Your assured steel products supply chain

The CARES Sustainable Constructional Steel Scheme Sector Report 2013/14




Contents

About this report

This, the third CARES Sustainable Constructional Steel (SCS) Sector Report, covers calendar year 2013. In it you will find an update on the performance of the sector in the past year, and how a CARES approved supply chain for constructional steel can reduce business risk and provide top-line benefits. The report focuses on the sustainability certification offered by CARES. The operations of CARES the organisation and other certification schemes offered by CARES are outside the scope of this report.

The principles of the Global Reporting Initiative (GRI) inform the report's development. 2011 is the 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 your expectations of how the constructional steel sector can contribute to a sustainable future.

Case study: Thames Reinforcements Ltd
Confidence for the customer, reassurance for us

"Our pile cages are better quality, they are transported more efficiently and their fabrication and installation are safer than ever. CARES certifications are a significant benefit to TRL. CARES provides a framework for high standards of quality, safety and environmental benefits, all of which are core to our operation".

Neil Murray
Health & Safety Director at TRL

Thames Reinforcements Ltd (TRL) prefers the CARES system above any other because it makes it easier to run their business. The CARES auditing process enables clients to check and refine the processes they need to show how they manage quality, safety and environmental responsibility. For example, prefabricating pile cages means better quality welding (quality-assured by CARES) and fewer on-site injuries to steel-fixers.

Looking beyond production quality, CARES also encourages TRL to engage with stakeholders. This is acutely relevant to TRL which is based on the Isle of Sheppey where the island population sees TRL as increasingly part of the community.

Becky May, Commercial Director says, "We fought hard to tell people about CARES; compared to its competition, there's no other standard out there like it."

Executive statement: Growth and impact

Our commitment to sustainability in construction is steadily growing. Core to it is the CARES Sustainable Constructional Steel (SCS) Scheme, the subject of this report.

This report aims to promote the use of constructional steels that help meet the requirements of green building rating systems. Specifying CARES helps de-risk a project. Providing third party certification to the highest levels of professionalism helps us assure clients that the materials they use will actually help their projects become more carbon-efficient and socially responsible.

I am delighted with our increasing growth and impact in the market. In 2014 CARES saw the further development of the Environmental Product Declaration (EPD) model with PE International. This allows us to provide verified EPDs to meet the needs of steel producers and the demands of construction clients. EPD is a common format for life cycle assessment. Also, we are an existing BREEAM-recognised Responsible Sourcing Certification Scheme and in September 2014, our recognition was re-confirmed under the latest BREEAM UK New Construction 2014 green building rating system. This excellent news is a great credit to CARES and my team here.

Also of significance is that the CARES SCS Scheme is the first construction product sector Scheme to be accredited by UKAS to BS 8902. The Department for Business Innovation & Skills recommends 'the use of UKAS accredited conformity assessment services whenever this is an option.' The accreditation is the stamp of approval of competence, impartiality and integrity. Building on these credentials, I look forward to CARES making an even greater impact in the future.

Our new map overleaf shows the burgeoning international reach of the Scheme, followed by an at-a-glance view of its key features:
(1) unique recognition,
(2) full product traceability, and
(3) achieving green building rating system credits.
Please do remind yourself of the significant benefits of CARES in our sector and see our environmental, economic and social performance updates on pages 9-12.

Professor Les Clark, OBE
Chairman of CARES

Who are CARES?

We are an independent, not-for-profit certification body providing confidence to the users, purchasers and specifiers of constructional steels through regulation, testing and inspection. CARES benefits the construction industry by offering certification for companies that provide materials, components and services primarily to the reinforced concrete industry. Customers who specify CARES approved companies and products have confidence that they comply with the relevant standards without any need for further verification. CARES is governed by the Board and advised by its Policy Advisory Committee which comprises the following Members:

Specifier	Contractor	User
• Association for Consultancy and Engineering • Institution of Structural Engineers • Highways Agency	• UK Contractors Group • Civil Engineering Contractors Association	• CONSTRUCT • Heathrow (formerly BAA plc) • Southern Water Services Ltd
Manufacturer (Producer)	**Manufacturer (processing)**	**UK CARES**
• UK Steel Association Hot Rolled Long Products Group • Post-Tensioning Association	• British Association of Reinforcement	• Independent Chairman • Executive Officers of UK CARES

For locations of CARES approved organisations, please refer to our website: http://ukcares.com/approved_companies.html

What is the CARES Sustainable Constructional Steel (SCS) Scheme?

Accredited by the UK Accreditation Service (UKAS), the CARES SCS Scheme **independently reports sector environmental and social performance levels** against a number of key performance indicators and sets targets for the future.

Specifically developed for the constructional steel supply chain, the scheme enables companies to declare the **sustainability performance of their products and organisation**. It also means the industry can demonstrate responsible sourcing of construction products and a commitment to sustainable development.

CARES 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 scheme is also for the end user. Reinforcing steel products produced by CARES approved firms are fully traceable and uniquely identifiable, allowing an unbroken and assured chain of custody throughout the whole supply chain, from mill to site.

CARES SUSTAINABILITY

UKAS PRODUCT CERTIFICATION
Registration Number 002

Independent, impartial and trusted

Where are CARES sustainability scheme approved firms?

CARES is internationally recognised as the preferred certification system for sustainable constructional steel. So, which companies are CARES approved and where are they? Amongst the many benefits to their businesses is the wide acceptance of CARES certified steel by green building rating systems around the world.

United Kingdom

- Kierbeck Thames Ltd., *Barking*
- ArcelorMittal Kent Wire Ltd., *Chatham*
- Thames Reinforcements Ltd., *Sheerness*
- F Brazil Reinforcements Ltd., *Canvey Island*
- Midland Steel Reinforcement Supplies UK
- Outokumpu Stainless Ltd. T/A Sheffield Stainless Bar, Long Products, *Sheffield*
- Outokumpu Stainless Ltd. T/A ASR Rod Mill and Sheffield Stainless Bar, Long Products, *Sheffield*

Germany

- ArcelorMittal Hamburg GmbH, *Hamburg*

Ireland

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

France

- ALPA, *Gargenville*

Luxembourg

- ArcelorMittal Rodange and Schifflange, *Rodange and Schifflange*

Portugal

- SN Maia - Siderurgia Nacional, S.A., *Maia*
- SN Seixal - Siderurgia Nacional, S.A., *Seixal*

Spain

- ArcelorMittal Gipuzkoa S.L.U. Factory of Zumarraga, *Zumarraga*
- Megasa Siderúrgica SL Naron, *Naron*
- ArcelorMittal Zaragoza, S.A., *Zaragoza*

"We are delighted that the CARES Scheme is accredited by UKAS to BS 8902. This is good for Crossrail and good for the industry."

Mike de Silva,
Crossrail Sustainability Manager

Turkey

- Ekinciler Iron & Steelworks Inc., *Iskenderun*
- Izmir Demir Celik Sanayi A.S., *Izmir*
- Yazici Iron & Steel Co Inc., *Iskenderun*
- ICDAS Celik Enerji Tersane Ve Ulasim Sanayi A.S., *Biga*
- HABAS A.S., *Izmir*
- Diler Iron and Steel Co Inc., *Gebze*
- Kroman Celik Sanayi A.S., *Gebze*
- Nursan Metalurji Endustrisi, *Payas Dortyol*
- Nursan Celik Sanayi Ve Haddecilik A.S., *Payas Dortyol*

Qatar

- Qatar Steel Company (QSC), *Mesaieed*

United Arab Emirates

- Emirates Steel Industries, *ICAD I, Mussaffah, Abu Dhabi*
- Conares Metal Supply Ltd (Rebar Mill Division), *Dubai*

Legend

- Reinforcing Steel Producers
- Structural Steel Producers
- Reinforcing Steel Processors (Fabricators)
- Stainless Steel Reinforcing Bar Producers and Processors

"Sustainability is an integral part of the decision-making process in today's construction industry. Customers choose suppliers based on cost, schedule, quality and sustainability. CARES certification has enabled us to supply 176 welded cages, consisting of 2500 tonnes of reinforcing steel to Crossrail's Woolwich Arsenal Station Box in five months, three weeks ahead of programme."

Brendon O'Connell,
General Manager, Kierbeck Thames Limited

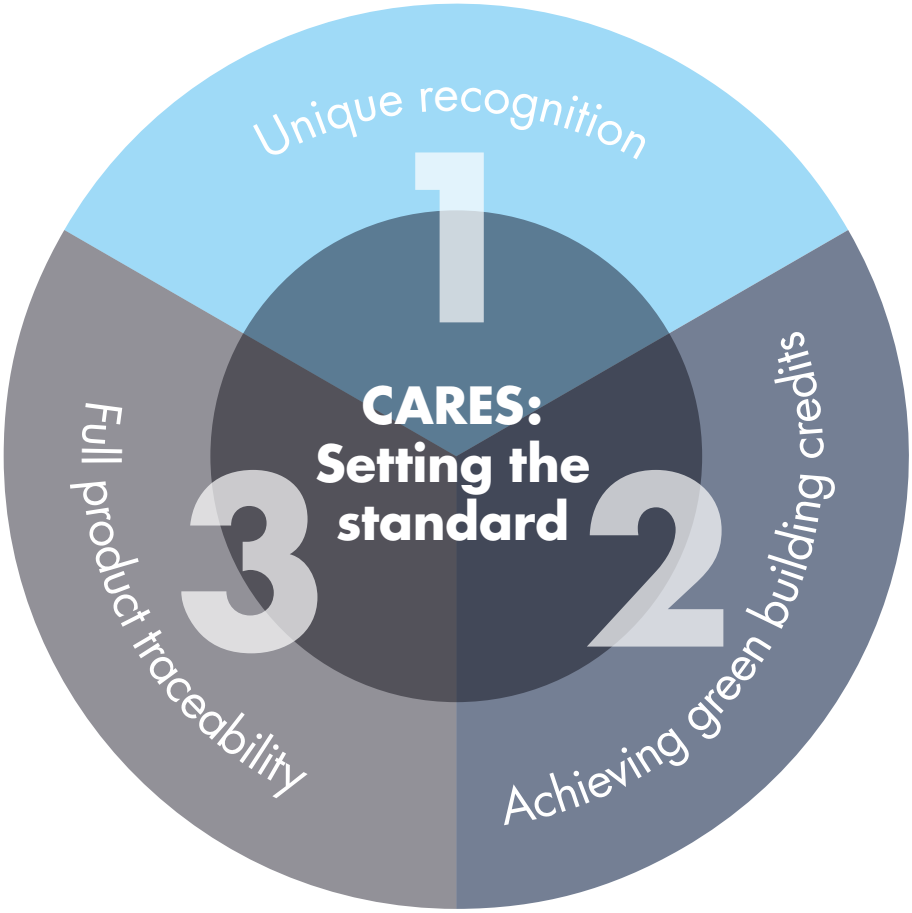
Your assured steel supply chain

Designers and contractors increasingly want independent, reliable and trusted information on the wider impacts of using different materials. With it they encourage the specification of responsibly sourced structural materials. Their reward is to showcase their expertise by achieving one more step to a green building certificate.

Suppliers increasingly want to be the standard bearers of an internationally recognised certification system demonstrating a fully traceable product across the whole supply chain. Their reward is product differentiation and a more resilient business.

The CARES SCS Scheme underpins these expectations. It offers some unassailable features and benefits, the most compelling of which are described here.

For the range of other benefits, features and endorsements of the Scheme, please see www.ukcares.com.



1

Unique recognition

SUSTAINABILITY

Registration Number 002

CARES is still the only sustainability scheme certification body accredited by the UK Accreditation Service (UKAS), as recommended by the UK government. The accreditation is to the rigorous requirements of *BS 8902:2009 Responsible sourcing sector certification schemes for construction products*. Independent accreditation by UKAS is the guarantee of the competence, impartiality and integrity of the certification body.

UKAS is the national accreditation body that assesses providers of certification, testing, inspection and calibration services. UKAS is appointed as the national accreditation body by the Accreditation Regulations 2009 and EU Regulations. The conformity assessment policy of the UK Department for Business, Innovation and Skills recommends the use of UKAS-accredited conformity assessment services. www.ukas.com

All management systems assured

All firms in the CARES approved supply chain have an environmental management system certified to ISO 14001, independently verified environmental product declarations (EPDs), validated carbon footprint data, and a quality management system certified to ISO 9001.

Q How do I know the claim on this steel product is credible?

A Its certification is accredited by UKAS, the national accreditation body that guarantees competence, impartiality and integrity of a certification body – look for the UKAS logo.

2

Achieving green building credits

The CARES SCS Scheme allows approved firms to differentiate their products: it enables the achievement of credits in green building rating systems such as BREEAM and LEED, which may be specified by clients, contractors and designers.

The CARES SCS Scheme has been assessed by BRE Global on responsible sourcing credits within *BREEAM UK New Construction 2014*. It has achieved entry into the list of recognised responsible sourcing schemes, under *Mat 03: Responsible sourcing of materials*.

Users of CEEQUAL on civil engineering projects in the UK can achieve maximum credits by procuring from the CARES approved supply chain. Finally, other green building assessment methods around the world have provisions that favour the use of sustainable construction materials and responsible practices. They include LEED (USA), ESTIDAMA (UAE), GSAS (Qatar) and BEAM Plus (Hong Kong). The use of products from CARES approved firms allows credits to be claimed under these schemes too.

Q How do I know the product is sustainable?

A Look at its markings. If it bears the markings and label required under the CARES SCS Scheme then there's no need for further testing: you can be sure that its chain of custody is assured, from hot metal production to delivery on site.

CARES SCS product markings

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 below.

Product marking

CARES Mark | Country = 7 (shown by 7 ribs) | Mill = 7 (shown by 7 ribs)

Product labelling

CARES SUSTAINABILITY

UKAS PRODUCT CERTIFICATION Registration Number 002

3

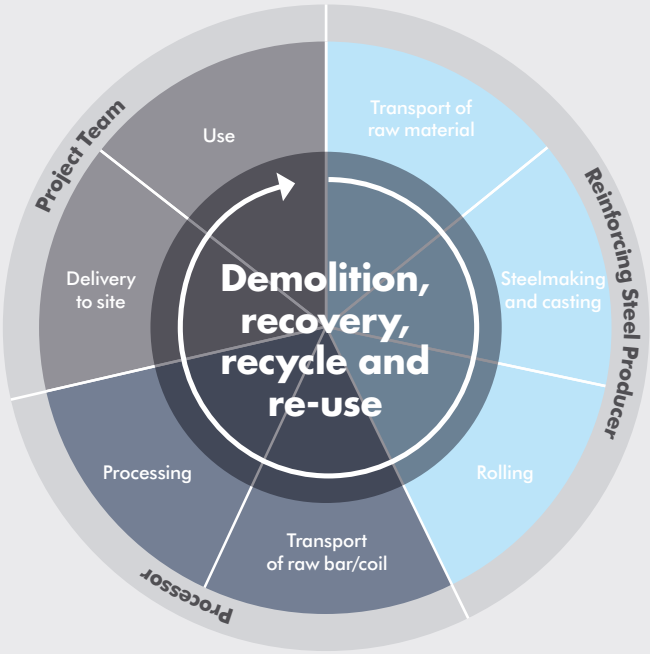
Full product traceability

The global supply chain for constructional steel is vast and complex. You want to be confident of where your steel comes from, you want to avoid uncertain properties or performance. So independent verification is vital.

Constructional steel products produced by CARES approved firms are fully traceable throughout the entire supply chain, from mill to site delivery. CARES approved producers use a unique marking (see below). This provides the traceability and saves money: when steel arrives on site no further testing is required, which means no costly construction delays.

100%

The percentage of constructional steel products supplied as part of a traceable batch through the CARES supply chain. Unchanged since 2011 our sector target is to maintain performance on this core KPI to 2015 and beyond.



Q Why does full traceability make a difference to my business?

A It means customers have 100% confidence in the quality of the steel and its provenance, knowing that the value chain from mill to site is integrated and uncontaminated means no delays during construction.

Sustainable steel: Why is it needed?

The buildings and infrastructure built by mankind create wealth. The construction sector, the built environment and their supply chains make a huge contribution to the global economy.

Impacts

The construction sector – of which steel and reinforcing bar industries are a part – is nonetheless responsible for significant impacts[1]:

- The global construction sector accounts for 40% of all workplace fatalities and the highest proportion of poor labour practices.
- Globally the sector accounts for 30 – 50% of mineral resource extraction and 30 – 50% of waste to landfill.
- The sector contributes to 23% of air pollution and 40% of drinking water pollution[2].
- Buildings account for 32% of global final energy use and 19% of all GHG emissions (2010)[3].
- In the EU, steel and aluminium together are responsible for approximately 51% of the total embodied energy in building materials (concrete is 17%).
- In the UK, the construction and operation of the built environment consumes 60% of all materials, results in 33% of all waste and accounts for 45% of CO_2e emissions.

Case study: İÇDAŞ
Sustainable water management

Turkey is the eighth largest steel producer globally and İÇDAŞ A.S. produces 11% of the country's steel in its Değirmencik Integrated Plant at Biga.

The company is accustomed to operating responsibly and became approved under the CARES SCS Scheme in 2011. The CARES Scheme helped İÇDAŞ to expand its environmental management system beyond the steel plant to cover all operating facilities. İÇDAŞ operations have become safer over recent years, the company increasingly uses local labour, has cut its water consumption and greenhouse gas emissions and invests in sustainable transport options and the local community.

In 2012, their Sustainable Water Management Project was hailed internationally as one of Turkey's Best Practices on Sustainable Development and Green Economy. The accolade recognised how the İÇDAŞ Değirmencik Integrated Plant uses desalinated seawater for cooling, saves water process energy, reduces its reliance on local aquifers, improves fish breeding conditions and achieves a positive economic return. See more at www.icdas.com.tr.

Opportunities

The journey to 'sustainable steel supply' has started and will be achieved when net positive impacts are achieved in the areas listed on page 7. Buildings that are designed with environmental and social impacts in mind at the outset are more likely to be better investments.

Good practices have abounded for years, and are always being refined. For example, off-site manufacture of steel components ensures better quality workmanship, improved safety and minimal waste production. Building Information Modelling (BIM) technology is allowing complexity in a resource-efficient way. Also, there is a highly developed market for steel recycling: about 40% of the steel produced globally is from recycled inputs.

Many of the impacts can be reduced through smart design, using more sustainable materials, process efficiency, clean technology and leaner management techniques. Using Modern Methods of Construction (MMC), of which material selection is a part, allows significant efficiency gains to be made. Product choice can reduce the carbon impact of a new building by 20 – 25% without impacting cost, quality or build programme[4]. Using a resource management plan during design will help reduce the costs. For example, waste costs the industry around 1% of turnover or around 30% of pre-tax profit[5].

Fundamental change in the building sector, however, also requires sustained policies on design, construction, and operation of buildings and their equipment. Coupled with advances in technologies and effective standards, this could lead to reduced energy use from buildings by 2050. Regulations affecting embodied carbon in materials vary globally. And by strengthening and expanding these policies geographically and to more building and appliance types will be key to reaching ambitious climate goals.

Customers are expecting improvements in performance in all parts of their 'value chain', so contractors and building owners must work together to deliver the improvements. This changing approach to decision-making in construction procurement requires suppliers to clearly demonstrate how they manage and improve sustainability performance. The CARES SCS Scheme is formally set up to do this through its scope, objectives, principles and the way it operates.

> **"Carbon is becoming a central design question. We must ask, 'Is it carbon critical?' and not, 'Is it cost efficient?' By asking that we can better create sustainable assets and infrastructure."**
>
> **Keith Clarke,** CEO of Atkins, New Civil Engineer, August 2008

[1] http://www.skanska.com/Global/About%20Skanska/Sustainability/Skanska_Sustainability_Agenda_Overview_Master_Copy_Release_1_2008_05_15.pdf

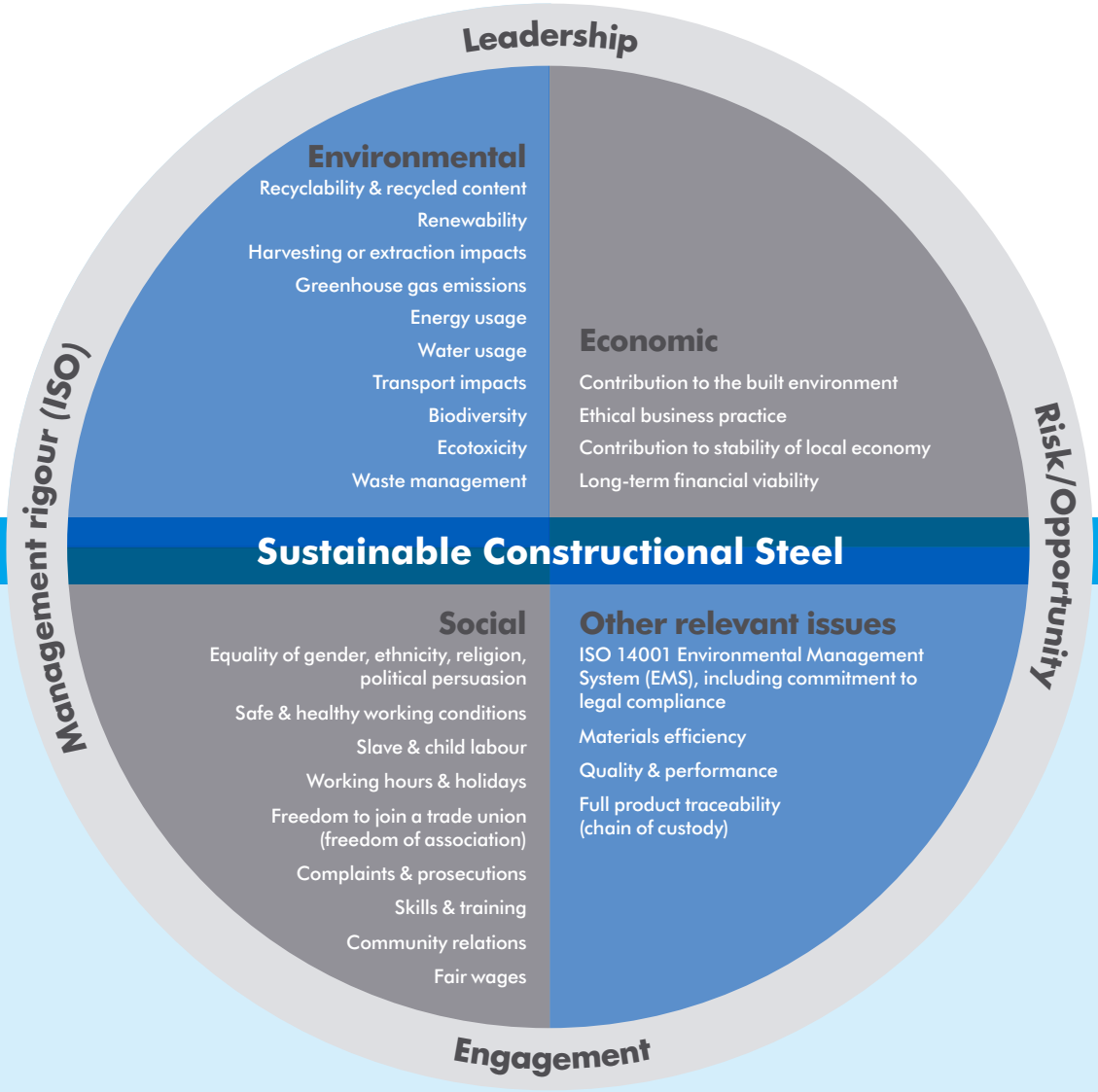
[2] http://www.bimhow.com/impact-of-the-construction-industry-on-the-environment/

[3] Chalmers et al, WBCSD, 2014; Climate Change: Implications for Buildings, Key Findings from the Intergovernmental Panel on Climate Change Fifth Assessment Report

[4] http://www.wrap.org.uk/content/business-case-specifying-and-sourcing-resource-efficient-products-1

[5] UK WRAP http://www.wrap.org.uk/content/resource-efficiency-built-environment

What matters most to our sector and its stakeholders?



The CARES assessment of material issues includes a range of topics that are important to our stakeholders.

The CARES Sustainability Technical Committee identified and prioritised the issues based on a number of factors including significance to key stakeholders, maturity of formal management systems, capability of existing systems and training programmes to manage the issues, and overall relevance to the constructional steel supply chain.

The CARES SCS Scheme comprises a schedule and performance reporting, both of which are guided by the materiality process. The list of the issues is informed by the requirements of BS 8902 and the Ethical Trading Initiative (ETI) Base Code. Currently, three issues are not schedule requirements of the Scheme: 'Renewability', 'Harvesting and extraction impacts' and 'Land remediation'.

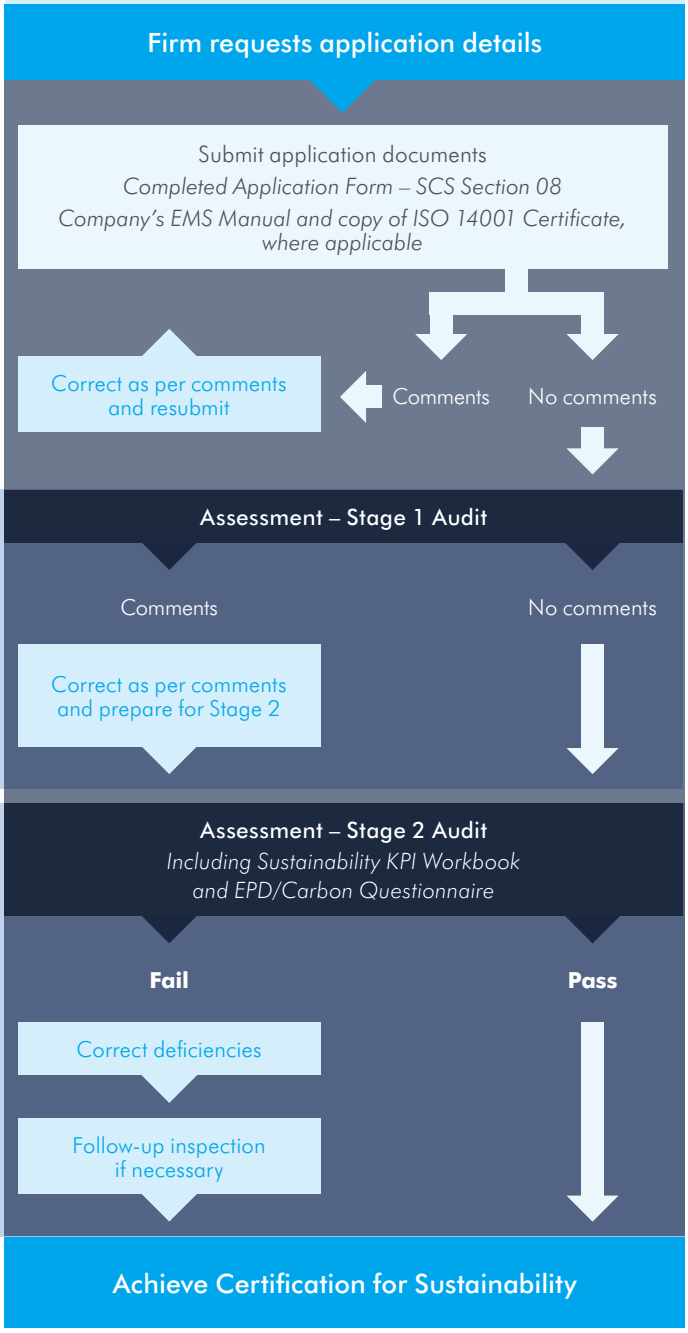
Q How was the list of issues derived?

A A formal review of issues is undertaken leading to a core list of topic areas that is refined using the input of representatives from the main stakeholder groups relevant to UK CARES and the constructional steel sector.

How the SCS Scheme works

To achieve CARES sustainability certification, a company's product, quality and environmental management systems are assessed. Applicants undergo a rigorous two-stage audit process (see box below).

SCS Scheme operation and key features



Evaluation and reporting against the Principles

Approved producers are required to submit annual reports on their performance against the indicators agreed for the Scheme. CARES audits over 60 indicators of performance disclosed in each report. Audits are conducted according to rigorous procedures and systems guided by the Principles (see page 9). Over time, CARES expects to see evidence of a transition to a more mature and effective approach to the issues by an approved producer.

BS 8902

By adopting the BS 8902 framework, CARES and constructional steel industry stakeholders have developed a workable approach to the identification, collection, auditing and reporting of sustainable performance data.

Assuring compliance

Sustainability considerations and requirements are increasingly built into legislation. The responsibility for compliance with regulations and standards rests absolutely with the approved firm. CARES assessments and ongoing audits provide assurance that these requirements continue to be met.

The scope of the Scheme

The scheme is open to producers and processors (or fabricators) of steel bars and coils for the reinforcement of concrete who meet the scheme's requirements. Applicants must already possess a valid CARES product certification certificate or product certification acceptable to CARES and an ISO 14001 environmental management system certificate from CARES or an accredited certification body acceptable to CARES.

Scheme policy

BS 8902 requires that the CARES SCS Scheme policy, objectives and principles are published.

CARES is committed to the principles of sustainable development, including inclusivity, integrity and transparency, and shall actively promote those principles through the effective implementation of the CARES Sustainable Constructional Steel Scheme which is UKAS accredited to BS 8902. Through active and frequent stakeholder engagement the Scheme has been specifically developed for the constructional steel supply chain. It uses the most relevant performance indicators which shall be publicly reported at least annually. There shall be a full reappraisal at least every two years, in consultation with stakeholders, to assess the level of performance by the Scheme against the sustainable development principles. CARES shall ensure that the Scheme steadily improves this level of performance through periodic review of the sustainability principles, responsible sourcing issues, objectives, targets and operational assessment schedules. The overall intent of this is that accredited certification of the constructional steel supply chain will deliver an improvement in sustainable development. CARES will endeavour to promote the fulfilment of this intent, nationally and internationally.

CARES Sustainable Constructional Steel Scheme Principles

i. Inclusivity, integrity, stewardship and transparency. These shall be reflected in practice by characteristics/criteria appropriate to the constructional steel supply chain. These will be measured at the product and organisation level and will develop in line with different stages of the Scheme's maturity with regard to sustainable development.

ii. The Scheme is concerned with ensuring that approved firms operate to the highest quality, environmental and health and safety standards necessary to satisfy end users by attaining and maintaining quality, environmental and health and safety management systems to ISO 9001, ISO 14001 and OHSAS 18001 respectively.

iii. The responsibility for compliance with legal requirements and standards rests absolutely with the Firm.

iv. The means of ensuring consistent compliance with the policies are the formal management systems which the firm must operate and implement to the satisfaction of the Authority and which are subject to assessment by the Authority at periodic intervals.

v. Development of products that improve the quality and sustainability of the built environment.

vi. Effective management of all waste streams and minimisation of waste disposed to landfill.

vii. Measurement, reporting and improvement of performance on sustainability issues.

viii. Minimisation of pollution and emissions associated with production and transportation.

ix. Protection and enhancement of the natural environment adjacent to or affected by constructional steel production.

x. More efficient use of energy and reduction in 'global warming potential/carbon footprint'.

xi. More efficient use of primary materials and promotion of the recyclability of constructional steel products.

xii. More efficient water use and minimisation of demand on mains water supplies.

xiii. Respect internationally recognised norms concerning workers conditions and rights.

An approved firm shall annually assess its level of performance against the sustainability principles using a maturity matrix.

"We have been impressed by the enthusiasm of the construction industry to take on responsible sourcing. Sector schemes were needed to make this a reality and the CARES Scheme meets this need."

Sarah Kaethner, Structural Associate Director, Arup

CARES Sustainable Constructional Steel Scheme objectives

i. To provide a means by which construction clients can be assured that approved firms have produced and processed the product in line with the sustainability principles.

ii. To provide a means by which approved firms in the constructional steel supply chain are able to declare product and organisational level sustainability performance.

iii. To undertake a review, at least biennially, to ensure continuous improvement of the constructional steel supply chain against the relevant issues and continuous improvement against the sustainability principles.

iv. To undertake regular and relevant public reporting, at least annually, to ensure continual improvement of the constructional steel supply chain against the relevant issues and sustainability principles.

v. To facilitate sustainable procurement in accordance with BS 8903:2010 Principles and framework for procuring sustainably – Guide.

Case study: ArcelorMittal Kent Wire Ltd
Can't do business without it

Photo courtesy of ArcelorMittal, photographed by Stephen Hird

A meticulous focus on quality and a considered view of what the market will demand in future led ArcelorMittal Kent Wire Ltd to believe firmly in the business benefit of CARES certification. **"CARES helps tremendously to ensure robust processes and controls are in place; we spend a lot of time talking with customers and their feedback is very strong. In short, when compared to other providers, we get the service we need from CARES"**, says CEO Phil Taylor.

Mr Taylor goes on to describe how CARES certification sits perfectly with product attributes such as price, quality and reliability because sustainability is part of the future-proofing required in business today. Traceability right back to the liquid steel at the mill is a cornerstone of the CARES scheme and that is what customers are increasingly expecting.

And to bring home the message further, all of ArcelorMittal Kent Wire's competitors are certifying to CARES: what better accolade is there?

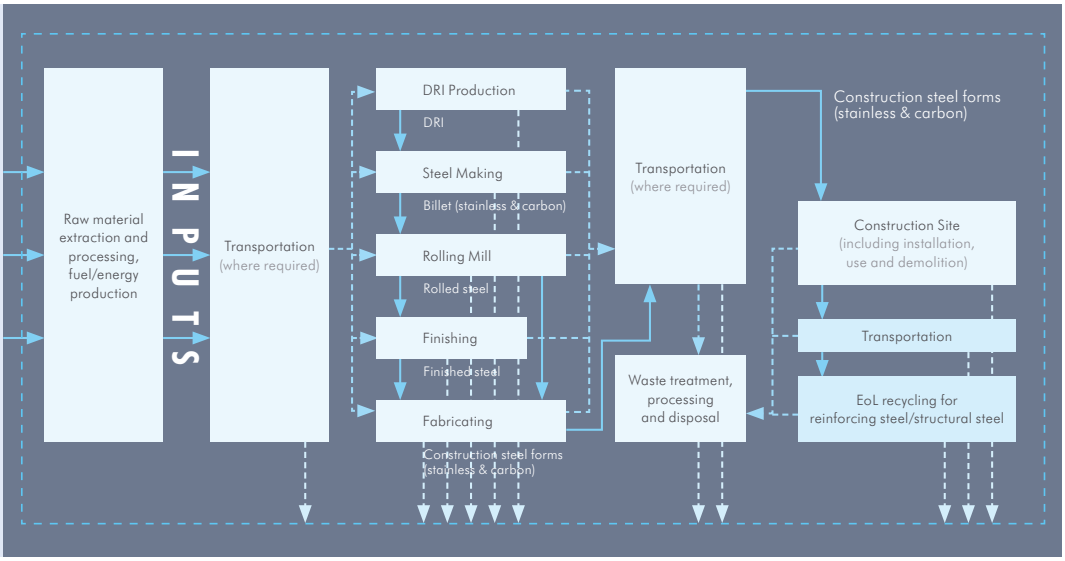
Environmental performance

The main environmental issues relevant to the sector and its stakeholders are covered by the certification processes required by the CARES SCS Scheme. The environmental performance of the sector is summarised here.

	Key metrics	2011	2012	2013	2015 target
Environmental management	Percentage of all employees at approved steel producers who are employed at ISO 14001 certified sites, or equivalent	96%	100%	100%	Maintain 100%
Energy efficiency and greenhouse gas emissions	Greenhouse gas emissions[6] (tonnes CO_2e per tonne of carbon steel bar produced)	1.1	N/A	N/A	Reduce by 2.5%
	Global warming potential[6] (tonnes CO_2e per tonne of carbon steel bar produced)[7]		1.3	N/A	Reduce by 2.5%
Materials	Tonnes of steel billet as percentage of tonnes of raw materials used	82	82	82	To be determined
	Post-consumer steel scrap in approved product (% by mass)	97%	97%	97%	Maintain 97%
Waste	Approved suppliers with waste management plans in place (%)	100%	100%	100%	Maintain 100%
	Waste sent to landfill (kg/tonne of finished product)	95	86	82	To be determined
	Waste incinerated (kg/tonne of finished product)	8	3	0.12	To be determined
	Waste recycled (kg/tonne of rolled steel billet finished product) [constructional steel producers]	175	164	158	Increase by 5%
Water	Water consumption (m^3) per tonne of finished product	1.1	1.0	1.1	Reduce by 5%
Biodiversity and ecotoxicity	Approved manufacturers who monitor and report on their biodiversity impacts (%)	71%	100%	100%	80%
	Environmental incidents that resulted in an enforcement order or a penalty[8] at an approved manufacturer site (#)	1	0	2	0

[6]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 90%. [7]Based on Electric Arc Furnace (EAF) route which uses recycled steel. [8]This includes a financial penalty, an enforcement notice, a prohibition notice, and/or a prosecution.

Global warming potential: Reporting system boundaries and scope



A tool for CARES approved firms

Data describing the global warming potential (GWP) of a product can vary significantly depending on who prepares the data, what assumptions are made, what methods are used and where organisational boundaries are drawn.

The CARES Environmental Product Declaration (EPD) and carbon footprint tools were developed with partners in industry and experts in lifecycle assessment. The approach provides a consistent basis to assess the GWP associated with the production of constructional steel products from 'cradle-to-grave'.

Economic performance

Companies create economic risks and opportunities for employees, communities, shareholders and other stakeholders. Principal impacts arise through employment opportunities, local procurement, civic governance and payment of tax and dividends. Doing business with integrity according to established financial standards helps earn a 'social licence to operate'.

Key metrics	2011	2012	2013	2015 Target
Approved manufacturers with **externally audited accounts** for the latest financial reporting period	100%	100%	100%	Maintain 100%
Approved manufacturers with a policy to comply with **ethical business practices**	79%	100%	100%	Maintain 100%

Notes: 'Approved' product or 'approved' suppliers refer to product and suppliers approved under the CARES SCS Scheme.

Energy efficiency and greenhouse gas emissions

CARES SCS Scheme approved firms must improve energy efficiency and reduce greenhouse gas (GHG) emissions. They are obliged to provide operational data and provide their customers with clear information on embodied energy and GHG emissions. CARES strongly encourages companies to publicly disclose data relating to the carbon footprint of their constructional steel products as well as data relating to transport efficiency.

Environmental management

The CARES SCS Scheme requires approved companies to maintain an effective environmental management systems (EMS) certified to ISO 14001. A well-conceived EMS helps reduce wastes and operating costs, shows continual improvement, demonstrates compliance and engages employees.

Certified to ISO 14001

All firms in the CARES approved supply chain have an Environmental Management System **certified to ISO 14001.**

Water

Water stress from excessive demand, poor management and diminishing supply can create significant environmental, community and geopolitical impacts. The SCS Scheme requires data on water consumption per tonne of finished product, as well as total annual water use alongside active encouragement of effective water treatment to enable recirculation and recycling on sites.

5%

The target reduction of water consumption per tonne of finished product by end of 2015.

Independently validated

All SCS Scheme approved firms' carbon footprint data are independently validated and benefit from an advanced Life cycle assessment (LCA) calculator certified to EN 15804.

"We have been eagerly awaiting the EPD work from CARES since there is a lack of data on environmental impacts. By publishing these data, CARES have shown real leadership. Access to quality data in EPDs, verified to EN 15804, is essential if we really want to quantify these impacts."

Andrea Charlson, Arup

Ethical business policy

The CARES SCS Scheme requires approved companies to adopt and provide evidence for an ethical business policy on some, or all, of the following:

1. Employee diversity
2. Economic value added (EVA) and contribution to the stability of the local economy.
3. Ongoing sustainability investment (eg innovation, engagement, supply chain resilience, climate change adaptation, human rights).
4. Responsible procurement.
5. Business integrity.
6. Local skills and capability.
7. Objectives and targets to monitor policy effectiveness.

Social performance

The principal sustainability issues faced by the sector from the point of view of people and communities are determined through the materiality process described on page 7. Sector performance in the issues is summarised below.

	Key metrics	2011	2012	2013	2015 target
Health & Safety	Employees located at OHSAS 18001 certificated sites (%)	89%	100%	100%	Maintain 100%
	Companies operating a system to ensure workers' conditions are safe and healthy (%)	100%	100%	100%	Maintain 100%
Training	Number of training hours per employee	24	28	24	Increase by 5 percentage points
Human rights	Compliance with applicable laws and industry standards on fair wages, working hours and public holidays (%)	100%	100%	100%	Maintain 100%
Community relations	Approved producers who have a policy in place to increase engagement with community stakeholders (%)	93%	100%	100%	Maintain 100%
Community complaints	Approved producers who have specific systems in place to deal with local community complaints (%)	93%	100%	100%	Maintain 100%

A safe, healthy and productive workplace

While the steel-making sector is a significant employer, it has a heightened awareness of the risks faced by employees and contractors. Good management approaches are vital to reduce these risks and create incident-free workplaces. The SCS Scheme aims to help achieve fewer accidents with less severe outcomes.

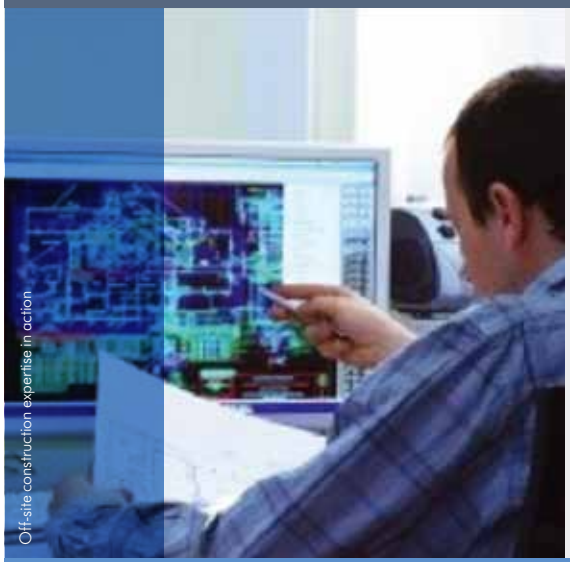
Skills and career development are important to productivity, long-term progress and loyalty. A skilled workforce deployed correctly underpins a responsible value chain. Approved firms provide evidence of technical and on-the-job training. Evidence can be qualitative or quantitative, for example the time invested in training, and measures of outcomes and effectiveness. The Scheme looks for evidence of skills gaps and the training developed to address them.

Good community relations, secure human rights

With a growing stakeholder interest in supply chain resilience and responsibility, companies increasingly seek reliable means to manage human rights and labour conditions equitably. Aligned with the Ethical Trading Initiative (ETI) Base Code the SCS Scheme expects suppliers to meet criteria on fair labour practices, diversity and equality. CARES auditors review policies and meet with employees during the Scheme audit process.

Constructional steel firms create both negative and positive impacts on local communities, but they aim to minimise nuisance to the local community, understand any issues raised and respond appropriately. And approved producers engage with host communities and others in a variety of ways, such as surveys, local community projects, dedicated helplines, newsletters, open days, employee representation and appropriate responses to legitimate complaints.

Case study: Midland Steel Ltd
Built to last – with the help of CARES



Off-site construction expertise in action

Midland Steel Ltd is known as an early adopter of responsible business practices. The Scheme helped it to crystallise further developments. This was due to its strict controls and full traceability: vital in bid documents in today's competitive market. Furthermore, there is a discernible shift in how business is done at Midland Steel, as a result of a wider appreciation of resource efficiency and the CARES SCS Scheme. In 2013 Midland Steel's engineering team applied their building information modelling (BIM) and off-site construction (OSC) expertise to solve a key engineering problem relating to structural columns at the London Bridge Station project. Working with the contractor they devised, transported and safely installed an eight-tonne column in a third of the normal time required.

Additionally, partly as a result of CARES, Midland Steel's transportation is now safer and more efficient, and the company's management policies have been refined. Still further the upstream steel mill used by the company is now also certified by CARES. There are still some challenges on raising awareness of sustainable constructional steel in the contracting community, but the business and market benefits of CARES and BS8902 for Midland Steel and its customers are clear.

How to specify sustainable constructional steel

To avoid any risk of procuring the wrong ('unsustainable') material, the purchaser's specification should make an explicit reference to the product standard and to CARES certification (or any fully equivalent Scheme). What to include in a specification (UK and non-UK):

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.

Tell us what you think

This is our third 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.

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