRS product certification for nearly 20-years.

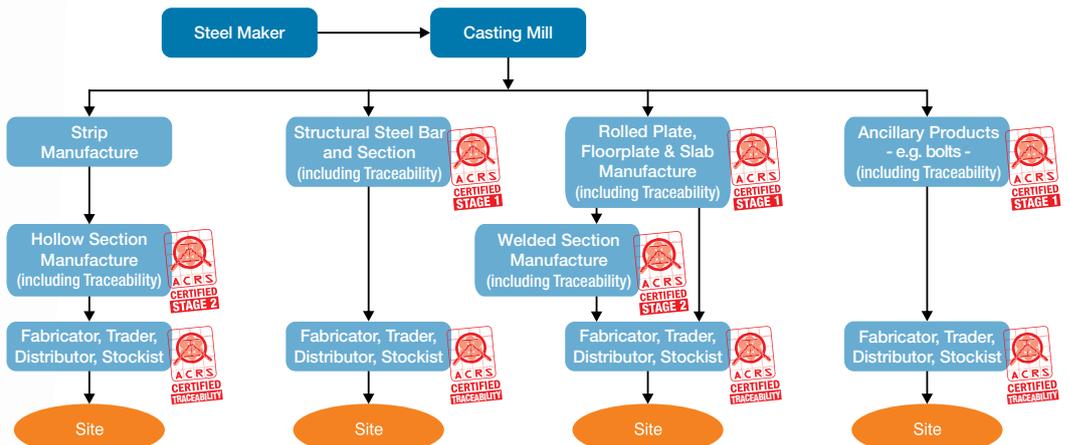
### The ACRS 2-stage 'Chain of Certification' – certifying steel from mill to site

Steels supplied to AS/NZS Standards can be made non-conforming by processes as cutting, bending and welding.

So, if you only have certificates from the steel mill, it means you only have half the story. The ACRS steel scheme certifies both the steel mill (Stage 1) and steel reinforcement ("rebar") processor, mesh manufacturer, or structural welded section manufacturer - providing a rigorous mechanism covering the two critical aspects of steel supply, and the traceability of materials between them. This 'chain of certification' provides a vital link between the steel manufacturer, the steel supplier, and the construction site.

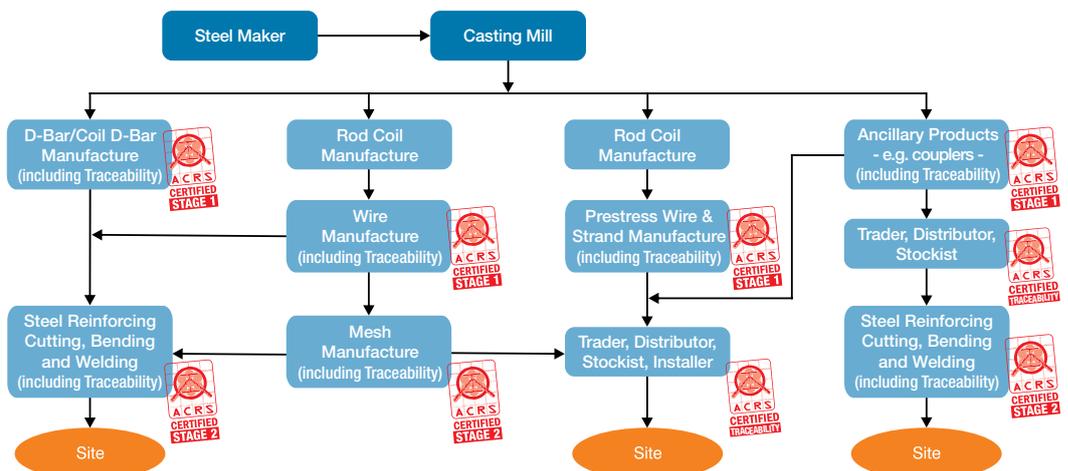
**For your steel to be ACRS certified, it must be covered by both ACRS Stage 1 and ACRS Stage 2 certification. Any break in the 'chain of certification' between the steel mill and the processor or fabricator means the steel delivered to site is not ACRS certified.**

## ACRS Structural Steel Chain of Certification



For structural steels, ACRS certifies BOTH the steel mill that manufactures the steel AND the manufacturer or fabricator of any welded structural steel sections. Verification of the outputs of both these supply streams is essential for any structural steels and steelwork claiming to conform with AS/NZS 5131. ACRS has worked with the ASI to deliver "end-to-end" certification from steel mill to construction site via the ASI's Steelwork Certification Australia fabricator scheme to provide consumers confidence in structural steelwork from the purchase of verified and traceable ACRS certified structural steels, through the supply chain to ACRS certified welded section fabricators and then through supply, delivery and erection of all finished fabricated steel on the project site.

## ACRS Reinforcing Steel Chain of Certification



For reinforcing steels, ACRS certifies BOTH the steel mill that manufactures the steel AND the steel reinforcement processor and mesh supplier. Verification of the outputs of both these supply streams is essential for any steel reinforcing materials claiming to conform with the Standards.

## SUBSTITUTION OF SPECIFIED STEELS BY UNVERIFIED STEELS

Philip Sanders explains there are two basic causes driving steel substitution, both often linked to the (usually) lower cost of unverified steels compared to steels meeting AS/NZS Standards:

**1. Deliberate substitution:** (e.g. supplying overseas grade steels such as BS-EN or more frequently these days, Chinese Standards' steel grades that do not meet minimum AS/NZS requirements). Product swapping is very common in the supply prestressing strand and structural steels – both manufactured steels and finished fabricated steels. Even worse, we are now seeing supply of completely different products altogether. For instance, ACRS has recently assisted an engineer who specified hot rolled structural sections to be supplied to AS/NZS 3679.1 and ACRS certified. Instead, what arrived on site were welded steel beams manufactured from plate made from overseas steel grades not meeting AS/NZS Standards. In another case, cold-formed steels were supplied instead of the specified hot rolled structural sections.

**2. Mistaken substitution:** Many mills manufacture different products to different standards to satisfy their international customers, and these variable products are widely available in the supply chain. Some suppliers buy similar looking product manufactured by the same company but to different country's standard (usually as it is cheaper) and supply this material instead of the specified, ACRS certified product. As a recent example, ACRS was approached over structural steels manufactured by an ACRS certified company, but the supplied material did not have the expected ACRS markings, labels, or documentation. On investigation, ACRS and the engineer discovered that the steel, although very similar in size and profile, had been made to a different steel standard for use in a third-country, and never intended for use in Australia or New Zealand.

Please contact ACRS, free of charge, if there is any aspect of steel specification, procurement, and supply that your team would like to discuss. All enquiries are confidential. Email: [info@steelcertification.com](mailto:info@steelcertification.com) or call +61 2 9965 7216.

## BUSINESS AS USUAL WHEN BUSINESS IS UNUSUAL

**ACRS Executive Director, Philip Sanders, confirms continuation of ACRS product certification for conforming steel producers and suppliers, and the maintenance of verified steel supply during the COVID-19 pandemic.**

ACRS is very pleased to confirm that its operations have not been interrupted by the current crisis, and ACRS certificates remain fully valid. Philip Sanders says; "We are working closely with our institutional stakeholders to deliver ongoing assurance that the wide range of manufactured and processed steels supplied under ACRS certification continue to meet the requirements of both applicable AS/NZS Standards and related Government-based specifications."

To limit the effects of the current restrictions and speedily resume normal operations upon the lifting of travel restrictions, ACRS has developed detailed, emergency provisions which allow ACRS to continue remote assessment of some site processes and systems coupled with increased market testing of materials, where required, to maintain rigorous and effective certification at the levels expected and required by users of ACRS certificates for the duration of this emergency.

"For all involved in the supply chain, we fully understand every company has its own sourcing policies and requirements, and ACRS will be working closely with you to maintain the highest possible levels of purchasing flexibility, yet not reduce the

rigour of the ACRS certification system and its value to certificate users." Sanders says.

ACRS' temporary emergency measures allow steel purchasers, specifiers and consumers relying upon ACRS certificates to remain assured that the manufacturers and suppliers currently supplying to their projects remain ACRS Certified.

ACRS' uninterrupted certification services mean that you will continue to enjoy the maximum possible choice of independently verified conforming steels. Similarly, ACRS certification will continue to assist suppliers, steel users, and consumers avoid receipt of non-ACRS Approved materials, or mixed supply of ACRS Approved and non-ACRS Approved materials through this difficult time, and you can continue to verify this is the usual way via the ACRS website.

Full details are available on the ACRS website at [www.steelcertification.com](http://www.steelcertification.com).

For any enquiries, please email ACRS at: [info@steelcertification.com](mailto:info@steelcertification.com)



# THE ACRS DIFFERENCE

## ✓ Independent

ACRS is a steel certification scheme for steel users, and independent of product suppliers. So you know ACRS is working for you;

## ✓ Expert

All ACRS auditors and technical staff are qualified and experienced in the manufacture of the materials ACRS certifies. So with ACRS you know certified materials have been audited and approved by people who understand them;

## ✓ Comprehensive

ACRS certifies all steel products, from all manufacturing locations to all scheme standards. So with ACRS you know all listed products are covered, not just some;

## ✓ Rigorous

ACRS audits every major site at least once every year. So with ACRS you know certificates are up to date;

## ✓ Verified

During every audit, ACRS takes samples at random from standard production and checks production data every three-months. So with ACRS you know supplied materials are assessed regularly;

## ✓ Continuous

ACRS uses only selected laboratories to ensure accurate results independent of the supplier, and matches these with the supplier's production data to monitor the supplier's consistency.



JAS-ANZ



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ACRS - Independent, Expert Third Party Certification & Verification of Reinforcing, Prestressing and Structural Steels for Compliance with Australian and New Zealand Standards