

YOUR ASSURED STEEL PRODUCTS SUPPLY CHAIN



The CARES Sustainable Constructional Steel Scheme Summary Report 2017/18



PERFORMANCE

See the latest data
and targets to 2020

SUPPLIERS

Take a look at the
global reach of
the scheme

SPECIFY

Learn how to
procure sustainable
steel products

Contents

- 03 Executive statement
- 04 Locations of CARES sustainability scheme-approved suppliers
- 05 Your procurement guide: how to specify sustainable constructional steel
- 06 Procuring Sustainable Constructional Steel
- 07 Performance: Environmental, Economic and Social

Who are CARES?

CARES is an independent, not-for-profit certification body. It operates for the benefit of the construction industry offering certification schemes for companies that produce materials, components or offer services, primarily to the reinforced concrete industry. Clients can specify CARES approved companies and products with the confidence that they will comply with the relevant product or system standards and without the need for verification testing by the purchaser or contractor.

CARES is governed by its Board and advised by its Policy Advisory Committee composed of the following Members: Association for Consultancy and Engineering, LHR Airports Ltd, British Association of Reinforcement, Civil Engineering Contractors Association, CONSTRUCT, BuildUK, Highways England, Institution of Structural Engineers, Post-Tensioning Association, UK Steel Association. The Chairman's nominees are; representatives from the International Steel Trade Association, British Independent Reinforcement Fabricators Association, Office for Nuclear Regulation (ONR/HSE), Rail Safety and Standards Board, and a stainless steel specialist.

The CARES Sustainability Committee is a technical advisory group made up of stakeholders from the construction industry, independent experts and representatives from the steel industry. Its role is to review and advise on the Sustainable Constructional Steels Scheme.

About this report

This report focuses on the latest updates and performance of the CARES' Sustainable Constructional Steel (SCS) Scheme. The data covers calendar year 2017 and updates cover changes to the scheme or its operating environment to publication in Autumn 2018. It shows how a CARES-approved supply chain for constructional steel can help reduce business risk and provide a range of other benefits. For information on the wider operations of CARES and other certification schemes offered by CARES please refer to our website and annual operating plan.

The principles within the Global Reporting Initiative (GRI) Standard 101, inform the report's development. 2015 is the updated baseline year for the sector's environmental, social and economic metrics used in the report. We welcome your comments and feedback on this report and on how the constructional steel sector can contribute to a sustainable future.

The Sustainable Constructional Steel (SCS) Scheme

CARES is accredited by the UK Accreditation Service (UKAS) to provide certification for management systems, product conformity and – the subject of this Report – sustainability management and performance.

The SCS Scheme accompanies CARES' product conformity Schemes and operates in compliance with BS 8902: 2009 'Responsible sourcing sector certification schemes for construction products'. This Standard provides a framework for the responsible management, development, content and operation of sector certification schemes for supply of construction products.

The SCS Scheme was specifically developed for the constructional steel supply chain: it enables suppliers to declare the sustainability performance of their products and organisation. The SCS Scheme enables the collation and reporting of the sector environmental and social management and performance against key performance indicators. It also sets targets for future performance.

A key benefit for the end user is that constructional steel products from CARES-approved suppliers are traceable, allowing an assured chain of custody from mill to site.

Executive statement: Steels contribution towards Sustainable Development

According to World Steel Association data for 2017, 51% of world steel production is used in buildings and infrastructure, with approximately 25% of this total being used in structural sections and 44% in reinforcing bars, added to provide tensile strength and stiffness to concrete. It is used because it offers the most economic and highest strength to weight ratio of any building material. It is also long lasting, with many construction applications having a service life of 100 years or more. And the story does not stop there, being reusable and indefinitely recyclable, its use supports moves towards a circular economy, so the vast majority of constructional steel in use today will loop through our economies for centuries to come.

Nevertheless, the challenges and opportunities of sustainable development pose some significant questions for the steel industry. For example, the Oct 2018 Intergovernmental Panel on Climate Change special report highlights how seeking to limit global warming to 1.5° significantly reduces the risks to natural and human systems than our current trajectory. Whilst the CARES Sustainable Constructional Steels (SCS) Scheme, operating since 2011, is predominantly focused on lower impact Electric Arc Furnace (EAF) production routes that utilise scrap steel in production, the steel industry will have to transform its practices over the next 30-50 years to adequately contribute to a 1.5° sector pathway.

The scheme is not just focused on reducing the environmental impacts of steel production and fabrication. It reflects how the constructional steels industry is working to implement and support a broader range of the principles of sustainable development, including delivering social value to communities where steel is produced and the products used. As such, CARES is pleased to be part of many industry collaborations, contributing to dialogue, listening to feedback, responding to market needs and improving the scheme.

In 2018, CARES has run its own consultations on how best to provide data that can enable its construction clients to calculate the social value of their projects. It continues to support the Action Program for Responsible and Ethical Sourcing (APRES), has been closely involved in the implementation of the new BES 6002 Ethical Labour Standard and has supported industry initiatives to identify and reduce incidents of Modern Day Slavery in constructional supply chains. CARES auditors have received training in Modern Slavery and certification to the SCS scheme requires companies to work to understand the risks inherent in their supply chains.

CARES presentations have been well received at the International Federation for Structural Concrete 5th International FiB Congress and other international FiB events, the American Concrete Industry European Chapter Durability of Concrete Structures event and has been represented at many other industry fora. CARES supports and is involved in the development of the ResponsibleSteel™ Standard.

The UK Government Procurement Policy Note PPN 11/16, together with the Welsh Assembly Procurement Advice Note on the sourcing of steel in construction and infrastructure projects, emphasise the need for social and environmental factors to be considered alongside cost when procuring steel for public sector projects in the UK. The CARES SCS Scheme is aligned to these guidance documents and helps enable companies to demonstrate compliance. As the UK is a leader in formulating and specifying explicit requirements, such as for social valuation and Modern Slavery, CARES is investigating and working with stakeholders to incorporate them into a national sustainability certification scheme to meet local market needs and is considering opportunities for other national schemes.

Since the last report, CARES has become one of the first companies in UK to gain accreditation from UKAS to certify to ISO 45001, a prerequisite of the SCS scheme. UKAS reconfirmed our accreditation to BS 8902 Responsible Sourcing sector certification schemes for construction products, ISO 14001:2015 and to BES 6001 Responsible Sourcing standard for Reinforcement products. SCS certification can contribute towards higher levels of green building rating system performance, including within BREEAM UK New Construction 2014 and ESTIDAMA. Company-specific verified Environmental Product Declarations (EPD's) to EN 15804, which are a requirement of the scheme, are accepted in the US Green Building Council's LEED certification. The EPD's also meet client demands for detailed information on the materials they specify.

Our list of approved suppliers is growing, recognising our professionalism and ability to give clients confidence that their choice of materials is supporting more transparent and responsible construction supply chains. I welcome readers to this report and invite you to explore the CARES Sustainable Constructional Steel Scheme and its performance.



**Professor Les Clark
OBE**

Chairman of CARES

**CARES SUPPORTS
EFFORTS TO ACHIEVE THE
SUSTAINABLE
DEVELOPMENT
GOALS**

Locations of CARES sustainability scheme-approved suppliers

CARES has global reach. The SCS Scheme is internationally recognised as the preferred certification system for sustainable constructional steel. CARES-approved suppliers benefit from the wide acceptance of CARES-approved steel by green building rating systems around the world.

Which suppliers are CARES-approved and where are they?



France

- ALPA, Gargenville

Germany

- ArcelorMittal Hamburg GmbH, Hamburg

Netherlands

- Van Merksteijn B.V., Almelo

Ireland

- Brazil & Co. (Steel) Ltd. T/A Fairyhouse Steel, Ratoath
- Midland Steel Reinforcement Supplies, Mountmellick, Co Laois

Portugal

- SN Maia - Siderurgia Nacional, S.A., San Pedro Fins, Maia
- SN Seixal, Siderurgia Nacional, S.A., Seixal

Qatar

- Qatar Reinforcement Company, W.L.L. - Doha
- Qatar Steel Company(QSC), Mesaieed

Spain

- Megasa Siderúrgica SL, Narón

Turkey

- Bastug Metalurji Sanayi A.S., Osmaniye
- Colakoglu Metalurji A.S., Gebze
- Diler Iron and Steel Co Inc., Gebze
- Ekinciler Iron & Steelworks Inc., Iskenderun
- HABAS A.S., Izmir
- ICDAS Celik Enerji Tersane Ve Ulasim Sanayi A.S., Biga
- Izmir Demir Celik Sanayi A.S., Izmir
- Kroman Celik Sanayi A.S., Gebze
- Yazici Iron & Steel Co Inc., Iskenderun
- Yesilyurt Demir Celik, Samsun

United Arab Emirates

- Conares Metal Supply Ltd, Rebar Mill, Dubai
- Emirates Steel Industries, ICAD I, Mussaffah, Abu Dhabi
- Union Iron & Steel Company L.L.C Mussafah, Abu Dhabi

United Kingdom

- ArcelorMittal Kent Wire Limited, Chatham
- ArcelorMittal Kent Wire Limited T/A AMCS, Chatham
- Capital Reinforcing Ltd, Bromborough
- F Brazil Reinforcements Limited, Canvey Island
- Hy-Ten Reinforcement Co Ltd, Chatham
- Lemon Groundwork Solutions Ltd, Wickford
- Midland Steel Reinforcement Supplies, London Thamesport
- Outokumpu Stainless Ltd. T/A ASR Rod Mill and Sheffield Stainless Bar, Long Products, Sheffield
- Outokumpu Stainless Ltd. T/A Sheffield Stainless Bar, Long Products, Sheffield
- Roe Bros & Co Ltd, Peterborough
- Thames Reinforcements Ltd, Sheerness

Ukraine

- ArcelorMittal Kryvyy Rih PJSC., Kryvyy Rih

Oman

- Jindal Shaded Iron and Steel LLC Sohar
- Sohar Steel, Sohar

Legend

- Reinforcing Steel Producers (Electric Arc Furnace)
- Reinforcing Steel Producer (Blast Furnace)
- Feedstock Coil Producer
- Structural Steel Producers
- Stainless Steel Reinforcing Bar Processor
- Flat Steel Producers
- Stainless Steel Reinforcing Bar Producers and Processors
- Reinforcing Steel Processors (Fabricators)

Providing assurance to the construction industry

Traceability through CARES SCS product markings

Product marking



All CARES steels are 100% traceable at a batch and product level to the original steel producer. Traceability starts with a unique cast number. Molten steel is cast, rolled, and then delivered to the fabricator. During cutting or bending the cast number is accompanied by a 'bar schedule reference' and 'bar mark' before delivery and use. Batches of product will carry the labels shown to the right

Product labelling



Environmental Product Declaration (EPD)

An Environmental Product Declaration (EPD) is a type of Life Cycle Assessment that provides environmental information from LCA studies in a common format, based on common rules. An EPD provides a consistent basis for assessing environmental impacts from extraction of raw materials, through processing, manufacture, refurbishment to eventual end-of-life and disposal. The data, verified by BRE is produced in accordance with ISO 15084. EPD's are required by each supplier and CARES also produces an average for the overall SCS Scheme.

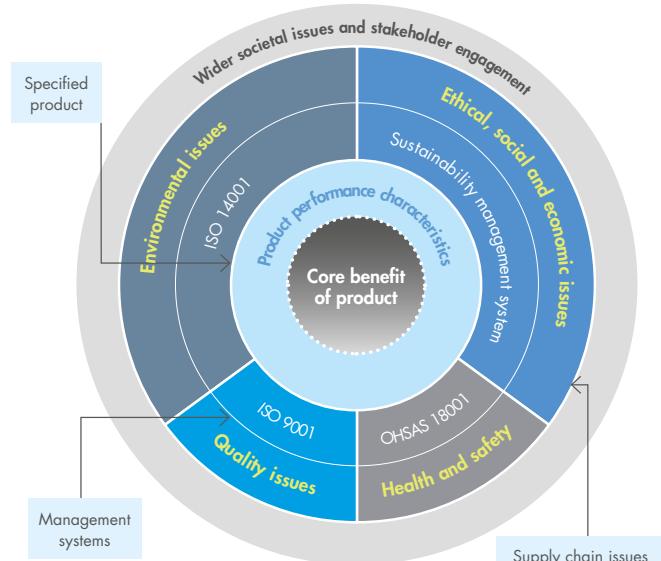


"There is increased interest from stakeholders in the construction industry to understand and document the environmental performance of materials – the first step towards improved material selection and reduced overall project environmental footprint. Within this trend, CARES has set the bar high by developing a detailed environmental product declaration for a key construction material, and has done so while bringing the key stakeholders of the industry together at the same table."

Jamila El Mir, Environment and Sustainability Senior Consultant, Arup

Scheme coverage – the 'extended' product applied to reinforcing steel

The concept of the extended product can be used to illustrate the demands placed upon a modern construction material supply chain, as shown here. CARES Product conformity standards are the basis of assurance for the physical product, which is shown in the centre of the diagram. Clients also want reassurance beyond the physical product, extending their concern into the management of environmental impacts and labour conditions throughout the supply chain. Management systems, as shown further out from the centre in the diagram, are a requirement of the SCS Scheme in order to demonstrate that the range of issues, illustrated in the next concentric circle out, are being continually improved. The final concentric circle reflects stakeholder engagement, the effectiveness of which is also a requirement of the scheme.



Procuring Sustainable Constructional Steel

To procure certified sustainable constructional steel, that conforms to product performance requirements, the following can be included in specifications:

1. UK project specifications

BS 4449:2005 and BS 4483:2005

All **hot rolled and cold worked steel bars** specified shall conform to BS 4449 (Grade B500B or B500C) and shall be cut and bent in accordance with BS 8666. The bars shall be obtained from firms holding valid CARES (or fully equivalent schemes) product conformity and sustainability scheme certificates of approval for the production and supply of the steel reinforcement.

Steel fabric reinforcement shall conform to BS 4483 (Grade B500A, B500B or B500C) and shall be cut and bent in accordance with BS 8666. Steel fabric reinforcement shall have a minimum nominal bar size of 6mm (8mm for Grade B500A). Steel fabric reinforcement shall be delivered to site in flat mats or pre-bent. The steel fabric shall be obtained from firms holding valid CARES (or fully equivalent schemes) product conformity and sustainability scheme certificates of approval for the production and supply of the steel fabric reinforcement.

NOTE: For diameters ≤ 12mm, Grade B500A, Grade B500B or Grade B500C conforming to BS 4449:2005 may be considered. For diameters > 12mm, Grade B500B or Grade B500C conforming to BS 4449:2005 shall be specified.

2. Non-UK project specifications

BS 4449:1997 or 2005 and BS 4483:1998 or 2005

All **hot rolled and cold worked steel bars** specified shall conform to BS 4449 [1997 or 2005] (Grade 460A or 460B or B500A, B500B or B500C) and shall be cut and bent in accordance with BS 8666. The bars shall be obtained from firms holding valid CARES (or fully equivalent schemes) product conformity and sustainability scheme certificates of approval for the production and supply of the steel reinforcement.

Steel fabric reinforcement shall conform to BS 4483 [1998 or 2005] (BS 4482:1985 Type 1 or Type 2, BS 4449:1997 460A, 460B or B500A, B500B or B500C) and shall be cut and bent in accordance with BS 8666. [Steel fabric reinforcement to BS 4483: 2005 shall have a minimum nominal bar size of 6mm (8mm for Grade B500A)]. Steel fabric reinforcement shall be delivered to site in flat mats or pre-bent. The steel fabric shall be obtained from firms holding valid CARES (or fully equivalent schemes) product conformity and sustainability scheme certificates of approval for the production and supply of the steel fabric reinforcement.

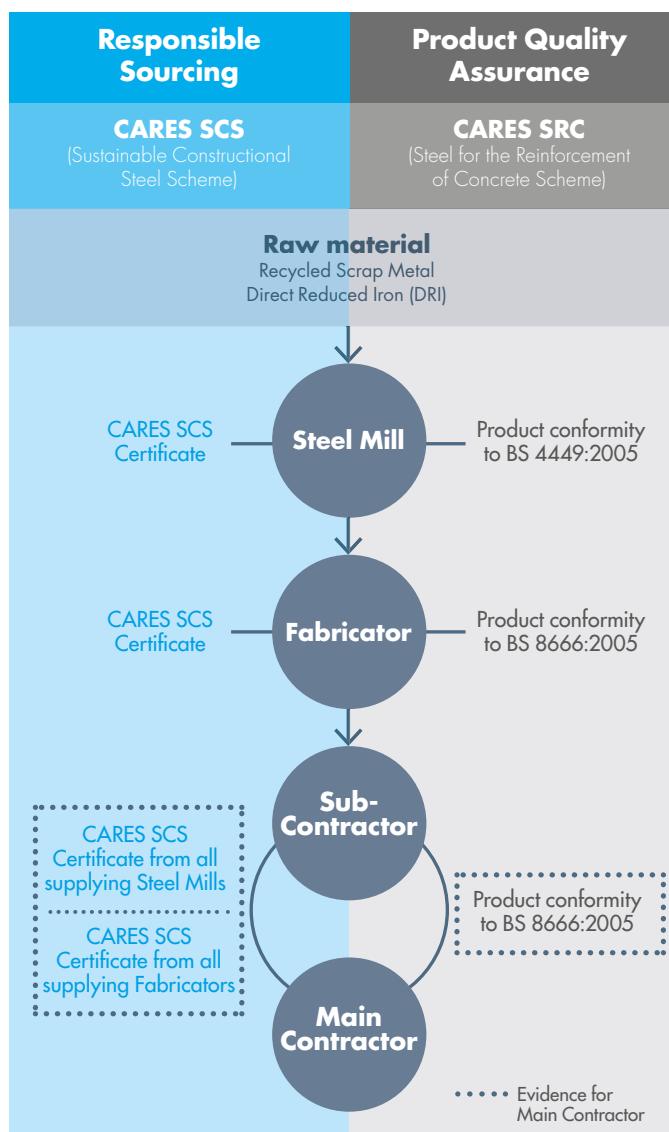
3. Stainless steel

All **stainless steel bars** specified shall conform to BS 6744 (specify the grade and alloy) and shall be cut and bent in accordance with BS 8666. The bars shall be obtained from firms holding valid CARES (or fully equivalent schemes) product conformity and sustainability scheme certificates of approval for the production and supply of the steel reinforcement.

What to look for when checking compliance with CARES SCS

Procurement professionals should look for the following items, as shown on the graphic, when checking for compliance to CARES SCS Scheme:

- Producer's CARES SCS certificate
- Processor's CARES SCS certificate
- Producer's Environmental Product Declaration (EPD)



Performance: Environmental, Economic and Social

The following table summarises performance from 2015-2017 against key scheme metrics. It includes approved producers using recycled steel in the Electric Arc Furnace process¹. It excludes those which use Direct Reduced Iron process, Blast Furnace process, rolling mills and fabricators. It includes targets to 2020 set from a 2015 baseline. The current status from the baseline towards the target is indicated.

Aspect	Key Metrics	2015	2016	2017	Target 2020	Status and notes
Environment	Employees at ISO 14001 certificated sites (%)	98	98	100	100%	Achieved
	Material Efficiency - % for producer (tonnes billet, bloom or slab produced as % of total raw materials)	82.9	83.1	82.3	Increase 2%	Off track
	Global Warming Potential (kg CO ₂ e per tonne of carbon steel bar produced) ²	840.3	840.3	898	Decrease 2.5%	Off track
	Water Use m ³ per tonne of steel	1.01	0.93	0.93	Reduce 10%	On track
	Post-consumer steel scrap recycled in approved product (% by mass) ⁴	96.9	98.1	97.3	Increase 1.4%	On track
	Waste to landfill (kg per tonne of steel)	58	43	47	Reduce 60% to 19	On track
	Waste to incineration (kg per tonne of steel)	0.46	0.04	0.02	Zero waste to incineration	On track
Health and Safety	Employees at OHSAS 18001 or ISO 45001 certificated sites (%)	97	100	100	100%	Achieved
Ethical, Social, and Economic	Total number of environmental and social complaints resulted in a successful prosecution by an external Regulator in the data collection/reporting period ⁵	0	1	5	Maintain 0	Not achieved
	Skills and Training (Development of Employees) (Number of training hours per employee and contractor) ⁶	27	22	23	Increase by 5%	Off track
	Community Relations - Approved producers who have a policy in place to increase engagement with community stakeholders (%)	100	100	100	Maintain	Achieved
	Community Relations - Approved producers who have specific systems in place to deal with local community complaints (%)	100	100	100	Maintain	Achieved
	Approved producers who have externally audited accounts for the latest financial reporting period (%)	100	100	100	Maintain	Achieved
	Approved producers who implement a policy to comply with ethical business practices (%)	100	100	100	Maintain	Achieved
	Suppliers evaluated against responsible sourcing policy and the social and environmental issues listed in CARES SCS Applicable Appendix's Section 3. (vi) (%)	n/a	12.50	20.00	75%	On track
	Reporting Sustainability Performance to Stakeholders - Publication of CSR/Sustainability Report on yearly basis (%)	n/a	18.75	26.67	100%	Previously voluntary credit. On track

An 'Approved product' or 'approved' producer refers to approval under the CARES SCS Scheme.

¹ The approved producer Alpa, which uses the Electric Arc Furnace process is excluded as data unavailable at time of publication.

² Relating to direct, indirect and avoided scrap burden. Scrap burdens - the world steel industry follows the 'substitution/avoided burden' approach to recycling at end-of-life, and assigns environmental impacts to ferrous scrap. Consuming scrap increases GHG emissions. Producing scrap (for recycling) gives a credit, reducing the overall carbon footprint. In this assessment it is assumed that the recycling rate at end of life is 92%.

³ The data points shown have been restated from previous years reports due to change in basis from sector average EPD value of 1342, which included whole life cycle data and was valid for 3 years until 2019, to annual average data from production sites based on scope described above.

⁴ Data excludes stainless steel production.

⁵ This includes a financial penalty, an enforcement notice, a prohibition notice, and/or a prosecution.

⁶ Last year's report indicated that in 2015, 47 hours of training were completed. This figure has been restated to exclude 1 producer which had introduced a new Electric Arc Furnace and as a consequence had an unusually high number of training hours which skewed the data.

YOUR ASSURED STEEL PRODUCTS SUPPLY CHAIN



BETTER FOR CUSTOMERS

**Product
Quality
certification**

**Full traceability
from mill to site
delivery**

**Sustainable
Constructional
Steel certification**

**Attract rating
credits in
BREEAM
UK New
Construction**

TRUST THE CARES MARK: NO FURTHER TESTING REQUIRED



This image shows how the CARES mark identifies a specific mill in a specific country.

Tell us what you think

This is our seventh report where we seek to capture how the CARES Sustainable Constructional Steel supply chain impacts on the environment, society and the economy. We welcome your feedback.

CARES

Pembroke House
21 Pembroke Road
Sevenoaks
Kent TN13 1XR

Tel: + 44 1732 450000
Fax: + 44 1732 455917

bahadirkaradayi@ukcares.com
ukcares.com



When you have
finished with this report
please recycle it

Independent, impartial and trusted
ukcares.com