



Assured Steel Certification

# Construction Product Conformity Assessment Models (Singapore)

15 Nov 2022

**14 - 18**  
**NOVEMBER**



Sunway Pyramid  
Convention Centre  
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**2022 SEAISI**

**STEEL MEGA  
EVENT & EXPO**

Technology • Sustainability • Construction

# Chin Seng YAP

## Regional Operations Manager (East Asia)



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# Contents

- Activities and Organization
- CARES Certification Schemes
- Construction Product Conformity Assessment Models (Singapore)



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# CARES - Assured Steel Certification

- CARES certification provides confidence to the users, purchasers and specifiers of steels through a regime of third party regulation, testing and inspection
- Independent, not-for-profit certification body, established in 1983
- Provide accredited certification schemes primarily for constructional steels over 45 countries.

## Certification Services

- Product Certification
- Management system certification
- Technical approvals
- Post Tensioning
- UKCA/UKNI
- Sustainable Constructional Steels Scheme
- BES 6001 Responsible Sourcing Certification

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# CARES -Assured Services Offered

## Product Conformity Certification

- Reinforcing steel – BS 4449, BS 6744, **SS560**, CS2, ISO6935 plus others (i.e. ASTM)
- Reinforcing steel fabrication – **BS 8666 (cut/bend)**, **SS561**, BS 4483 (fabric)
- Pre-stressing wire and strand – BS 5896 plus others
- Welding of Reinforcing steel – BS8548 / BS EN ISO 17660
- Approval of PT Installation for Highway Structures
- Approval of PT Installation for non - Highway Structures
- **Singapore Specialist Builders – In-Situ Post Tensioning Works**
- **Alternative Structural Steel to BC1**

## Management Systems Certification

- Quality Management systems to ISO 9001:2015
- Environmental Management systems to ISO 14001:2015
- Occupational Health and Safety Management systems to ISO 45001:2018

## UKCA/UKNI

- Structural steel sections to EN 10025:2004
- Constructional flat steel to EN 10025:2004
- Stainless Steel to EN10088-5:2009
- Pre-cast Concrete to various harmonized standards

## Sustainability Certifications

- Sustainable Construction Steel (SCS) Certification (Sector certification scheme UKAS accredited to BS 8902)
- BES 6001 Responsible Sourcing Certification
- ResponsibleSteel Certification
- Environmental Product Declaration to EN 15804 (3rd party verified EPD Report)
- Product carbon foot-printing (CF Report)

## Technical approval

- European Technical Approval of PT kit to EAD 160004
- Coupler approval (*TA1-A to UK Highways Design Manual, TA1-B to BS8597, TA1-C to Sellafield Nuclear Specification and **TA1-F to ISO 15835***)
- Reinforcement Continuity Systems to CARES TA2
- Stud shear Reinforcing Systems to CARES TA7
- Pile Cage Connection Systems to CARES TA15

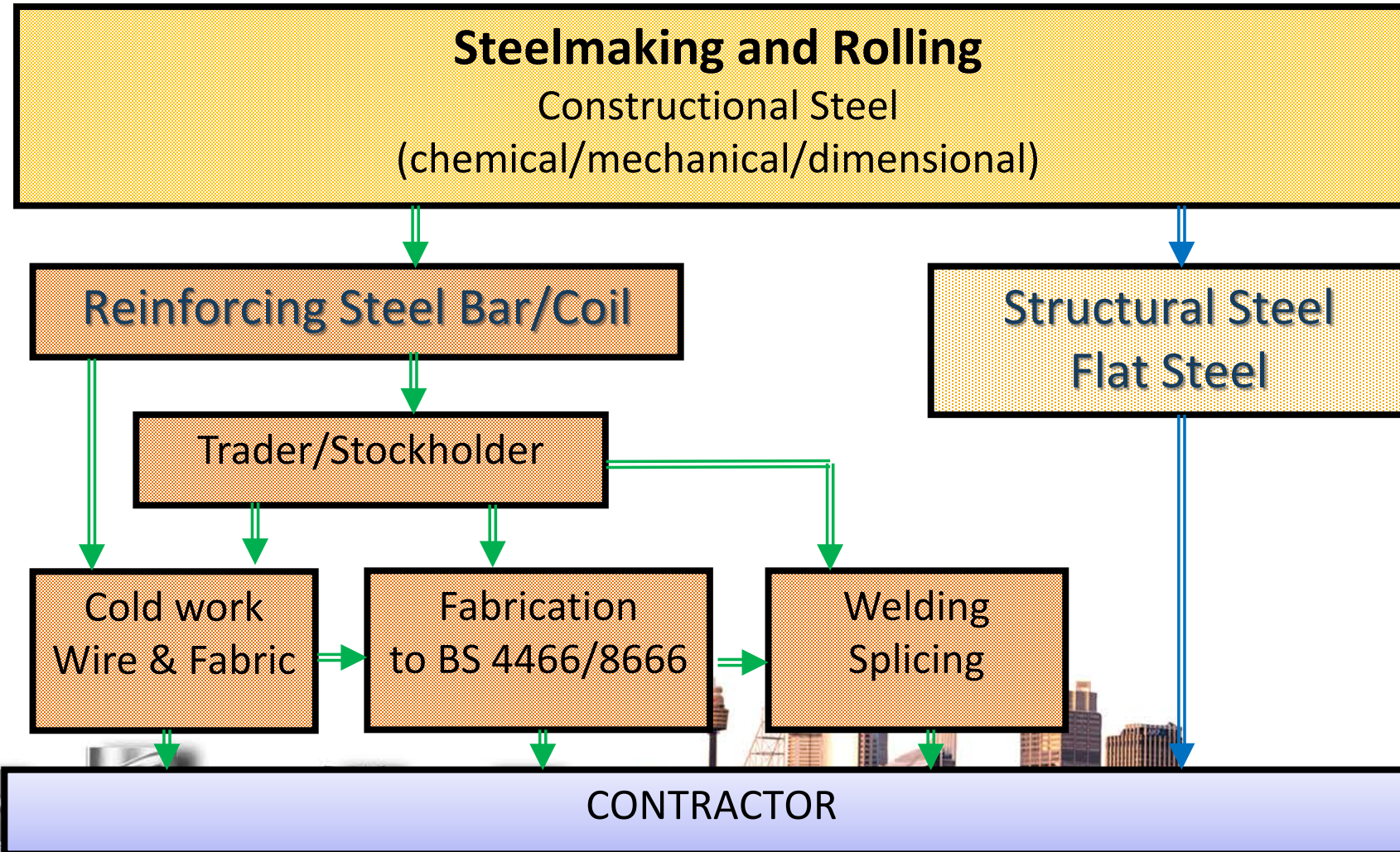
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# CARES approved supply chain

Reinforcing steel supply chain

Structural steel & Flat steel supply chain



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# CARES Steel for the reinforcement of concrete (SRC) scheme

## - Technical requirements

Appendix No.	Description
1	Production of carbon steel bars and coils
1-N	Production of carbon steel bars and coils for use in Nuclear applications and other mega projects
2	Processing and supply of bar, coil and fabric
3	Cold worked wire
4	Welded fabric
5	Feedstock materials
7	On-site processing of reinforcing steels
8	Mechanical coupling of reinforcing steel
9	Purchase and supply of steel products for the reinforcement of concrete
11	Manufacture of pre-assembled welded fabrications using tack welded joints to BS EN ISO 17660 and BS 8548 under factory conditions
12	Manufacture of pre-assembled welded fabrications using welded semi-structural and/or structural joints to BS EN ISO 17660 and BS 8548 under factory conditions



## Product Conformity Certification Services

- Providing steel and steel related products and services certification to more than **330 companies in over 45 countries**
- Providing **SRC 1 - BS4449** product certification
  - *91 manufacturers*
- Providing **SRC 2 – BS8666** product certification
  - *107 steel processors / fabricators*
- Providing **SRC 4 – BS4483** product certification
  - *13 manufacturers*
- Providing **SRC 8 – Application of mechanical couplers**
  - *37 steel processors / fabricators*
- Providing **TA coupler** product certification
  - *20 manufacturers*
- Providing **PT 8 – BS5896** product certification
  - *23 manufacturers*

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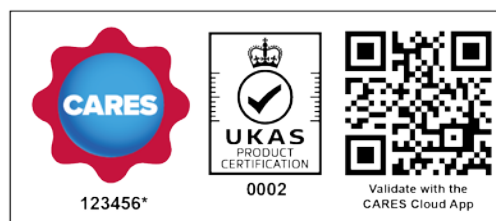


# CARES Accreditation Standards

BS EN ISO/IEC 17065:2012

BS 8902:2009

BS EN ISO/IEC 17021:2015



UK  
CA



UK  
NI

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# Major global projects

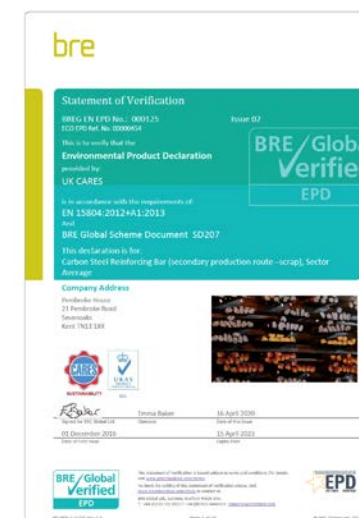


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# Major global projects and recognitions



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# CARES – How we deliver assurance

## Steel industry experience

- All auditors have extensive steel industry experience



## Audit high impact sites at least annually

- Frequent product testing



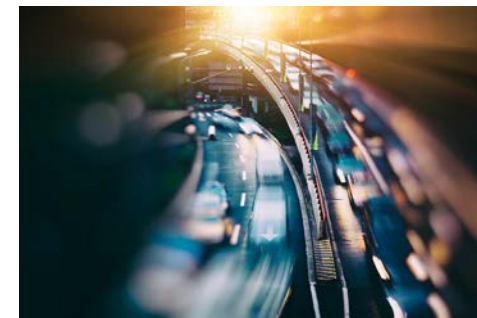
## CARES cloud and digital eco-system

- CARES traceability system



## Our ability to make change happen...

- Across the whole supply chain



Our unique approach to auditing provides assurance through a 'one stop shop'

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# CARES Accredited Certification Schemes

CARES	CARES Hong Kong Ltd	CARES Certification PTY Ltd (Australia)	CARES Certification PTE Ltd (Singapore)
<ul style="list-style-type: none"> <li>Construction Products and Associated Services (CP&amp;AS)</li> <li>Construction Products Directive (CPR)</li> <li>Post-Tensioning Systems (PT)</li> <li>Steel for the Reinforcement of Concrete (SRC)*</li> <li>Technical Approvals (TA)</li> <li>Sustainable Constructional Steel (SCS)</li> <li>BES 6001</li> <li>Environmental Management Systems (EMS)</li> <li>Occupational Health and Safety Management Systems (OHSAS)</li> <li>Quality Management Systems (QMS)</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Management Systems (EMS)</li> <li>Occupational Health and Safety Management Systems (OHSAS)</li> <li>Quality Management Systems (QMS)</li> </ul>	<p><b>JAS-ANZ</b> accreditation <b>in progress</b> for:</p> <ul style="list-style-type: none"> <li>Post-Tensioning Systems (APT)</li> </ul>	<p><b>SAC</b> accreditation <b>in progress</b> for:</p> <ul style="list-style-type: none"> <li>Factory Production Control (FPC) to BC1</li> <li>Post-Tensioning Systems (SPT)</li> <li>Steel for the Reinforcement of Concrete (SSRC)</li> <li>Quality Management Systems (QMS)</li> </ul>





# Construction Product Conformity Assessment Models (Singapore)



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# CARES IN SINGAPORE

- CARES has registered a new company in Singapore, CARES Certification Pte. Ltd. in January 2022.
- Almost 100% of reinforcing steels imported by Singapore were sourced from CARES approved manufacturers according SS560:2016, accredited by SAC. CARES also providing certification to Specialist Builders (SB) for Post Tensioning Work which we work together with BCA. CARES is introducing steel processing (cutting and bending) and the application of mechanical coupler schemes in Singapore as well.
- SAC (Singapore Accreditation Council) has launched 2 CB Schemes at 30<sup>th</sup> November 2021, which included:
  - CT-22 SAC Criteria for Certification Bodies (In-situ for Post Tensioning Works)
  - CT-24 SAC Criteria for Certification Bodies (Alternative Structural Steel to BC1)
- CARES Singapore has applied the above schemes and accreditation assessment in progress.
- Precast scheme aim to be launched in Q1 2023.
- Next potential SAC extension to scope on piling works, ground stabilising, pre-cast works, SS561 (BS4483 equivalent), BS8666, SS ISO15835 (TA1-F equivalent), ISO 17021 for QMS, EMS and OHSMS.

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# CARES in Singapore

**SS 560 : 2016**

## **8 Evaluation of conformity**

### **8.1 Factory production control system**

Based on this Singapore Standard and in order to ensure equivalent level of confidence in the conformity of the finished product, all reinforcing steels shall be manufactured using permanent factory production control system regardless of its production process. The factory production control system shall be approved by a Certification Body accredited by the Singapore Accreditation Council (SAC).

The above factory production control system shall comply with Clause 8 of BS EN 10080 : 2005.



# CARES in Singapore

## Product Conformity Certification Services (Steel Scheme)

- Providing **CPAS Appendix 21 - SS560** product certification
  - 47 sites
- SAC Accreditation



CP & AS Appendix 21

### Construction Products and Associated Services

#### Appendix CP&AS 21

Quality and operations assessment schedule for Singapore Standard (SS 560:2016) weldable reinforcing steel bars, coils and decoiled products for the reinforcement of concrete including inspection and testing requirements

No	Company Name	Country
1	AGSI HFZ Plant	United Arab Emirates
2	Akdemir Celik Sanayi Ve Ticaret A.S	Turkey
3	Al Ittefaq Steel Products Company	Saudi Arabia
4	Alliance Steel (M) Sdn Bhd	Malaysia
5	Ann Joo Steel Bhd	Malaysia
6	Arcelormittal Kryvyi Rih PJSC Ordzhnikidze Street	Ukraine
7	Bastug Metalurji Sanayi A.S.	Turkey
8	Benxi Beiyang Iron & Steel (Group) Co Ltd	China
9	Compañia Española de Laminación, S.L. - CELSA	Spain
10	Conares Metal Supply Ltd (Rebar Mill Division)	United Arab Emirates
11	Daehan Steel Co.Ltd (Pyeong-Taek Plant)	South Korea
12	Diler Iron and Steel Co Inc	Turkey
13	Ekinciler Demir Ve Celik San	Turkey
14	Emirates Steel Industries Co	United Arab Emirates
15	ESL Steel Limited	India
16	Habas Sinai Ve Tibbi	Turkey
17	Hoa Phat Dung Quat Steel JSC	Vietnam
18	ICDAS Celik Enerji Tersane Ve Ulasim Sanayi	Turkey
19	Izmir Demir Celik Sanayi A.S	Turkey
20	Jiangsu Province Binxin Special Steel Material Co Ltd	China
21	Jiangsu Shagang Group Co Ltd	China
22	Jiangsu Yonggang Group Co Ltd	China
23	Jiangyin Xicheng Steel Co. Ltd	China
24	Jindal Shadeed Iron and Steel LLC	Oman
25	JINDAL STEEL & POWER LTD (Angul Plant)	India
26	JINDAL STEEL & POWER LTD (Patratu Plant)	India
27	Jingye Iron and Steel Co., Ltd	China
28	JSW Steel Ltd,. Vijayanagar Works	India
29	Kardemir Karabuk Demir Celik San	Turkey
30	Koc Metalurji A.S Rolling Plant	Turkey
31	Kroman Celik Sanayii A.S	Turkey
32	Moon Iron & Steel Co S.A.O.C	Oman
33	Nervacero SA	Spain
34	Osman Sonmez Insaat Taahhut Ticaret	Turkey
35	PT Dexin Steel Indonesia	Indonesia
36	Qatar Steel Company (QPSC)	Qatar
37	Qatar Steel Company FZE	United Arab Emirates
38	SAIL IISCO Plant	India
39	Saudi Iron & Steel Compant (Shadeed)	Saudi Arabia
40	Shandong Iron & Steel Company Laiwu Company	China
41	Shandong Laigang Yongfeng Steel Corp.	China
42	Shiheng Special Steel Group Co Ltd	China
43	Southern Steel Berhad	Malaysia
44	Tosyali Algerie Fer Et Acier	Algeria
45	Yazici Iron & Steel Co Inc	Turkey
46	Yesilyurt Demir Celik Endustrisi	Turkey
47	Zenith Steel Group Ltd	China



# CARES in Singapore

**CERTIFICATE  
OF APPROVAL**

**Product Conformity Certification - SS 560****Page  
1 of 2**

This is to certify that  
**SHANDONG IRON AND STEEL COMPANY LTD. LAIWU COMPANY**  
at its establishment at  
**No. 99 Fuqian Street, Gangcheng District, Jinan City, Shandong  
Province, 271104, China**

has satisfied the Authority that it operates a quality management system that complies with the requirements of BS EN ISO 9001, the Factory Production Control (FPC) requirements of BS EN 10080:2005 - Clause 8.1 and the relevant CARES Quality and Operations Assessment Schedules. Where appropriate, and as listed below, it has further satisfied the Authority that it manufactures and/or supplies products that conform with the stated product standards and is entitled to use the CARES marks on its products using the processes and procedures registered with the Authority.

**Scope of certification:**  
Production of steel reinforcement as stated on the attached appendix

This certificate remains the property of the Authority and is issued subject to the Regulations of the Authority. This certificate is uncontrolled when printed. To check the validity of this certificate please scan the above Static QR Code with the CARES Cloud App or contact us on +44 1732 450000.

CERTIFICATE NUMBER	FIRST APPROVAL	ISSUE DATE	EXPIRY DATE
<b>220502</b>	<b>May 2022</b>	<b>11 May 2022</b>	<b>31 December 2022</b>

SIGNED FOR UK CERTIFICATION AUTHORITY FOR REINFORCING STEELS

  
Lee Brankley,  
Chief Executive Officer

  
Accredited  
Certification  
Body  
PD-2016-17

  
UKAS  
PRODUCT  
CERTIFICATION  
0002

The use of the Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate number 0002.  
UK Certification Authority for Reinforcing Steels, Pembroke House, 21 Pembroke Road, Seacroft, Kent, TN13 1UR, UK.  
A Company Limited by Guarantee. Registered in England No. 1762468.  
Cen. Ref: AIC112010 /0001 1074-01

**APPENDIX TO CARES CERTIFICATE NO. 220502**

**Product Conformity Certification - SS 560****Page  
2 of 2**

**SHANDONG IRON AND STEEL COMPANY LTD. LAIWU  
COMPANY**  
**NO. 99 FUQIAN STREET, GANGCHENG DISTRICT, JINAN  
CITY**  
**SHANDONG PROVINCE, 271104, CHINA**

**CPAS 21 - Singapore - SS 560:2016**

**Scope of certification:**  
SS 560:2016 Grade B500B Bar 12 to 32mm

This certificate remains the property of the Authority and is issued subject to the Regulations of the Authority. This certificate is uncontrolled when printed. To check the validity of this certificate please scan the above Static QR Code with the CARES Cloud App or contact us on +44 1732 450000.

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Cen. Ref: AIC112010 /0001 1074-01

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# CARES in Singapore

## Post tensioning Scheme Development for Singapore:

- CARES has worked with BCA on drafted the Singapore In-Situ Post Tensioning Works certification scheme for Specialist Builders.
- The Scheme has launched ***in November of 2021***
- CARES Certification Pte. Ltd. has applied for SAC Accreditation to become an accredited 3<sup>rd</sup> party CB.
- CARES Certification Pte. Ltd. has conducted audits against Specialist Builders witnessed by SAC and BCA.



REQUIREMENTS FOR  
CERTIFICATION OF SPECIALIST BUILDERS  
(IN-SITU POST TENSIONING WORKS)



ACCREDITATION SCHEME FOR PRODUCT  
CERTIFICATION BODIES

**CT 22**  
SAC CRITERIA FOR CERTIFICATION  
BODIES (IN-SITU POST TENSIONING  
WORKS)

CT 22, 30 November 2021  
The SAC Accreditation Programme is managed by Enterprise Singapore  
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Ver 1.0 (Sep 2021)

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# CARES in Singapore

CARES Certification Pte. Ltd. is providing In-Situ Post Tensioning Works certification for the local Specialist Builders, witnessed by BCA and SAC.



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# CARES in Singapore

## Precast Product Certification Scheme Development for Singapore:

- BCA and CARES have been working on developing a customised scheme for Singapore since late 2019.
- In early 2020, a technical committee has been formed and CARES has been invited to join
- Since then, we have been providing technical support and guidance to the committee and made sure the progress made so far had been in the right direction
- SAC is currently working on fine-tuning the CB requirements for accreditation criteria

## TECHNICAL REQUIREMENTS FOR CERTIFICATION OF SPECIALIST BUILDERS (FACTORY PRODUCTION CERTIFICATION FOR PRECAST PRODUCTS)

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Building and Construction  Authority

We shape a **safe**, **high quality**, **sustainable** and **friendly** built environment.



# CARES in Singapore

## **Piling Works and Ground Support and Stabilisation Works for Earth Retaining and Stabilising Structures (ERSS) Certification Scheme Development for Singapore:**

- BCA have been working on developing both customised schemes for Singapore since late 2019.
- We have attended CB dialogue session for both schemes on 28 March 2022.
- We also received feedbacks from SBs that requested CARES to provide both the schemes certification so that they can have one-stop certification service provided by single CB, since most of the SBs also having both works.
- Both schemes are expecting to launch in Q4 of 2022. There are currently more than 100 companies (for each work) registered with BCA.
- Same like PT and Precast scheme, the SBs will need certifications from 3<sup>rd</sup> party accredited CB, under regulation in near future that currently drafted by BCA..

Preliminary Draft for Ground Support and Stabilisation Works (for review and discussion)

## **ACCREDITATION SCHEME FOR PRODUCT CERTIFICATION BODIES:**

## **SAC CRITERIA FOR SPECIALIST BUILDERS (GROUND SUPPORT AND STABILISATION WORKS FOR ERSS)**



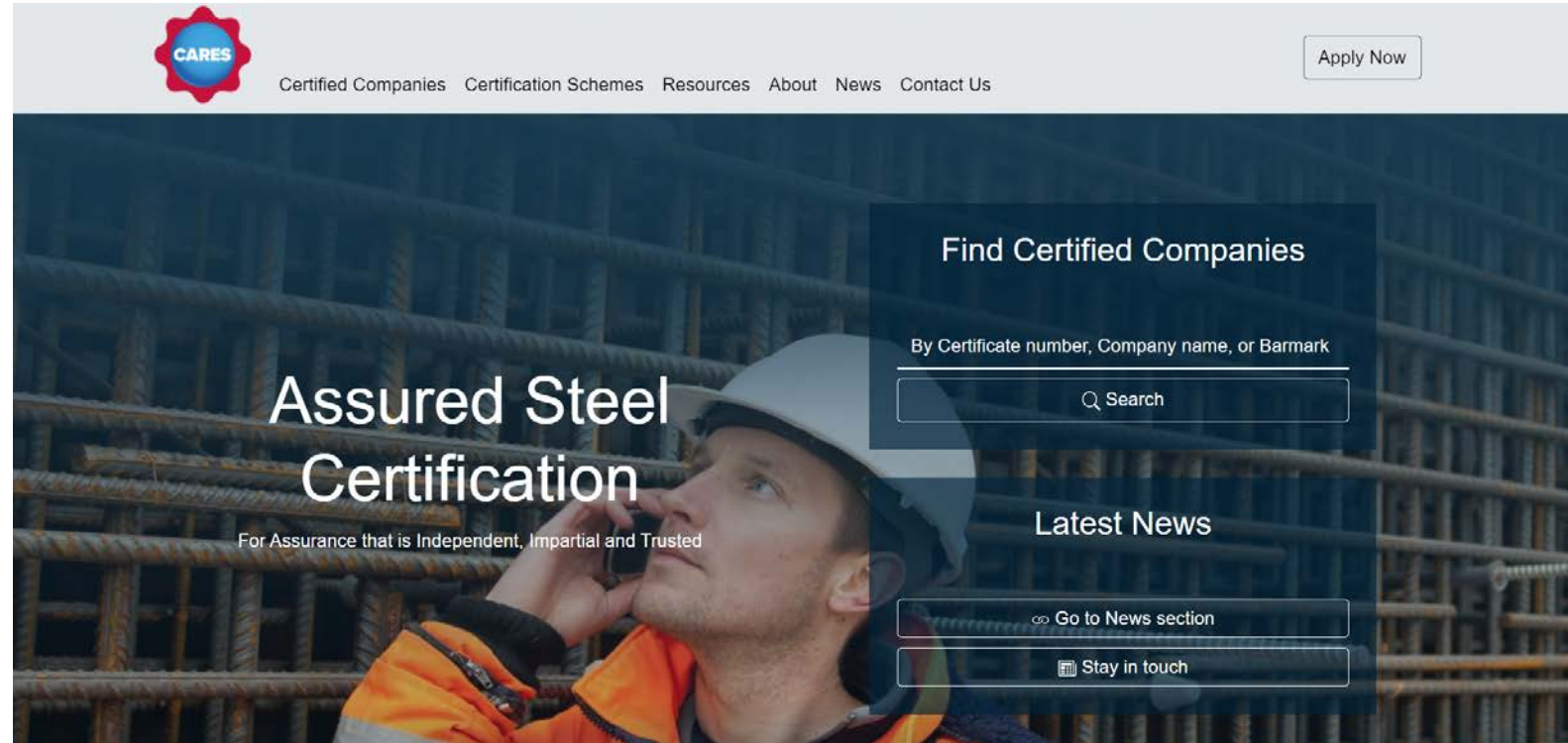
# CARES Singapore Steel for the reinforcement of concrete (**SSRC**) scheme

## - Technical requirements

Appendix No.	Description
1	Production of carbon steel bars and coils – SS560:2016: <b>SSRC Scheme Appendix 1</b>
2	Processing and supply of steel products – BS8666: <b>SSRC Scheme Appendix 2</b>
3	Welded fabric – SS561: <b>SSRC Scheme Appendix 3</b>
4	Mechanical coupling of reinforcing steel - application: <b>SSRC Scheme Appendix 4</b>
5	Manufacture of pre-assembled welded fabrications using tack welded joints to BS EN ISO 17660 and BS 8548 under factory conditions: <b>SSRC Scheme Appendix 5 &amp; 6 [tack-welded &amp; (semi or normal) structural]</b>

www.carescertification.com  
www.caressingapore.com

- CARES List and Location of Approved Firms
- Certification information
- Resources
- About
- News
- Contact



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# Any questions?

## Thank you

Contact: Chin Seng YAP

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LinkedIn: [www.linkedin.com/company/carescertification/](http://www.linkedin.com/company/carescertification/)



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