

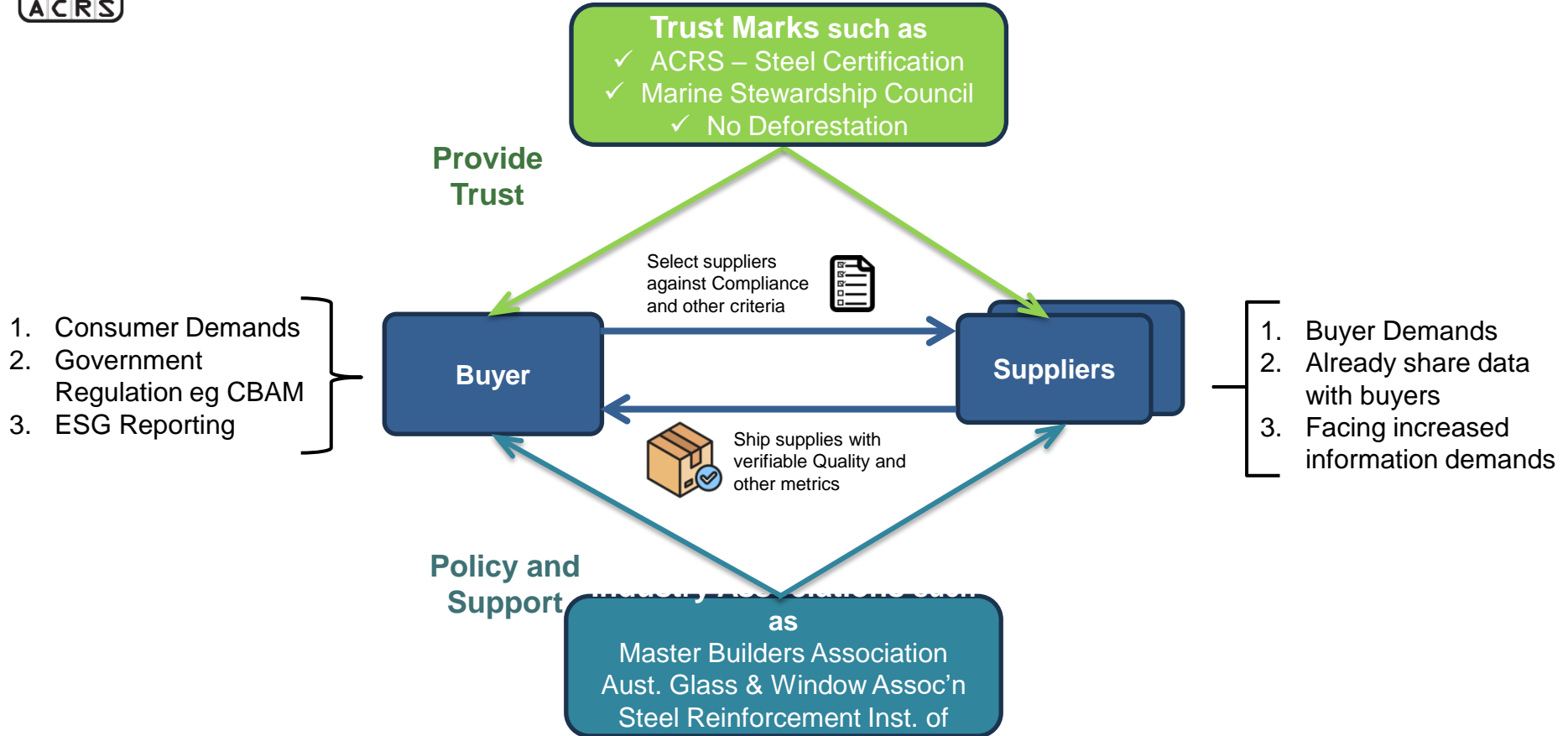
ACRS Digital Verification and Traceability Project

Dr Andrew Wheeler

ACRS ([Steelcertification.com](https://www.steelcertification.com))



The Exchange Between Buyer and Suppliers





Buyer

- Specifies what is required
 - Fit for Purpose
 - Compliant
 - Meet specification
- Demonstrate compliance
 - Meet Standards
 - Compliance Mark
 - Third-party assessments
 - Expert opinions
- Complex supply chains





Mill Test Certificates



南京钢铁股份有限公司 (地址: 南京市六合区大厂卸甲甸)
 NanJing IronSteel Company Limited
 TEL: +86-25-57076980 FAX: +86-25-57076980
 Email:ng319@nsteel.com.cn
 质量记录编号: JL180073/b 230509P00043

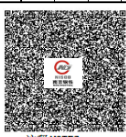
质量证明书

MILL TEST CERTIFICATE

客户名称 SOLD TO	南京钢铁集团国际经济贸易有限公司	客户编号 CUSTOMER NO.		产品名称 PRODUCT	热轧钢板 Hot rolled steel plate
收货单位 SEND TO	To Whom It May Concern	客户采购案号 CONTRACT NO.		合金结构钢 Alloy structural steel	
技术条件 SPEC.	AS/NZS 3678-2016 : 350L15 AS1391 and AS1544.2	发货通知单号 REFERENCE NO.	P23050033	证明书编号 CERTIFICATE NO.	230509P00043
许可证号 APPROVAL CERT. NO.		合同编号 CONTRACT NO.		订单编号 ORDER ITEM NO.	
		交货状态 DELIVERY CONDITION	AR	车船号码 TRAIN/SHIP NO	苏C2215
				证明书日期 T/C ISSUE DATE	2023/05/28

序号 NO	订单 项次 ITEM NO	产品编号 PRODUCT No.	试片编号/批号 SAMPLE/LOT NO.	规格 (mm) DIMENSIONS	数量 QTY	重量 WEIGHT t	分析 区域 A-A	化学成分 CHEMICAL ANALYSIS (wt%)															
								C	Si	Mn	P	S	Alt	Nb	V	Ti	Cu	Cr	Ni	Mo	RE	Co	B
								X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹	X10 ¹
01	001	20303560741826	23305111020252	8.00*2200*5800	5	4.005	L	16	20	138	13	4	32	11	1	3	2	3	0.3	40	15	36	
02	001	2030356074183	23305111020252	10.00*2200*5800	15	15.030	L	16	20	138	13	4	32	11	1	3	2	3	0.3	40	15	36	
03	001	20303560741485	23305111020267	12.00*2200*5800	10	12.020	L	16	20	138	13	4	32	11	1	3	2	3	0.3	40	15	36	
04	001	20303560741381	23305111020268	16.00*2200*5800	20	32.060	L	16	20	138	13	4	32	11	1	3	2	3	0.3	40	15	36	
05	001	20303560741393	23305111020271	20.00*2200*5800	25	50.075	L	16	20	138	13	4	32	11	1	3	2	3	0.3	40	15	36	

序号 NO	拉伸试验 C.L. 试			AO 落锤 试验 位置	BO 冲击 试验 位置	B.T 冲击 试验 位置	CO 冲击 试验 位置	CA 冲击 试验 位置	CA 冲击 试验 位置	CA 冲击 试验 位置	CAve 冲击 试验 位置	ReH MPa	Rm MPa	E %	
	屈服 T.S.	抗拉 T.S.	伸长 E.L.												
	值	值	值												
01	420	545	34.0	THD5	THD5	OK	TZD1	-15	127	113	116	119			
02	420	545	34.0	THD5	THD5	OK	TZD1	-15	127	113	116	119			
03	420	545	34.0	THD5	THD5	OK	TZD1	-15	127	113	116	119			
04	420	545	34.0	THD5	THD5	OK	TZD1	-15	127	113	116	119			
05	420	545	34.0	THD5	THD5	OK	TZD1	-15	127	113	116	119			



交货状态:热轧-rolled
 A-A分析区域 Analysis region
 L-降低成分 Lower composition
 C-低硫成分 Low sulfur composition
 D-L位置方向:纵向/Longitudinal,
 U-横截面/Transverse Section;M-厚度方向/Through
 thickness;T-头部,W-尾端;A-任意位置/Anywhere;
 B=1/3厚度;F=1/4厚度;1/4厚度;1/3厚度;
 C-中心/Center;1-厚度<8mm,2-8mm表面,
 3mm<厚度<20mm,4-20mm,5mm
 below surface;20mm<厚度<32mm,表下3mm.
 20mm<t<32mm,3mm, below surface:
 2=1/3厚度,1/3thickness,3=1/4厚度,1/4thickness,
 1=1/2厚度,1/2thickness,5=全厚度 Through thickness
 等/Equal bending/等角弯曲/Equal angle=100°
 等心直径/Bending diameter=Ds
 at=test piece thickness
 冲击/Impact:缺口形状 Notch shape=V
 试样规格 Test piece size: S=100x5mm
 CE=C*Ms/6*(Cr+V+Mo)/S*(Cu*Ni)/15
 CoF=Nb*V*Ti
 AO=tensile test sample location
 C.L.Gauge Length/拉伸标距 A:A:LO=65 V:SO mm
 Y.S=Yield Strength
 T.S=Tensile Strength
 E.L=Percentage Elongation After Fracture
 BO=Bend test sample location
 B.T=Bend Test
 CO=Charpy Impact Test sample location
 CA=Charpy Impact Test Temp
 CA=Charpy Absorbed Energy
 CAve=Charpy Absorbed Energy Ave.

注释/NOTES



NISCO have ISO 9001:2015 certificate No.022194303388L from GBC. Laboratory accreditation certificate registration No. CNAS L3039
 0 is a residual element, not artificially added during production process. Production process:SDP+LPW+VCR. Testing specifications:AS 1391 and AS 1544.2
 符合EN 10204:2004 3.1要求。镇静钢ACCORDING TO EN 10204:2004 3.1 Fully killed Steel
 产品编号第0位为冶炼炉号:The first 0 digit of product No. are heat number 外观和尺寸检验均合格 VISUAL INSPECTION (SURFACE) AND DIMENSION CHECK:OK

兹证明本文所列产品,均依材料标准制造及试验,并符合标准及订单技术要求,不含有辐射元素。
 WE HEREBY CERTIFY THAT MATERIAL DESCRIBED HEREIN HAS BEEN MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE MATERIAL SPECIFICATION & P.O. THE PRODUCTS DON'T CONTAIN RADIOCHEMICAL

质量负责人 CHIEF OF INSPECTOR	检验站站长 INSPECTION STATION	SURVEYOR
320-		



Compliance Certificates

VALID TO 31 DEC 2024
The document is uncontrolled when printed
View original at www.steelcertification.com

2024

DECEMBER



www.steelcertification.com

Australasian Certification Authority for Reinforcing and Structural Steels Ltd
Products assessed by ACRS to AS/NZS 4671

To be read in conjunction with
Certificate Number: 231128



SHANDONG IRON AND STEEL CO LTD, LAIWU COMPANY
LAIWU, SHANDONG, CHINA

has satisfied the Authority that it complies with the ACRS Quality and Operations Assessment Procedures. Where appropriate, it manufactures products as indicated by "s" below and is permitted to use the ACRS mark with these products.

Products manufactured:

ACRS 4671 Grade	Product
Bar in coils	12, 16 mm ✓
	20, 24, 28 mm ✓
	32, 36 mm ✓

Bar Markings:




Grade & Quality Class: Shanding Iron Marking



www.jas-anz.org/registrant

2 of 2

2024
VALID TO 15 Eleven
Australasian Certification Authority for Reinforcing and Structural Steels Ltd



PRODUCT CERTIFICATION
www.steelcertification.com

CERTIFICATE OF APPROVAL
Product Conformity Certification

This is to certify that
SHAANXI BAIZHUO IRON AND STEEL CO.,LTD
at
Lot 1236, Prai Industrial Estate,
Peral Pitu Pinang Malaysia 13600




has satisfied the Authority that it complies with the rules of the ACRS Product Certification Scheme and the relevant ACRS Quality and Operations Assessment Procedures. Where appropriate, and as listed below, it has further satisfied the Authority that it manufactures and/or supplies products that conform with the Standards listed below, and is entitled to use the ACRS mark in relation to the products covered by this certificate.

Reinforcing Bar Manufacture of steel to AS/NZS 4671:2019

SCOPE OF CERTIFICATION
Products listed on this Manufacture Certificate may be relied upon as having the benefit of ACRS Product Certification Scheme certification after any cold working only if cut, or bent, or welded by an ACRS certified processor. For Approval of process of reinforcing bar, refer to the bar processor's ACRS Fabricated Product certificate. This certificate remains the property of the Authority and is issued subject to the Regulations of the Authority.

CERTIFICATE NUMBER	VERSION	FIRST APPROVAL	ISSUE DATE	EXPIRY DATE
100501	1	20 April 2010	16 October 2024	05 December 2024

SIGNED FOR ACRS



Andrew Wheeler,
Executive Director
AUSTRALASIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEELS LTD | ABN: 40 096 692 545 | PO BOX 1369, CROWS NEST NSW 1585, AUSTRALIA.

To check the validity of this certificate please scan the above Static QR Code with the ACRS Cloud App or visit www.steelcertification.com

Cert. Ref: 039-01 103001



www.jas-anz.org/registrant
Accreditation certificate number Z521212AC

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Page 1 of 2

PRINTED ON 16/10/2024 FROM ACRS



Dieselgate





Providing Confidence



Third Party

Provide accreditation

“We do not certify or inspect organisations, products or people; rather, we accredit the bodies that do.”

- Management Systems
- Product Certification

“JAS-ANZ do not certify schemes or products but accredit the certifiers.”



Providing Confidence



- ***NATA Accreditation***
 - ✓ *Meets requirements outline in ISO/IEC 17025 or 17020*
 - ✓ *Undertakes regular audits internally and by NATA auditors*
 - ✓ *technical experts in the field are involved in audits*
 - ✓ *Accredited to testing as listed on their scope*
- ***Provide Test Certificates***

“A test report is not third-party certification. The test report basically states that the prototype sent to the laboratory on the day passed testing but there are no guarantees this product is what the factory will continue to manufacture and supply,”

Sam Guindi



Product Certification

- Products vary significantly
- Importance / application
- Replaceability/cost of replacement
- Generic product certification is no codified
- Australian and international standards outline testing requirements
- Material standards outline additional Test requirements

“Schemes developed by both regulatory Authorities and Certifying bodies.”





Product Schemes

Certifying Bodies

Schemes developed by Certifying Bodies broadly fall into four categories:

- i. producers have facilities to produce to the required quality.
- ii. producers have facility to produce to the required quality and at time of audit was verified.
- iii. producers have facilities to produce to the required quality and are regularly audited and verified.
- iv. producers have facilities to produce to the required quality and are regularly audited by auditors with technical expertise in the field and carry out independent testing.



Product Certification





Product Certification – What to look for

1. Independence -Who is the Driver of the Scheme
 - Supplier or Customer
2. Relevance
 - Product or Management Scheme
 - Covers Performance Requirements
3. Regularity and rigour of audits
 - Regularity of audits and technical reviews
 - Expertise of audit staff
4. Demonstration of conformance
 - ✓ Frequency of testing
 - ✓ Independent testing
 - ✓ External Review of results for compliance
5. Traceability



Traceability

What is Traceability

- the ability to discover information about where and how a product was made .
- traceability is maintained through manufacture and supply.
- A requirement of numerous material and product Standards
- Increasing important when considering ESG



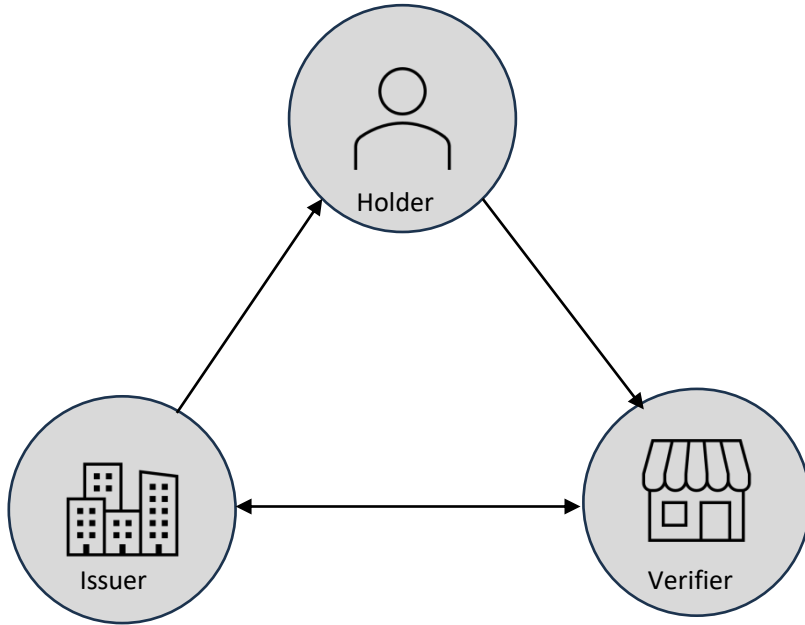


Confidence in Compliance

- Identified Issues
 - Fake Certificates
 - Fake Credentials
 - Inappropriate Certification Schemes
- Progressing Forward
 - Digital Certification
 - Verifiable credentials
 - Trust Anchors



Verifiable Credentials





Trust Anchors

Two-Factor Authentication

Factor 1 – Username and Password

Factor 2 – Authentication through verifiable source



Authentication
App

or



Text Code



ACRS Cloud

- Trusted rigorous scheme
- Product certification ISO/IEC 17065
- JASANZ Endorsed Scheme
- JASANZ Accredited Body
- Realtime - Verifiable credentials



ACRS Cloud – Certificate Verification

2024
VALID TO 31 Dec
Australasian Certification Authority for
Reinforcing and Structural Steels Ltd




PRODUCT CERTIFICATION
www.steelcertification.com

CERTIFICATE OF APPROVAL

Product Conformity Certification

This is to certify that
Bestbar (NSW) Pty Ltd



at
**Building 2 Nexus Industry Park, 43/47 Lyn Parade
Prestons NSW Australia 2170**

has satisfied the Authority that it complies with the rules of the ACRS Product Certification Scheme and the relevant ACRS Quality and Operations Assessment Procedures. Where appropriate, and as listed below, it has further satisfied the Authority that it manufactures and/or supplies products that conform with the Standards listed below, and is entitled to use the ACRS mark in relation to the products listed on this certificate.

SCOPE OF CERTIFICATION

Processing and distribution of carbon steel bars and distribution of mesh

Products listed on this Manufactured Product certificate may be relied upon as having the benefit of ACRS Product Scheme certification after any subsequent processing only if cut, or bent, or welded by an ACRS certified processor. For Approval of processed reinforcing bar, refer to the bar processor's ACRS Fabricated Product certificate.

This certificate remains the property of the Authority and is issued subject to the Regulations of the Authority.

CERTIFICATE NUMBER	VERSION	FIRST APPROVAL	ISSUE DATE	EXPIRY DATE
61201	1	01 December 2006	01 January 2024	31 December 2024

SIGNED FOR ACRS



Andrew Wheeler,
Executive Director

AUSTRALASIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEELS LTD | ABN: 40 096 692 545 | PO BOX 1369, CROWS NEST NSW 1585, AUSTRALIA

To check the validity of this certificate please scan the above Static QR Code with the ACRS Cloud App or visit www.steelcertification.com

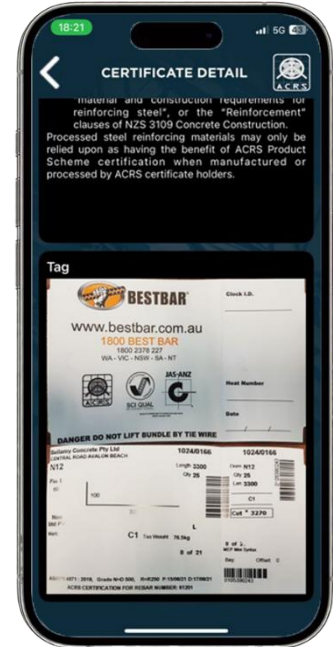
Cert. Ref.: 009-07 61201 |



www.jas-anz.org/register
Accreditation certificate
number Z5221212AC

This document is uncontrolled when printed View original at www.steelcertification.com

Page 1 of 2





ACRS Cloud – Batch Verification

Stay Steel Safe
steelcertification.com

Specify ACRS Certified steel to ensure conformance with material standards

ACRS Cloud App

download free

Australasian Certification Authority for Reinforcing & Structural Steels

+61 2 9965 7216
info@steelcertification.com

Scan QR codes on product labels to access instant, trusted, real time credentials.

- ✓ verify suppliers' certification & scope
- ✓ verify batch-level conformance & traceability

Try ACRS Cloud Now!

Scan Product Cert QR for scope & accreditation

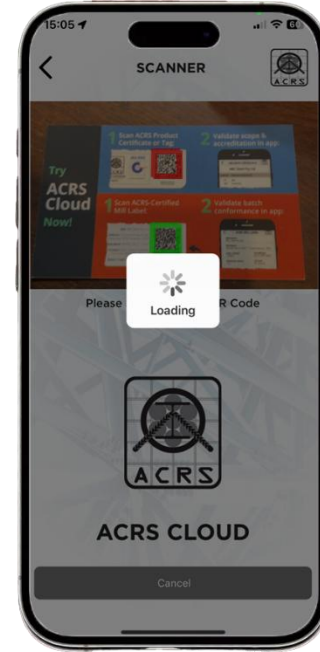
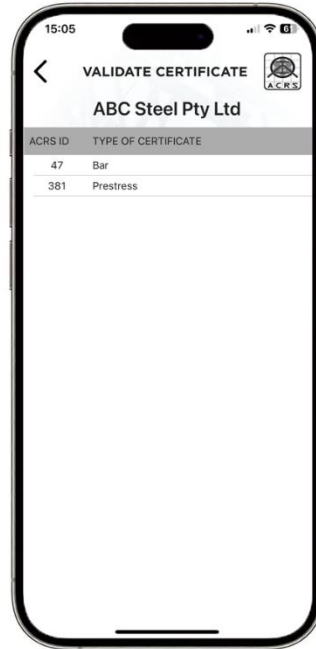
Scan Mill Label QR for batch details

JAS-ANZ
ACRS
CERTIFICATION
694321

Verify with the ACRS Cloud App

MIR: ABC Steel Pty Ltd
Address: 55 Steel Products Rd,
Somershire, NSW Australia, 2000
Standard: AS/NZS 4672.1:2007
Product: Plain 7 wire ordinary,
12.7mm, 1870 MPa, Relax 2
Batch / Cast / Heat #: 123456

Verify with the ACRS Cloud App

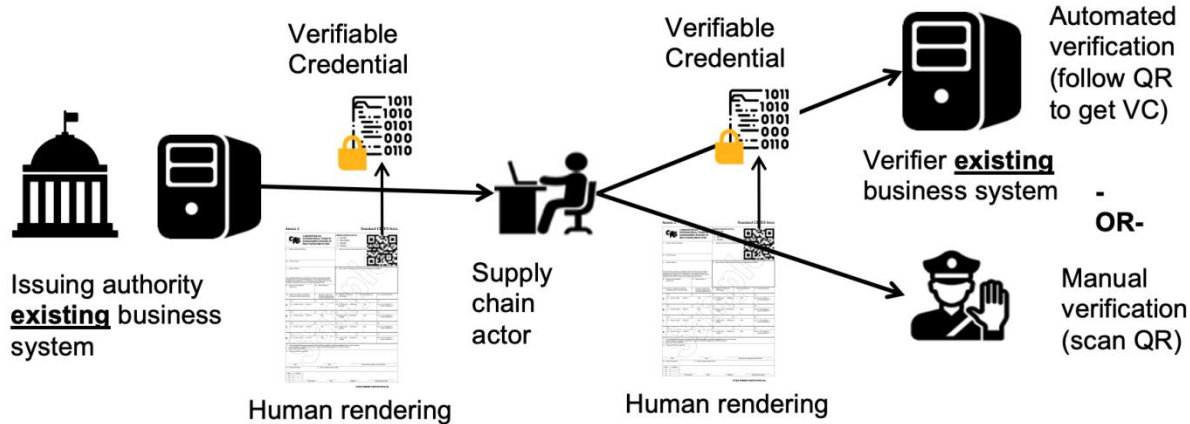




Architecting Trust

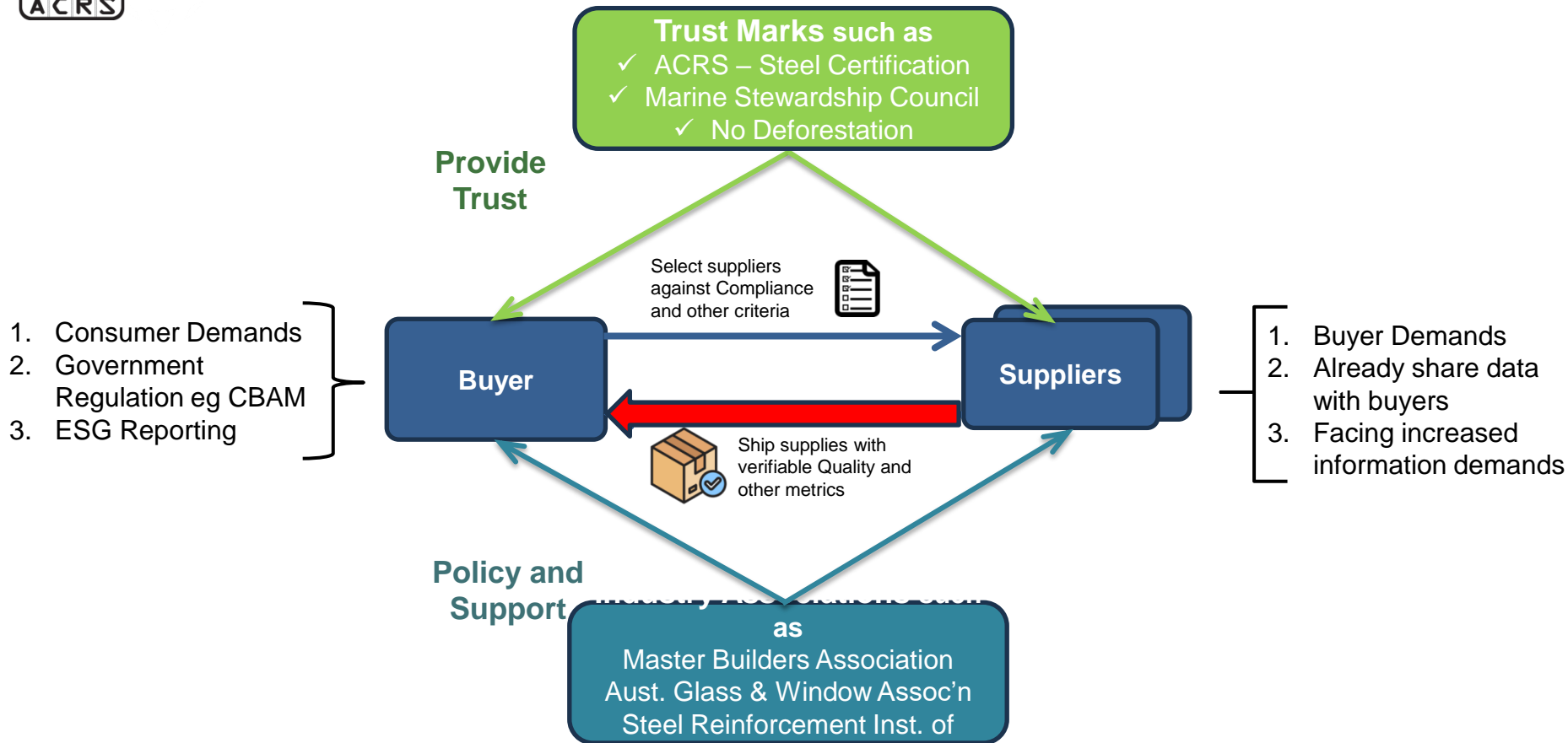
- Typically it is a 'bolt-on' to existing technology
- It is paper compatible (ie QR code)
- Selective redaction, tamper proof, activate additional value to the ecosystem

Issuer → **Holder** → **Verifier**





The Exchange Between Buyer and Suppliers





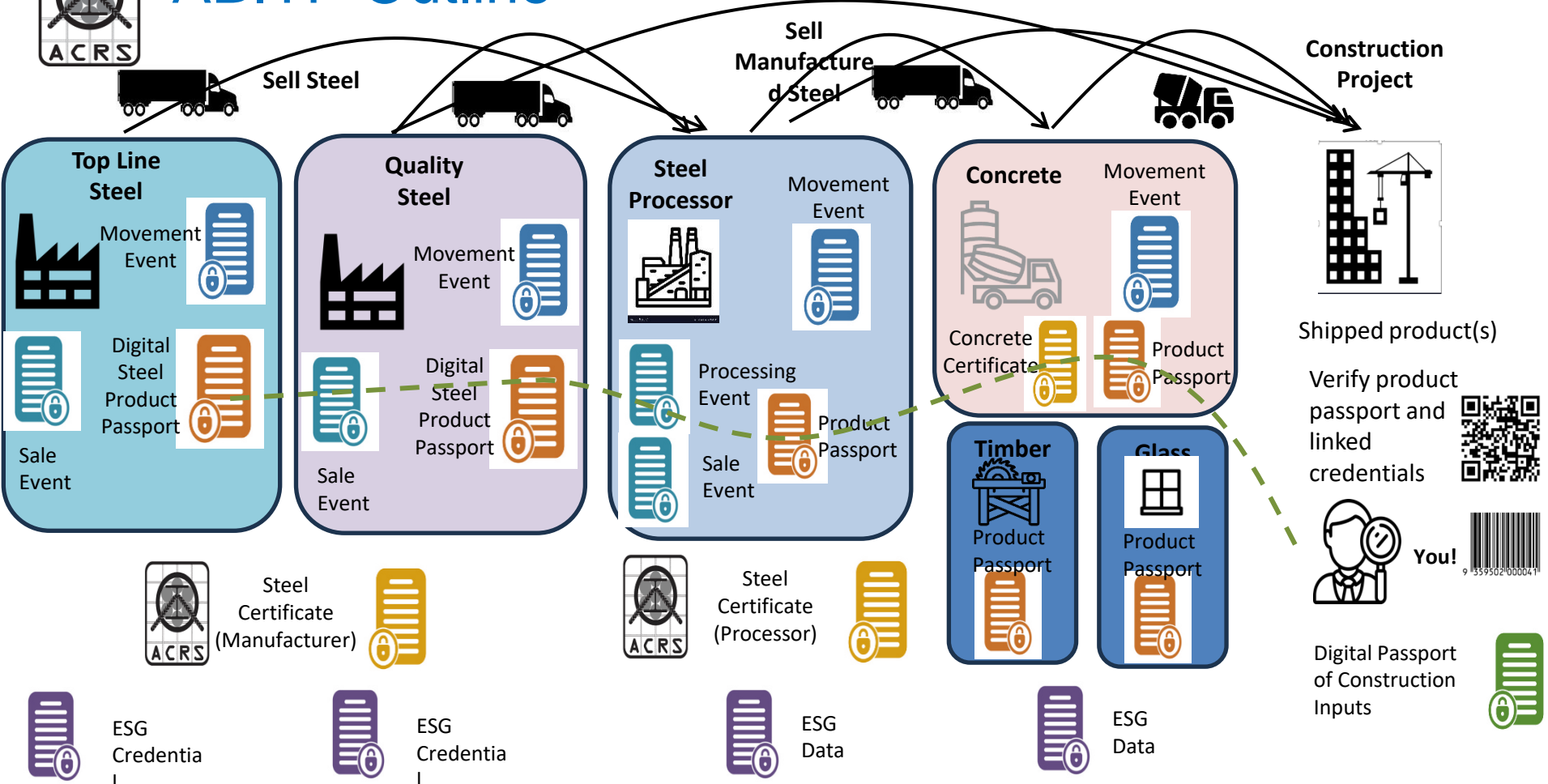
Architecting Global Digital Trust

- International progress around supply chain traceability
 - UNCEFACT, W3C, GS1 etc



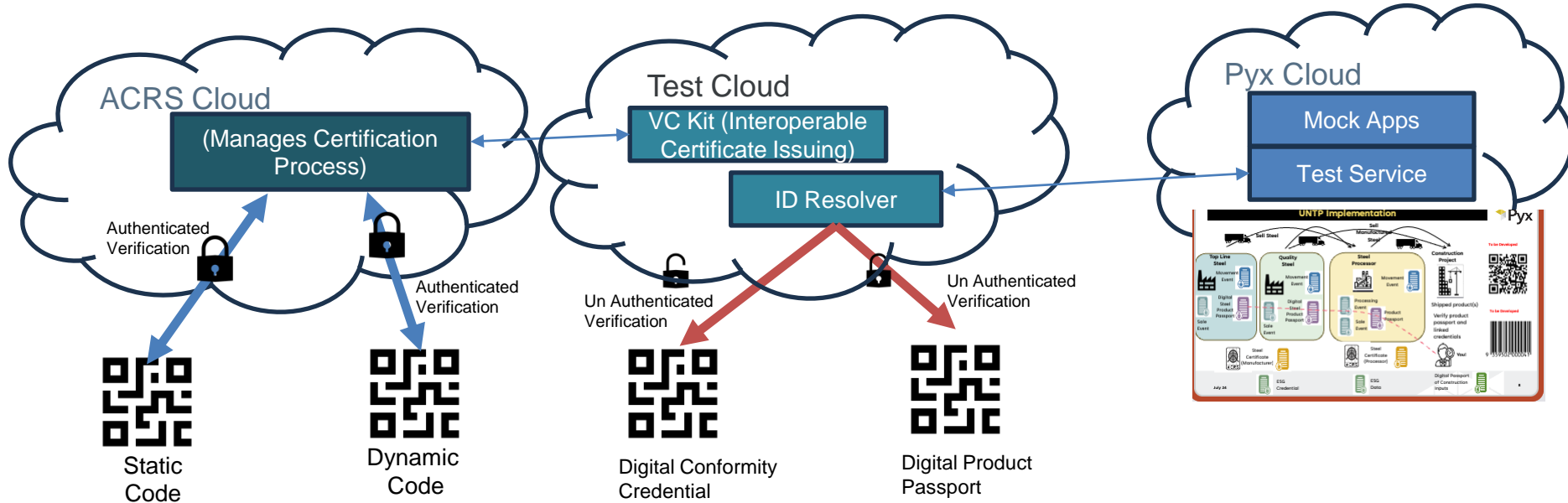


ABITP Outline





Extending ACRS Cloud – Conformity Credential Issuing



Excellent option for ACRS cloud customers that already have login details.

Enables ACRS Cloud customers to see the traceability details about steel products

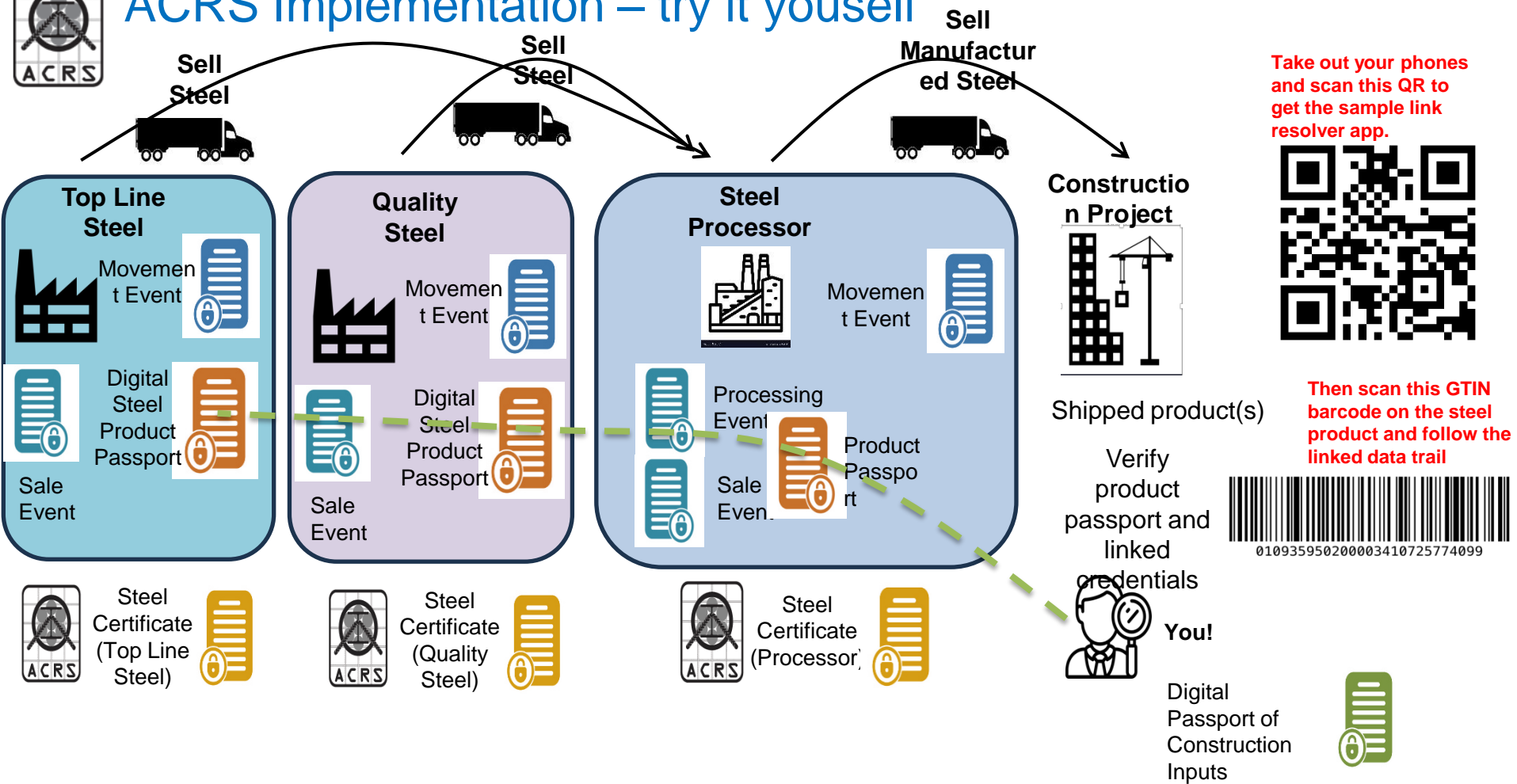
Issued to larger Steel Manufacturers so that they can include certification in their digital product passports

Value add offering to smaller steel manufacturers – so that they can issue their own DPP's

Provides reference implementation and Australian Building Industry Transparency Protocol (ABITP) testing



ACRS Implementation – try it yourself



Steel Compliance Certificate

Conformity credentials are usually issued by independent third parties and provide a trusted assessment of product ESG performance against credible standards or regulations

Structural Steel Certification

Verifiable credential 

[View details >](#)

Product composition

A complete list of materials that make up the composition of this product.

100% ID steel
Steel

[AU >](#)

Traceability

Traceability events specify the “what, when, where, why and how” of the products and facilities that constitute a value chain.

transformation

[View](#)

Product information

Copyright © 2024

 acrs.pyx.io

Traceability Certification Scheme

Certificate number D1015

Version 1.0

First approval 2000-01-01

Issued 2024-03-05

Expires 2024-12-31

Evidence

Traceability Evidence Compliance evidence
[AS/NZS 4671:2001](#)
[AS/NZS 3678:2011](#)
[AS/NZS 1594:2002](#)
[AS/NZS 3679.1:2010](#)

CERTIFICATE ISSUED BY



AUSTRALASIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEELS LTD

Copyright © 2024

 acrs.pyx.io

Traceability Capability

TRACEABILITY EVENT

Transformation

EVENT ISSUED BY

Industry Steel

Business identifier 55 126 272 964

Location Wetherill Park, NSW

Identity verification 55 126 272 964

[Other evidence !\[\]\(b41b71011a8b855bc1d1430aed0f7da1_img.jpg\)](#)

Event description

Event ID f951479e-a6de-40cb-be05-911678b0c3ea

Event type observe

Description Assemble Pile Cage

Time and date 2024-07-15T11:18:49.156Z

Copyright © 2024

 acrs.pyx.io

Process type Assembly

Transformation

010935950200003410725774099 OUTPUT

Pile Cage
3M Pile Cage

Sustainability 100%

Confidence 100%

[View >](#)

[↑ Transformed](#)

0109359502000010 INPUT

Steel Rods
Mfg By: Top Line Steel

Sustainability 100%

Confidence 100%

[View >](#)

0109359502000041 INPUT

Steel Coil
Mfg By: Quality Steel

Sustainability 100%

Confidence 100%

[View >](#)

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